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# Foreign Direct Investments:

## Concepts, Methodologies, Tools, and Applications

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*USA*

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# Preface

The role of foreign direct investment initiatives is pivotal to effective enterprise development. Globalization, accelerated by information technologies, has increased the speed of business transactions and has reduced the distances between international businesses. This growth has transformed the realm of foreign investment in countries around the world, calling for a methodological approach to planning feasible capital investment proposals in general and foreign direct investment projects.

Staying informed of the most up-to-date research trends and findings is of the utmost importance. That is why IGI Global is pleased to offer this four-volume reference collection of reprinted IGI Global book chapters and journal articles that have been handpicked by our senior editorial staff on this topic that will shed light on critical issues related to the importance of global stocks to economic structures and the effects that these holdings have on the financial status of nations by providing both broad and detailed perspectives on cutting-edge theories and developments. This reference is designed to act as a single reference source on conceptual, methodological, technical, and managerial issues and provide insight into emerging trends and future opportunities within the global business market.

*Foreign Direct Investments: Concepts, Methodologies, Tools, and Applications* is organized into eight distinct sections that provide comprehensive coverage of important topics. The sections are:

1. Fundamental Concepts and Theories;
2. Development and Design Methodologies;
3. Tools and Technologies;
4. Utilization and Applications;
5. Organizational and Social Implications;
6. Managerial Impact;
7. Critical Issues and Challenges; and
8. Emerging Trends.

The following paragraphs provide a summary of what to expect from this invaluable reference tool.

Section 1, "Fundamental Concepts and Theories," serves as a foundation for this extensive reference tool by addressing crucial theories essential to the understanding of foreign direct investments. Introducing the book is "Incentives to Attract Foreign Direct Investment in Emerging Economies: A Causality Analysis for the Indian Case," by Ishita Ghoshal (Symbiosis International University, India) and Ishita Ghosh (Symbiosis International University, India): a great foundation laying the groundwork for the basic concepts and theories that will be discussed throughout the rest of the book. Section 1 concludes and leads into the following portion of the book with a nice segue chapter, "The Fundamentals of Neuroeconomics" by Kijpokin Kasemsap (Suan Sunandha Rajabhat University, Thailand).

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Section 2, "Development and Design Methodologies," presents in-depth coverage of the conceptual design and architecture of foreign direct investments. Opening the section is "An Integrated Model of Perceived Risk and Risk-Reducing Strategies in the Tunisian Stock Market: Risk-Behavior Model," by Azza Béjaoui (University of Sousse, Tunisia) and Adel Karaa (College of Business Administration, University of Hail, Saudi Arabia). Through case studies, this section lays excellent groundwork for later sections that will examine present and future applications for foreign direct investments. The section concludes with an excellent work by Nkem Okpa Obaji (Department of Business Administration, Nigerian Turkish Nile University, Abuja, Nigeria), Aslan Amat Senin (Faculty of Management, Universiti Teknologi Malaysia, Johor, Malaysia), and Mercy Uche Olugu (Department of Statistics, Federal School of Statistics, Ibadan, Nigeria), "Supportive Government Policy as a Mechanism for Business Incubation Performance in Nigeria."

Section 3, "Tools and Technologies," presents extensive coverage of the various tools and technologies used in the implementation of foreign direct investments. The first chapter, "IFRS Harmonization and Foreign Direct Investment," by Javier Vidal-García (University of Valladolid, Spain) and Marta Vidal (Complutense University of Madrid, Spain), lays a framework for the types of works that can be found in this section. The section concludes with "Quantum-Inspired Computational Intelligence for Economic Emission Dispatch Problem" by Fahad Parvez Mahdi (Universiti Teknologi Petronas, Malaysia), Pandian Vasant (Universiti Teknologi Petronas, Malaysia), Vish Kallimani (Universiti Teknologi Petronas, Malaysia), M. Abdullah-Al-Wadud (King Saud University, Saudi Arabia), and Junzo Watada (Universiti Teknologi Petronas, Malaysia). Where Section 3 described specific tools and technologies at the disposal of practitioners, Section 4 describes the use and applications of the tools and frameworks discussed in previous sections.

Section 4, "Utilization and Applications," describes how the broad range of foreign direct investments efforts has been utilized and offers insight on and important lessons for their applications and impact. The first chapter in the section is "The Determinants of Foreign Direct Investment Outflows From Turkey," written by Raif Cergibozan (Kırklareli University, Turkey) and Caner Demir (Kırklareli University, Turkey). This section includes the widest range of topics because it describes case studies, research, methodologies, frameworks, architectures, theory, analysis, and guides for implementation. The breadth of topics covered in this section is also reflected in the diversity of its authors, from countries all over the globe. The section concludes with "Quality Action to Accelerate Fair Accessibility Through Law of Telecommunication: Global Village Setting," by Agus Pramono (Universitas Diponegoro, Semarang, Indonesia), P.L. Rika Fatimah (Universitas Gadjah Mada, Yogyakarta, Indonesia), and Ivan Lanovara (TS Scholar, Kajang, Malaysia), a great transition chapter into the next section.

Section 5, "Organizational and Social Implications," includes chapters discussing the organizational and social impact of foreign direct investments. The section opens with "Information Asymmetries in the Context of Restatement Announcements," by Pierangelo Rosati (Irish Centre for Cloud Computing and Commerce [IC4], Dublin City University, Ireland), Pietro Mazzola (SDA Bocconi School of Management, Italy), and Riccardo Palumbo (University "G. d'Annunzio" of Chieti-Pescara, European Capital Markets CRC, Italy). This section focuses exclusively on how these technologies affect human lives, either through the way they interact with each other or through how they affect behavioral/workplace situations. The section concludes with "Strategic-Spatial Analysis of the Implementation of Business Opening Politics of Mexico," by José G. Vargas-Hernández (University of Guadalajara, Mexico).



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Section 6, "Managerial Impact," presents focused coverage of foreign direct investments in a managerial perspective. The section begins with "Transcontinental Strategies and Strategic Choices" by Reza Aboutalebi (University of Surrey, UK), Hui Tan (Royal Holloway, University of London, UK), and Reshma Trupti Lobo (University of South Wales, UK). This section serves as a vital resource for developers who want to utilize the latest research to bolster the capabilities and functionalities of their processes. The chapters in this section offer unmistakable value to managers looking to implement new strategies that work at larger bureaucratic levels. The section concludes with "Major Macroeconomic Dynamics for Labor Market in Turkey: A Causality Analysis" by Mustafa Karabacak (Uşak University, Turkey) and Oytun Meçik (Eskişehir Osmangazi University, Turkey).

Section 7, "Critical Issues and Challenges," presents coverage of academic and research perspectives on foreign direct investment tools and applications. The section begins with "Does Trust Matter for Foreign Direct Investment Decisions?" by Sibel Bali Eryigit (Uludag University, Turkey). Chapters in this section will explore theoretical approaches and offer alternatives to crucial questions on the subject of foreign direct investments. The section concludes with "Transnational Acceleration of Local Startups: Portugal's Building Global Innovators (BGI) Model," by Luís Carvalho (European Institute for Comparative Urban Research, The Netherlands), Nuno Camacho (Erasmus University Rotterdam, The Netherlands), Gonçalo Amorim (MIT Portugal, Portugal), and José Paulo Esperança (BGI – IUL MIT Portugal Accelerator, Portugal).

Section 8, "Emerging Trends," highlights areas for future research within the field of foreign direct investments, opening with "Diffusion of Technology via FDI and Convergence of Per Capita Incomes: Comparative Analysis on Europe and the MENA Region" by Sumru Oz (Koc University, Turkey). This section contains chapters that look at what might happen in the coming years that can extend the already staggering amount of applications for foreign direct investments. The final chapter of the book looks at an emerging field within foreign direct investments, in the excellent contribution, "Place-Based Subnational Development: Unpacking Some of the Key Conceptual Strands and Normative Dispositions," by Nick Gray (Northumbria University, UK) and Lee Pugalis (University of Technology Sydney, Australia).

Although the primary organization of the contents in this multi-volume work is based on its eight sections, offering a progression of coverage of the important concepts, methodologies, technologies, applications, social issues, and emerging trends, the reader can also identify specific contents by utilizing the extensive indexing system listed at the end of each volume. As a comprehensive collection of research on the latest findings related to using technology to provide various services, *Foreign Direct Investments: Concepts, Methodologies, Tools, and Applications* provides government officials, economists, managers, financial professionals, researchers, administrators, and all audiences with a complete understanding of the development of applications and concepts in this field. Given the vast number of issues concerning usage, failure, success, policies, strategies, and applications of foreign direct investments in countries around the world, *Foreign Direct Investments: Concepts, Methodologies, Tools, and Applications* addresses the demand for a resource that encompasses the most pertinent research in technologies being employed to globally bolster their knowledge and applications.



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Section 1

# Fundamental Concepts and Theories

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# Chapter 1
# Incentives to Attract Foreign Direct Investment in Emerging Economies:
## A Causality Analysis for the Indian Case

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## ABSTRACT

*The study delves into a diagnostic check for macroeconomic factors that may cause and explain outward FDI flows to India as a representative of the emerging economies. The seventeen top investing economies to India across the period from 2008-14 reveal that overall FDI outflows, inflation, exchange rate and growth of the economy affect FDI outflows to India in the long run where only exchange rate has a causal effect. Also, the above-mentioned variables except growth along with the size of the economy has significant effect on the extent of FDI flows to India from the economies considered for the study.*

## INTRODUCTION

Foreign Direct Investments (FDI), a key component of foreign private capital flows, has been an important means to financing investments and growth in the emerging economies. Such inflows often exceed official sectoral financing within the economy and have continued to remain an important engine of growth in a majority of the Emerging Market Countries (EMC) of the current global economy. Foreign private capital flows, and in particular short-term flows, can, however, be unpredictable as is evident

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from the recent financial crises. In this light, it has become imperative to understand the trends in FDI flows to EMCs. Insights into investment decisions and structural changes that may affect the trends and direction of such flows have become the prevailing pointers in recognising net private flows to emerging markets and can possibly be a source of negotiating economic stability at times of volatility in global capital markets (The World Bank, 2003).

China and India are the largest emerging markets in the current global economy (Jain, 2006). Around the mid-2015, the World Bank estimated that while China was the leading Emerging Market Country (EMC), India will be poised to overtake China with a 7.5 per cent projected growth rate (Times of India, 2015). The World Bank also anticipated that China would grow at 7.1 per cent while other EMCs would grow by 4.4 per cent in 2015, with a likely rise to 5.2 per cent in 2016, and 5.4 per cent in 2017. Although the "carefully managed" slowdown would continue in China, the oil importing Indian economy would move ahead because reforms helped in stimulating the market confidence and falling oil prices reduced economic liabilities (World Investment Report, 2015).

In 2015, the World Bank Chief Economist, Kaushik Basu opined that

*… slowly but surely the ground beneath the global economy is shifting. China has avoided the potholes skillfully for now and is easing to a growth rate of 7.1 per cent; Brazil, with its corruption scandal making news, has been less lucky, dipping into negative growth; growth in South Asia is expected to continue firming to 7.1 per cent this year, led by a cyclical recovery in India and supported by a gradual strengthening of demand in high-income countries. (Times of India, 2015)*

India's gain from the declining global oil prices has enabled the country to improve its fiscal and trading accounts. Implementation of subsidy reforms and the easing of monetary policy has helped the country raise business and investor confidence, thereby attracting new capital inflows. The "Make in India" initiative since late 2014 has been a vital impetus to the inflow of funds and boosting economic growth (The Economist, 2014).

Regional studies pertaining to Asia submit that India is poised to be the next economic super-power, surpassing China soon (Thirlwell, 2004). Whether this prediction holds any water, is a matter of time. However, it is undeniable that the importance of the Indian economy as a key driver in the global economic growth will remain a force to reckon with (Chandler & Zainulbhai, n.d.) (Asia House, 2013) (Sanghoee, 2015) (Forbes, 2015) (LSE IDEAS, 2012). It is in this light, that the chapter aims to investigate the determinants of inward FDI in India from its highest investing partners.

The chapter is divided into two main parts – a) the importance of India in the global economy and how investment inflows will help the economy grow b) the empirical analysis to understand short run and long run relationships amongst the variables considered and estimate the extent of the effects.

## BACKGROUND

In the last few years, the global economy has slowed down considerably. Foreign Direct Investment (FDI) in 2014 recorded a decline of 16 per cent (approximately, 1.2 trillion). The decline has been fraught with economic and geopolitical instability, creating various policy driven uncertainties for investors world-wide; large disinvestments have also off set new global investments. New investments were also offset



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by some large divestments. The drop in FDI flows was particularly concerning when compared to the global growth in GDP, trade, gross fixed capital formation and employment. However, since 2015, an upward trend in FDI has been noted. In fact, the current FDI flows are responsible for almost 40 percent of external development finance to developing and transition economies. The UNCTAD predicts FDI flows to touch $1.4 trillion in 2015 and further on at $1.5 trillion in 2016 and $1.7 trillion in 2017, respectively. Some cited reasons are growth prospects in the United States, the demand-side stimulation in the economies because of the recent spiraling down of oil prices and various macroeconomic and trade policies that have been relaxed and reformulated to accommodate trade and investment liberalization and promotion between trading partners. The current macroeconomic forecasts for the world economy estimate that multinational corporations (MNCs) will have a wave of profitability and cash reserves in the forthcoming years of the current global business cycle. This expectant outlook will also fuel higher FDI flows. However, the recent instabilities surrounding the European Union (namely, the BREXIT and its aftermath), other geopolitical insecurities and susceptibilities in emerging economies may soon dampen this optimism in the near future for the world investment climate (World Investment Report, 2015) (World Investment Report, 2016).

A cursory look at FDI inflows by geography clearly indicates that developed nations have continued to receive record high investments in 2014, while developing and emerging nations fell flat as far as this economic variable goes. Remarkably, it was noticed that while the developing regions of Asia drove the inflows to the developed nations (where FDI reached a record high of USD 681 billion in 2014), FDI flows to Asia grew by 9 per cent (USD 465 billion in 2014). East, South-east and South Asia – all witnessed a surge in FDI inflows. It is notable that economic giants of this region, China and India, both enjoyed considerable rise in FDI inflows. While China's inflows went up by 4 per cent in 2014, India's went up by a significant 22 per cent. However, given the geopolitical insurgencies in West Asia, there was a downward trend in the FDI inflows for the sixth consecutive year.

In terms of regional groupings, FDI is essentially determined by larger global macroeconomic trends, economic performances of the members in the partnership among themselves and vis-à-vis the world economy and other geopolitical factors. Increasing long term cooperation and supporting a common climate for foreign investments, do augment the inflows, as well. Extra-regional FDI is also attracted by a larger and unified market size that such regions offer. In spite of these inherent merits, it was noticed that most economic clusters experienced a fall in inflows till around 2014. However, notably, the Association of Southeast Asian Nations (ASEAN), witnessed a 5 per cent increase in inflows, and the Regional Comprehensive Economic Partnership (RCEP), an increase of 4 per cent. Also, while the share of intra and extra regional FDI is largely dependent on the particular characteristics of the regions themselves, total inflow of FDI in the developing and emerging clusters are still very low. In comparison, ASEAN has shown a significant pull in the inflow of FDIs. The APEC economies reached $652 billion in 2014, accounting for more than half of global FDI flows, while intra-APEC FDI flows and stocks are significant, at about 40 per cent of inward stock that was noted during 2009–2011.

## Top Investors and Invested Sectors in India

Table 1 provides estimates published by the Reserve Bank of India (RBI) in the latter part of 2015. Various aggregated values provided here may be different from the figures specified by the World Investment Reports. This is due to methodological differences.



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Some cursory observations from this data and other more recent developments, show the following:

- In the last decade, Mauritius, Singapore and USA have consistently remained the top three investors in India (The Reserve Bank of India, 2016).
- While the trend in inflows have gone up, there has been a dip in the inward FDI in the years 2011-12 and 2012-13. This was possibly due to the political uncertainties and policy changes anticipated with a change in Government (The Reserve Bank of India, 2015).
- It is interesting to note that in spite of the various bilateral and regional trading agreements that India has engaged in with other nations (some of the significant ones being SAFTA, EU-India, ASEAN-India), barring Singapore, Mauritius and Japan, so far the inflows have not been very robust from these trading partners ("Department of Commerce, Government of India", 2016).
- With the launch of the "Make in India" initiative in the late 2014, there seems to be an upswing in the inflows with new trade and investment policies in place ("Economic Survey 2015-16", 2016) ("Department of Commerce, Government of India", 2016).
- There are some 18 trade partnership negotiations underway with India and another nine that have been recently made operational. The improvement in the inflows may well be considerably high in the long run, other economic factors remaining conducive ("Department of Commerce, Government of India", 2016).
- As recently as February 2016, the Economic Survey of India (2015-16) declared that FDI inflows in India increased by 31 per cent to USD 24.8 billion between April-November, 2014. The survey also pointed out that more than 60 per cent of the FDI equity inflows of USD 24.8 billion during 2015-16 (April-November) came from Singapore and Mauritius. Since the launch of the "Make in India" initiative in September 2014, there has been a 40 per cent increase approximately in FDI inflows between October 2014 and June 2015, vis-à-vis the analogous period of the previous financial year. With the aim to open up and streamline the FDI policy while boosting the ease of doing business climate in the country, the government has undertaken various reforms, since. It has also been noted that after the introduction of the initiative, FDI inflows have consistently increased into sectors like computer software and hardware, services, trading, automobile industry, construction activities, chemicals and telecommunications. Over this development, countries such as Japan, China, France and South Korea have confirmed their intent of substantially investing in India in various industrial and infrastructure projects in the offing.

Another important observation is that India's services sector has remained the most significant in terms of its contribution to the FDI inflows into the country. Almost 66.1 per cent of the country's gross value added growth in 2015-16 has been attributed to FDI inflows from this sector. Regardless of the economic slump in the post crisis period of 2010-14 India showed the fastest growth in its services sector, recording a Compound Annual Growth Rate (CAGR) of 8.6 per cent and just tipping over the Chinese who were at 8.4 per cent. Also, India's services sector growth in 2014 was at 10.3 per cent while the Chinese were at 8.0 per cent (DNA, 2016) (Live Mint, 2016) (The Economic Times, 2016) ("Foreign Direct Investment", 2016).



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*Table 1. Foreign direct investment flows to India: country-wise and industry-wise (in millions of USD)*

| Source/Industry | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 P |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Total FDI | 14,939 | 23,473 | 18,286 | 16,054 | 24,748 |
| **Country-Wise Inflows** | | | | | |
| Mauritius | 5,616 | 8,142 | 8,059 | 3,695 | 5,878 |
| Singapore | 1,540 | 3,306 | 1,605 | 4,415 | 5,137 |
| U.S.A | 1,071 | 994 | 478 | 617 | 1,981 |
| Cyprus | 571 | 1,568 | 415 | 546 | 737 |
| Japan | 1,256 | 2,089 | 1,340 | 1,795 | 2,019 |
| Netherlands | 1,417 | 1,289 | 1,700 | 1,157 | 2,154 |
| United Kingdom | 538 | 2,760 | 1,022 | 111 | 1,891 |
| Germany | 163 | 368 | 467 | 650 | 942 |
| UAE | 188 | 346 | 173 | 239 | 327 |
| France | 486 | 589 | 547 | 229 | 347 |
| Switzerland | 133 | 211 | 268 | 356 | 292 |
| Hong Kong | 209 | 262 | 66 | 85 | 325 |
| Spain | 183 | 251 | 348 | 181 | 401 |
| China | 2 | 73 | 148 | 121 | 505 |
| Malaysia | 40 | 18 | 238 | 113 | 219 |
| South Korea | 136 | 226 | 224 | 189 | 138 |
| Luxembourg | 248 | 89 | 34 | 539 | 204 |
| Others | 1,142 | 892 | 1,154 | 1,015 | 1,250 |
| **Sector-Wise Inflows** | | | | | |
| Manufacturing | 4,793 | 9,337 | 6,528 | 6,381 | 9,613 |
| Construction | 1,599 | 2,634 | 1,319 | 1,276 | 1,640 |
| Financial Services | 1,353 | 2,603 | 2,760 | 1,026 | 3,075 |
| Real Estate Activities | 444 | 340 | 197 | 201 | 202 |
| Electricity and other Energy Generation, Distribution & Transmission | 1,338 | 1,395 | 1,653 | 1,284 | 1,284 |
| Communication Services | 1,228 | 1,458 | 92 | 1,256 | 1,075 |
| Business Services | 569 | 1,590 | 643 | 521 | 680 |
| Miscellaneous Services | 509 | 801 | 552 | 941 | 586 |
| Computer Services | 843 | 736 | 247 | 934 | 2,154 |
| Restaurants and Hotels | 218 | 870 | 3,129 | 361 | 686 |
| Retail & Wholesale Trade | 391 | 567 | 551 | 1,139 | 2,551 |
| Mining | 592 | 204 | 69 | 24 | 129 |
| Transportation | 344 | 410 | 213 | 311 | 482 |
| Trading | 156 | 6 | 140 | 0 | 228 |
| Education, Research & Development | 56 | 103 | 150 | 107 | 131 |

*continues on following page*



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*Table 1. Continued*

| Source/Industry | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 P |
|---|---|---|---|---|---|
| Others | 506 | 419 | 43 | 293 | 232 |
| P: Provisional. | | | | | |

Source: RBI, 2015.

Note: Includes FDI through Secretariat of Industrial Assistance (SIA)/Foreign Investment Promotion Board (FIPB) and Reserve Bank of India (RBI) routes only.

## MAIN FOCUS OF THE CHAPTER

### Drivers of FDI Inflow and Outflow: A Literature Review

The determinants of FDI inflows have been empirically tested in many studies, so far. The broad classification of variables that were set out by UNCTAD and used by (Walsh & Yu, 2010) are market size, labour cost, trade openness, infrastructural facilities, gross capital formation, labour force, macroeconomic stability, growth prospects, etc. The following table summarizes the nature of determinants and variables that could be responsible for FDI inflows.

The spurt in FDI in the last decade has given rise to a few generalized theories that determine the global flow of funds between nations. One, the heterogeneous methods to understanding international production (Dunning, 1986) and the classical model for determinants of FDI stems from the formerly done research by Dunning (1981) which provide an extensive analysis based on ownership, location and the internationalization (OLI) paradigm. In 1993, Dunning had put forward that FDIs are driven by access to income generating assets, early mover entry, internalization of net benefits necessitated by the costs of transactional market failures being higher than administrative costs of operating a foreign branch, and the location of production advantages such as access to capital, access to skilled and abundant labor, control over transfer price, reduction in exchange risks, lag and lead payments, and so on, which will remain attractive as long as there are gains to be made from operating in different locations. All these advantages must be favorable enough to outweigh the costs of setting up and operating from a foreign operation (Penrose, 1994) (Dunning, 2001) (Dunning, 2009) (Al-sadiq, 2013).

Two, according to the theory of internationalization (Rugman & Dunning, 1973) (Rugman, 1987), FDI takes place because Multi-National Corporations (MNCs) want to substitute external markets with internal markets that are more efficient (such as, intra-firm transactions). This helps them avoid difficulties that arise with differences in transaction costs, time lags, bargaining and buyer uncertainties,

*Table 2. FDI determinants (as given by UNCTAD)*

| Determining Variables | Examples |
|---|---|
| Policy variables | Tax, trade, privatization and macroeconomic policies |
| Business variables | Investment incentives |
| Market related economic determinants | Market size, growth and structure |
| Resource related economic determinants | Raw materials, labour costs and productivity |
| Efficiency related economic determinants | Transport and communication costs and labour |

Source: United Nations Conference on Trade and Development, 2015.



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and other externalities in the goods and factors markets. The movement of funds continue till marginal benefits and costs equalize (Horstmann & Markusen, 1995) (Kindleberger, 2002).

Three, according to several experts, FDI is an outcome from the imperfections that exist in the market structure of the world – concentration and agglomeration of firms and economies of scales that come into being because of competition and comparative advantage. FDIs may also be an outcome of the firms' specific competencies stemming from managerial skills, brand name, superior marketing distribution, bargaining and political power, access to raw materials, and patent-protected technology. Kindleberger (1969), Hymer (1972) and Horaguchi and Toyne (1990) have worked observing such market imperfections and conclude that the movement of investments may substantially depend on these factors.

According to Arbatli (2011), cross-country and over-time variations in FDI inflows can be split into two categories, namely, global push factors and country-specific pull factors. Many studies have established that global push factors are central to the explaining of capital flows to EMCs, hence making the regulation of their outcomes important in the purview of domestic policies. The importance of global economic conditions has also gained importance with the recent global economic crisis and the subsequent decline in FDI inflows.

The country-specific pull factors that are usually classified as a) fixed or structural factors such as whether the country is an oil exporter or not, its location and the average level of education; b) political factors including existence of conflict, labour strikes, and/or protests; c) macroeconomic factors such as inflation, the share of exports, and the real exchange rate; and d) economic policy variables including corporate tax rates, tariff rates, exchange rate policy, and whether there are capital account restrictions.

1. **Global Push Factors:**
    a. Growth in capital exporting countries on FDI flows to EMCs have been somewhat ambiguous. While higher income growth in developed nations allow for expansions into other markets and are associated with easier internal financing conditions, it may also make investment in the domestic economy relatively more attractive. Usually, 3 to 4-year moving averages of real GDP growth account for lag effects due to implementation and planning times associated with FDI.
    b. International liquidity helps in understanding the effects of credit conditions in advanced countries on FDI flows. Lower interest rates are expected to increase FDI flows, making it easier for firms to finance investment projects.
    c. Risk environment indicate the global risk appetite is also a common push factor that could affect FDI flows to EMCs.
2. **Country Specific Pull Factors:**
    a. **Fixed or Structural Factors:**
        i. The size of the domestic market can play a role in drawing FDI, where firms decide to invest in the host country to capture a share of the domestic market. This variable is also related to the capital-to-labor ratio and, hence, the productivity of capital. Countries with a low level of per capita income might invite more inflows, consistent with a higher marginal product of capital.
        ii. Several studies have established a strong empirical correlation between educational level in the host country and FDI inflows. Policies encouraging investments in human capital, augmenting skill sets and generic education usually attract FDI. A certain level of educational fulfilment is vital to a country's ability to draw FDI and to maximise



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the human capital spill overs that take place due to the presence of MNCs in the host country. The minimum level of education required will depend on the industries present in the host country and according to other characteristics of the host country's enabling environment. By its self, education unlikely to make FDI inflows attractive but it remains a vital variable in determining inflows when considered in tandem with other key macroeconomic concerns (Usman, 2014) (Bellak, Leibrecht, Stehrer 2009) (OECD, 2003). Lipsey (2000) also captures a positive effect of FDI on growth and has a strong interaction with the level of schooling in the host country.

iii. Oil importing nations are affected by the global prices of oil and this can affect the nation's trading account (and GDP) significantly.

iv. Most studies that have used the Gravity equation to determine FDI, have traditionally used location (distance between the home and host countries). Amongst a host of variables that can be added to the augmented gravity model, the fundamental variables are size and distance – the crux of the model (Podda, 2016) (Marku, 2014) (Pagano & Volpin, 2004) (Shatz, 2000).

b. **Political Environment and Institutions:** Many studies have shown a negative relationship with FDI inflows and political uncertainties and corruption. While quantifying and measuring such risks can be vague, biased and difficult, there are indices that rank countries according to political stability, domestic and conflicts, law and order norms (even labour laws), ease of doing business, global competiveness and bureaucracy (Arbatli, 2011) (Bénassy-Quéré, Coupet & Mayer, 2007) (Rose-Ackerman & Tobin, 2003) (Henisz 2000). A study by Bevan and Estrin (2000, 2004) that measured determinants of FDI inflows to transition economies, namely, the central and eastern parts of Europe, considered factors such as country risk, labour cost, host market size and gravity factors for the duration 1994 to1998. The investigation concluded that country risks are influenced by private sector and industrial development, government balance, reserves and corruption. A dummy variable employed for capturing the key announcements of progress in the EU agreement seemed to directly affect the FDI inflows.

c. **The Macroeconomic Environment:** The macroeconomic environment and policies in EMCs have improved consistently over the last decade. This can clarify the overall positive trend and the sharp rise in inflows in the 2000s. However, an important concern that remains is examining the effects of macroeconomic variables on FDI and the feedback effect from FDI to macroeconomic variables, especially in the case of economic growth.

i. In a review done by (Ghosh & Chakrabarti, 2016), it was noted that many empirical studies reported that market size indicates potential for consumption and hence, trade. It can be measured by Gross Domestic Product (GDP), GDP per capita income, and size of the middle class population. These are expected to be positive and significant determinants of FDI flows. Literature made available through studies undertaken by Lankes and Venables (1996), Resmini (2000), Bevan et al. (2000), Garibaldi et al. (2002), Nunes, Oscategui, and Peschiera (2006), and Sahoo (2006) – all point towards the same findings. In contrast, Holland and Pain (1998) and Asiedu (2006) have found out that growth and market size are insignificant determinants of FDI flow (Narayanamurthy, Perumal, & Kode Chandra, 2010). It has also been empirically observed that the rate of growth and FDI inflows are positively related. There can also be feedback effects from FDI (both current and past) on economic growth in return (Arbatli, 2011). Also, Duran (1999) found



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that some of the key variables that drive FDI were the market size, the growth rate of the economy, the country's wealth and savings, its macroeconomic stability and trade openness, among others. Dunning's work (the OLG paradigm), as mentioned earlier, is seminal in the case of determinants of FDI. Therefore, FDI tends to flow to the countries with larger market size and higher economic growth rates in which larger economies of scale could be provided for FDI to exploit their ownership advantages (Culem, 1988). Also, a country which has a stable macroeconomic condition with high and sustained growth rates will receive more FDI inflows than a more volatile economy. The proxies measuring growth rate are GDP growth rates, industrial production index, interest rates, inflation rates (Amaya & Rowland, n.d.) (Dadush, Dasgupta, & Ratha, 2000).

ii. Low inflation rate is makes FDI inflows more attractive. Domestic inflation will affect the net returns and hence the investment decisions of the MNCs. It is a safe assumption to say that inflation rates and FDI inflows are inversely related. In 2010, Dabla-Norris et. al., found results in their study that are concurs with this relationship (International Monetary Fund, 2010).

iii. Many studies have reported that the effect of export orientation on FDI inflows may be indefinite since it would be differently dependent on horizontal and vertical FDI. International trade tends to boost and support FDI. Much of FDI is export oriented and may also require the import of complementary, intermediate and capital goods. Most MNCs are now trading through Global Value Chains (GVC). In either case, volume of trade is augmented, thereby increasing trade openness (Lankes & Venables, 1996; Sahoo, 2006). Trade openness can be proxied as the ratio of the total trade by GDP (Nunes et al., 2006).

iv. The exchange rates levels and their volatility can affect FDI inflows significantly, as well as, the total amount of foreign direct investment that takes place and the allocation of this investment spending across a range of countries. When a currency depreciates (say in the host country), it can be advantageous in terms of FDI inflows in two ways. One, it lowers the domestic wages and production costs relative to the home country. Keeping all other factors constant, the country undergoing the real currency depreciation has improved "locational advantage" or attractiveness as a location for receiving productive capacity investments. Two, with this new-found "relatively" lower wage situation, the exchange rate depreciation improves the overall rate of return for the host country. Also, the change in the real exchange rate can help assess the effects of competitiveness on FDI flows. This may be more important if the investment is oriented towards the export market (Goldberg & Kolstad 1994) (Abbott, Cushman, & Vita, 2012). (Goldberg & Klein, 1997) (Udoh & Egwaikhide, 2010).

v. Gross capital formation is a strong determinant of FDI receipts (Ranjan & Agrawal, 2011) (Sridharan, Vijayakumar & Rao, 2009). Krkoska (2001) and Lipsey (2000) found that there was no significant impact on FDI with an increasing rate of capital formation. This finding is purely from the dataset that they used for the study. However, a positive or negative and significant relationship between FDI and capital formation is anticipated.

vi. The host country's infrastructural quality plays a significant role in attracting FDI receipts. Loree and Guisinger (1995) assessed the determinants of FDI by United States towards developed nations from 1977 to 1982 and concluded that the host country policy



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related variables are significant in developed countries and infrastructure seems to be an important determinant for all the regions. Similar studies have been conducted by for developing and emerging economies and show similar results – quality of infrastructure in the host country is a vitally important factor for FDI inflows (Rehman, Ilyas, Alam & Akram, 2011) (Subramanian, Chakrabarti, Sairam & Kuntluru, 2012) (Shah, 2014).

vii. Yeyati (1996) and later, Torre, L. D., Schmukler and Yeyati (2002) have examined the extent of business cycles and interest rate cycles of developed countries and their impact on FDI inflows for the period 1980 to 1990. They considered the determinants of bilateral FDI using the Gravity model and found that FDI flows from US and Europe move counter cyclical to the business cycle in the home country, while the interest rate cycles are the important determinants of FDI inflows. Jansen and Stokman (2004) found that countries that have comparatively intensive FDI relations, also have more synchronized business cycles during 1995–2001. Before 1995, they found a positive association between FDI linkages and output co-movement, but this may partly reflect the effects of trade relations. Moreover, more intensive FDI links were also associated with a greater vulnerability to lagged output spill overs from abroad, whereas trade links are not. Policy implications of this study were a) that there is an underlying tendency for business cycles to exhibit greater co-movement in the future, and b) that policy makers need to incorporate the FDI linkage among economies in their models and analytical framework for policy analysis.

viii. In two independent studies for Ghana and Malaysia, Andinuur (2013) and Roslan (2013), have respectively found out that while there exists a unidirectional causal link for GDP and FDI to inflation, there was no such relationship for inflation to GDP and FDI. Also, a unidirectional causality was discovered running from GDP to inflation and all causality observed were statistically significant. In another study for the ASEAN 5, it was observed through VAR techniques that there was a clear negative relationship with inflation rates and FDI receipts (Siddiqui & Aumeboonsuke, 2014). In an IMF working paper of 2002, Garibaldi et al. studied the FDI and Portfolio investment flows to 26 EMCs in Eastern Europe including the former Soviet Union from 1990 to 1999. The estimates from the study indicated that the FDI flows are well explained by standard economic fundamentals, including inflation.

ix. Higher the labour costs in the home country, more likely it is to seek a destination for FDI, while the higher the labour force participation rate (LFPR) is, it will increase the GDP and lead the nation to investing abroad. FDI often takes a form of capital flows from a parent company to its foreign affiliate by relocating technical factors from one region to another and substituting capital movement with labour mobility in host regions while profiting from domestic markets. Ethier (1986) suggests that one more driving force could be uncertainty and asymmetric information (Latorre, 2008).

d. **Economic Policies:** According to Arbatli (2011), trade policy and agreements, capacity of the home country and capability of undertaking outward investments, costs and returns on investments, exchange rate classifications, restrictions in capital account transactions related to FDI, corporate tax rates and other taxes, etc., are also key factors in attracting FDI[1].



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## Methods and Materials

Ideally a comprehensive set of macroeconomic and policy variables are required to understand their effects on FDI inflows. Data non-availability and disparity in the time frame and intensity of reforms, policies and trade agreements across countries pose a big challenge for such analysis.

Based on the above discussion, the study concentrates on the following variables:

- Annual foreign direct investment flows from the 17 home countries to India over the years (outward FDI from the 17 countries into India)
- Annual trade as a ratio of GDP of the home countries (to capture trade openness)
- Annual GDP at market prices of the home country (to capture the market size of the home country)
- Net outflows of annual foreign direct investment of the home country in current US$
- Annual percentage growth rate of the home country
- Annual percentage of consumer price index (to capture inflation)
- Labour force participation rate as a percentage of the total population aged above 15 years (modelled ILO estimate) (to capture the capacity of the home country)
- Annual gross fixed capital formation as a percentage of GDP of the home country (to capture the capacity of the home country)
- Real effective exchange rate index (2010 = 100) of the home country

It was not feasible to include infrastructure index, ease of doing business, corruption index, political stability, business cycles, trading policies, etc. as determining factors of outward FDI due to paucity of data and difficulty in measurement for the countries considered in the study. Also, the existence of trading agreement between India and the individual home countries could not be considered. The countries selected for the study account for the highest FDI inflows to India despite many of them not having any trade agreement with India currently. Trade agreements with many of these countries are under negotiation.

## Model

For empirical analysis, the following linear equation is estimated using country-wise data for 2008-2014. As per the nature of the data, the study has used the panel data estimation technique to estimate the following model to show the impact of various macroeconomic indicators of the home countries on FDI inflows into India from these countries.

$$\log\left(FDI_{it}^{India\ Inflows}\right) = a + b_1 Trade_{it}^{Ratio} + b_2 \log\left(GDP_{it}\right) + b_3 \log\left(FDI_{it}^{Outflows}\right)$$
$$+b_4 \log\left(Growth_{it}^{Rate}\right) + b_5 Inflation_{it} + b_6 \log\left(LFPR_{it}\right) + b_7 \log\left(Capital_{it}^{Fixed}\right) + b_8 REER_{it} + \varepsilon_{it}$$

where, $\log\left(FDI_{it}^{India\ Inflows}\right)$. is the log of the annual foreign direct investment flows from the 17 home countries to India over the years; $Trade_{it}^{Ratio}$ is the annual trade as a ratio of GDP of the home countries; log($GDP_{it}$) is the annual GDP at market prices of the home country; $log\left(FDI_{it}^{Outflows}\right)$ is the log of net outflows of annual foreign direct investment of the home country in current US$; $\log\left(Growth_{it}^{Rate}\right)$ is



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the annual percentage growth rate of the home country; $Inflation_{it}$ is the annual percentage of consumer price index; log($LFPR_{it}$) is the log of the labour force participation rate as a percentage of the total population aged above 15 years (modelled ILO estimate); $\log\left(Capital_{it}^{Fixed}\right)$ is the log of annual gross fixed capital formation as a percentage of GDP of the home country; $REER_{it}$ is the real effective exchange rate index (2010 = 100) of the home country.

## Data

Data for the above mentioned variables were collected from World Development Indicators provided by the World Bank. Panel data for 17 countries ranging from 2008-2014 has been used for the analysis.

## Tools and Tests

The authors have used panel data estimation methods to find the relationship defined above. The following illuminates the methodology used for the study.

### Panel Data Unit-Root Tests

The authors have used panel data unit root tests to check whether the variables are stationary or not. Several statistical methods (Levin, Lin and Chu 2002; Im, Pesaran and Shin, 2003; Choi, 2001; Breitung, 2000; and Hadri, 2000) are constructed to test for unit roots in panel data. Among those the study has employed Levin-Lin-Chu test and Im-Pesaran-Shin tests to check for stationarity in the variables.

#### *Levin-Lin-Chu (LLC) Test*

The model is:

$$y_{i,t} = \alpha_i + \rho_i y_{i,t-1} + \varepsilon_{it}, \text{ t = 1, 2, . . ., T; i = 1, 2, . . ., N}$$

It proposes a panel based ADF test which restricts $\rho_i$ by keeping them identical across cross sections as follows:

$$\Delta y_{i,t} = \alpha_i^* + \rho_i^* y_{i,t-1} + \sum_{j=1}^{\rho_i} \theta_{ij} \Delta y_{i,t-j} + \varepsilon_{it}$$

The null and alternative hypotheses are defined as:

**$H_0$**: $\rho_i=\rho=0$ for all i, against
**$H_A$:** $\rho_1=\rho_2=\ldots=\rho<0$ for all i, with test based on statistics: $t_\rho = \hat{\rho} / SE\left(\hat{\rho}\right)$

The LLC unit root test suggests that both the variables are stationary at first difference in the case of developing as well as developed countries.



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### *Im-Pesaran-Shin (IPS) Test*

The model is: $y_{i,t} = \alpha_i + \rho_i y_{i,t-1} + \varepsilon_{it}$, t = 1, 2, . . ., T

The null and alternative hypotheses are defined as:

**$H_0$:** $\rho_i = 1$, i = 1, 2, . . ., N i.e. each series in the panel contains a unit root for all i
**$H_A$:** $\rho_i < 1$, for at least one i

They use separate unit root tests for the N cross-section units.

The DF regression:

$$y_{i,t} = \alpha_i + \rho_i y_{i,t-1} + \varepsilon_{it}$$

or the ADF regression:

$$\Delta y_{i,t} = \alpha_i + \rho_i y_{i,t-1} + \sum_{j=1}^{\rho_i} \theta_{ij} \Delta y_{i,t-j} + \varepsilon_{it}$$

is estimated and the t-statistic for testing $\rho i = 1$ is computed. Let $t_{i,T}$ (i = 1, 2, . . ., N) denote the t-statistic for testing unit roots in individual series i, and let $E(t_i,T) = \mu$ and $V(t_i,T) = \sigma^2$.

Then $\overline{t}_{N,T} = \frac{1}{N}\sum_{j=1}^{N} t_i, T$ and $\overline{W} = \sqrt{\frac{N\left(\overline{t}_{N,T} - \mu\right)}{\sigma}} \Rightarrow N\left(0,1\right)$

$\overline{W}$ converges in distribution to a standard normal variate sequentially, as T→ ∞ first and then N→ ∞. The IPS test is a way of combining the evidence on the unit root hypothesis from N unit root tests performed on N cross-section units. The test assumption is that T is the same for all cross-section units and hence *E (ti,T)* and *V (ti,T)* are the same for all *i*, so the IPS test is applied only for balanced panel data. In the case of serial correlation, IPS test proposes using the ADF t-test for individual series.

## Panel Cointegration

### *Pedroni's Residual Cointegration Test*

To test the cointegration relationship, Pedroni's method (1999, 2004) which extends the idea of residual based cointegration, proposed by Engle and Granger (1987) is used. Pedroni's formulation allows for the heterogeneity across the cross-sections by permitting individual specific fixed effect, slopes and deterministic time trend for each cross-section. To test the cointegration, following bi-variate regression equation is estimated:

$$Y_{jt} = a_j + \delta_{jt} + b_t + \beta_j X_{jt} + e_{jt}$$



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Under the null hypothesis of no cointegration in heterogeneous panels i.e. $e_{it}$ is non-stationary, Pedroni develops seven different test statistics based on the estimated error term $e_{it}$ in equation. These are divided in two groups. The first group, "within dimensions" contains four test statistics termed as panel-v, panel-p, panel-t non parametric (PP) and panel-t parametric (ADF). The second group "between dimensions" contains three test statistics termed as group-p, group-t non parametric (PP) and group-t parametric (ADF).

The estimated statistic will be the average of the individual statistics. The rejection of null of no cointegration indicated that the cointegration holds at least for one individual. After the calculation of the panel cointegration test statistics, Pedroni shows that the standardized statistic is asymptotically normally distributed as follows:

$$K = \frac{\left(K_{N,T} - \mu\left(N\right)^{\frac{1}{2}}\right)}{\left(V\right)^{\frac{1}{2}}} \Rightarrow N\left(0,1\right)$$

He reports the critical values for μ and v for different values of number of regressors in cointegration relationship.

### *Johansen Cointegration Test for Two Variables (Fischer-Type Test)*

Johansen (1988) proposes two different approaches; one of them is the likelihood ratio trace statistics and the other one is maximum Eigen value statistics, to determine the presence of cointegration vectors in non-stationary time series. The trace statistics and maximum eigenvalue statistics have shown in equation below:

$$\lambda_{trace}\left(r\right) = -\mathrm{T}\sum_{i=r+1}^{N}\ln\left(1-\hat{\lambda}_i\right)$$

$$\lambda_{max}\left(r,r+1\right) = -\mathrm{T}\ln\left(1-\hat{\lambda}_{r+1}\right)$$

where T is the sample size. For the trace test tests the null hypothesis of at most r cointegration vector against the alternative hypothesis of full rank r = n cointegration vector, the null and alternative hypothesis of maximum eigenvalue statistics is to check the r cointegrating vectors against the alternative hypothesis of r+1 cointegrating vectors.Using Johannsen's (1988) test for cointegration, Maddala and Wu (1999) consider Fisher's (1932) suggestion to combine individual tests, to propose an alternative for testing for cointegration in the full panel by combining individual cross-sections tests for cointegration.

If $\pi_i$ is the p-value from an individual cointegration test for cross-section i, then under the null hypothesis for the whole panel,



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$$-2\sum_{i=1}^{N} ln\left(\pi_i\right)$$

is distributed as $\chi^2_{2N}$.A big benefit is that the test can handle unbalanced panels. EViews reports $\chi^2$-value based on MacKinnon-Haug-Michelis (1999) p-values for Johansen's cointegration trace test and maximum eigenvalue test.

Further, to estimate the long run relationship between the heterogeneous cointerated panels, Panel Fully Modified Least Square (FMOLS) method is used. This methodology allows consistent and efficient estimation of cointegrating vector and also addresses the problem of simultaneous bias. The cointegrated regression for estimation is:

$$Y_{it} = a_i + bX_{it} + e_{it}; \;\; X_{it} = X_{i,t-1} + e_{it}$$

## Panel Causality for a Pair of Variables

Granger causality is checked in both the panels to analyze the causality hypotheses explained in section 1. In case of long-run relationship, panel Vector Error Correction Model (VECM) is used while panel Vector Auto Regression (VAR) method is used in case of no cointegration. The conventional Granger causality tests raise two critical issues for a panel data case, both dealing with the potential heterogeneity of the individual cross sections. The first source of heterogeneity is cross sectional variation due to the distinctive intercepts; such heterogeneity may be addressed with a fixed effects model (i.e. it is controlled by introduction of individual effects in the model). The more crucial case is where heterogeneous slope coefficients should be considered (i.e. should be controlled by introducing individual dimension for regression slopes in the model). The second source of heterogeneity affects the causality relationships. For instance, for some individuals the introduction of past values of may improve the forecast on, whereas for others there may be no improvement. Therefore, we should distinguish two subgroups of individuals according to the causality relationships between and. If this heterogeneity is not considered, the test of causality hypothesis may lead to a fallacious conclusion concerning the relative size of the two subgroups. In a nutshell, the Granger causality for panel data sets should consider the different sources of heterogeneity of the data-generating. A newly suggested theory of Granger Causality in Panel by Hurlin and Venet (2001) is used here to test causality which controls for both sources of heterogeneity. The procedure has three main steps, which are related to the homogeneous non-causality (HNC), homogeneous causality (HC) and heterogeneous non-causality (HENC) hypotheses. Following model is estimated:

$$\Delta \ln energy_{it} = \sum_{k=1}^{p} a_k \Delta \ln energy_{i,t-k} + \sum_{k=1}^{p} b_k \Delta \ln gdp_{i,t-k} + \lambda_i + \mu_{it}$$

$$\Delta \ln gdp_{it} = \sum_{k=1}^{p} a_k \Delta \ln gdp_{i,t-k} + \sum_{k=1}^{p} b_k \Delta \ln energy_{i,t-k} + \lambda_i + \mu_{it}$$



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Homogeneous Non Causality hypothesis refers to the case in which there is no linear causality between dependent variable and explanatory variable for any cross section (the null hypothesis states non-existence of causal relationships across all cross sections, N).

$$\mathbf{H_0}: \; b_k^i = b_k^j = 0 \quad \forall_i \epsilon \left[1, N\right], \quad \forall_k \epsilon \left[1, p\right]$$

$$\mathbf{H_1}: \; b_k^i \neq 0 \; \exists \left[1, k\right]$$

To test these Non-linear restrictions, the following Wald statistic is computed:

$$F_{HNC} = \frac{\left(RSS_1 - RSS_\mu\right) / N_p}{RSS_\mu / \left[NT - N\left(1+p\right) - p\right]}$$

where, RSS1 denotes the sum of squared residuals obtained under the null hypothesis, $RSS_u$ denotes the sum of squared residuals produced by unrestricted model. If the HNC hypothesis is not accepted, Homogeneous Causality hypothesis is tested which says that there exists causality between per capita GDP and per capita energy consumption for all cross sections (the null hypothesis states existence of causal relationships across all cross sections, N).

$$\mathbf{H_0}: \; b_k^i = b_k^j \forall_i \epsilon \left[1, N\right], \forall_k \epsilon \left[1, p\right]$$

$$\mathbf{H_1}: \; b_k^i \neq b_k^j \exists \left[i, j, k\right]$$

with the F-statistic being:

$$F_{HNC} = \frac{\left(RSS_2 - RSS_\mu\right) / \left[\left(N-1\right)p\right]}{RSS_\mu / \left[NT - N\left(1+p\right) - p\right]}$$

where RSS2 denotes the sum of squared residuals under the null hypothesis. If the HC hypothesis is also rejected, Heterogeneous Non Causality hypothesis is tested which means that least one cross section unit does not indicate a causality relationship between two variables (the null hypothesis states non-existence of causal relationship for each cross section unit).

$$\mathbf{H_0}: \; b_k^i = 0 \quad \forall_i \epsilon \left[1, N\right], \forall_k \epsilon \left[1, p\right]$$

$$\mathbf{H_1}: \; b_k^i \neq 0 \; \forall_i \epsilon \left[1, N\right], \forall_k \epsilon \left[1, p\right].$$

with the F-statistic being:



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$$F_{HENC} = \frac{\left(RSS_{3,i} - RSS_{\mu}\right) / p}{RSS_{\mu} / \left[NT - N\left(1+2p\right) - p\right]}$$

where RSS3,i denotes the sum of residual squares obtained from model when one imposes $b_k^i = 0$ for all k ϵ [1,p], for each i. These N cross-sectional tests allow to us to identify the individuals for which there are no causality relationships.

## Panel Vector Error Crection Model (VECM)

In case of long-run relationship, panel VEC method is used to get the direction of causality between the variables. Following are the steps to conduct this analysis:

**Step 1:** Estimate $Y_{it} = a_i + b_t X_{it} + e_{it}$ and obtain residuals;
**Step 2:** Estimate Granger causality model with a dynamic error correction term (residuals obtained from step 1)

$$\Delta Y_{it} = a_{1j} + \sum_{k=1}^{m} a_{11ik} \Delta Y_{it-k} + \sum_{k=1}^{m} a_{12ik} \Delta X_{it-k} + b_{1i} ect_{it-1} + \mu_{it} \quad (1)$$

$$\Delta X_{it} = a_{2j} + \sum_{k=1}^{m} a_{21ik} \Delta X_{it-k} + \sum_{k=1}^{m} a_{22ik} \Delta Y_{it-k} + b_{2i} ect_{it-1} + \mu_{it} \quad (2)$$

where Δ is first difference, m is the lag length, eit-1 is error correction term and b is speed of convergence parameter for each individual. Sources of causation can be identified by testing for significance of the coefficients on the lagged variables in Equations (A) and (B). First, by testing H0: $a_{12ik} = 0$ for all *i* in Equation (A) or $H_0$: $a_{22ik} = 0$ for all i in Equation (B), Granger weak causality is evaluated. Masih and Masih (1996) and Adjaye (2000) interpreted the weak Granger causality as 'short run' causality in the sense that the dependent variable responds only to short-run shocks to the stochastic environment. Another possible source of causation is the Error Correction Term (ECT) in Equations (A) and (B). In other words, through the ECT, an error correction model offers an alternative test of causality (or weak exogeneity of the dependent variable). The coefficients on the ECTs represent how fast deviations from the long run equilibrium are eliminated following changes in each variable. If, for example, b1i is zero, then Y does not respond to a deviation from the long run equilibrium in the previous period. It is also desirable to check whether the two sources of causation are jointly significant, in order to test Granger causality. This can be done by testing the joint hypotheses H0: a12ik = 0 and b1i = 0 for all i in Equation (A) or H0: a22ik = 0 and b2i = 0 for all i in Equation (B). This is referred to as a strong Granger causality test. The joint test indicates which variable(s) bear the burden of short run adjustment to re-establish long run equilibrium, following a shock to the system (Adjaye, 2000). If there is no causality in either direction, the 'neutrality hypothesis' holds.



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## Panel Vector Auto Regression (VAR)

To check for causality in case of no long-run relationship, panel VAR is used. Following fixed effects model is estimated:

$$\Delta Y_{it} = \sum_{k=1}^{p} a_k \Delta Y_{it-k} + \sum_{k=1}^{p} b_k \Delta X_{it-k} + \lambda_i + \mu_{it}$$

$$\Delta X_{it} = \sum_{k=1}^{p} a_k \Delta X_{it-k} + \sum_{k=1}^{p} b_k \Delta Y_{it-k} + \lambda_i + \mu_{it}$$

where, p= lag length, $\lambda_i$: country fixed effects-controls the potential heterogeneity of cross sections.

## Panel ARDL Approach: Multivariate Analysis

To test for panel unit roots in multivariate analysis, the study have used LLC and IPS tests again to check whether the variables are stationary or not. Let us consider the following AR(1) processfor panel data:

$$y_{it} = \rho_i y_{i(t-1)} + X_{it}\delta_i + \varepsilon_{it}$$

where i=1,2,…N cross-section units or series, that are observed over periods t=1,2,…T. The $X_{it}$ represent the exogenous variables in the model, including any fixed effects or individualtrends, ρi are the autoregressive coefficients, and $\varepsilon_{it}$ the errors are assumed to bemutually independent idiosyncratic disturbance. If | ρi| < 1, yi is said to be weakly (trend) stationary. On the other hand, if | $\rho_i$| = 1 then $y_i$ contains a unit root. For purposes of testing, there are two assumptions that we can make about the ρi .First, one can assume that the persistence parameters are common across cross-sections so that $\rho_i = \rho$ for all i. The Levin-Lin-Chu (LLC), Breitung and Hadri tests all employ this assumption. Alternatively, one can allow pi to vary freely across cross-sections. The Im-Pesaran-Shin (IPS), and Fisher-ADF and Fisher-PP tests are of this form.

After determining the level of integration of all variables, the study proceeds to the application of panel ARDL to estimate the long-run and short-run relationships between regression variables. Autoregressive Distributed Lag (ARDL) models are standard least squares regressions which include lags of both the dependent variable and independent variables as regressors (Greene, 2008). Although, ARDL models have been used in econometrics for decades,they have gained popularity in recent years as a method of examining long-run and cointegrating relationships between variables (Pesaran and Shin, 1999). In panel settings with individual effects, standard regression estimation of ARDL models is problematic due to bias caused by correlation between the mean-differenced regressors and the error term. This bias only vanishes for large numbers of observations T, and cannot be corrected by increasing the number of cross-sections, N. To address this problem, a number of small T–large N, dynamic panel data GMM estimators have been developed (for example, Arellano-Bond, 1991). In large datasets, these assumptions underlying dynamic GMM are often inappropriate, and the estimator breaks down. In these cases, a



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popular alternative is the Pooled Mean Group (PMG) estimator of Pesaran, Shin and Smith (PSS, 1999). This model takes the cointegration form of the simple ARDL model and adapts it for a panel setting by allowing the intercepts, short-run coefficients and cointegrating terms to differ across cross-sections. The model can be written as:

$$\Delta y_{i,t} = \phi_i EC_{i,t} + \sum_{j=0}^{q-1} \Delta X_{i',t-j'} \beta_{i,j} + \sum_{j=1}^{p-1} \lambda_{i,j} \Delta y_{i,t-j} + \varepsilon_{i,t}$$

where

$$EC_{i,t} = y_{i,t-1} - X_{i,t'} \theta$$

It is assumed that both the dependent variable and the regressors have the same number of lags in each cross-section. For notational convenience, it is also assumed that the regressors X, have the same number of lags q in each cross-section, but this assumption is not strictly required for estimation. The following log-likelihood function is then derived:

$$l_t(\varphi) = -\frac{\mathrm{T}_i}{2} \sum_{i=1}^{N} \log\left(2\pi\sigma_i^2\right) - \frac{1}{2} \sum_{i=1}^{N} \frac{1}{\sigma_i^2} \left(\Delta Y_i - \phi_i EC_i\right)' H_i \left(\Delta Y_i - \phi_i EC_i\right)$$

where

$$\Delta Y_i = \left(\Delta y_{i,1}, \Delta y_{i,2}, \ldots\ldots \Delta y_{i,T_i}\right)'$$

$$EC_i = \left(EC_{i,1}, EC_{i,2}, \ldots\ldots EC_{i,T_i}\right)'$$

$$H_i = \left(I_{T_i} - W_i \left(W^{'W_i}\right)^{-1} W_i'\right)^{-1}$$

$$W_i = \left(\Delta Y_{i,-1}, \Delta Y_{i,-p+1}, \Delta X_1, \Delta X_{i,-1} \ldots\ldots \Delta X_{i,-q+1}\right)$$

$$\Delta X_i = \left(\Delta X_{i,1}, \Delta X_{i,2}, \ldots\ldots \Delta X_{i,T_i}\right)'$$

where the jth lags of $\Delta Y_i$ and $\Delta X_i$ as $\Delta Y_{i,-j}$ and $\Delta X_{i,-j}$, respectively. This log-likelihood can be maximized directly. However, there exists an iterative procedure. Initial least squares estimates of θ based on the regression $\mathrm{Y_t} = \theta \mathrm{X_t}$ (where $\mathrm{Y_t}$ and $\mathrm{X_t}$ are the stacked forms of $\mathrm{y_{i,t}}$ and $\mathrm{x_{i,t}}$) are used to compute



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estimates, using the first-derivative relationships, of $\Phi_i$ and $\sigma_i^2$. These estimates are then used to compute new estimates of θ, and the process continues until convergence. Given the final estimates of θ, $\Phi_i$ and $\sigma_i^2$, estimates of $\beta_{i,j}$ and $\lambda_{i,j}$* may be computed.

## Panel Causality through Panel Granger Test

In the pairwise causality tests with the stationarised data, the bivariate regressions in a panel data context take the following form:

$$x_{i,1} = \alpha_0 + \alpha_{1,i} x_{i,t-1} + \ldots + \alpha_{l,i} x_{i,t-1} + \beta_{1,i} y_{i,t-1} + \ldots + \beta_{1,i} y_{i,t-1} + \varepsilon_{i,t}$$

where t denotes the time period dimension of the panel, and i denotes the cross-sectional dimension. The different forms of panel causality test differ on the assumptions made about the homogeneity of the coefficients across cross-sections. The first is to treat the panel data as one large stacked set of data, and then perform the Granger Causality test in the standard way, with the exception of not letting data from one cross-section enter the lagged values of data from the next cross-section. This method assumes that all coefficients are same across all cross-sections, i.e.:

$$\alpha_{0,i} = \alpha_{0,j}, \alpha_{1,i} = \alpha_{1,j}, \ldots\ldots\ldots \alpha_{l,i} = \alpha_{l,j} \forall i, j$$

$$\beta_{1,i} = \beta_{1,j}, \ldots\ldots\ldots\ldots \beta_{l,i} = \beta_{l,j} \forall i, j$$

A second approach adopted by Hurlin and Dumitrescu (2012) makes an extreme opposite assumption, allowing all coefficients to be different across cross-sections:

$$\alpha_{0,i} \neq \alpha_{0,j}, \alpha_{1,i} \neq \alpha_{1,j}, \ldots\ldots\ldots \alpha_{l,i} \neq \alpha_{l,j} \forall i, j$$

$$\beta_{1,i} \neq \beta_{1,j}, \ldots\ldots\ldots\ldots \beta_{l,i} \neq \beta_{l,j} \forall i, j$$

This test is calculated by simply running standard Granger Causality regressions for each cross-section individually. The next step is to take the average of the test statistics, which are termed the $\overline{W}$ statistic. They show that the standardized version of this statistic, appropriately weighted in unbalanced panels, follows a standard normal distribution. This is termed the $\overline{Z}$ statistic. The authors have relied on the first version of the test. The p-values of the statistic are reported below.

## Analysis

The empirical results with data of 17 developed and developing countries across 2008-2014 is reported below.



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## Unit Root Tests

The first step is to check for presence of unit roots in all the variables using LLC and IPS tests. The results are shown in Table 3.

The results of Table 3 help us to specify the order of integration for each variable. The same is reported in Table 4.

As per the results of the unit root tests, FDI Outflow, Growth Rate, Inflation, Inflows to India and REER are stationary at first difference, i.e. integrated of first order. Capital formation and LFPR are stationary at second difference, i.e. integrated of second order. Only Trade GDP Ratio and GDP are stationary at level, i.e. integrated of zero order.

*Table 3. Unit root tests*

| Variable | Im-Pesaran-Shin | | | Levin-Lin-Chu |
|---|---|---|---|---|
| | p-Value | | | |
| | Level | 1st Diff | 2nd Diff | Level |
| Trade GDP ratio | 0.0050* | | | 0.0000 |
| ln(FDI Outflow) | 0.4362 | 0.0046* | | 0.0000 |
| Growth rate | 0.2113 | 0.0110* | | 0.0000 |
| lnGDP | 0.0409* | | | 0.0000 |
| ln(K) | 0.1498 | 0.1765 | 0.0000* | 0.0000 |
| ln(LFPR) | 0.3326 | 0.1717 | 0.0000* | 0.0000 |
| Inflation | 0.2579 | 0.0304* | | 0.0000 |
| ln(India inflows) | 0.4095 | 0.0496* | | 0.0000 |
| REER | 0.4549 | 0.0000* | | 0.0000 |

Source: Authors' calculations.

*Table 4. Order of integration*

| Variable | Im-Pesaran-Shin | Levin-Lin-Chu |
|---|---|---|
| Trade GDP ratio | *I(0)* | *I(0)* |
| ln(FDI Outflow) | *I(1)* | *I(0)* |
| Growth rate | *I(1)* | *I(0)* |
| lnGDP | *I(0)* | *I(0)* |
| ln(K) | *I(2)* | *I(0)* |
| ln(LFPR) | *I(2)* | *I(0)* |
| Inflation | *I(1)* | *I(0)* |
| ln(India inflows) | *I(1)* | *I(0)* |
| REER | *I(1)* | *I(0)* |

Source: Authors' calculations.



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*Table 5. Pedroni residual cointegration test*

| Variable | | Statistic | Probability |
|---|---|---|---|
| ln(FDI Outflow) | Panel v-Statistic | -0.759332 | 0.7762 |
| | Panel rho-Statistic | 1.080445 | 0.8600 |
| | Panel PP-Statistic | -5.810855 | 0.0000 |
| | Panel ADF-Statistic | -5.446056 | 0.0000 |
| | Group rho-Statistic | 3.294467 | 0.9995 |
| | Group PP-Statistic | -5.369382 | 0.0000 |
| | Group ADF-Statistic | -3.944702 | 0.0000 |
| Growth rate | Panel v-Statistic | -4.149884 | 1.0000 |
| | Panel rho-Statistic | 1.858189 | 0.9684 |
| | Panel PP-Statistic | -14.87355 | 0.0000 |
| | Panel ADF-Statistic | -8.086718 | 0.0000 |
| | Group rho-Statistic | 3.321937 | 0.9996 |
| | Group PP-Statistic | -15.91766 | 0.0000 |
| | Group ADF-Statistic | -8.631667 | 0.0000 |
| Inflation | Panel v-Statistic | -2.729841 | 0.9968 |
| | Panel rho-Statistic | 1.742754 | 0.9593 |
| | Panel PP-Statistic | -8.19909 | 0.0000 |
| | Panel ADF-Statistic | -6.475082 | 0.0000 |
| | Group rho-Statistic | 3.543013 | 0.9998 |
| | Group PP-Statistic | -6.42158 | 0.0000 |
| | Group ADF-Statistic | -4.948385 | 0.0000 |
| REER | Panel v-Statistic | -1.765 | 0.9613 |
| | Panel rho-Statistic | 1.878 | 0.9699 |
| | Panel PP-Statistic | -10.065 | 0.0000 |
| | Panel ADF-Statistic | -5.859 | 0.0000 |
| | Group rho-Statistic | 3.119 | 0.9991 |
| | Group PP-Statistic | -8.394 | 0.0000 |
| | Group ADF-Statistic | -4.923 | 0.0000 |
| **Kao Residual Cointegration Test** | | | |
| **Variable** | | **Statistic** | **Probability** |
| ln(FDI Outflow) | ADF Statistic | -2.1181 | 0.0171* |
| Growth rate | ADF Statistic | -2.1262 | 0.0167* |
| Inflation | ADF Statistic | 1.7306 | 0.0418* |
| REER | ADF Statistic | -1.7934 | 0.0365* |

Source: Authors' calculations.



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## Cointegration

As explained earlier, if two variables are stationary at first difference, i.e., integrated of first order, then there may exist a long-run relationship between them. To check the same, cointegration results for FDI Inflows to India with each of the other 3 variables that are integrated of one order are given in Table 5.

The results show that FDI Outflow, Growth rate, Inflation and REER are cointegrated with FDI Inflows to India, i.e., these variables have long-run relationships with FDI Inflows to India.

Further, to estimate the long-run relationship between the heterogeneous cointegrated panels in case of developing countries, Panel Fully Modified Least Square (FMOLS) method is used. The result is given as follows:

$$\log\left(FDI_{it}^{India\ Inflows}\right) = 5.002\log\left(FDI_{it}^{Outflows}\right)$$
$$-5.505\log\left(Growth_{it}^{Rate}\right) - 31.414Inflation_{it} + 15.246REER_{it} + \varepsilon_{it}$$

The above result explains that if FDI Outflows of the home country increases by 1 percent then FDI Inflows to India increases by 5.002 percent; if Growth Rate of the home country increases by 1 percent then FDI Inflows to India decreases by 5.5 percent; if Inflation of the home country increases by 1 unit then FDI Inflows to India decreases by 31.4 percent; and if the REER of the home country increases by 1 unit then FDI Inflows to India increases by 15.24 percent.

*Table 6. Panel causality test results*

| Serial No. | Hypothesis | F-Statistics | P-Value |
|---|---|---|---|
| 1 | ln(FDI Outflow) does not Granger Cause ln(India inflows) | 0.3075 | 0.8652 |
| | ln(India inflows) does not Granger Cause ln(FDI Outflow) | 0.5916 | 0.6785 |
| 2 | Growth rate does not Granger Cause ln(India inflows) | 0.3456 | 0.8401 |
| | ln(India inflows) does not Granger Cause Growth rate | 0.8473 | 0.5332 |
| 3 | Inflation does not Granger Cause ln(India inflows) | 1.9407 | 1.97E-01 |
| | ln(India inflows) does not Granger Cause Inflation | 0.0511*** | 0.9941 |
| 4 | Trade GDP ratio does not Granger Cause ln(India inflows) | 0.4725 | 0.7554 |
| | ln(India inflows) does not Granger Cause Trade GDP ratio | 4.0635 | 0.0436 |
| 5 | Ln(GDP) does not Granger Cause ln(India inflows) | 1.1821 | 3.88E-01 |
| | ln(India inflows) does not Granger Cause ln(GDP) | 0.9982 | 0.4617 |
| 6 | ln(K) does not Granger Cause ln(India inflows) | 1.0909 | 0.4228 |
| | ln(India inflows) does not Granger Cause ln(K) | 0.1803 | 0.9422 |
| 7 | ln(LFPR) does not Granger Cause ln(India inflows) | 0.7388 | 0.5912 |
| | ln(India inflows) does not Granger Cause ln(LFPR) | 0.3902 | 0.8103 |
| 8 | REER does not Granger Cause ln(India inflows) | 4.3475 | 0.0918*** |
| | ln(India inflows) does not Granger Cause REER | 1.8834 | 0.2774 |

Source: Authors' calculations.

**Notes**: *, ** and *** represent the coefficient is significant at 1, 5 and 10 percent respectively.



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## Causality

The pair-wise causality results for FDI Inflows to India and all the other variables under scrutiny are reported in Table 6.

The results show that only REER of the home country causes FDI Inflows to India. The rest of the variables, i.e., ln (FDI Outflow), Growth rate, Inflation, Trade GDP ratio, ln(GDP), ln(K) and ln(LFPR) do not show any causal relationship towards FDI Inflows to India.

## Estimation

In order to estimate the relationship running from all the I(1) and I(0) variables to FDI Inflow to India, an ARDL model is constructed. Capital formation and LFPR are not included in the model since they are I (2) and therefore, cannot be fit into an ARDL model. Prior to that it was necessary to ascertain the optimal lag length to be used for estimation. Models were estimated with various possible lag lengths and the model with lag 1 demonstrated the minimum AIC and BIC values. Hence, we restricted ourselves to estimate the ARDL model with lag 1. The residuals from this model were collected (which will represent the long run relationship in the ARDL model). Two models were constructed, one with the lagged values of the explanatory variables only and the other with lagged values as well as current values of the explanatory variables. The results are reported below:

$$lnindiainflowsd1 = -1.1142 - 0.0071 * growthrated1\left(-1\right)$$
$$+0.1401 * inflationd1\left(-1\right) + 0.0126 * lnfdioutflowd1\left(-1\right)$$
$$+0.0495 * lngdp\left(-1\right) + 0.0027 * reerd1\left(-1\right) - 0.0001 * trade_gdp_ratio\left(-1\right) + 1 * ect$$

where, Inflation and the error correction term are statistically significant, showing that in the short run only inflation of the home country has significant effect on FDI outflows to India and there is a significant long run relationship running from all the explanatory variables of the home country to FDI outflows to India. The significant error correction term explains that the disequilibrium in FDI outflows to India is being adjusted annually towards its final equilibrium.

$$lnindiainflowsd1 = -0.6918 - 0.0005 * lnfdioutflowd1\left(-1\right) - 0.0394 * growthrated1\left(-1\right)$$
$$+0.1027 * inflationd1\left(-1\right) - 9.5780 * lngdp\left(-1\right) - 0.0167 * reerd1\left(-1\right) - 0.0003$$
$$*trade_gdp_ratio\left(-1\right) + 0.0138 * growthrated1 - 0.1333 * inflationd1 - 0.0186 * lnfdioutflowd1$$
$$+9.6041 * lngdp - 0.0828 * reerd1 - 0.0002 * trade_gdp_ratio + 1.0212 * ect$$

where, past values of growth rate, inflation, GDP, current values of inflation, FDI outflows, GDP, REER and the error correction term are statistically significant. This shows that current growth rate of the home country, past values of FDI Outflows and REER, both current and past values of inflation and GDP affect FDI inflows to India significantly in the short run. Also all of these variables affect FDI inflows to India significantly in the long run. The significant error correction term explains that the short run disequilibrium in FDI outflows to India is being adjusted annually towards its final equilibrium.



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## Summary of Results

The results above show that FDI Outflow, Growth rate, Inflation and REER affect the FDI outflows from the home countries to India in the long-run. However, only REER causes the FDI outflow. The estimation of the model reveals that when only the past values of the macroeconomic indicators are considered, only inflation affect outward FDI significantly in the short run. The adjustment of FDI outflows to its long run equilibrium from the short run fluctuations are seen to occur in a significant manner. When the model is estimated with past as well as current values of the indicators, current growth rate of the home country, past values of FDI Outflows and REER, both current and past values of inflation and GDP affect FDI outflows from the selected countries to India. In this model too, the adjustment from short run fluctuations to the long run equilibrium occurs significantly.

Current growth rate of the home country has adverse effect on FDI inflows to India because higher growth rate is associated with more developed economies. The more developed the economy becomes, it may choose to invest in other developed economies rather than in a developing economy like India. Previous year's FDI outflows shows a negative impact on outflows to India. This may be due to the expectation of a cyclical behaviour of overall FDI outflows. A rise in the previous year's outflows may lead to believe that in the current period flows should fall following the cyclical nature of the variable. A rise in the past value of REER leads to fall in outflows to India since rise in the exchange rate depreciates the local currency making investment in terms of USD more expensive than before which may make the country reluctant towards outward FDI. Anticipation of stickiness in the average exchange rate may be the triggering factor in such a scenario. A rise in previous period's inflation leads to a rise in the dependent variable, however, current inflation shows negative impact. Higher current inflation will make the currency weaker making it disadvantageous for the economy to invest abroad. Past GDP displays negative relation while current GDP shows positive effect. If the current size of the economy increases it would imply that the markets have expanded as well as capacity, making it conducive to invest in other countries. In both the models, the adjustment component being statistically significant, it may be said that the short run ups and downs of outward FDI flows from these economies get nullified rapidly and takes the variable closer to the equilibrium value implying a naturally stable mechanism.

## SOLUTIONS AND RECOMMENDATIONS

Between 2010 and 2014, there has been a lot of criticism that India has faced about its inward FDI situation. In spite of its large market size, affordable labour costs, abundance of work force and a promising growth path, India could not capitalize on these positives. Large tariff and non-tariff barriers (high import tariffs and exit barriers for firms, stringent labour laws, inferior infrastructure, centralised decision-making, and a limited number of export-processing zones, etc.) dampened the impetus to bring in the FDI receipts that the nation had potential for. In November 2011, India's central government announced retail reforms for both multi-brand stores and single-brand stores and paved the way for retail innovation and competition with multi-brand retailers such as Walmart, Carrefour and Tesco. It also allowed single brand majors such as IKEA, Nike, and Apple to participate in such innovation. However, most MNCs interested in setting up shop in India still seek clarifications on clauses like sourcing from Indian SMEs and infrastructure investments by them in India (Wall Street Journal, 2011).



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India continues to be far behind China and the other nations of the BRICS, in the ease of "Doing Business" rankings of 2016 (Doing Business, 2016). Although India is better off than China in the Corruption Perceptions Index (CPI) of 2015 (Corruption Perceptions Index, 2015), the rankings are paltry in the "Global Enabling Trade Index" of 2014 (Global Enabling Trade Index, 2014) and the "Global Competitiveness Index" rankings of 2015-16, as well (Global Competitiveness Index, 2016)

However, in spite of these dismal figures and circumstances, India has recently beaten China[2]as the top FDI destination (Times of India, 2016). The FDI Intelligence Report 2016, said that with $63 billion of FDI announced in 2015, India has taken the top rank in the list of countries in terms of Greenfield capital investments, specifically across the coal, oil and natural gas and renewable energy sectors (*The FDI Report*, 2016). Additionally, according to the report, India's project numbers increased by 8% to 697, although they still lagged behind China's 789 projects. The report also said that "for the first time in many years, China was a laggard on regional FDI growth rather than an engine: it saw a 23 per cent decline in capital investment and a 16 per cent drop in FDI projects due to plateauing economic growth and rising costs" (Financial Times, 2016) (Smart Investor, 2016).

On April 11, 2016, the RBI has also declared that FDI in the country increased to USD 42 billion during April-February in 2015-16, up 27.45 per cent from the inflows in the corresponding period of the previous financial year, and as of today India saw a record 53 per cent increase in FDI in last two years as the investment climate brightened due to steps taken to foster growth, price stability and fiscal prudence which also improved the overall macroeconomic stability (First Post, 2016).

From struggling to be an attractive FDI destination to "pipping China at the post", it has been a hard but a fast faced and worthwhile journey for India. Measures taken by the government to foster economic growth, price stability and fiscal prudence have improved the overall macroeconomic stability and brightened the investment climate in the country over the last two years. The global economic indices and rakings that have been a poor show for India will gradually make a turn-around, as well. The Finance Minister of India has been on record saying that "Improving the ease of doing business is a "work in progress", and adding measures have also been initiated to ensure that the system itself is more transparent" (Times of India, 2016).

India is projected to require around USD 1 trillion in the 12th Five-Year Plan (2012–17), to fund infrastructure growth covering sectors such as highways, ports and airways. This would require support from FDI flows. As mentioned earlier, during 2014, foreign investment was witnessed in sectors such as services, telecommunications, computer software and hardware, construction development, power, trading, and automobile, among others, with services taking the lead (Foreign Direct Investment, 2016). According to the "World Employment and Social Outlook: Trends 2015" report published by the International Labour Organisation (ILO), job creation in the coming years will mainly stem from the services sector. This also is another reason for India to look forward to an economically positive future (World Employment and Social Outlook Trends, 2015).

With a philosophy based on the four principles of new processes, new infrastructure, new sectors and a new mind-set, the "Make in India" initiative aims at making India a global hub of manufacturing, design and innovation, has been taken by the government. The initiative is set to boost entrepreneurship, not only in manufacturing but in relevant infrastructure and service sectors as well. The Department of Industrial Policy and Promotion (DIPP), in consultation with various central ministries, state governments, industry leaders, and other stakeholders, has formulated a strategy for increasing the contribution of the manufacturing sector to 25 per cent of the GDP by 2020; while, an exhaustive plan of action has been drawn out to improve "ease of doing business" (indiabudget.nic.in, 2016). With all the buzz that



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the economy has created in the last couple of years, India should record a robust growth rate from all the investments (among others) that in the offing.

## FUTURE RESEARCH DIRECTIONS

This study does not capture a robust time period post the implementation of the "Make in India" initiative. While India is on its path to take a giant economic leap, at least in terms of FDI receipts, there are many socio economic factors that still need addressing and overhauling. Formal investigations involving trade agreements, trade policies, socio-economic and geo-political factors – all put together to build a comprehensive panel causality study that considers a time frame between 2006 to 2026 (say) – should provide a 360-degree view and a more wide-ranging understanding of how the factors responsible for inward FDI work in India, specifically. It will also help in determining if the new wave of trade and investment reforms have truly made the desired substantial and sustainable impact on the economy or not; and whether complementary economic factors and policy measures can be further introduced or refitted to augment the flow of FDI into the nation.

## CONCLUSION

India is standing at the gateway to a new wave of economic success. With a young and educated working population, there is a huge talent pool and human capital to tap from. India is also endowed with vast natural resources. If the gaps between the demand and supply sides of the economy can be filled in skilfully, there is very little that can actually stop India from becoming the next economic super-power.

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## KEY TERMS AND DEFINITIONS

**Causation:** Indicates that one event is the result of the occurrence of the other event; i.e. there is a causal relationship between the two events. This is also referred to as cause and effect.

**Emerging Economies:** An emerging market economy is a nation's economy that is progressing toward becoming advanced, as shown by some liquidity in local debt and equity markets and the existence of some form of market exchange and regulatory body. Emerging markets are not as advanced as developed countries but maintain economies and infrastructures that are more advanced than frontier market countries.

**FDI Outflows/Inflows:** FDI net inflows are the value of inward direct investment made by non-resident investors in the reporting economy. FDI net outflows are the value of outward direct investment made by the residents of the reporting economy to external economies.

**Foreign Direct Investment (FDI):** FDI takes place when there is an existence of a controlling proprietorship in a business enterprise in one country by an entity based in another country.

**Gross Capital Formation:** Capital accumulation/formation refers to the stock of capital and/or its growth, usually by augmenting saving and investment at the macroeconomic level. The gross measurement of capital formation is usually calculated before deduction depreciation.

**Horizontal and Vertical FDI:** Horizontal FDI, where multi-plant firms duplicate roughly the same activities in multiple countries, has been distinguished from vertical FDI, where firms locate different stages of production in different countries.

**Host/Home Country:** A country where a company that is based in another country has business activities.

**Inward Foreign Direct Investment (FDI):** When a foreign entity invests in a local economy by purchasing another business or establishing new operations for an existing business.

**Market Size:** In economic terms, a proxy for the potential market size can be expressed as Gross Domestic Product (GDP). The confines of a market (in the context of the chapter) are the economic size of the concerned country trying to attract FDI.

**Mergers and Acquisitions (M&A):** A general term that refers to the consolidation of companies or assets. While there are several types of transactions classified under the notion of M&A, a merger means a combination of two companies to form a new company, while an acquisition is the purchase of one company by another in which no new company is formed.

**MNCs/MNEs:** A multinational corporation (MNC) or enterprise (MNE) is an organization that owns or controls production of goods or services in one or more countries other than their home country. It can also be referred as an international corporation, a "transnational corporation", or a stateless corporation.

**Panel Data:** This term is used in Econometrics and Statistics, for multi-dimensional data frequently involving measurements over time. Time series and cross-sectional data are special cases of panel data that are in one dimension only (one panel member or individual for the former and one-time point for the latter).



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**Real Exchange Rate:** R is defined as the ratio of the price level abroad and the domestic price level, where the foreign price level is converted into domestic currency units via the current nominal exchange rate (E). Formally, R= (E.P*)/P, where the foreign price level is denoted as P* and the domestic price level as P.

**Trade Openness:** The inward and/or outward orientation of an economy to trade with other countries. Some determinants of trade openness are trade barriers, import-export, infrastructure, technologies, scale economies, and market competitiveness.

## ENDNOTES

1 The authors have not considered economic policies in the model and hence, have not elaborated upon the section.

2 China was neck and neck with USA in terms of inward FDI flows and second in ranking for such receipts, till India recently beat China at around mid-2016.

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# Chapter 2
# Computational Investing

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## ABSTRACT

*Investing means using funds to start a venture or acquire part of an existing one in hopes that in time the business will accrue profits for the entrepreneur. Often, entrepreneurs opt to purchase companies' stocks. To be able to select the right – profitable – stocks to buy, one requires knowledge of modern portfolio theory, computational investing, stock brokerage, mutual funds, bonds, value investing, how capital gains are taxed, how to trade stocks and options online, and how to use diversification to allocate online investments.*

## INTRODUCTION

The Modern Portfolio Theory is a result of the ingenious efforts of Harry Markowitz. In 1952, Markowitz pioneered the concept by publishing an article, "Portfolio selection," in the *Journal of Finance*. Through the piece, he demonstrated how diversification of stock reduces portfolio risk (Strong, 2009, p. 156). In other words, a single investment is exposed to risk due to the fact that several factors create high uncertainty and, as a result, lower expected returns. Examples of such factors are time, resources, manpower, and so on. Thus, Markowitz proposed a model that ensures capital is spread across a variety of investments so as to cushion entrepreneurs against any unfavorable returns resulting from one or several securities.

To gain a better understanding of Modern Portfolio Theory, it is important to understand the key terms applicable in the model. Firstly, risk is the variability in outcomes based on the expected return. Hence, it is measured by calculating the standard deviation ($\sigma$) of a percentage of the return ($r_i$). Optionally,

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risk can be determined by computing variance ($\sigma^2$), which is the square of standard deviation. Secondly, expected returns (E ($r_i$)) is a function of probability ($p_i$) and percentage of the returns ($r_i$) expected from the security. In this case, the expected returns of a portfolio is a summation of individual returns ($\sum p_i r_i$) of several securities. Thirdly, a security includes a finance lease, commercial loan, trade receivable, credit card, and so on. Fourthly, a portfolio is a collection of investment items such as bonds and stocks that require capital allocation. Fifthly, covariance ($\sigma_{ij}$) is a measure of the relationship that exists between variables (Francis and Kim). A positive covariance denotes that the variables progress in a similar direction. In other words, it shows positive correlation. Sixthly, an investment item's weight ($w_i$) is the ratio of the funds allocated to the stock to the total amount invested in the entire portfolio. Finally, portfolio risk ($\sigma_p$) is a logical expression that is based on the covariance and variance of securities in a portfolio.

Markowitz's diversification concept is useful in portfolio analysis. In this case, assets that have a positive correlation can be combined with an aim of reducing risk. Hence, that ensures that none of the returns of the portfolio is forfeited. In other words, the risk of the portfolio reaches its lowest value when the correlation between assets is at a minimum (Francis & Doncheol, 2013, p. 5). That remains the case even if the risk associated with individual assets is high.

According to Markowitz, diversification needs to be done strategically. In this case, an entrepreneur should invest in assets in different industries (Strong, 2009, p. 149). For instance, the investor should buy shares in manufacturing, mining, and service sectors. The reason for that is that companies that sell the same goods or services occasionally perform poorly and hence investors that diversify their portfolios by buying assets in the same industry stand to lose. Conversely, by investing in different sectors, poor performance in one industry does not affect the returns from other industries.

The significance of diversification can be illustrated using a portfolio containing two investment assets, A and B. Suppose the expected returns for asset A ($E(r_A)$) is 8%, while that of asset B ($E(r_B)$) is 24%. Also, suppose that the standard deviation for asset A ($\sigma_A$) is 22%, while that of B ($\sigma_B$) is 44%. Additionally, assume that the weight of asset A ($w_A$) is 2/3, while that of asset B ($w_B$) is 1/3. In this case, the expected return of the portfolio (E ($r_p$)) can be determined by the following calculations.

$$E(r_p) = w_A E(r_A) + w_B E(r_B)$$

$$E(r_p) = 2/3(8/100) + 1/3(24/100) = 0.0533 + 0.0800$$

$$E(r_p) = 0.1333 = 13.33\%$$

As shown in the example above, the expected return of the portfolio is a weighted average of the expected returns of the assets A and B (Graham & Smart, 2012, p. 219). This means that by investing in two different assets from different industries, the entrepreneur gains favorable returns from the portfolio. Thus, diversification of the portfolio improves the expected returns.

Markowitz also demonstrated the effect of diversification on portfolio risk. According to him, portfolio risk can be determined using the formula below.

$$\sigma_p = \sqrt{(w_A^2\sigma_A^2 + w_B^2\sigma_B^2 + 2w_A w_B \sigma_{AB})}$$



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In this case, $\sigma_{AB}$ is the covariance of returns. For demonstrative purposes, let the values of $\sigma_{AB}$ be +0.095, -0.095, and 0 and the weighted values and standard deviations of the assets A and B remain as given in the previous example. Thus,

$$\sigma_p = \sqrt{(w_A^2\sigma_A^2 + w_B^2\sigma_B^2 + 2w_Aw_B\sigma_{AB})}$$

$$\sigma_p = \sqrt{[(2/3)^2(0.22)^2 + (1/3)^2(0.44)^2 + (2*2/3*1/3*\sigma_{AB})]}$$

$$\sigma_p = \sqrt{[0.02151 + 0.02151 + 4/9*\sigma_{AB}]}$$

$$\sigma_p = \sqrt{[0.04302 + 4/9*\sigma_{AB}]}$$

If $\sigma_{AB} = +0.095$, then $\sigma_p = 0.6982$. Secondly, if $\sigma_{AB} = -0.095$, then $\sigma_p = 0.0282$. Lastly, if $\sigma_{AB} = 0$, then $\sigma_p = 0.2074$. Therefore, positive covariance increases portfolio risk, while a negative covariance reduces it. Thus, according to Markowitz's Modern Portfolio Theory, the diversification of stock results in the reduction of the risk of the portfolio, especially if the variables have negative covariance (Khan and Jain).

## BACKGROUND

Computational investing is another topic that provides insights on investing and stocks. It includes a collection of theories that have effectively been used as strategies for investing. For instance, John Bogle's passive investment approach recommends that entrepreneurs should allocate resources to assets that have minimum trading expenses. The reason for that is that active involvement in market-stock trade cannot match the returns of the market (Laopodis, 2013, p. 32). In other words, Bogle advocates for a long-term view approach to investing – one should pay attention to taxes and costs. Therefore, according to him, a well-diversified portfolio is an assortment of low-cost assets that have been in the market for a considerable number of years. That is, investors should adopt a buy-and-hold strategy.

Another theory of computation investing is value investing. According to Warren Buffet, who developed the idea, investors should exercise discipline, intelligence, and patience in relation to buying stock (Laopodis, 2013, p. 32). In other words, the entrepreneurs should purchase shares of reputable companies only.

Thirdly, computational investing includes active investing. The theory aids in analyzing the general proceeds obtained in the security market by engaging in regular trading. In this case, trading normally involves utilizing mutual funds to acquire certain securities. Unfortunately, the pricing models of market securities are not accurate and hence may cause losses (Voges & Pope, 2006, p. 432). The shortcomings of the models can be detected and resolved by experienced investors. Hence, active investing means one should consult a professional before buying stock.

Therefore, computation investing contains complex theories, which means that entrepreneurs should adopt the use of other tools to guide them in buying stock. Computer applications are instrumental in this regard. They make it easy to analyze and interpret information that is useful for decision making. For instance, Mathematica, which relies on the use of statistics, differential equations, calculus, and other mathematical functions, is utilized in market analysis. It can solve problems related stock options and thus is relevant to day traders (Wellin, Gaylord, & Kamin, 2005, p. 8).



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Machine learning provides another means of managing information pertaining to investments. It entails the creation of structures and models that can provide useful information from raw data. The data is derived from a considerable number of securities that are influenced by a number of fundamental technical factors. In other words, the inputs are collected and then a model created to predict their future values. Thus, machine learning aids in the classification as well as regression analysis of the stock market (Balch).

The models used in machine learning may be linear in nature (Balch). Linear models can be described by the linear equation below.

$y = m(x) + b$

In this case *y* is the output, *x* is the input or independent variable, *m* is the gradient of the line, and b is a constant or y-intercept, which means that it is the value of *y* when *x* is zero. *m* is calculated by diving the change in output that occurs after a change in input. Thus, the linear equations can be applied in the pricing of stock, particularly in the Capital Asset Pricing Model (CAPM).

In the CAPM, the linear equation takes the form $E(R_i) = R_F + [\beta \times (E(R_M)-R_F)]$. In this case, $R_F$ is the risk free rate of return, $E(R_M)$ represents the proceeds from the market portfolio, $\beta$ is the beta coefficient, and $[E(R_M)-R_F]$ is the market risk premium – an extra return for reimbursing investors for risks taken in clinging to a portfolio of assets in the market. When an asset yields expected returns, its beta coefficient is one (Kürschner 4). If the asset's returns exceed expectations, then its beta coefficient is greater than one. In that respect, if the returns are below market expectations, the asset's beta value is less than one. Hence, the CAPM has extensively been used by investment firms to measure financial performance.

Polynomial and data driven models can also be used in machine learning. The polynomial model consists of more than one parameter, each of which should be well identified. The model is non-linear in nature and hence quite fast in runtime. In comparison, data driven models are designed to function in query fashion and hence are multi-dimensional – allow users to add new input variables with time. To predict the future value of a stock, the mean of the dependent values must first be computed, which makes data driven models slow in runtime compared to polynomial models (Balch). The dependent variables that are typically used in the model include the profit/earnings (P/E) ratio.

## MAIN FOCUS OF THE CHAPTER

### Open a Stock Brokerage Account Online

Some of the concepts discussed in Modern Investment Theory and computational investing are useful to stock brokers, especially when opening an online account. A stock broker is an individual or company that trades in shares on behalf of a client. If the interaction between the client and the broker is through a website, the broker is referred to as an online broker. The online service allows the investor to allocate some funds to the brokerage firm for the purchase and sell of stock. Normally, the transactions occur on order basis, that is, the client must request the broker to buy or sell profitable shares. Apart from trading in shares, a significant number of online brokers also provide other support services such as tax reporting, creation of financial statements, and so on. Optionally, an investor may decide to do the



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online trading independently (Magliolo xvii). That means the entrepreneur will need to open an online stock brokerage account. To succeed in such a venture, the entrepreneur must consider several factors.

Firstly, the investor needs to acquire a portfolio tracking tool, which is a set of online tools that provide information on the trading of stock. Hence, the tool allows investors to keep a close eye on the performance of their stock while shopping for additional profitable investments. The portfolio tracking tool can be treated as an additional expense to the cost of opening an online brokerage. However, an effective method would be to treat portfolio tracking as a support service provided by an online broker (Hart, 2005, p. 36).

Secondly, transaction costs are incurred in operating the online brokerage account. Normally, the online broker that hosts the independent stockbrokerage account charges a specific amount for each transaction executed. In other words, an online broker may provide the portfolio tracking tool at a low cost, but charge the investor highly per transaction (Hart, 2005, p. 42).

Apart from that, some hosts charge for stop-sell order requests. Therefore, investors should take time to compare the charges of different hosts to ensure that they get value for their money.

Thirdly, the type of account matters. Often, investors have the option of opening either an individual retirement account (IRA) or retail account. Before opening an IRA, the entrepreneur should consult a tax advisor because some of the transactions done through the account are taxable. For instance, if a transfer of funds is done from the investor's IRA to an online broker's IRA, there are no tax penalties or consequences. However, taxes apply if the investor withdraws money from an online brokerage IRA. Conversely, transferring funds to a retail account has no tax implications. Similarly, the purchase of stock through the use of funds in the retail account has no tax implications. However, the income from the stocks sold through the account is taxable (Hart, 2005, p. 50).

Additionally, investors expect returns in form of dividends from companies in which they own shares. The dividends may be scrip dividends or dividend re-investment plans (DRIP). For the investors that subscribe to the scrip-dividend policy, the expected cash returns are automatically converted to new shares. Conversely, for those in DRIP, the cash dividends are first sent to a scheme administrator who then may use the funds to acquire the company's shares through the stock market or send the money to the stakeholders. Therefore, before opening an online account, the investor should consider the reinvestment service offered by the host (Hobson, 2012, p. 15).

Also, the investors need to determine the means through which they will fund their online brokerage accounts. Firstly, capital may be sourced from savings. In this case, keeping money in bank accounts yields low annual interest. Depositing the money into an online brokerage account will result in better cash benefits. Secondly, the IRA is also a source of funding. In this case, the funds can be transferred from an existing IRA to the online brokerage IRA mentioned earlier. Thirdly, the investors can opt to make direct deposits. In this regard, the cash-in-hand that they possess should be greater than or equal to the bare minimum required to open the online brokerage account. Given that the option will force the entrepreneurs to develop a working plan on how to make regular deposits into the account, discipline is required (Hart, 2005, p. 55). The investors can obtain additional hard cash from gifts, financial assets converted to money, extra income, refunds, and so on.

Therefore, before opening an online brokerage an account, one must consider several things. These include the type of account to be opened, transaction costs involved, and customer service. The investor should also take into account how the online brokerage shall be funded, the cost of the portfolio tracking tool, and the dividend re-investment policy provided. Once these queries have been addressed, the next



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step is to open an online brokerage account (Hart, 2005, p. 57). In reference to that, it is worth noting that managing a profitable stock investment portfolio requires thorough knowledge of ways of investing.

## Investing in Stocks

Equity investment – investing in stocks – refers to the value of assets and cash that an individual, company, or group puts into another entity. The amount of funds contributed determines the ownership or level of influence the investor has in the venture. This level of influence can also be referred to as shares. Thus, the more shares an entity purchases, the greater its equity stake. Equity investments are often handled by professional investors that administer large portions of money on behalf of amateur investors. The professional investors carry out such activities through private equity (PE) firms. Hence, private equity refers to the shares of individuals in a listed or unlisted company (Kumpf, 2013, p. 17). Equity investors benefit in two ways. Firstly, they make gains when the stock prices increase. Secondly, they receive dividends periodically. An increase in stock prices yields the most benefits and thus the entrepreneurs mainly buy shares of companies in hopes that the stock prices will rise. There are other aspects of private equity that must be addressed before one understands investing in stocks.

The private equity firms utilize three investment approaches that are based on maturity of portfolio entities and volume of equity purchased by the PE companies. Firstly, the firms allocate venture capital to young firms that have a potential of rapid growth. Normally, the venture capital is a small sum of money and hence the PE firms do not acquire a majority stake in the entity. Secondly, by providing growth capital, the companies acquire a minority stake in mature firms. Finally, the PE firms use buyouts to gain control of mature organizations (Kumpf, 2013, p. 17).

Buyouts can further be split into management buy-ins and management buy-outs. Management buy-ins are driven by outsiders, while management buy-outs are initiated by insiders. In a management buy-in, the private equity firm establishes its own management team, whereas in a management buy-out, the existing management is retained (Kumpf, 2013, p. 18).

Given that it is not easy to identify the best companies to invest in, investment tools are required. In this case, the Magnet Stock Selection Process (MSSP) is of great value. The MSSP is a technique designed to blend momentum, value, and growth to optimize long-term returns (Kimmel, 2009, p. 124). Magnet is an acronym that defines each of the factors considered in the selection process.

M stands for management and momentum. In this case, the entrepreneurs should invest in firms that have capable managers. The management should exemplify leadership, innovativeness, and success in the marketing of products. Additionally, whether or not the management owns a significant portion of the stock of the business, they should prove that they have always acted in the best interest of their shareholders. Momentum refers to the relationship between stock price and the market as a whole (Kimmel, 2009, p. 125). The entrepreneurs should conduct trend analysis of the share price performance for a few consecutive months and only invest in the venture if the evaluation shows strong performance.

A stands for acceleration of revenues and earnings. In this case, the PE firms should only buy shares of companies that regularly achieve at least a 15% increase in quarterly earnings and revenues (Kimmel, 2009, p. 125). This standard effectively eliminates big companies that dominate their industries, but fail to sustain quick growth rates. Acceleration of growth can also be shown by gross profit (GP) margin. The GP margins should continually rise each year (Kimmel, 2009, p. 126). A decline in GP margins shows that the firm is facing financial challenges.



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G stands for growth at a discount, which is shown by the price/earnings (P/E) ratio. In this case, the growth of a company should be twice its P/E ratio (Kimmel, 2009, p. 126). This ensures that investors do not spend more than they should on stocks.

N stands for new product or management (Kimmel, 2009, p. 126). In this respect, the rapid rise of a company's share price shows that something innovative is happening. In other words, it indicates that the management is making strategic decisions that create growth prospects. Normally, if new products are not developed or no strategic decisions are implemented, the growth potential of an entity is constrained. Also, new management can be a source of novel ideas that may propel a company forward.

E stands for emerging products or industrial opportunities (Kimmel, 2009, p. 125). In this case, if new product lines are developed, then a company can look forward to growth. That is because new lines require capital, innovation, and personnel. A firm invests in new products to enhance its already existing lines. In this respect, opportunities are created and risks are taken to generate additional returns. Thus, investors should regard such changes as a sign of potential for growth for the company. In other words, investing in the stock of such firms may result significant returns in the long run.

Lastly, T stands for timing. The stock acquisition should be done at the right moment. In this case, the opportune time is when the share price declines. Investors should also invest in businesses during initial public offerings or when shares are sold at a discount. By acquiring the shares at such periods, the investors will reap significant rewards after the share prices appreciate in future (Kimmel, 2009, p. 125). In other words, as the companies grow, the entrepreneurs' equity also increases.

Thus, equity investment is an avenue for wealth generation. This is especially the case if approaches such as MSSP are effectively used in the selection process. One must also accept that private equity firms play a crucial role in identifying favorable investments. That is because the entities employ skilled personnel to identify successful businesses. Also, it is indisputable that the private equity managed by the PE firms aids upcoming and mature enterprises overcome financial limitations and hence ensure work is done properly (Loewen, 2008, p. 43). That said, to fully understand the subject of investing and stocks, one needs to consider other topics apart from equity. For instance, it is paramount to discuss bonds and mutual as well as exchange trade funds.

## Investing in Mutual Funds, Bonds and Exchange Traded Funds

It is important to have a diversified investment portfolio. The reason for that is that occasionally particular industries face challenges such as competition that reduce the anticipated returns. Apart from stocks, mutual funds, bonds, and exchange traded funds are viable investment options.

Mutual funds are created by a group of people who wish to invest in particular projects. There are benefits that arise from having such a pool of funds. Firstly, professional fund managers are employed to handle the invested funds. They diversify the holdings, thus reducing risk (Northcott, 2009, p. 12). The investors select the management and fund based on the anticipated risk and returns.

There are costs associated with mutual funds. These include operation and remuneration expenses. Normally, the expenses are covered by paying a regular fee, which is a percentage of the annual charge. The charge varies depending on size of the fund; larger funds have smaller expense ratios. However, different mechanisms may be employed by other funds (Northcott, 2009, p. 18). In this case, all expenses and costs are disclosed in a prospectus.



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Mutual funds can be categorized into two types. Firstly, there are open-end funds. In this case, the sale of shares to investors is done without undue restraint. Also, the open-end fund managers decide how best to use the new money received. The options available in this regard include purchasing new securities or increasing the fund's shares in existing assets (Northcott, 2009, p. 27).

Secondly, there are closed-end funds, which have some restrictions. For instance, an investor may only be able to purchase shares in the concerned enterprise if some existing stakeholders of the entity are willing to sell theirs. This is due to the fact that the closed-end funds have a predetermined number of shares (Northcott, 2009, p. 28). Also, the entrepreneurs value their shares based on future price expectation. In contrast, the value of the shares of the open-end funds is determined by the market price of shares already sold and value of existing securities within the holding.

In this respect, mutual funds are used to invest in shares or bonds. In the case of shares, the companies targeted may be large, medium, or small cap. Cap means capitalization and thus the categories are based on market valuation. For instance, a medium cap firm is one that is valued from $2 billion to $10 billion. Therefore, a small cap company is one that is worth less than $2 billion (Northcott, 2009, p. 66). Large cap companies, those worth more than $10 billion, are considered less risky than small cap enterprises.

The mutual funds can also be used to purchase bonds. Bonds yield fixed returns. The amount of income generated depends on contractual requirements and solvency of the issuer of the bonds (Maeda, 2009, p. 15). Bonds may be provided by particular organizations or bond funds. In this case, the company bonds are considered risky due to the fact that in the past major companies exited the market after selling bonds.

In relation to investing in bonds, the entrepreneurs may opt to be active traders or buy-and-hold investors. Active trading is expensive because it involves regular transactions. Conversely, the buy-and-hold investors keep their bonds until they mature. As a result, the entrepreneurs earn interest.

There are other factors that should be considered in relation to investing in bonds. Firstly, the entrepreneurs should be aware of their risk tolerance. This can be determined by extensive analysis of the bond-returns. In this case, the volatility of returns is reduced by acquiring low yield bonds. Secondly, the bond maturity period is an important factor to keep in mind. For instance, some bonds may mature after 10 years, which means that the money will be unavailable for that long (Maeda, 2009, p. 17). In other words, purchasing a bond means lending your money to a corporation or government entity for a defined period in exchange for interest on the principal amount. Thus, it is imperative to conduct extensive research to identify high-yield bonds.

Besides the bonds and mutual funds, the entrepreneurs should consider investing in exchange trade funds (ETFs). ETFs are variations of mutual funds. However, unlike the case is with conventional mutual funds, the investors who put their money into the ETFs do not have to submit the money through financial agents. That is because the management of the funds is based on a fixed set of rules that determine the types of individual stocks held in a portfolio. In other words, the ETFs are passively managed and hence stock selection is updated on specified dates (Appei, 2009, p. 3). Another difference between the ETFs and regular mutual funds is that the individual investors can purchase the ETFs through the stock market, while mutual funds are managed by fund managers. In this respect, the investor is wholly responsible for transactions concerning the ETFs.

The ETFs have other characteristics. For instance, the value of shares traded is determined by the market price of the stock on the transaction date. Also, investors have to pay a broker's commission fee for the purchase of the ETFs. The cost of purchasing the ETF shares is low compared to the expenses incurred in acquiring regular stocks because of active competition. In reference to that, it is worth noting that all mutual funds, including the ETFs, attract sales charges.



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Another advantage of the ETFs is that the sale and purchase of new shares is done on an investor-investor basis. This means that one investor sells shares to another entrepreneur in exchange for cash. Thus, updating the records is easy (Appei, 2009, p. 5).

Mutual funds, bonds, and exchange trade funds are all viable investments. However, each of the forms of investment bears its own risks. Additionally, the entrepreneurs must consider the costs associated with the investments among other factors before selecting one.

Investing and stocks is a wide subject. It covers the Modern Portfolio Theory, which advocates for diversification of investments to minimize portfolio risk. Secondly, it includes computational investing that provides several models used to analyze data for effective decision-making. Also, it addresses opening an online brokerage account. The subject provides information on the use of the portfolio tracking tool, transaction costs involved in the establishment of the account, and so on. Additionally, by studying the chapter, learners discover the significance of the MSSP approach to investing. Finally, the subtitle on mutual funds, bonds, and ETFs shows how pools of funds can be utilized to make investments.

## Value Investing

Another subject that needs to be addressed while discussing investing and stocks is value investing. Basically, it refers to the purchase of securities at a price that is lower than their intrinsic worth. That is, the cost of the shares is determined by the primary business value. This also means that the investor does not rely on the stock market to establish the true worth of a certain stock. Instead, the entrepreneur check's the firm's earnings. To gain a better understanding of the topic, one needs to review its fundamental aspects.

Generally, the investors who apply value investing opt to buy shares in companies that have declining stock prices, but are destined to experience greater returns in time. In this regard, such investors hope to make significant profits by selling the shares when the companies' earnings will force their share prices to rise (Browne, 2007, p. 25). For instance, in the 1950s, Berkshire Hathaway Inc., a textile company, was facing financial challenges. As a result, the price of its shares gradually declined. Warren Buffet, a former student of Columbia Business School, noted that previously the company showed great potential in terms of returns (Browne, 2007, p. 27). Thus, he prompted his father to acquire a considerable number of shares in the company to gain a controlling stake. At that time, the firm's shares traded for only eight dollars. Because of his father's stake in the business, Buffet was able to join Berkshire. By the 1960s, he had become part of the management and thus was able to influence decision-making. Buffet began remodeling Berkshire and hence in a short while the company's share value rose to $ 18. Decades later, the company sold its stocks at $90,000 per unit.

To be successful in value investing, one needs to be cognizant of several indicators. The investor needs to monitor the targeted firm's cash flow, profits, and sales. That is because doing so will enable the entrepreneur to identify the right time to acquire the stocks of a firm that trades at a discount for a lengthy period (Browne, 2007, p. 28).

The theory of value investing was introduced by Benjamin Graham. In 1934, while lecturing at Columbia Business School, Graham came up with a set of principles for guiding investors who wanted to engage in the venture (Greenwald et al., 2004, p. 38). According to him, stocks should be bought when they are trading on sale basis. That is, when a company is selling its shares at a discount. This is the principle that a considerable number of mutual fund managers apply. That is, the mangers use growth funds to invest in new fast growing firms and spend value funds in purchasing shares that are on sale (Browne, 2007, p. 43). As expected, with time, the investments made through value investing – value



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funds – yield greater returns. Secondly, the investors should first establish the true value of the target company. This can be done by calculating the total cash flows of the business. Given that future cash flows are included in the computations, the investor needs to make assumptions with respect to market conditions (Greenwald et al., 2004, p. 38). However, basing the value of a firm on probable factors may not reveal the true value of its assets or potential. Thus, the value investors prefer calculating a firm's worth using its intrinsic value.

The intrinsic value of the organization can be established by valuing the company's assets. In this case, the valuation is done using the business' financial statements. Firstly, some assets are adjusted to reflect their current prices. Thereafter, total liabilities are deducted from the sum of current assets/ inventory, cash, and receivables. The figure obtained is referred to as the reproduction cost (Greenwald et al., 2004, p. 14). A desirable security is a stock that retails at a price that is lower than the reproduction cost. Graham describes such a stock as net-net stock.

The intrinsic value of a firm can also be determined by assessing the organization's earnings power. In this case, the investors should first establish the company's inflow of earnings over a considerable number of previous years. Next, they should use the established trend to predict the firm's business cycle (Greenwald et al., 2004, p. 14). Then the figure obtained is compared to the reproduction cost. The company has earnings power if the value is greater than the intrinsic worth that was determined by assessing the organization's assets. That is, provided its corrected net worth is less than the reproduction cost. If that is the case, the firm's stocks become desirable.

Another thing that Graham suggests that investors should consider in relation to value investing is investment biases. The biases are influenced by legislative policy or size – number of investors who have confidence in the organization. Established laws may prevent an institution from acquiring stocks of particular businesses. Often, governments enact laws to prevent companies or individuals from investing in socially irresponsible ventures. In this case, an organization may be considered socially irresponsible because it violates environmental and safety policies among others (Greenwald et al., 2004, p. 21). Consequently, such firms experience a decline in their share prices. This forces the organizations to reform. A good time to invest in such organizations is when it becomes evident that the restructuring is progressing well.

In regard to size, the herd mentality determines investment into some entities. Generally, institutions do not make investment decisions. Rather, it is individuals – managers – who work for the organizations that decide the stocks to acquire. Normally, the institutional managers play safe. In other words, they purchase the stocks preferred by other organizational leaders. That is, they apply the principle of safety in numbers. A majority of the other managers make investments that are not risky to protect their jobs. In other words, the administrators sell the shares of companies that underperform and acquire the stocks of organization's that continuously increase their returns (Greenwald et al., 2004, p. 24). In this respect, one can see that the investors that rely on investment biases – the institutional managers– cannot engage in value investing. The entrepreneurs that engage in the venture need to know how to account for profits – capital gains.

## How Capital Gains are Taxed

The purchase and sale of stocks results in profits, also known as capital gains. Usually, the capital gains are taxable. Unfortunately, a significant number of online investors remain unaware of that fact because



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they do not have tax consultants. Thus, to avoid breaching the law, such entrepreneurs need to know the tax classes that they fall in and the methods they can use to account for the profits they make.

The type of taxation applied on the capital gains depends on whether the returns are long-term or short-term. Generally, the tax rates for long-term capital gains are lower than the rates applied to the short-term profits; the specific laws that established that policy came into effect between 2009 and 2012 (Krantz, 2013, p. 72). For the long-term capital gains, if an individual's ordinary tax rate is higher than or equal to25%, then the utmost capital gains tax (CGT) rate that can be applied on the profits the person makes is 15%. Otherwise, a maximum capital gain rate of 0% is charged if the individual's income tax rate is below that figure. For the short-term gains, the CGT rates that apply are shown in Table 1 below.

Additionally, the capital gains may be realized or unrealized. For investors that have a taxable brokerage account, a taxable event occurs as a result of capital appreciation. Capital appreciation basically refers to a rise in share prices. For instance, if an online investor acquires shares for $20 and the price of the stocks later rises to $80, then the capital appreciation would be $60. By selling the shares, the entrepreneur would realize capital gains, which are taxable. However, if the investor holds on to the shares, the capital appreciation is referred to as unrealized capital gains, which are not taxable (Krantz, 2013, p. 68).

It is not enough to know the tax class that one falls in. The online investors need to offset and keep track of the capital gains to evade penalties. Offsetting capital gains means deducting capital losses from the long-term plus short-term profits that result from the sale of shares. Evidently, if the capital losses exceed the gains, the investor would have made a net loss and thus the taxes would not apply. In this respect, tracking down the capital gains is essential. That is, the online investor should take note of the dates when the shares were bought and sold (Krantz, 2013, p. 75).

Still, the entrepreneur needs to fulfill another requirement. The Internal Revenue Service (IRS) requires one to have a reporting mechanism for capital gains. In this case, the online investor has several alternatives. To begin with, the entrepreneur can use personal finance software. For instance, Intuit developed Quicken is an application that can generate capital gains worksheets. The software presents the required data in accordance with the tax preparation guideline (Krantz, 2013, p. 76). Optionally, the online investor can provide the required information by using the portfolio-tracking tool. This web-based application compiles all information required to compute taxes.

*Table 1. Income tax rates for short-term capital gains*

| Tax Rate | Married Filing Jointly or Qualified Widow(er) | Single | Head of Household | Married Filing Separately |
|---|---|---|---|---|
| **10%** | $0 - $18,150 | $0 - $9,075 | $0 - $12,950 | $0 - $9,075 |
| **15%** | $18,150 - $73,800 | $9,075 - $36,900 | $12,950 - $49,400 | $9,075 - $36,900 |
| **25%** | $73,800 - $148,850 | $36,900 - $89,350 | $49,400 - $127,550 | $36,900 - $74,425 |
| **28%** | $148,850 - $226,850 | $89,350 - $186,350 | $127,550 - $206,600 | $74,425 - $113,425 |
| **33%** | $226,850 - $405,100 | $186,350 - $405,100 | $206,600 - $405,100 | $113,425 - $202,550 |
| **35%** | $405,100 - $457,600 | $405,100 - $406,750 | $405,100 - $432,200 | $202,550 - $228,800 |
| **39.6%** | over $457,600 | over $406,750 | over $432,200 | over $228,800 |

Source: Bankrate, *What is your tax bracket?* Bankrate, 2014, Web, 16 Sept. 2014.



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Another alternative is to utilize an online brokers' website. Such sites keep information on the dates transactions were conducted, reveal whether the gains were realized or not, and so on (Krantz, 2013, p. 77). At the end of year, the online brokerage may mail the data to the investor. The investors can then forward the records to the IRS. This is a new development. Initially, it was the duty of brokers to get such data for their clients.

There are more options. For instance, the online investors may use web-based calculator sites to compute the capital gains. In this case, the entrepreneur keys in data on the sale and purchase of stocks and then the site automatically determines the net capital losses and gains. The online investor then downloads the summarized data for use in filing returns. Finally, the investor can use a dedicated online site that optimizes tax strategies. For instance, GainsKeeper is one of the reputed web-based sites that provide services for reducing taxes. Generally, such sites suit active traders who can afford to pay for the cost of the services (Krantz, 2013, p. 77).

## How to Trade in Stocks Online

Online stock trading is another important subtopic of investing and stocks. This type of trade is to some extent similar to regular transactions that involve one walking into a shop, picking the required items, paying for them, and leaving. That is, the online traders select the shares they prefer and electronically transfer the sum required for the purchase. Once the money is received, the sale is reflected. However, online trading has some complications because the prices of stocks are set in real time (Krantz, 2013, p. 129). Thus, the online investors have to use the following options in trading through the internet.

Firstly, the entrepreneurs can trade their stocks online through market orders. In this case, they have to instruct their stock brokers to sell their stock. Normally, the brokers are requested to sell the shares at the highest price that a willing customer is ready to pay. As a result, such orders are quickly executed (Krantz, 2013, p. 129). Given that it is easy to find such willing buyers, the online investors pay a small commission for the brokers' services.

Secondly, stocks can be traded online through limit orders. In this case, the online investors are allowed to set the prices at which they are willing to purchase or accept the sale of stock (Schwartz, 2010, p. 156). For instance, consider an entrepreneur who owns 40 shares, each valued at $100. Suppose the price of the stocks is declining and hence the investor estimates that soon the value of a share will plunge to $70. In this case, the online investor can sell the shares in two ways. The first option is through the market order, which was discussed above. However, that may not give the best returns since the buyers may momentarily offer lower prices than the projected minimum. Optionally, the online investor could set the lowest selling price at $85 to minimize losses. Thus, so long as the decline proceeds as expected, the limit order is the preferable alternative. When the shares' price falls to $85 per unit, the broker will sell all stocks if possible. Limit orders are not based on price alone. Some investors give a deadline within which to sell the stocks (Krantz, 2013, p. 129).

Sometimes, one may not obtain the returns expected after the sale of shares through the limit orders. This is because the shares' price may decline so rapidly that the seller is unable to place the stocks on sale at the agreed price. In this case, the broker may only sell a restricted number of stocks. The rest of the shares are kept in the investor's portfolio. Thus, the limit orders provide a false sense of security.

Online investors can also use stop market orders to trade online. This type of order is similar to a limit order in that a minimum buying or selling price is set. However, for the stop market orders, when shares' price reaches the designated value, the orders are converted into market orders (Krantz, 2013, p.



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130). For instance, using the previous example, the broker may be instructed to execute a stop market order when the stocks' price reaches $85. In this case, if the value of shares suddenly plunges to $80 per unit, the online broker would still have to sell the shares at that price.

Fourthly, the shares can be traded through a stop limit order. This option is similar to a stop market order. However, once the defined price is exceeded, the stop limit order is converted into a limit order (Krantz, 2013, p. 130). Thus, the stop limit order prevents the sale of shares if the value of the stocks falls beneath the limit price. To elaborate further, still using the same example, suppose the activation price for selling stocks is $85 and the limit value is $75. When the shares' value falls below $85 per unit, the order becomes a limit order. Hence, when the price reaches $75, the broker is supposed to sell every available stock at that price (Krantz, 2013, p. 130). However, a further decline in price would result in no sale at all. That is, the remainder of stock is kept in the online investor's portfolio.

Lastly, the online stocks can be traded through a trailing stop. This type of order basically follows the market. For a favorable market, rising stock prices, the online investor instructs the broker to retain the shares until the value of the securities reaches a predetermined value. This order is referred to as a trailing sell stop. For a bearish market, the broker is expected to sell the shares as the stocks' price approaches a set minimum value (Pardo, 2008, p. 85). This order is known as an exit trailing stop. Thus, the online investors continuously search for positive yields during the stocks' transaction life.

## How to Trade in Options Online

Apart from stocks, options can also be traded online. An option is a financial instrument that gives one the right to sell or purchase a precise quantity of underlying stock at a prearranged price within a defined time period. The option seller is not legally obliged to carry out all the tasks stipulated in the contract when the financial instrument is handed over to a buyer. The online trading of options is done through screen-based or electronic methods. In the United States of America, there are several institutions – exchange companies – that specialize on options trading. They include the International Securities Exchange (ISE), Boston Options Exchange (BOX), and NASDAQ. The online trading of options has advantages as well as prerequisites that are worth discussing in details (Fontanills & Cawood, 2009, p.43). The online trading of options yields more benefits to the online investor than full-service or traditional brokerage. For example, for this type of trade, commission expenses are lower. That is, the traditional broker may charge $100 for a round turn, whereas an online brokerage charges only several dollars (Fontanills & Cawood, 2009, p. 45). In this case, a round turn refers to each deal or sale. Normally, a commission cost is charged on all orders. The charge applied varies depending on the service being offered. Also, the commission expenses decrease as the services offered to the investors increase. Another advantage of the online trading of options is that the online investors receive considerable support in terms of information as opposed to what happens in traditional brokerage. In other words, the entrepreneurs have access to applications that generate data on tax deductible costs and so on. However, the technique has some disadvantages. For instance, new traders need the services of online brokers that specialize in order-taking only. It is not easy to find such experts.

The online investors must fulfill other requirements to be able to successfully trade in options through the internet. Firstly, they need a computer, internet service provider, portfolio tracking tool, and an online brokerage account. Additionally, the investor should have knowledge on how to assess stocks. The valuation of shares is normally done through fundamental analysis of the equities. That is, the investor must review the targeted company's earnings, assets, changes in management, income statements, and so



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on (Fontanills & Cawood, 2009, p. 64). If the analysis shows that the market value of the stock is lower than its real worth, demand for the equity increases. Conversely, if the market price of the organization's stocks is higher that its calculated true value, demand decreases.

Also, the online option traders need to assess the extent of competition among firms that operate in the sector. For instance, high-tech firms operate in extremely competitive environments, which means the organizations can only survive by continuously unveiling new products. This makes investing in the companies risky as projects often fail, which results in significant losses. In this regard, the active online traders should study such industries in depth to be able to forecast the success of the companies they intend to invest in (Fontanills & Cawood, 2009, p 55). In this case, the necessary information about these types of firms is readily available; the online investors can find the data in investment websites such as Optionetics.

Besides that, the options investor should consider the type of broker to employ. There are three categories of brokers namely: discount, options specialty, and full-service brokers. The full-service brokers charge relatively high fees. This is because they conduct research on annuities, bonds, stocks, and other long-term investment options. In other words, they give advice on the best options to trade. The discount brokers charge relatively low fees since they rarely give recommendations on investment options (Benklifa & Olmstead, 2013, p. 33). As the name suggest, the option specialty brokers particularly cater to the needs of the online option investors. That is, they give advice on competition and so on. However, the differences among the brokers in terms of services provided are gradually diminishing. This is because internet tools are slowly integrating the services provided by the brokers and hence, eventually, one broker will be able to provide all the services.

Fourthly, a trading platform is crucial. A trading platform is an application that provides option and stock quotes in real time. Thus, an effective one allows the investor to transact directly. In addition, a good platform displays several option exchange firms and bid or ask prices of the companies. Thus, independent online traders use the platforms to identify favorable exit and entry option prices (Benklifa & Olmstead, 2013, p. 56).

Therefore, to be a successful online trader of options, one must have sufficient knowledge on several subjects. Firstly, the investors should know the types of brokers that exist and the services they offer. A broker can be a full-time, option specialty, or discount broker. Secondly, the online options trader should be aware of the commissions charged by the different types of brokers. Thirdly, a trading platform that provides information on the targeted stocks' prices is required. Lastly, before trading in options online, the investor should analyze the concerned company. Given that several types of online investment options exist, it is important to understand how to use diversification to reduce the risk involved in selecting each.

## How to Use Diversification to Allocate your Online Investments

The online investors, those who own portfolios that contain stocks that are traded through the internet, are at risk of facing fluctuating returns. They can prevent severe losses caused by market volatility through diversification. Diversification means that the investors should acquire stocks in companies that operate in different industries and have operations worldwide. Additionally, the entrepreneur should buy a variety of assets from companies of different sizes and obtain investment advice from several sources. If that is done, the investors can be certain that a deep plunge in the price of particular shares will not destroy their portfolios (Sindell, 2005, p. 318).



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Each of the diversification approaches has specific benefits. To begin with, assets include stocks, bonds, mutual funds, exchange trade funds, options, and other financial instruments. Buying a variety of the assets allows the investor to benefit from the unique characteristics of each. For instance, mutual funds are managed by experts. Secondly, the purchasing of shares of companies that operate in different sectors safeguards a portfolio from unfavorable policy changes and so on (Sindell, 2005, p. 318). Thirdly, the buying of stocks of companies that conduct their business globally protects one from the challenges created by the weakening of the currency of particular country. For instance, if the US dollar declines in value, worldwide investments may be more profitable. Also, by investing across the world, the online investors reduce the impact of natural disasters and so on. Lastly, investing in firms of different sizes enables the entrepreneurs to take advantage of steady growth, which is associated with large organizations, the quick growth of small institutions, and the consistent returns of medium-sized corporations.

The online investors have access to several sources of information on diversification. Particularly, web-based institutions offer excellent advice on the subject. For instance, Fidelity provides online worksheets that aid the investors to select different assets according to the risk associated with each (Sindell, 2005, p. 318). NETirement.com provides an online calculator for use in assessing the assets' risks based on preset average returns of the investments.

## CONCLUSION

Investing and stocks is a wide subject. It covers the Modern Portfolio Theory, which advocates for diversification of investments to minimize portfolio risk. Secondly, it includes computational investing that provides information on the models used to analyze data for effective decision-making. Also, it addresses opening an online brokerage account. The subject provides information on the use of the portfolio tracking tool, transaction costs involved in the establishment of the account, and so on. Additionally, by studying the chapter, learners discover the significance of the MSSP approach to investing. Besides that, the subtitle on mutual funds, bonds, options, and ETFs shows how pools of funds can be utilized to make investments. In Apart from that, value investing shows how underpriced stocks can become significant. The subtitle on how capital gains are taxed enables the online investors to know the types of taxes that are applied on returns that result from the trading of shares online and methods they can use to report the profits. The chapter gives learners an opportunity to learn about other aspects of online investing including the trading of stocks and options through the internet and diversification of online investments, which reduces risk.

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## KEY TERMS AND DEFINITIONS

**Bonds:** A debt investment in which an investor loans money to an entity which borrows the funds for a specified period of time at a fixed interest rate.

**Mutual Funds:** An investment vehicle that is made up of funds from many investors with the objective of investing in stocks, bonds, money market products and similar assets.

**Online Trading:** Individual investors buy and sell stocks over an electronic network through a brokerage company.

**Portfolio Management:** Professional asset management of different securities to reach investment goals.

**Stocks:** Defines the ownership certificate of any company. A share means the stock certificate of a particular company.

**Value Investing:** The strategy of selecting stocks that trade for less than their intrinsic value.

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# Chapter 3
# The Use of Technology in Organizations

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## ABSTRACT

*Multinational Corporations (MNC) face the challenge of compete in the new interconnected business environment. In particular technology is recognized as a factor that boost productivity and competitiveness and drives the business connectivity which in turn involves cross-borders goods, services and financial flows. MNC is recognized as being possessed of high-tech assets, and also, resources including capital, management skills and R&D capabilities and subsidiaries can get them, from its holding company, and they transfer technology to local businesses. A knowledge transfer, running parallel to the technology transfer take place benefiting to the local economy. Foreign Direct Investment (FDI) is considered as the primary vehicle to facilitate technology transfer (and underlying knowledge flows) toward emerging countries. The ultimate goal of the MNC is related to leverage technology and knowledge transfer in order to maintain a competitive edge and move toward even higher value-added activities.*

## INTRODUCTION

Cemex, the world's third largest cement company, reached their size thanks to the use of a technique called "The Cemex Way", a corporate philosophy that allows the Mexican company to transfer and obtain the knowledge from an acquired foreign company. Originally designed as a computer system that allows Cemex CEO, Lorenzo Zambrano, to know in real time how the cement plants were performing, "The Cemex Way" today is one of the best examples of how a Multi National Corporation (MNC) can transfer technology using the Direct Foreign Investment (FDI) to create a competitive advantage based in knowledge to their subsidiaries along the world. Zambrano, as many others Multi National CEO's, learned the value of information in an interconnected world. A world in which the difference between a company based on a developed nation and a global leader based in a country like India, Mexico or

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Brazil is not as clear as before. Technology has been part of the success, because thank to it, these organizations have been able to take advantage of the knowledge and innovation regardless of where they are located. (Stewart, 2015)

The knowledge can flow from the parent company to the subsidiary and from the subsidiary to the local companies or vice versa, leveraged by through Direct Foreign Investment (FDI) and technology, the mix will determine different scenarios that describe the way in which organizations create or absorb knowledge. The challenge for the MNCs will be decide which of these scenarios will has the potential to increase their productivity and innovation in line to find their own "Cemex Way".

In this chapter the use of technology in the Multinational Corporation (MNC) is addressed. An interconnected world is emerging and that circumstance implies an increase in worldwide goods, services and financial flows. Technology is well recognized as an enabler of these flows and the MNC faces the challenge to diffuse knowledge across borders taking advantage of the transfer of technology that takes place among headquarters and its subsidiaries. Governments of emerging economies recognize MNC as having superior technology so in recent years have changed their public policies to open the doors to foreign investment. FDI plays the principal role as the technology transfer facilitator. In this chapter the 3M case is presented in order to understand how the following factors; FDI, the factors driving productivity and competitiveness within a country and the country's particular stage of economic development are enablers of technology and knowledge transfer. Also this case helps to understand how using the matrix *Knowledge transfer based on technology and FDI*, helps to select what technology transfer strategy is appropriate to compete. A final section clarifies that MNC must not just use technology to compete, but to diffuse knowledge associated to those technology transfers in emerging countries.

## AN INTERCONNECTED WORLD

The rapid advances in technology and infrastructure (nowadays mainly cloud-based), coupled with the pervasiveness of the Internet have brought unexpected growth in ICT access and connectivity to the enterprises around the world, causing major changes in global business scenario. According to the Telecommunication Development Bureau, a business division belonging to International Telecommunication Union (2015), between 2000-2015 global Internet penetration grew 7 fold from 6.5% to 43%, meaning that globally 3.2 billion people are using the Internet and from those about 2 billion come from developing countries. Even though the rate of Internet penetration in emerging countries is increasing quickly (25% per year over 5% in developed countries), this is due to the still low Internet penetration in emerging countries (35% in most of the emerging countries against 70% on average in developed countries) (Nottebohm, et al., 2012).

The Mobile broadband is certainly the most dynamic market segment, reaching an overall 47% mobile penetration in 2015 (a value that increased 12 times since 2007). By end 2015, there are more than 7 billion mobile cellular subscriptions, corresponding to a penetration rate of 97%, up from 738 million in 2000, Mobile-broadband penetration levels for developing countries are around 39 active subscriptions per 100 inhabitants, however in the Americas it is one of the highest (77.6), ranking second globally (ITU, 2015), In developing countries global subscriptions increased from 53% in 2005 up to 73% by 2010, such that the development path taken by emerging countries is partly a result of the high levels of mobile phone adoption(Nottebohm, et al., 2012). Bock et al (2015), emphasized that this new business environment is deeply impacted by a whole new universe of connectivity "that's local (it's always



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where you are), personal (tailored to your needs and preferences), social (all your friends are there as well)—and it's always on (Continuous access to information)" bringing about a shift towards an increasing mobile, flexible and interconnected business environment (Cisco, 2014). Multinational Corporations (MNC) – an entity evolved from its national origins to the state of having business activities in more than one country (Porter, 1980) (Kogut & Zander, 2003) – have been affected by this new interconnected business environment, due to the inherent nature of its operations requiring constant communication and information exchange among subsidiaries and parent (Aghina, De Smet, & Heywood, 2014). MNC compete using technologies exploiting this new interconnected business environment, enabling the rise of a new type of MNC that emerge not only in developed countries but have recently emerged from developing countries such as Brazil, India, China, South Africa and Mexico (Santiso, 2007). In some sectors these companies are global leaders beating corporations from developed countries. Examples include: Mittal (India), which in 2006 took control of its competitor Arcelor – headquartered in Europe – and due to this action, Mittal became the leader in the steel sector. Similar examples include: Cemex (Mexico) competing against Lafarge (France) and Holcim (Switzerland), Companhia Vale Do Rio Doce (Brazil) spearheading international rankings, along with the Anglo-Australian company BHP Billiton and the British-Australian company Rio Tinto Group. (de la Torre, Didier, & Pinat, 2014). Underlying the success of these companies is their ability to generate and utilize effectively technological resources (Manolopoulos, Dimitratos, Young, & Lioukas, 2009). The old-fashioned focus where the MNC only seeks profit maximization with different pricing strategies (Magee, 1981) has been evolving to include the dissemination of knowledge across borders where the company develops their activities, using its technology and organizational efficiency. With this productive knowledge, the company is seeking a competitive advantage (Kogut & Zander, 2003). Research pointed out that creation and exploitation of technology is one of the main reasons explaining the success and growth of MNC (Manolopoulos, Dimitratos, Young, & Lioukas, 2009) within a newly interconnected environment that forms a digital ecosystem (Dreischmeier, Close, & Trichet, 2015). Digital ecosystems is a network of companies, individual contributors, institutions, and customers that are interconnected and collaborate (Bock, Field, Zwillenberg, & Rogers, 2015) in the processes of the organization and encompasses different value-chains in different industries and countries in order to increase efficiency and innovation (Dreischmeier, Close, & Trichet, 2015), (World Economic Forum, 2015). Waterman, Peters, & Phillips (1980), established such ecosystems as a framework where structure, people (skills, staff, style and shared values) and processes (systems) perform work to produce specific products/services (Alter, 2013). In these so-called ecosystems, companies are no longer functional silos, they share information throughout the chain, integrating processes, people and technology among different businesses, industries and even countries. In this new interconnected world, emerging countries face a great challenge and several opportunities since the economies of developed countries are more connected than their counterparts in the emerging countries (McKinsey Global Institute, 2014).

Given both the growing business connectivity in emerging markets and the growing impact of mobile technologies, an increasing share of global economic activity involves cross-border flows. Today, 35% of cross-borders goods, up to 20% more than in 1990. In 2012, the combined value of trade in goods and services plus financial flows reached $ 26 trillion, equivalent to 36% of global GDP, compared to $ 5 billion, 23% of the world GDP in 1990 as shown in Figure 1. More than a third of all financial investments in the world are international transactions, and one fifth of Internet traffic is trans-boundary (McKinsey Global Institute, 2014).



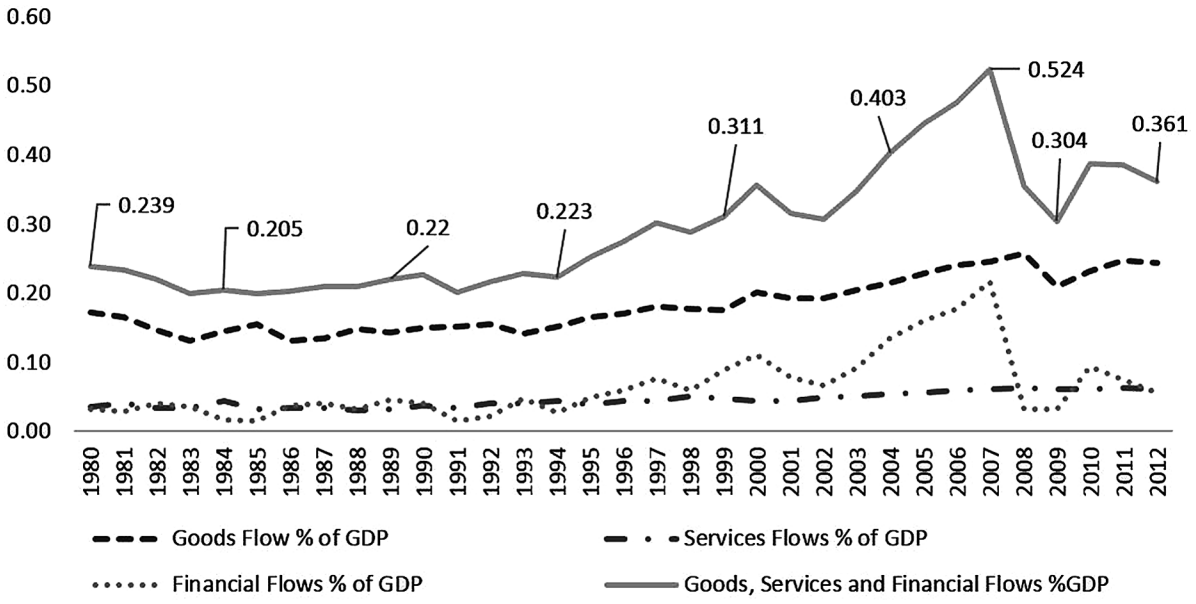
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Unquestionably, we live in an interconnected world where economies of developed countries remain more connected to these cross-border flows than emerging economies do, Germany tops the list while Hong Kong ranked second and the United States in third place; nevertheless, this situation is rapidly changing. By 1990, developed economies had 54% of all trade in goods, but in 2012 the flows fell to 28% due to the increased participation of emerging economies in world trade. Among the emerging economies increasingly connected to these flows of economic transactions are Brazil, China, India, Morocco and Saudi Arabia. As of 2014, emerging economies account for 40% of the goods flows. (McKinsey Global Institute, 2014)

## MULTINATIONAL COMPANIES AND TECHNOLOGY

Before 1980s, governments from developing countries considered that the MNC invested in their countries just to take advantage from laxer local environmental regulations, cheap labor force and to exploit the offer of relatively cheap natural resources. Regarding the technology that MNC was bringing to the host country, it was considered mostly obsolete and/or harmful for the environment (they could even be prohibited in their home country); thus, local governments imposed strict controls or even severe legal restrictions restricting the MNC activity. Nowadays, this situation has changed in many emerging countries, because it is now well recognized that MNC (especially in the most dynamic and knowledge-intensive sectors) have technological assets and knowledge that can help emerging countries to close the technological gap (Chudnovsky & Lopez, 2003). This point of view is extremely important because technology is an enduring good, which is used by modern organizations to compete; its importance is such that current views consider that the corporate resources must be dedicated to its creation, going after

*Figure 1. Worldwide goods, services and financial flows as percentage of the GDP, 1980-2012*
*Source: McKinsey Global Institute analysis, World Trade Organization.*






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the final purpose of generating future benefits, i.e., the enterprise must become a *Technology Producing Company* (TPC) (Magee, 1981). In this point of view, technology is also regarded as a public good, which once created, can be used by other companies (or the same subsidiaries of the MNC). Some authors (Kogut & Zander, 2003), (Teece, 1977) argue that technology is not a public good because the estimated technology transfer cost, - i.e. the cost of sharing technology with other companies or subsidiaries of the MNC-, can vary from 2% up to 59% of total costs. These costs are derived from the coding and teaching of complex knowledge to the recipients; reason why these costs are reduced with each technology transfer and with the experience of the technology receptor. However while this situation does not involve reducing performance of the TPC, technology can be considered as a public good (Magee, 1981).

MNC are recognized as specialists in the generation of sophisticated technologies since yields are higher for these technologies than for simpler technologies; as a result, they require highly skilled labor in the creation and ownership of such sophisticated technology work. The abundance of this highly skilled labor in developed countries gives them a comparative advantage in the creation and exportation of new technologies. On the other hand, emerging countries need simple production processes and simple products. Moreover, the MNC can hardly provide the technology that is most useful to these countries, as simpler technologies are easier to copy than sophisticated technologies (Magee, 1981).

The presence of a dominant firm in the industry promotes R&D activities and investment in innovation because the appropriability costs are lower for these structures in the industry. Driffield, Love, & Yong (2014) report two direct effects of MNC's R&D activities, as shown in Table 1; (1) it contributes directly to innovation and knowledge creation; and (2) it forms the basis for the absorption capacity of technology from their subsidiaries.

Thus, the MNC is more efficient in the technology transfer through its own subsidiaries than through cross-border markets, this has been named "the appropriability problem" and is studied in detail within the appropriability theory of the Multinational Corporation that talks about creation and appropriation from the yields of the private inversions in the information market. Chudnovsky and Lopez (2003) consider that as a result of this appropriability problem, the subsidiaries of MNCs in emerging countries often have more advanced technologies and management practices than local businesses usually have; however, MNC occasionally makes the mistake of importing technologies and procedures without any kind of adaptation to the local conditions (Jaguli, Malek, & Palil, 2014); as a result, the local companies take the responsibility of fitting the standards, technologies and management problems of the country (Magee, 1981) with the risk of underestimating the time and resources needed to compete with these technologies globally (Baumgartner, Hatami, & Vander Ark, 2012). MNC should be able to understand the context of the emerging market in which it is located, find the best partners – the company gets greater benefits if it is integrated with key members of their local supply chains (Sanders, 2008)– and develop talent. Khanna (2014) refers to this as contextual intelligence: the ability to understand the limits of our knowledge and adapt that knowledge to a different environment from which it was developed.

*Table 1. Benefits arisen from MNC's R&D activities*

| | |
|---|---|
| 1 | Innovation and knowledge creation. |
| 2 | Improve Local subsidiaries' technology absorption capacities. |

Source: Prepared by the author based on; (Driffield, Love, & Menghinello, The Multinational Enterprise as a Source of International Knowledge Flows: Direct Evidence from Italy, 2010).



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The degree to which emerging economies benefit from these tangible and intangible assets owned by multinationals, has become a key issue in the research and policy for social and economic development agenda (Chudnovsky & Lopez, 2003). Literature mentions three specific benefits; Firstly, MNC activities in emerging countries have the potential impact of increased competition in domestic markets, forcing local companies to improve their productivity through the optimization in the use of existing technologies or by adopting new technologies. Secondly, local companies can make use of superior technologies and management practices belonging to multinational companies through imitation or by hiring workers trained by multinational companies. Third, if the subsidiaries of the MNC develop innovation activities in emerging countries, they can generate improved human capital (Chudnovsky & Lopez, 2003), (Kogut & Zander, 2003). Technology transfer lies in the heart of the growth of MNC (Kogut & Zander, 2003), and this perspective is well-known by the governments of emerging countries, which is why according to the new perspective discussed at the beginning of this section, encourage multinationals to establish themselves locally and expect to generate technology transfer to the local businesses (Glass & Kamal, 1999). In general, the MNC brings these emerging countries not only technology, but also, its resources including capital, management skills and R&D capabilities (Jaguli, Malek, & Palil, 2014), as shown below in Table 2.

However, this model assumes that subsidiaries can get technology from its holding company, and they transfer technology – whether by accident or strategy – to local businesses. In practice, there is no guarantee that these conditions are fulfilled, as not all MNC employ cutting edge technology, nor all subsidiaries automatically have access to the technology from its parent (Driffield, Love, & Menghinello, 2010), or just that the parent is not willing to share this technology in order to prevent it from being transferred to third parties or imitated through reverse engineering. The latter is a real threat for MNC, so much that Glass & Kamal (1999) consider putting limitations to imitations is a valid strategy in order to protect the development of innovative products or process innovation. Despite these inherent risks and costs, transfer of technology represents a strategy used by MNC to gain local market share (Saldanha, Mello, Knemeyer, & Vijayaraghavan, 2015).

Local businesses can obtain technology from MNC generally through four forms:

1. Purchase of technology in contractual forms (patents, licenses, turnkey contracts, etc.)
2. Joint ventures between local firms and multinationals (including what has been termed ‘strategic partnerships’). Different studies (Luo & Wang, 2012), (Jaguli, Malek, & Palil, 2014) have shown that this relationship between MNC and local businesses is considered an appropriate channel for the technology transfer.

*Table 2. Benefits that a MNC gives to a country in which it operates*

| | |
|---|---|
| 1 | *Increase competition*. Local companies uses (or adopt) technology to increase competitiveness in order to beat MNCs and local competitors. |
| 2 | *Use of superior technology and processes*. Local companies copy superior technologies coming from MNC through imitation or hiring MNC’s workers. |
| 3 | *Improved human capital*. Local workers acquire the knowledge generated by MNC’s innovation activities. |
| 4 | *General resources.* Capital, management skills and R&D capabilities |

Source: Prepared by the author based on; Diffusion of environmentally friendly technologies by multinational corporations in developing countries, Chudnovsky & Lopez, 2003. Knowledge of the Firm and the Evolutionary Theory of the Multinational Corporation, Kogut & Zander, 2003 . and Do MNCS’ high quality and standard requirements matter? A channel for vertical spillovers., Kogut & Zander, 2003.



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3. Reverse engineering, by imitation, copy, etc. (without the consent of MNC).
4. Foreign direct investment (FDI). Considered one of the most important. Modern theory of Technology Transfer in MNC, measures the growth of the apparent productivity in the host economy, associated with foreign direct investment (Driffield, Love, & Menghinello, 2010), (Jaguli, Malek, & Palil, 2014).

The choice between these four forms of technology transfer depends mainly on:

- The overall strategy of the MNC
- Factors driving productivity and competitiveness in a country in combination with
- The country particular stage of economic development

This combination of factors determines whether there are local companies with endogenous innovation capacity (Chudnovsky & Lopez, 2003). Recent studies (Driffield, Love, & Yong, 2014) suggest that the technology transfer from the MNC is most effective when the subsidiaries are located in the same regional block as the headquarters. A very high proportion of the flow of goods in the world is made within one of the three main regional blocks: Europe, North America and Asia. Although as noted above, the growth of commodity flows in emerging blocks such as Asia and South America, has been increasing. It is estimated that in 2025, the annual revenue only for the concept of trans-border e-commerce could reach $250 billion and up to 350 billion dollars, against the current $80 million dollars. Asia will account for 40% of the trans-border income, while in North America will account for 20% and South America for 10%. (van Heel, Lukic, & Leeuwis, 2014). So far, the empirical work enables to infer the existence of a knowledge transfer running parallel to the technology transfer from a MNC with advanced technology to a subsidiary in a developing country (Driffield, Love, & Menghinello, 2010). The flow of technology transfer between the parent and the subsidiary where the four possible types of knowledge flow that can occur in an MNC are shown in the Table 3.

It may be observed from the Figure 2 that Quadrant 2 represents the standard situation where a multinational company operates its superior knowledge in an emerging country by transferring knowledge to their subsidiary(ies). Quadrant 3 represents the situation in which knowledge flows from the subsidiary(ies) to the parent company. In the latter situation, the subsidiary is not limited to the adaptation of technology, but it becomes an active technology developer, either because MNC has developed a local research center or merely due to their business strategy, the MNC has developed a "listening post" designed to source knowledge from the host country. Driffield, Love, & Menghinello (2010) describes it as " Placing the R&D near the principal research and innovation clusters enables the absorption of

*Table 3. Technology transfer flows*

| | | Transfer from subsidiary to parent | |
|---|---|---|---|
| | | **Yes** | **No** |
| Transfer from parent to subsidiary | **Yes** | (1) Double way transfer | (2) Transfer with knowledge exploitation |
| | **No** | (3) Transfer and knowledge acquisition | (4) No knowledge transfer |

Adapted from (Driffield, Love, & Menghinello, The Multinational Enterprise as a Source of International Knowledge Flows: Direct Evidence from Italy, 2010)



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learning due to the geographical proximity to such sites. The research center gathers information about emerging country technology, in order to be transferred to the headquarters". It is a real challenge for the MNC go for a flow of knowledge different that the one presented in quadrant 2 because the company rarely commits resources for R&D outside their home country and little evidence has been found that the use of Information Technology (IT) contributes to decentralize the R&D activities in MNC; on the other hand, there seems to be tendency to centralize R&D using IT, just in their own home country or just in subsidiaries within developed countries, discouraging innovative activities from local firms and subsidiaries (Kumar, 1996).

The way in which knowledge flows in the matrix depends equally on the three reasons mentioned above (1) the overall strategy of MNC, (2) the factors driving productivity and competitiveness in a country in combination with (3) a country's particular stage of development. Particularly, technological readiness, workforce preparation and that the country finds itself in the innovation-driven stage (the final stage of economic development of a country) play an important role in the R&D of the local company to generate knowledge directly. Although being in quadrants 1 and 3 of the matrix may be an indicative of the country's technological development; one must be careful with this affirmation since this is also an indicative of privately owned knowledge which usually cannot flow to local businesses (Driffield, Love, & Menghinello, 2010).

Generally, MNC are recognized to have specific advantages with technology that enable them to overcome a potentially unfavorable position relative to domestic firms in foreign markets. Such benefits typically include the possession of information technology or knowledge of a process in which technology is involved, the management capacity, skilled labor in the use of technology, and their ability to perform R&D. However, MNC can also take from the host country's national companies their superior knowledge of local markets as well as consumer preferences and business practices because they possess superior intangible productive assets, a reputation, or even a greater technological knowledge than the MNC (Jaguli, Malek, & Palil, 2014). Moreover, although it is traditionally recognized that the multinational corporations have superior technology, literature (Driffield, Love, & Yong, 2014) reports models that are not based on the assumption that knowledge and/or technology flow only from the parent company to the subsidiary and subsequently to the domestic industry as a 'secondary' effect, but conversely the knowledge or technology flows to the MNC from the national companies, which is known as "reverse spillovers".

The reverse flow occurs when a host country has a significant presence of Multinational Enterprises who have chosen the country for its superior knowledge in technology. In these conditions it is reasonable to expect that the "reverse spillovers" arise either among local companies and national subsidiaries of the MNC or between domestic and foreign MNC subsidiaries (Driffield, Love, & Yong, 2014). Nevertheless, evidence of such "reverse spillovers" in emerging countries remains inconclusive although there have been documented cases of technology transfer and learning between MNCs and their suppliers and subcontractors in emerging countries, these studies rarely reveal that multinational was able to extract all the benefits from new technology generated among their suppliers. Additionally, there is no clear evidence of side effects, such as the use of MNC's employee skills at local companies (Chudnovsky & Lopez, 2003). However, it would be rash to consider that these inverse flows occur only among developed countries. Research on "reverse spillovers" in emerging countries is still a research subject currently in development; for instance, (Luo & Wang, 2012) report the presence of these "reverse spillovers" in regions of China where no sophisticated technology or R&D centers are found.



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## ACCESS TO TECHNOLOGY THROUGH DIRECT FOREIGN INVESTMENT

If the technology was developed in the emerging country is an irrelevant issue, because the real issue is that companies operating within the country should have access to this technology and the ability to absorb and use it. In this sense, it is widely recognized that foreign direct investment (FDI) is considered as the main vehicle to facilitate technology flows toward emerging countries (Glass & Kamal, 1999), (Jaguli, Malek, & Palil, 2014). Foreign direct investment is the transfer of an intermediate good, which accounts the competitive advantage of a company that may well be either the knowledge that underlies the technology or superior management activities (Kogut & Zander, 2003). Nowadays, most emerging countries look favorably foreign direct investment as a part of a more open and favorable government policy towards international market businesses (Chudnovsky & Lopez, 2003). This policy change is reflected in the growing number of bilateral trade agreements that have been recently negotiated. Certainly, there are many elements that may help explain why a developing country can be interested in attracting foreign direct investment – it is recognized that FDI is multifactorial; therefore, the implications for the local industry can be equally diverse (Driffield, Love, & Yong, 2014)–; nonetheless, technology/ knowledge transfer is one of the dominant factors, among several others (Glass & Kamal, 1999), due to the belief that the main advantage of a business takes to foreign markets is its possession of superior knowledge (Kogut & Zander, 2003). The first theory that examined the effects of FDI was the theory of industrial organization (Hymer, 1976). This theory analyzes how FDI affects local businesses in a country. Theoretically, the arguments suggest that FDI can generate positive *spillovers* to local firms through knowledge and technologies. *Spillovers* are defined as the indirect effects in the productivity that occur in domestic firms as a result of transfer intangible assets to the affiliate (Sinani & Meyer, 2004). It is noteworthy that FDI is an important external source for the dissemination of knowledge and thereby promotes competition in the local industry because usually when the MNC invests in a foreign country, it often takes leading and patented technology as well as advanced production skills to successfully compete with local businesses, and these are the comparative advantages that can be transferred to local businesses (Jaguli, Malek, & Palil, 2014).

### Case Study[1]: High Technology Markets and Emerging Economies

Minnesota Mining and Manufacturing Co. was founded in 1902 pursuing the goal to extract the mineral corundum from a mine called Crystal Bay at Minnesota. Swiftly the company turned to other materials and other products and nowadays 3M employs 88,000 people worldwide and produces more than 60,000 products. By 2013 3M topped $31.8 billion in sales around the world (international sales $20.1 billion accounts 63% company's total sales), 86 national subsidiaries and 70 international affiliates (3M company information, 2015). Due to 3M Company's policies, several of these affiliates are based on countries classified as emerging economies. Different criteria as those from International Monetary Fund, BRICs+, N-11 (Next eleven), FTSE Group and Russell Investments list China as a country that has some characteristics of a developed market, but does not meet standards to be a developed market. Notwithstanding that, due to its high growing rates, China may be classified as a developed country in the near future.

Since 1984 3M started to set up operations in China and has grown to a $3 billion business, (about 10% of 3M's global business just below $9.5 billion from USA). The company's China R&D center is already the largest one 3M has outside the US and since September 2013 is as a separate business-



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region; *the greater China region* (China, Hong Kong, Taiwan and Mongolia form the new area known as the Greater China region). 3M subsidiaries are basically local organizations and *greater China region* has 33 or 35 big business units from a division standpoint. All are managed on a local basis, because as Francis Hu, COO of 3M China says "With only a couple of exceptions, virtually all in the management team are local. Localization doesn't only mean people", in product development subsidiary is leveraged by technology/knowledge transferred by headquarters, "but the aim is always local products. From a strategy standpoint, we want to be very local". Business environment is changing rapidly in China, Hu saw the need to reallocate resources to the fast growing water purification business, growing it from RMB 6 million to RMB 25 million in two years. Another fast growing business areas in China, are; automotive (Great Wall Motors, a Chinese auto company is doing well in this sector), security and medicine. 3M China faces serious threats from competition, Hu argue at this point "the improvement of the local companies was surprising to us. So you think about having two groups: the foreign company trying to be local; the local company is trying to be high-tech or move up in the portfolio. I think the (local) group is doing better than the (foreign) group".

The concept of competitiveness has been commonly applied to two levels of analysis, the enterprise level and the national level. The general definition of competitiveness refers to the advantage (or the disadvantage) of the products or services of an organization or a country in the international markets (Hult, 2012). It is considered that competitiveness in high technology markets is closely related to the absorption and creation of technology capabilities of the company as well as various factors such as level of infrastructure of the company/industry and skilled labor, among others. From this perspective, *how 3M in China compete in the high-tech market*? *What technology transfer strategy is appropriate to select in order to make the company competitive in high-technology markets*?

*How companies in emerging countries compete in the high-tech market*? Empirical evidence shows illustrative cases such as South Korea and Taiwan where companies received strong government support to transfer technology to their national companies during their industrialization process, as well as cases like Malaysia and Thailand who chose to become exporters of high-tech components based on their cheap and highly skilled labor force. A more illustrative example is found in India where technology was adapted for local consumption and in turn generated an industry in the area of computer software. Some countries have developed their own technologies such as Brazil (aviation, electronics and computers), India (software) and Malaysia (electronics). In some cases, the strategy should evolve as the environment changes. An example of this is the case of the automotive components industry in India, which at first started with foreign companies either working collaboratively or as joint ventures and later evolved to integrate themselves into the global industry value chain with the ultimate goal of succeeding in the creation of their own knowledge.

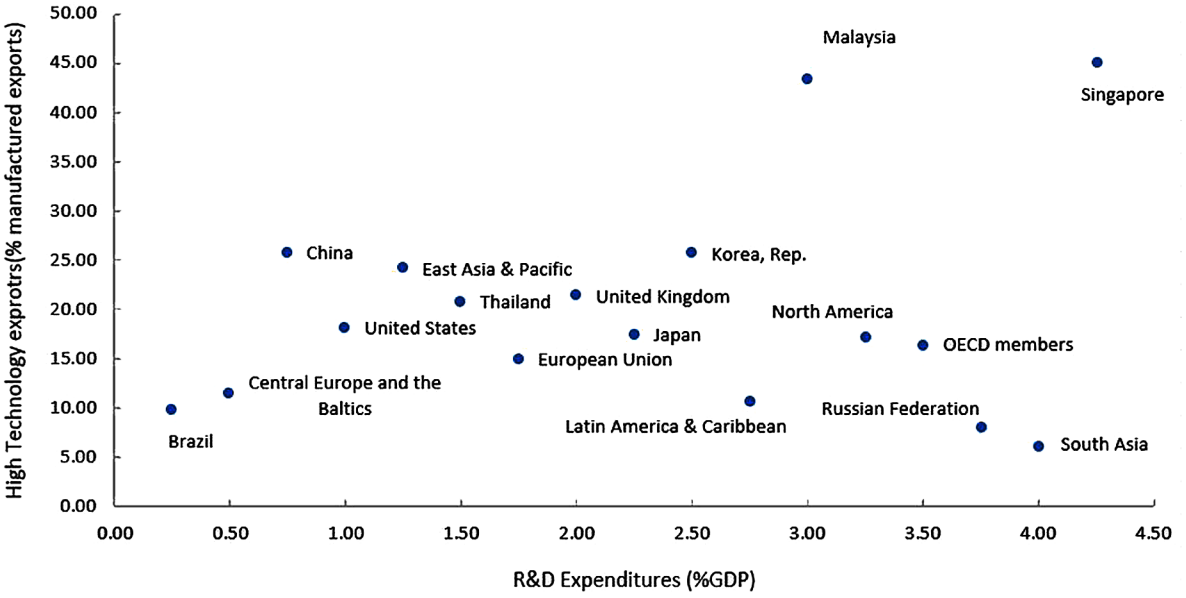
The chance for emerging countries to compete in high-tech markets depends on the factors driving productivity and competitiveness within a country and are in turn influenced by the country's particular stage of economic development (mentioned earlier). Particularly relevant are; the absorptive capacity of technology and FDI as enablers of technology and knowledge transfer, and that the country is in the innovation-driven stage (or as a minimum the MNC has a R&D center in the host country). It is noteworthy that a positive correlation was found between investment in R&D and high-tech exports of a country (Alvarez & Marin, 2013) as shown in Figure 2.

This begs the question *what technology transfer strategy is appropriate select in order to make the company competitive in high-tech markets*?



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*Figure 2. R&D expenditures vs. High technology exports*
*Source: The World Bank IBRD-IDA*




To answer this question an adjustment was made to the array *of knowledge flow resulting from the technology transfer* involving internal and external factors in technology transfer. Two factors should be considered:

- The technological capacity of the company that involves at least two levels; creation and absorption technology. This factor represents the innovation level at the company and accounts for internal factor.
- The FDI as an external factor to exploit a competitive advantage. Similarly it involves two levels; inward and outward flows. It represents the role of MNC.

The combination of these two positions of internal and external factors define selection strategies of knowledge transfer based on technology and FDI as shown in the following Table 4:

In the matrix there are two quadrants of interest for emerging economies namely CI and AO. Quadrant CI encompasses those countries with sufficient innovation capability to create technology and have inward FDI to the country. The relationship between MNC and innovation in the company usually generates involuntary *spillovers* by transferring technology to other local companies. In this situation local businesses may have a learning experience as a result of the *spillover* effect.

Additionally, quadrant AO represents those economies that break into international markets through outward FDI, despite these economies usually have a delay in developing technology compared with developed countries. Learning abroad would be the most relevant process in this quadrant.

The central idea for emerging economies lies in the determination of the transit possibilities to the more dynamic quadrants, moving from AO to CI and to CI to CO; for example, it is remarkable how during 1960-1990 period, the so-called Asian Tigers, Singapore, Hong Kong, Taiwan and Korea were



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*Table 4. Knowledge transfer based on technology and FDI*

| | | | |
|---|---|---|---|
| Innovation | **Technology creation C** | CI Local Learning (Emerging economies) | CO Knowledge-based update (Developed economies) |
| | **Technology absorption A** | AI Adaptation (Non-developed economies) | AO Foreign learning (Emerging economies) |
| | | **FDI Inward I** | **FDI Outward O** |
| | | **MNC** | |

Adapted from (FDI and Technology as Levering Factors of Competitiveness in Developing Countries, Alvarez & Marin, 2013)

able to leap from quadrant AI to quadrant CO, going through significant increases in FDI flows and achieving high rates of growth and industrialization.

According to Hu, 3M China plans to face threats in the high-tech market using the so called location management strategy, which consists of (1) taking advantage from government drive-innovation policies; as far as China in in the innovation-driven stage (2) being local, (3) putting more resources into technology and R&D; 3M china is updating from quadrant AO to quadrant CO "(We) have to start to think of the alignment with many local companies: customers and suppliers; trying to become part of them … from a manufacturing standpoint, we're going to move over to the west, reason is not cost because 3M is not a low-cost manufacturer … the government is promoting investment, promoting (the) industrialization of those regions so we follow our customers" pointed Hu.

There is substantial evidence to say that technology transfer flows (and underlying knowledge) are a motive for FDI in a country (Guillén & García-Canal, 2011). In MNC, the knowledge transfer usually moves from the headquarters based in a developed country toward a subsidiary based in an emerging country. However, it can also occur as a trans-boundary flow from a developed country with low R&D capacity or like a reverse flow from subsidiaries in the host country to developed countries or else as reverse spillovers.

## KNOWLEDGE: THE FINAL QUEST

MNCs have left the old approach based on the market scavenging and the hunt for resources, moving toward a modern vision of efficiency and pursuit of knowledge (Dunning, 2006) where FDI is done not only to exploit the technology in the emerging country where it is taken, but to achieve a technology transfer that implies a transfer of knowledge that is used as a competitive advantage in the local economy or even at their home country (Driffield, Love, & Yong, 2014). Thus, MNC is proven to be an efficient (and effective) way to create and transfer knowledge across borders and the FDI is performed to achieve the transfer of an intermediate good called knowledge, which embodies the advantages of a company, either as knowledge underlying technology, production processes or other management activities in the company, (Kogut & Zander, 2003). Caves (1971) was the first one to establish this relationship when he pointed out that "the company producing a differentiated product controls knowledge about serving the market that can be transferred to other national markets for this product at little or no cost." Alvarez and



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Marin (2013) further added the condition that "this market is imperfect." However, the cost of the flow condition should be analyzed carefully. As noted in the previous section, technology is a public good and the underlying knowledge has the property of being likewise a public good (Buckley & Casson, 1976), i.e. that can be transferred to a marginal cost zero, so that is easily transferred and difficult to protect. Glass and Kamal (1999) point out that MNC's workers can disseminate their knowledge to local businesses when they change employers, so the MNC should pay a premium wage to avoid leakage of its workers to local businesses. This policy usually does not favor local workers who do not earn this bonus. However, Teece (1977) argues, that the transfer cost is not close to zero (or zero) in all cases; actually, in his research he states that the characteristics of knowledge itself determine the costs and the transfer mode. These characteristics, understood as tacit knowledge and implicit knowledge, are extremely relevant in the context of technology transfer. The information is often delivered through documents that describe the necessary procedures for the use of technology. This information is structured and can be stored (explicit knowledge), but in many cases technology involves factors that are not possible to structure; for example, the knowledge that the engineers and workers who work in the foreign subsidiary of MNC possess (tacit knowledge). Companies create knowledge (tacit and implicit) and use it to produce technologies and successful products (Ichii, Hattori, & Michael, 2012).The main determinants of transfer costs are the degree of previous experience with technology transfer, the country's particular stage of economic development, and the number of companies using similar technologies. These variables capture the direct experience with the transfer of technology, the understanding of its use over time, and the common knowledge of its properties (Dhanaraj, Lyles, Steensma, & Tihanyi, 2004); thus, they represent approximate measures of tacit knowledge transfer. Kogut and Zander (2003) indicate that somehow, the MNC specializes in internal transfer of tacit knowledge. Seen from an "absolutist about coding position," this tacit knowledge can be codified, but the costs of doing so are higher (Ancori, Bureth, & Cohendet, 2000) than the oldest technologies or simple technologies that are often better coded, so they are less costly to transfer. The less easily to be codified and more difficult it turns out to teach the technology, the more likely the transfer is going to be more expensive. This result implies that the choice of transfer mode is determined by the efficiency of the multinational firm in transferring knowledge in relation with other companies, and not to relative to an abstract transaction market (Kogut & Zander, 2003). The activities of FDI and the creation/assimilation of technology enable the MNC to specialize in the transfer and recombination of knowledge. One effect reported by Sjöholm (1999) derived from these transfers is that knowledge, unintentionally overflows (*Spillover*) horizontally or vertically to local businesses. Furthermore, there is empirical evidence that shows examples of these spillovers in emerging countries such as shown by Schoors & Bartoldus (2001) in Hungary; Lopez-Cordova (2003) in Mexico; and Javorcik (2008)in Lithuania. Javorcik himself notes that these *spillovers* are more likely to occur vertically as EMC can benefit from the improved performance of its suppliers. This improvement of local companies supplying EMC leads to the production of a greater variety of intermediate goods, which enables the emerging economy gain a comparative advantage in producing more sophisticated end products (Jaguli, Malek, & Palil, 2014). This situation is illustrated in the modified matrix of knowledge flow resulting from the technology transfer between the parent, and the subsidiaries with the inclusion of spillovers and local businesses as shown below in Table 5.

The top row describes knowledge flows from the headquarters of the MNC to its foreign subsidiary. This flow can generate spillovers to local firms (quadrant 1) or not (quadrant 2). In both cases there is utilization of the knowledge, but in the second case, this does not represent an advantage for the emerging economy. Quadrant 3 represents a special situation, where despite the absence of knowledge



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*Table 5. Technology Transfer flows Parent/Subsidiaries/Local companies*

| | | Transference from subsidiary to local companies | |
|---|---|---|---|
| | | **Yes** | **No** |
| Transference from parent to Subsidiary | **Yes** | (1) Harnessing knowledge with spillovers | (2) Harnessing knowledge without Spillovers |
| | **No** | (3) Only Spillovers from subsidiary | (4) No knowledge transfer or Spillovers |

Adapted from (Driffield, Love, & Menghinello, The Multinational Enterprise as a Source of International Knowledge Flows: Direct Evidence from Italy, 2010)

transfer from the parent to the subsidiary, the latter is able to provide knowledge generated internally (in an intentional or accidental way) to local businesses. Quadrant 4 is the situation where there is no flow of knowledge in any way. This last situation can happen when a government policy, to avoid losing a competitive advantage, or other factors limit the cross-border knowledge flow.

A MNC in an emerging country must compete based on its superior technology and knowledge. This implies that the company has the ability to generate and transfer tacit knowledge that is difficult to imitate. Thus, the MNC must take care not only of the competitiveness of other companies and market demand, but the degree to which its advantage cannot be replicated by competitors or at least it cannot be replicated more quickly through imitation by its competitors.

Evidence from literature demonstrates the importance of technology, or expressed in a better way, knowledge flows (flows underlying technology) represent for the MNC. There are many activities derived from the ideas displayed in this chapter that MNC can be implement in its relations between parent, subsidiary and local companies (including, but not limited to improving the quality of local product suppliers, supporting local suppliers to meet international quality standards) that are not covered here, but it is left to the reader go deepen their study.

## THE CHALLENGES FOR MNC

Technology has been the basis of many productivity increases in the enterprise. Emerging countries can improve their productivity not merely by adapting exogenous technologies transferred from parent MNC but taking advantage from underlying knowledge at the technology transfer in cross-borders flows. Knowledge is particularly important for emerging economies as they approach the innovation-stage. In the long run, MNC competitiveness can be largely enhanced by technological innovation. Innovation is therefore the ultimate goal of a MNC. In the end, it is not the objective to adapt or even create technology, and certainly, it is not about being provided by the parent or home country knowledge. In the broadest sense, the real challenge for MNC is related to apply knowledge to maintain a competitive edge and move toward even higher value-added activities.

As mentioned earlier, through the location of subsidiaries in technologically advanced regions, MNCs can gain access to knowledge embedded in the region. These subsidiaries gain access to knowledge from two distinct contexts; (1) the MNC headquarters and the other subsidiaries; and (2) an external environment of regional or host country firms (Almeida & Phene, 2004). A research carried out by Phene & Almeida (2008) suggests that subsidiaries absorb significant knowledge from home country firms and from firms in other countries, with a more limited access to the production of knowledge. Nevertheless,



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host country knowledge is critical to the scale and quality of innovation while the knowledge absorbed from other subsidiaries and the parent company within the MNC does not lead to increased innovation. However, recent literature (Cowden & Alhorr, 2013), (Mahajan, 2014) offers strong evidence to consider that more disruptive innovation will be discovered through the firm's internal network rather than through an open networks. Specifically, research indicates that the most disruptive innovations will be discovered in subsidiaries that pursue local market initiatives in emerging markets than in the headquarters at their home country.

While MNCs traditionally dominate high-end markets in many industry segments, there is a strong competition at the lower-end and middle markets, and an increasing number of companies are becoming innovative and can often compete fairly aggressively at high-end markets; thus, innovation has become absolutely critical to the long term success of MNCs. Since MNC subsidiaries play a limited role in MNC innovation, emerging economies (especially those that are not in the innovation-stage) face the challenge to harvest the power of innovation Min Zhou & Patrick Berbon (2012) refer three best practices to meet this challenge; (1) Create an ecosystem that encourages ingenious innovation, which consists of supportive government policies, foreign-educated returnees and a vibrant venture capital system, (2) Product/Service customization; consumers are increasingly more demanding of products that are tailored to their unique tastes and habits, and (3) Developing new technologies and business models rooted in very practical approaches to the market. As far as the key role of innovation as a driver of economic growth and well-being is widely recognized, MNC needs educated and strongly motivated people in order to build an innovation-driven enterprise. Workers with advanced degrees are an essential resource for innovation. MNC should not only consider the importance of FDI, knowledge transfer and an innovation-driven approach, but going beyond and setting up the right environment in place that will nurture, promote, and enable the human factor (Dutta, Lanvin, & Wunsch-Vincent, 2014). The need to understand the role that the human factor along with technology/FDI and FDI plays a critical role in innovation, so the MNC is able to compete in the interconnected world.

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## KEY TERMS AND DEFINITIONS

**Emerging Countries:** Are low-income, rapid growth countries using economic liberalization as their primary engine of growth. They satisfy two criteria; a rapid pace of economic development, and government policies favoring economic liberalization and the adoption of a free-market system (Hoskisson, Eden, Ming Lau, & Wright, 2000).

**Foreign Direct Investment (FDI):** Is an investment made by a multinational corporation MNC or entity based in one country, into a company or entity based in another country for which the foreign investor has control (owning 10% or more of the business) over the company purchased. (Duce, 2003). FDI comes in three types: Horizontal: where the company carries out the same activities abroad as at home, Vertical: when different stages of activities are added abroad and Conglomerate: where an unrelated business is added abroad. This is the most unusual form of FDI as it involves attempting to overcome two barriers simultaneously - entering a foreign country and a new industry. FDI can take the form of greenfield entry that implies assembling all the elements from scratch or takeover that is often covered by the term 'mergers and acquisitions' (M&As) but internationally, mergers are vanishingly small, accounting for less than 1 per cent of all foreign acquisitions. (Financial Times, 2016). Literature (OECD, 2013)shows that FDI creates direct, stable and long-lasting links between economies. Inward foreign direct investment (FDI) will serve as a channel for knowledge and technology transfer to the host country (Hallin & Holmström Lind, 2012).

**Innovation:** For this chapter, the author takes the Innovation definition from Czarnitzki and Kraft (2011): Innovation is the efficient use of the scarce resource knowledge. Knowledge in turn is the result of a firm's own R&D or information spillovers from outside. Information spillover possibly result i.e. from research activities conducted by research institutions, suppliers or customers but the most important source is perhaps information from competing companies.



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**Knowledge Transfer:** Knowledge is composed of know-how and skills that reflect a firm's capacity to deploy resources to bring into effect a desired end (Leszczyńska & Pruchnicki, 2003), and exist two dimensions of knowledge in organizations: explicit and tacit. (Nonaka, 1994). Knowledge transfer includes mostly transfer of tacit knowledge such as knowhow, management, and technical skills so they ensure learning of new information, technical and organizational skills and it is quite different from technology transfer which involves rather the transfer of capital goods such as machinery and equipment. In a new perspective Kogurt and Zander (2003) indicated Firms are social communities that specialize in the creation and internal transfer of knowledge, which helps to achieve firm's superior productivity (Driffield, Love and Menghinello, 2010).

**Multinational Corporation MNC:** The multinational corporation is defined in some sense arbitrarily by where frontiers are drawn, however a generally accepted definition is " a business enterprise comprising entities in two or more countries linked by ownership or significant control which enables decision making permitting coherent policies and a common strategy across national boundaries" (Winston, 2011). A firm becomes a multinational "when the same knowledge is exploited at several different locations, involving several different countries", thus, an MNC may be viewed as a complex pattern of interdependent activities, linked by knowledge flows and intermediate products. (Hoskisson, Eden, Ming Lau, & Wright, 2000).

**Spillovers:** Traditionally, the multinational corporation (MNC) is ascribed superior technologies and management skills that allow it to compete successfully against local firms however when MNC introduce superior technology, that will "spill over" to local firms. This unintentional transfer of knowledge, are widely believed to benefit firms in the host country, resulting in, e.g., productivity growth among domestic firms (Hallin & Holmström Lind, 2012), moreover there is a positive relationship between intentional knowledge diffusion and unintentional knowledge spillovers. In econometric literature Spillovers effects are events in one context that occur because of something else in a seemingly unrelated context (Wikipedia contributors, 2015). Technological knowledge spillover is the phenomenon by which a group of geographically proximate MNC' inventory of self-generated technological knowledge leaks out to MNC subsidiaries or other member firms within a cluster (Tsai-Ju, 2015) and are defined as the indirect effects in the productivity that occur in domestic firms as a result of transfer intangible assets to the affiliate (Sinani & Meyer, 2004).

**Technology Flows:** As Manyika et al (2014) stated: "Global flows have been a common thread extending through the mercantilist and colonial eras, from trade routes of old such as the renowned Silk Road through the industrial revolutions that swept across Europe and North America in the 18th and 19th centuries to the more recent rise of emerging economies." But today the web of cross-border Goods, services and financial exchanges has exploded in scope and complexity. Goods and services and financial flows are the sum of imports and exports of goods and services for each country; and financial flows are the inflows and outflows of foreign direct investment, equity and bond flows, and cross-border lending and deposits. Underlying these are technology supporting the mentioned flows and a cross-border technology flow is undertaken in parallel to the Goods and Services flows. Technology flows refer to the average of technological payments and receipts. Trade in technology comprises four main categories: transfer of techniques (through patents and licenses, disclosure of know-how); transfer (sale, licensing, franchising) of designs, trademarks and patterns; services with a technical content, -including technical and engineering studies as well as technical assistance; industrial R&D. (OECD, 2011).



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## ENDNOTE

[1] Data in this case were taken from CKGSB online article, *3M Company: In China for China* (Mahajan, 2014)

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# Chapter 4
# The Role of Governance on Outward Foreign Direct Investment in Emerging Market Economies

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## ABSTRACT

*Emerging market economies have clear deficit in governance infrastructure and also have an increasing trend in the amount of foreign direct investment (FDI) outflows compared with advanced countries. Hence the main issue of the study is to identify the determinants leading to the increase in FDI outflows with special emphasize given to the role of governance infrastructure. Thus, the aim of the study is to analyze the effect of governance infrastructure together with other control variables on FDI outflows in emerging market economies. It is found that improvement in all measured aspects of governance infrastructure leads to increase in FDI outflows from emerging market economies and governance infrastructure, human capital and physical infrastructure are base factors for MNCs taking outward FDI decision from emerging market economies. It is also found that FDI outflows from emerging market economies are not market or efficiency seeking; instead they are resource, labor or finance seeking.*

## INTRODUCTION

There are several benefits that the home countries derive from outward FDI. First, and most distinctive, is that the stream of income, mainly in the form of repatriated profits, from foreign earnings through affiliates in host countries. Second, it creates employment and contributes to growth in home country if outward FDI complements home country production as such as affiliates in host country import intermediate products or inputs from the parent company in home country. Third, MNCs may learn new skills and technics from exposure to host countries through outward FDI. (Nourbakhshian et.al., 2012; Behbehani and Al Hallaq, 2013), Fourth, outward FDI allows MNCs to explore new global markets, to

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generate higher profits and incomes through the production and sales in host country markets (Bukari, 2016). Fifth, efficiently utilized and managed abundant natural resources in host countries decrease costs and increase the price competency of MNCs (Bukari, 2016). Finally, affiliates in host countries generally use production techniques that are developed and patented in home country R&D base; hence it is another stream of income for home country.

Governance infrastructure of a country may affect outward FDI in two ways. First, and most distinctive, is the positive impact of quality of governance on outward FDI both in the short and long run. The effect of governance on FDI is through the effect of institutions on investment environment of a country and through the decreasing transaction costs, production costs and uncertainty (Bellos and Subasat, 2012). Second effect is the negative short run effect of governance infrastructure on outward FDI mainly referred as escape response of outward FDI due to low quality of governance in home countries (Klimek, 2015; Witt and Lewin, 2007).

The main issue of the study is to identify the determinants leading to the increase in FDI outflows with special emphasize given to the role of governance infrastructure. Thus, the aim of the study is to analyze the effect of governance infrastructure together with other control variables on FDI outflows in emerging market economies.

The study claims that governance infrastructure as a base factor has positive significant effect on outward FDI in contrast to studies maintaining escape response argument. Hence, the study builds a new theoretical perspective for the outward FDI before delving into the empirical analysis.

Next section presents background for the study. A new theoretical perspective for FDI theory is developed in third section. Fourth section explains how governance is measured in thesis. Fifth section presents data, variables and methodology used in thesis. Statistical analysis is carried out in sixth section. Seventh section presents empirical analysis. Last section provides concluding remarks.

## BACKGROUND

There are numerous studies in the literature that have concentrated on the role of governance on inward FDI. The studies examining the role of governance on outward FDI or considering governance as a determinant of outward FDI are limited (Globerman et. al., 2006; Witt and Lewin, 2007; Kayam, 2009; Das, 2013; Subasat and Bellos, 2013; Klimek, 2015). Also, there are other studies in the literature analyzing the effect of host country governance on outward FDI of home countries such as Mishra and Daly (2007). This type of studies is not included in the empirical survey.

Globerman et. al. (2006) found statistically significant positive effect of governance on outward FDI in both emerging and transition European economies and emerging markets for the period 1995-2001. They used principal component analysis of six main WGI governance variables as a proxy for overall governance performance of the countries. They had only three-year data for each governance indicator, hence they extrapolated them which may lead to biased results since 57% of governance data were extrapolated.

Witt and Lewin (2007) argued that outward FDI is an escape response from perceived misalignments between firms' needs and home country institutional environment in advanced industrialized nations in the context of societal coordination. The main drawback of their study is that the conclusion they reached does not base on an empirical analysis. Instead they reviewed the literature on IB without even employing meta-analysis based on the selected studies.



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Although Kayam (2009) concluded that improvement in government stability, investment profile and bureaucracy quality decreases outward FDI as an escape response, her estimation results do not support. In total of sixty five developing and transition economies in four regional clusters for the period 2000-2006, bureaucracy quality has no statistically significant effect on outward FDI in any cluster, investment profile has statistically significant negative effect on outward FDI only in two regions and finally government stability has statistically significant negative effect on outward FDI only in one region. Hence only three out of twelve regression supports her conclusion.

Das (2013) found that increase in home country political risk leads to increase in outward FDI as an escape response in his analysis of fifty-six developing economies for the period 1996-2010 with panel random effect estimation technique.

In a bilateral panel regression analysis, Subasat and Bellos (2013) found that high corruption, improvement in bureaucratic quality and democratic accountability in home countries leads to increase in outward FDI directed to fifteen Latin American countries for the period 1980-1996.

Klimek (2015) found that deterioration of governance in home countries increases outward FDI in developing countries for the period 1996-2010.

All studies above except Witt and Lewin (2007) used fixed or random effect panel regression technique, hence they all have endogeneity problem resulting from reverse causality problem or multicollinearity issue between governance variables and control variables used in the regression. Also, the studies analyzing developing countries include least developed countries leading to biased results for the analysis since the governance infrastructure in least developed countries are totally different from developing countries and takes the lowest values compared to all countries.

## MAIN FOCUS OF THE STUDY AND PROBLEMS ENCOUNTERED

Emerging market economies have clear deficit in governance infrastructure and also have an increasing trend in the amount of foreign direct investment (FDI) outflows compared with advanced countries. The main issue of the study is to identify the determinants leading to the increase in FDI outflows with special emphasize given to the role of governance infrastructure. Thus, the aim of the study is to analyze the effect of governance infrastructure together with other control variables on FDI outflows in emerging market economies. The study claims that governance infrastructure as a base factor has positive significant effect on outward FDI in contrast to studies maintaining escape response argument. Hence, the study builds a new theoretical perspective for the outward FDI before delving into the empirical analysis.

There are numerous studies in the literature that have concentrated on the role of governance on inward FDI. The studies examining the role of governance on outward FDI or considering governance as a determinant of outward FDI are limited.

This limited literature analyzing the role of governance on outward FDI has following drawbacks as;

- All of them employ fixed or random effect panel regression technique, hence they all have endogeneity problem resulting from reverse causality problem or multicollinearity issue between governance variables and control variables used in the regression.
- None of the studies consider lag of outward FDI as a potential determinant of outward FDI. Hence all of the analyses employed are static panels, not dynamic panels.



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- The studies analyzing developing countries include least developed countries leading to biased results for the analysis since the governance infrastructure in least developed countries are totally different from developing countries and takes the lowest values compared to all countries.
- Most of the studies use WGI (2016) governance variables that are mainly devised for inquiring the role of governance on growth, rather than role of governance on outward FDI. Another problem with these indices is that they encompass 31 different datasets with sub indices under same name or similar indices from different databases. Hence there exists a high multicollinearity. Also, another disadvantage is that some datasets do not include same indices for all countries; some specific only to African countries or the datasets do not contain all the years. Hence there is a high asymmetry when all countries involved.

## SOLUTIONS AND RECOMMENDATIONS

How the study tackles those drawbacks in the previous section is as follows;

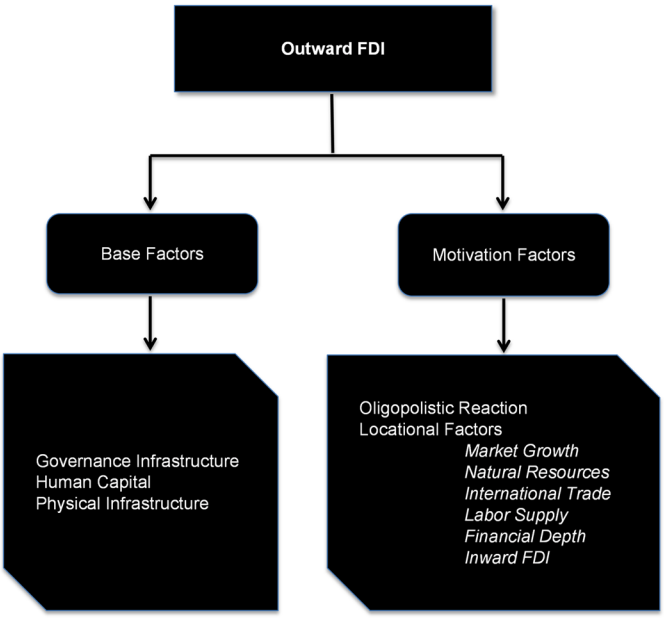
The study employs System GMM analysis that allows both overcoming endogeneity problem and including lag of FDI outflows as a possible determinant of FDI outflows. Hence it is not static but dynamic panel analysis.

- The study excludes least developed countries from the analysis based on difference in governance infrastructure that developed in the historical context. Least developed countries are generally ex-colonies, did not find a chance to establish their own governance structures since they are ruled by the regimes of colonizers for many years. When they thought they won their independence, they were ruled by totalitarian regimes left behind and supported by advanced countries of today for sustaining political stability of the region or securing their economic interests (Beyer, 2008; Etzioni, 2008). The colonial state and extractive institutions persisted even after independence (Acemoglu et.al, 2001). Developing countries generally are not colonized as in the case of least developed countries; they are just occupied. They are not extractive states; most of them are either founder or part of great civilizations in the past. Main problem is that most of them could not adapt their historical and cultural inheritance, customs, economic practices, belief and legal system with modern practices and standards of advanced countries, but they have made an effort to catch up advanced countries, hence they have better governance infrastructure compared with least developed countries. Thus including least developed countries into the analysis leads to biased results.
- Four governance indices are created in the study based on two different databases as ICRG (2011) and FRH (2011). All the sub-indices are totally distinct from each other; hence there is less multicollinearity issue. All of the sub-indices are available for all countries starting from 1996. Hence the governance clusters are symmetrical in the sense that, any sub-indices used for any country will be used for other countries too. Kaufman et al. (2011) recognizes the fact that other definitions of governance may of course be relevant for other purposes and encourages users with different objectives to combine their sub-indices in different ways more suited to their needs. Hence, four aspects of governance are determined that have potential to influence FDI decision of MNCs. Hence, the aim of the study is to measure the role of governance on FDI outflows just based on these aspects of governance. It is more clearly in this way, which sub-indices are used for aggregate indices for which purposes.



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*Figure 1. Determinants of outward FDI*




## THEORETICAL PERSPECTIVE

Figure 1 presents that any outward FDI decision taken by individual investor or MNC depends on two factors as base and motivation. Without the base that the home country offers to investors, any motivation behind the outward FDI decision may not put into practice. FDI theories in the literature has either totally excluded the base factor or partially included it as other determinants of FDI. Most of the studies in the literature have concentrated on the motivation factor behind the FDI decision.

### Base Factors

Base factors include governance infrastructure, physical infrastructure and human capital that the home countries offer to investors.

#### Governance Infrastructure

Governance infrastructure of a country may affect outward FDI in two ways. First, and most distinctive, is the positive impact of quality of governance on outward FDI both in the short and long run.

The effect of governance on FDI is firstly through the effect of institutions on investment environment of a country and secondly through the decreasing transaction and production costs, and uncertainty (Bellos and Subasat, 2012).

Formal institutions such as constitutions, prudential laws, regulations, government policies and informal institutions such as traditions, habits, customs affect the perception and willingness of investors, they limit opportunism, build transactional trust in financial transactions, and ultimately influence international players to engage in cross border transactions (North, 1990).



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*Governance helps determine policy formulation and implementation that, in turn, determine whether or not there is a sound, attractive business environment for investment and production. (World Bank, 2003, p.10)*

Good policies and good administration of policies are needed to influence investment climate of a country and one without the other would be ineffective (World Bank, 2003).

High quality of governance infrastructure offers domestic enterprises favorable conditions to become strong and competitive for foreign expansion by allowing them to close deals with host countries' administration (Klimek, 2015).

Klimek (2015) also argues that governance infrastructure of home countries may significantly influence development opportunities of its multinationals abroad if the acquirers were operating in a more transparent and reliable institutional framework, especially to overcome the obstacles that are mainly raised by the national security of the host countries.

Second effect is the negative short run effect of governance infrastructure on outward FDI mainly referred as escape response of outward FDI due to low quality of governance in home countries (Klimek, 2015; Witt and Lewin, 2007).

Witt and Lewin (2007) argue that in times of rapid changes in the extra-institutional environment, slower rate of institutional change due to higher levels of societal coordination increases the probability of misalignments between firms' needs and home country's institutional environment that leads the increased propensity of firms to take outward FDI decision as a means of escape to other (host) countries in which institutional environment is perceived to be in closer alignment with firms' needs (Witt and Lewin, 2007).

*Institutions may propel or even force the outflow of capital from particular locations. Poor institutions may induce home country capital to look for better and safer conditions in a host country. In this case, the low quality of institutions in the home country will be positively correlated with high level of outflows…Corporations headquartered in a risky location will consider opportunities to transfer some of its assets abroad. (Klimek, 2015, p.102)*

The risk of expropriation, expectation of unlawful acts by the government, inhospitable conditions for new entrants, possible consequences of financial crises or difficult conditions in a home country are other factors that may encourage firms to relocate some of its assets abroad as an escape reason (Klimek, 2015)

It is claimed that this second effect of governance infrastructure on outward FDI may only occur in the short run since after a point, these MNCs will eventually move their parent company to another country where there exists a well established governance infrastructure and after that point is reached, it is no more possible to talk about outward FDI for the initial home country. Hence the long run relationship between governance infrastructure and outward FDI is still positive; low quality of governance is a structural impediment for flourishing of MNCs to increase outward FDI to affiliates in host countries.

## Human Capital

The quality of human capital in home country determines the skill level of management, workers and innovation capabilities of research personnel in R&D bases of the parent company. Since innovation capabilities of parent company determines the extent of outward FDI by protected knowledge and man-



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agement capabilities determine marketing, advertising, communication and transportation costs through internalization of MNCs, high level of human capital is a base factor that increases outward FDI through foreign operations of the parent firm.

### Physical Infrastructure

Not only the quality of physical infrastructure in host countries, but also the quality of physical infrastructure in home countries where FDI is originated matters since the quality of physical infrastructure are associated with greater accessibility and reduction in transportation costs. (Khadaroo and Seetanah, 2007)

Erenburg (1993) argues that if physical infrastructure were not extended to local and multinational enterprises publicly, then these enterprises would be operating with less efficiency, as they would have to build their own infrastructure leading to duplication and wasting of resources.

## Motivation Factors

FDI decision of a typical foreign investor is taken at least considering one motivation factor as;

### Oligopolistic Reaction

According to Knickerbocker (1973), FDI is an interactive kind of corporate behavior by which rival firms in an industry composed of a few large firms countering one another's moves by making similar moves themselves.

*Either the countering firms acquire about the same advantages as the firm that made the initial move, so that a new competitive balance is established in the industry, or the countering firms force the firm with the advantage to forego exploiting it by the threat of intensifying competition in the industry to the point where all rivals suffer. In this case the old competitive balance is restored. (Knickerbocker, 1973, p.6)*

### Locational Factors

#### *Market Growth*

The literature has mainly focused on the negative effect of market growth on outward FDI decision of MNCs based on market seeking motive. Low level of growth is considered as a sign of weaker performance of home economy leading investors to interest in locations offering better prospects by allowing diversification with higher returns (Klimek, 2015). Also, high level of growth not only attracts investors from abroad, but also encourages domestic firms to invest locally, hence leading to decreasing amount of outward FDI (Globerman et.al., 2006).

But, it is claimed that high growth rate in home country increases investment opportunities of parent company in the form of outward FDI due to the higher amount of abundant capital ready to invest in locations that bring higher returns (Klimek, 2015).



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*Given the higher growth and structural transformation of many developing countries, we can expect further expansion of outward FDI as these countries aspire to become significant regional or global players. (Das, 2013, p.9)*

### *Natural Resources*

High level of available natural resources not only attracts investors from abroad as in the form of inward FDI, but also encourages domestic firms to invest locally, hence leading to decreasing amount of outward FDI according to resource seeking motive. Thus, low level of available natural resources in home countries leads to increase in FDI outflows.

### *International Trade*

International operations of MNCs are generally established to replace exports or to produce imports and in some cases, international operations occur only because there is actual or potential trade. International trade brings enterprises of one country into contact with enterprises of another country, which often causes conflict. International operations are one means of resolving this conflict. Not only advantages lead to trade but also trade leads to advantages. A firm may establish distribution channels or may establish differentiated product through its export activities, which improves its advantages leading to foreign operations (Hymer, 1960).

### *Labor Supply*

Low level of labor supply in home country both leads to higher wages and lower quality of human capital unable to meet the necessary skill set for domestic operations of parent company. Hence MNCs established in home country will seek foreign markets with available or abundant labor supply that results in increase in FDI outflows based on labor seeking motive.

### *Financial Depth*

Tight regulations on financial markets, uneasy access to financial capital in the form of credits and liquid assets in home country makes parent company hard to borrow locally in order to finance its investments. Hence MNCs established in home country will seek foreign markets where well-established financial markets exist, leading to increase in FDI outflows based on finance seeking motive.

### *Inward FDI*

Increasing level of FDI inflows in a country indicates that as a host country, it is an attraction center for foreign investors, hence domestic firms and MNCs that established their parent company in that home country are less inclined to take outward investment decision in foreign locations, instead they try to expand their operations in their home market first. Hence the trend in FDI inflows should be the first indicator for home country MNCs to expand their international operations.

Since FDI inflows in transition countries are generally market or resource seeking, MNCs investing in these countries do not establish R&D centers since it is not technology intensive FDI as in developed countries, instead the knowledge embedded in the production process are protected by patents. Hence MNCs established in transition countries cannot increase their FDI outflows because there are no or few spillover effects from FDI inflows.



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## MEASURING GOVERNANCE

Reviewing the literature, all the studies examining role of governance on FDI based on either just one index like corruption, political stability, etc. or aggregate indices as Kaufman et al. (2011), La Porta et al. (1997), etc.

Different authors led to different conclusions based on countries included, data span, estimation techniques and governance indices used. There are both similar and contrasting results with respect to these differences.

Aggregate indicators drawn from a variety of sources should provide more precise measures of governance than individual indicators (Globerman and Shapiro, 2002). It is possible to measure the effect of different aspects of governance on outward FDI by this way. That's why four aggregate governance indicators created by sub-indices taken from ICRG and FRH databases used in the study.

The three governance indicators; political stability, administrative quality and public voice are based on governance indicators developed by Aysan et.al. (2006). But, the reason to include these indicators, the motivation behind using them and the sub-indices of the indicators differ from Aysan et.al. (2006). Governance indicators used in the study are as follows:

### Political Stability Index (PSI)

This index is constructed to measure the safety of political environment in home countries. This index is the average of three indices from ICRG (2011); government stability, external conflict and internal conflict.

Since the FDI decision of MNCs based on motivations and concerns different than short-term capital flows, politically unstable countries are not preferred as home countries to initiate outward FDI.

If the home country of the MNCs, which initially is politically stable, turns into unstable either because of internal and external conflict, or the impaired government, MNCs either decreases their size on the home country by increasing outward FDI or shifts their bases to politically more stable countries.

Government stability is the most important aspect of political stability. Since MNCs initiate foreign operations from home country, based on current government policies, they want home country governments to be stable and realizing promised policies in order to earn profits based on those outward FDI decisions initiated before.

The internal conflict is the indicator of how the public in the home country reacts against government; it is the outcome of policies of current and past governments. MNCs do not want operate in home countries that lack of internal peace, with conflict and civil warfare in everyday life.

Due to external conflict, MNCs do not want to establish their operation bases in home countries that are under the high probability of constant warfare or conflicts with neighbor countries.

### Economic Stability Index (ESI)

This index is constructed to measure the sustainability of FDI due to economic stability of the home countries. This index is the average of six indices from ICRG (2011); risk for budget balance, risk for current account, risk for exchange rate stability, risk for foreign debt, risk for inflation and risk for international liquidity.



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Economic stability is another important aspect of governance, since MNCs consider the costs and returns on outward FDI projects. If an economy is governed by inadequate and inconsistent economic policies and turns into unstable one, it constitutes the major cause of unpredictable high costs. Returns on FDI projects, which seems profitable at the beginning turn into losses mainly due to exchange rate risks and inflation. Bad economic governance increases uncertainty and risks, which are detrimental to foreign operations. Hence MNCs either relocate its operation base to economically more stable home country or just make outward FDI if they predicted that the time required to exploit full return on FDI comes before the time of the economy in the home country becomes unstable.

## Administrative Quality Index (AQI)

This index is constructed to measure the quality of the relationship between investor and the administrative / bureaucratic institutions of the home country, and the protection of investor rights. This index is the average of three indices from ICRG (2011); investment profile, bureaucracy quality and corruption.

MNCs taking outward FDI decision in a home country evaluate the performance of bureaucracy based on how responsive is the system to the need of investors, does it take too much time and effort even to initiate simple steps of investment plans, do investor have to deal with lots of unnecessary formalities and red tape. The bad quality of bureaucracy is a detrimental factor for foreign operations, since it increases the time for implementation of investment plans; hence it increases the costs of investment due to time lags.

Another important factor is the role of corruption in carrying out investment plans of MNCs. It increases the cost of outward FDI; hence it is a detrimental factor.

MNCs also consider the protection against expropriation, contract viability by the risk of unilateral contract modification or cancellation, and payment delays by the extent that profits can be transferred out of the host country to home country bases. These sub factors define the investment profile of a home country and it constitutes an important role for MNCs taking outward FDI decision since they show the extent of protection of investor rights.

## Public Voice Index (PVI)

This index is constructed to measure the protection of consumer rights against investors and investor rights against government. This index is the average of three indices; democratic accountability from ICRG (2011), political rights and civil liberties from FRH (2011).

MNCs internalize external markets through outward FDI and they import products from their own foreign affiliates in the host countries. The type of products and services supplied by MNCs to home country markets are highly sensitive to the preferences of consumers since the consumer rights in the home country are well protected. Any reduction in the quality of goods and services offered to domestic consumers or any harm given to environment or public health is confronted with public reaction either by the legal system which provides those rights to consumers through lawsuits or by democratic actions through boycott, rallies, assembly against MNCs. Since MNCs take this reality into account at the planning stage of their investment, increasing protection of consumer rights either through legal system or democratic rights of the public do not constitute a detrimental factor for FDI outflows in these countries. On the contrary, they enlarge the preference set of consumers, which lead to increased amount of FDI outflows by MNCs. This is the mechanism for the protection of consumer rights against investors in home country.



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*Democratic institutions provide checks and balances on elected officials, which in turn reduce arbitrary government intervention and lowers the risk of policy reversal and strengthen private property protection. (Asiedu and Lien, 2011, p.1)*

Hence home countries governed by democratic regimes are preferred by MNCs to establish their bases of operation, which initiates outward FDI. This is the mechanism for the protection of investor rights against government of home country.

## DATA AND VARIABLES

The study covers fifty-two emerging market economies by excluding all least developed countries for the period 1996-2010. See Table 3 in Appendix 1 for the list of emerging market economies covered in the study. See Table 4 in Appendix 2 for the source of the variables.

## STATISTICAL ANALYSIS

### Trend in FDI Outflows

Figure 2 both presents total FDI outflows from three different country clusters in million dollars and total FDI outflows from three different country clusters as a percentage of all FDI outflows in the world. Advanced, developing and least developed countries all have an increasing trend in total FDI outflows. While the FDI outflows from advanced countries had increased trefold, the FDI outflows from developing countries had increased sixfold during the period 1996-2010. Also, the share of total FDI outflows from developing and least developing countries had increased, the share of total FDI outflows from advanced countries had decreased as a percantage of all FDI outflows in the world.

According to Figure 3, average FDI outflows as a percentage of GDP from emerging market economies had doubled with an increasing trend. Inspecting one standard error bands indicate that emerging market economies had experienced divergence with respect to this indicator. Divergence is highest in 2003 and 2009; right after financial crises. Kuwait in 1998 and 2003, Bahrain in 2009 have the lowest, Bostwana in 2001, Bahrain in 2004, Kuwait in 2007 and 2009 have the highest level of FDI outflows as a percentage of GDP.

### Trend in Governance Infrastructure

Figure 4 presents four different aspects of governance in emerging market economies as political stability (psi), economic stability (esi), administrative quality (aqi) and public voice (pvi). Emerging market economies have the highest performance in political stability compared with other governance variables. The economic stability of these countries has a clear increasing trend despite the financial crises experienced in this period. There is no increasing or decreasing trend in other governance variables. These countries have clear deficit in governance infrastructure especially in administrative quality and public voice.



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*Figure 2. Total FDI outflows and FDI outflows as a percentage of world*
*Source: Author's own calculation based on UNCTAD (2016).*
*Note: The right axis for LDCs.*

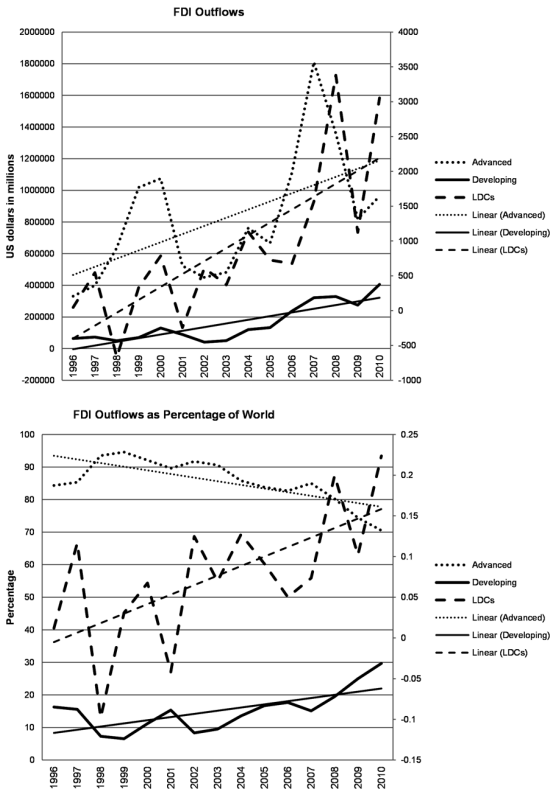



*Figure 3. FDI outflows as a percentage of GDP*
*Source: Author's own calculation based on UNCTAD (2016).*

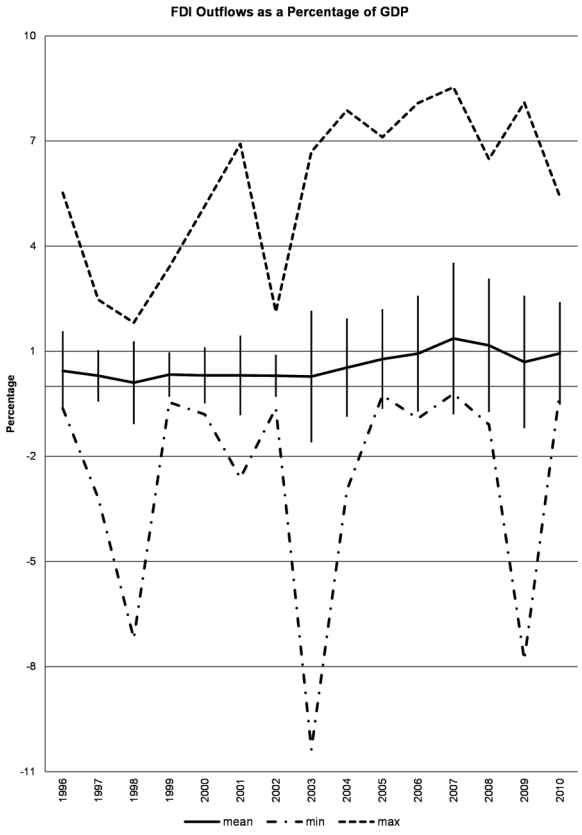



Figure 5 presents the comparison of governance indices of emerging market economies and developed market economies. Except for economic stability (esi), emerging market economies have performed worse than developed market economies for all other governance variables. It seems that emerging market economies have closed the gap in economic stability relative to the developed market economies.

## EMPIRICAL ANALYSIS

### Empirical Model

The general model to be estimated with System GMM is as below;

$$y_{it} = \propto y_{i,t-1} + X'_{it}\beta + \varepsilon_{it} \quad (1)$$

$$\varepsilon_{it} = \mu_i + \nu_{it} \quad (2)$$



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*Figure 4. Average governance performance for emerging market economies*
*Source: Author's own calculation based on ICRG (2011) and FRH (2011).*

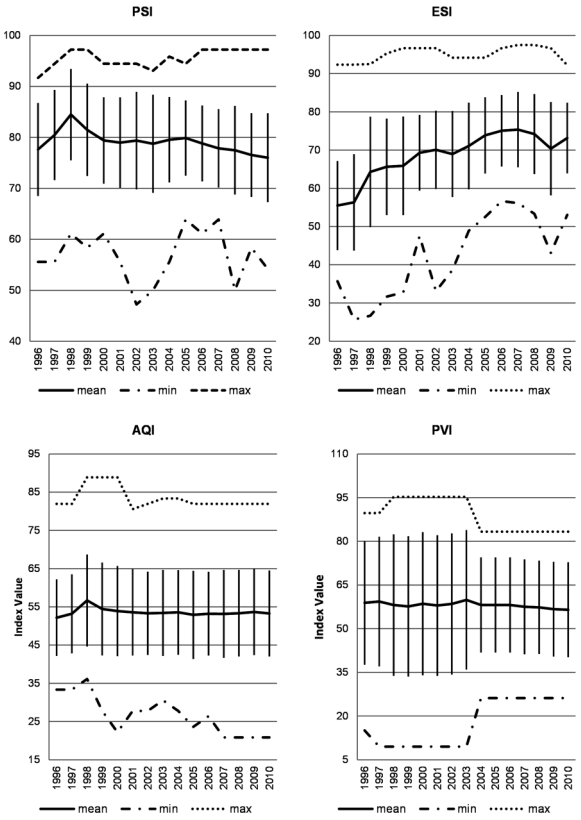
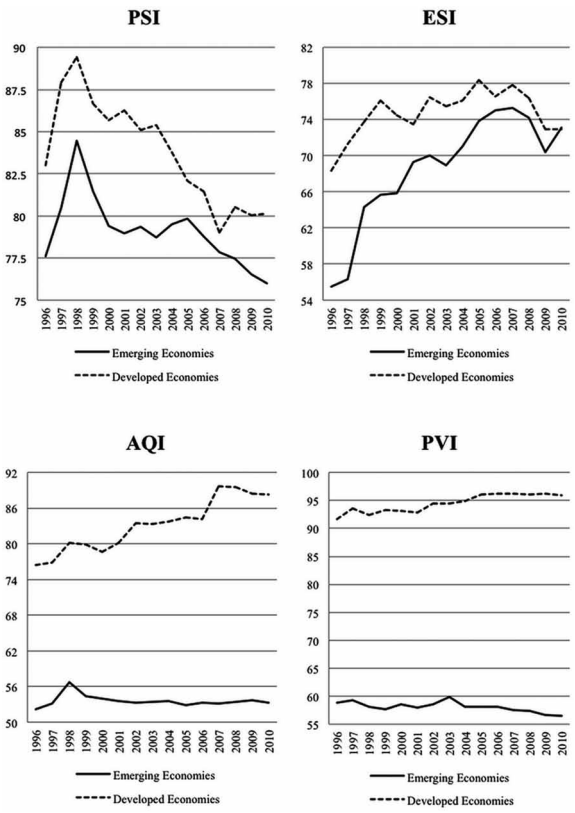



*Figure 5. Average governance performance for emerging and developed market economies*
*Source: Author's own calculation based on ICRG (2011) and FRH (2011).*




$$E\left(\mu_i\right) = E(\nu_{it}) = E(\mu_i \nu_{it}) = 0 \tag{3}$$

The disturbance term $\varepsilon_{it}$ has two orthogonal components as the fixed effects, $\mu_i$ and idiosyncratic shocks, $\nu_{it}$

$$\Delta y_{it} = \left(\propto -1\right)\Delta y_{i,t-1} + \Delta X'_{it}\beta + \Delta \nu_{it} \tag{4}$$

Assuming that changes in any instrumenting variable w are uncorrelated with the fixed effects (Roodman, 2009).

$$E\left(\Delta w_{it}\mu_i\right) = 0 \tag{5}$$



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The System GMM estimator that is developed by Arellano and Bover (1995), Blundell and Bond (1998) augments the Difference GMM estimator that is developed by Arellano and Bond (1991) by making an additional assumption of the first differences of instrument variables are uncorrelated with the fixed effects (5), which allows the introduction of more instruments. Hence it can dramatically improve efficiency by building a system of two equations; one is the original equation (1), the other is the transformed one (4). While Arellano and Bond (1991) instruments differences with levels, Blundell and Bond (1998) instruments levels with differences (Roodman, 2009).

Validity depends on the assumption that the $v_{it}$ is not serially correlated. But if the $v_{it}$ is serially correlated of order 1 then, for instance, $y_{i,t-2}$ is endogenous to the $v_{i,t-1}$ in the error term in differences, $\Delta\varepsilon_{it} = v_{it} - v_{i,t-1}$, making it a potentially invalid instrument. The researcher would need to restrict the instrument set starting with third lag or longer. If the researcher finds second order correlation, he or she would need to start with even longer lags (Roodman, 2009).

Reduced From Equation;

$$OFDI_{it} = \propto OFDI_{i,t-1} + \beta_1 BASE_{it} + \beta_2 MOT_{it} + \varepsilon_{it} \tag{1.1}$$

$$\varepsilon_{it} = \mu_i + \nu_{it} \tag{1.2}$$

$$E\left(\mu_i\right) = E(\nu_{it}) = E(\mu_i \nu_{it}) = 0 \tag{1.3}$$

$$\Delta OFDI_{it} = \delta \Delta OFDI_{i,t-1} + \phi \Delta BASE_{it} + \lambda \Delta MOT_{it} + \nu_{it} \tag{1.4}$$

$$E\left(\Delta w_{it} \mu_i\right) = 0 \tag{1.5}$$

$OFDI_{it}$ represents FDI outflows for country i in year t. $OFDI_{i,t-1}$ represents FDI outflows for country i in year t-1 to measure the oligopolistic reaction. $BASE_{it}$ represents governance indicators, human capital and physical infrastructure as base factors. $MOT_{it}$ represents motivation factors for country i in year t. GDP growth is included as a motivation factor in all regressions since FDI, governance and growth are three concepts interact with each other according to literature.

Model 1 is the benchmark model including lag of FDI outflows, all governance indicators, human capital, physical infrastructure and FDI inflows.

Models 2-5 include governance infrastructure as the only base factor, GDP growth and all other motivation factors. All motivation factors other than lag of FDI outflows and GDP growth are regressed in separate models.

## Estimation Results

According to our benchmark Models 1.1, 1.2, 1.3 and 1.4 in Table 1; improvement in all aspects of governance infrastructure leads to increase in FDI outflows in emerging market economies. Politically and economically more stable home countries with high administrative quality due to efficient and uncor-



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rupted bureaucracies and more democratic institutions providing check and balances against arbitrary government intervention creates more investment friendly business environment and secure both investor and consumer rights, leading to increase in outward FDI. The results of the study support the findings of Globerman et.al. (2006) with respect to aggregate governance infrastructure and Subasat and Bellos (2013) with respect to administrative quality and public voice. The findings of the study are in contrast with the literature on outward FDI as an escape response to deterioration in governance infrastructure in home countries (Das, 2013; Witt and Lewin, 2007; Kayam, 2009; Klimek, 2015).

Model 1.2 in Table 1 suggests that improvement in human capital in home country increases FDI outflows by enhancing skill level of management, workers and technical staff by increasing innovative capabilities of the parent company and decreasing marketing, advertising, communication and transportation costs due to better management capabilities. Since there is a statistically significant positive relationship between human capital and FDI outflows, FDI outflows do not base on efficiency seeking motive; instead human capital is a base factor positively contributing to expanding foreign operations of MNCs.

Improvement in physical infrastructure leads to increase in FDI outflows from emerging market economies due to greater accessibility and reduction in communication and transportation costs according to Model 1.8 in Table 1. Hence it will not be a misleading conclusion that physical infrastructure is a base factor for outward FDI decision of MNCs.

All models in Table 1 reveal that there is a statistically significant negative relationship between FDI inflows and FDI outflows in emerging market economies. Increasing level of FDI inflows indicates that these countries are attraction center based on either resource or market seeking motive for MNCs established abroad, hence MNCs established in these countries first try to exploit these locational attractions by increasing domestic operations of parent company leading decrease in FDI outflows.

All of the estimation results in Table 1 and 2 reveal that lag of FDI outflows has statistically significant positive effect on current FDI outflows, which confirms the oligopolistic reaction by suggesting that outward FDI is an interactive corporate behavior in an industry where a few large firms counter one another's moves by making similar moves themselves (Knickerbocker, 1973)

According to the estimation results both in Table 1 and 2; statistically significant positive relationship between market growth and FDI outflows suggest that FDI outflows from emerging market economies do not base on market seeking motive. Higher growth rates in home countries increase investment opportunities of parent company in the form of outward FDI due to the higher amount of abundant capital ready to invest in locations that bring higher returns. The results of the study do not support Globerman et.al. (2006) who found no statistically significant effect of growth on outward FDI. But our result support Klimek (2015) in his estimation result with dependent variable of per capita FDI outflows instead of outward FDI stocks.

The estimation results of Model 2.1 in Table 2 present that there is a statistically significant negative relationship between available natural resources and FDI outflows in emerging market economies. Hence decreasing level of available natural resources in home countries leads to increase in FDI outflows based on resource seeking motive.

There is a statistically significant negative relationship between labor supply and FDI outflows in emerging market economies according to Model 3.2 in Table 2. Low level of labor supply in home countries both lead to higher wages and lower quality of human capital unable to meet the necessary skill set for domestic operations of parent company. Hence MNCs established in home country will seek foreign markets with available or abundant labor supply that result in increase in FDI outflows based on labor seeking motive.



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Inspection of Model 4.3 in Table 2 reveals that international trade substitutes FDI outflows in emerging market economies due to statistically significant negative relationship between international trade and FDI outflows. Increasing amount of international trade due to higher amount of exports replace FDI outflows from home countries. The findings of the study contrast with Das (2013) who found that increase in trade openness proxied by our measure leads to increase in outward FDI and Globerman et.al. (2006) who found that international trade complements outward FDI.

*Table 1. System GMM estimation results I*

| **Dependent Variable: ofdi** | | | | | | |
|---|---|---|---|---|---|---|
| | **Model 1.1** | **Model 1.2** | **Model 1.3** | **Model 1.4** | **Model 1.5** | **Model 1.6** |
| l.ofdi | 0.415*** | 0.616*** | 0.352** | 0.417*** | 0.651*** | 0.612*** |
| | (0.153) | (0.140) | (0.143) | (0.123) | (0.168) | (0.167) |
| psi | 0.012* | | | | | |
| | (0.006) | | | | | |
| esi | | 0.005* | | | | |
| | | (0.003) | | | | |
| aqi | | | 0.022** | | | |
| | | | (0.009) | | | |
| pvi | | | | 0.020* | | |
| | | | | (0.011) | | |
| humcap | | | | | 0.005* | |
| | | | | | (0.003) | |
| infra | | | | | | 0.011* |
| | | | | | | (0.006) |
| gdpgr | 0.059** | 0.060** | 0.062** | 0.059* | 0.051** | 0.061* |
| | (0.023) | (0.026) | (0.028) | (0.031) | (0.024) | (0.033) |
| ifdi | -0.086* | -0.084* | -0.097** | -0.136* | -0.069* | -0.089* |
| | (0.046) | (0.049) | (0.048) | (0.075) | (0.038) | (0.051) |
| Prob > F | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Countries | 52 | 52 | 52 | 52 | 52 | 52 |
| Instruments | 32 | 36 | 32 | 32 | 33 | 32 |
| Hansen | 0.390 | 0.307 | 0.237 | 0.372 | 0.743 | 0.376 |
| AR(2) | 0.467 | 0.389 | 0.485 | 0.441 | 0.401 | 0.397 |

Source: Author's Own Calculations.

Notes: The values in parenthesis are robust standard errors. ***, ** and * denote significance levels at % 1, % 5 and % 10 respectively. AR(#) is test for #-order serial correlation in the #-differenced residuals, under the null of no serial correlation. Hansen test of over-identification is under the null that all instruments are valid. All of the independent variables are treated endogenously. Appropriate lags of endogenous variables were instrumented according to AR(#) test of serial correlation.



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The result of Model 5.4 in Table 2 presents that there is a statistically significant negative relationship between financial depth and FDI outflows in emerging market economies. Decreasing amount of financial depth due to tight regulations on financial markets, uneasy access to financial capital in the form of credits and liquid assets in home country makes parent company hard to borrow locally in order to finance its investments. Hence MNCs established in home country will seek foreign markets where well-established financial markets exist, leading to increase in FDI outflows based on finance seeking motive.

*Table 2. System GMM estimation results II*

| **Dependent Variable: ofdi** | | | | |
|---|---|---|---|---|
| | **Model 2.1** | **Model 3.2** | **Model 4.3** | **Model 5.4** |
| ofdi | 0.517** | 0.382*** | 0.731*** | 0.616*** |
| | (0.197) | (0.091) | (0.202) | (0.175) |
| psi | 0.013* | | | |
| | (0.007) | | | |
| esi | | 0.015* | | |
| | | (0.008) | | |
| aqi | | | 0.014** | |
| | | | (0.007) | |
| pvi | | | | 0.009** |
| | | | | (0.005) |
| gdpgr | 0.099* | 0.044* | 0.068** | 0.078*** |
| | (0.052) | (0.026) | (0.031) | (0.027) |
| natural | -0.024* | | | |
| | (0.013) | | | |
| labsup | | -0.012* | | |
| | | (0.007) | | |
| trop | | | -0.008** | |
| | | | (0.003) | |
| findep | | | | -0.008* |
| | | | | (0.005) |
| Prob > F | 0.000 | 0.000 | 0.000 | 0.000 |
| Countries | 52 | 52 | 52 | 52 |
| Instruments | 32 | 52 | 28 | 37 |
| Hansen | 0.468 | 0.435 | 0.748 | 0.283 |
| AR(2) | 0.477 | 0.485 | 0.434 | 0.421 |

Source: Author's Own Calculations.

Notes: The values in parenthesis are robust standard errors. ***, ** and * denote significance levels at % 1, % 5 and % 10 respectively. AR(#) is test for #-order serial correlation in the #-differenced residuals, under the null of no serial correlation. Hansen test of over-identification is under the null that all instruments are valid. All of the independent variables are treated endogenously. Appropriate lags of endogenous variables were instrumented according to AR(#) test of serial correlation.



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## FUTURE RESEARCH DIRECTIONS

The main drawback of the study is that the analysis cover the period 1996-2010, hence the effect of deterioration in governance infrastructure in several Middle East emerging market economies on outward FDI after 2010 could not have been analyzed due to data unavailability. A further study with available governance data covering 2010-2015 may be necessary to conclude that the relationship between governance infrastructure and FDI outflows changed or not in emerging market economies.

## CONCLUSION

It is found that total FDI outflows in million dollars and total FDI outflows as a percentage of all countries in the world both have increasing trend in emerging market economies. Average FDI outflows as a percentage of home country GDP has doubled during the period under analysis. These countries generally have clear deficit in different aspects of governance infrastructure. Also on average, they have an increasing economic stability despite global financial crises occurred in this period.

According to the empirical findings, improvement in all aspects of governance infrastructure leads to increase in FDI outflows in emerging market economies. Politically and economically more stable home countries with high administrative quality due to efficient and uncorrupted bureaucracies and more democratic institutions providing check and balances against arbitrary government interventions create more investment friendly business environment and secure both investor and consumer rights, leading to increase in outward FDI. Hence governance infrastructure together with human capital and physical infrastructure are base factors for home country MNCs. It is also found that FDI outflows from emerging market economies are not market or efficiency seeking; instead they are resource, labor or finance seeking. And international trade, especially increase in exports, replaces FDI outflows. The results also support oligopolistic reaction behavior of MNCs in taking outward FDI decision. Finally, it is found that increase in FDI inflows leads to decrease in FDI outflows since MNCs established in emerging home country markets first try to exploit locational advantages before expanding their foreign operations.

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## KEY TERMS AND DEFINITIONS

**Administrative Quality Index:** The index value of administrative quality in home country taking values between 0 and 100.

**Economic Stability Index:** The index value of economic stability in home country taking values between 0 and 100.

**Financial Depth:** The ratio of liquid assets as a percentage of home country GDP.

**Governance Infrastructure:** The quality of home country institutional capabilities.

**Human Capital:** Availability of educated human resources in home country.

**International Trade:** Total volume of exports and imports as a percentage of home country GDP.

**Labor Supply:** Availability of population aged 15-65 that are currently employed or in search of a job in home country.



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**Natural Resources:** Availability of total natural resource rents as a percentage of home country GDP.

**Physical Infrastructure:** Availability of energy, water, communication and transportation infrastructure in home country.

**Political Stability Index:** The index value of political stability in home country taking values between 0 and 100.

**Public Voice Index:** The index value of public voice in home country taking values between 0 and 100.

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## APPENDIX

*Table 3. List of emerging market economies*

| | | |
|---|---|---|
| Algeria | Gabon | Paraguay |
| Argentina | Guatemala | Philippines |
| Bahrain | Honduras | Poland |
| Bolivia | Hungary | Qatar |
| Botswana | India | Romania |
| Brazil | Iran | Russia |
| Brunei Darussalam | Jamaica | Saudi Arabia |
| Bulgaria | Jordan | South Africa |
| Cameroon | Kazakhstan | Sri Lanka |
| Chile | Kenya | Thailand |
| China | Kuwait | Tunisia |
| Colombia | Libya | Turkey |
| Congo Republic | Malaysia | Ukraine |
| Costa Rica | Mexico | United Arab Emirates |
| Croatia | Moldova | Uruguay |
| Dominican Republic | Morocco | Venezuela |
| Ecuador | Pakistan | |
| Egypt | Papua New Guinea | |



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*Table 4. Data source*

| Variable Name | Code | Indices\Sub Indices | Data Source |
|---|---|---|---|
| FDI Outflows | ofdi | FDI Outflows as a Percentage of GDP | UNCTAD (2016) |
| FDI Inflows | ifdi | FDI Inflows as a Percentage of GDP | UNCTAD (2016) |
| Political Stability | psi | | |
| Index | | Government Stability | ICRG (2011) |
| | | Internal Conflict | ICRG (2011) |
| | | External Conflict | ICRG (2011) |
| Economic Stability | esi | | |
| Index | | Risk for Budget Balance | ICRG (2011) |
| | | Risk for Current Account as % of GDP | ICRG (2011) |
| | | Risk for Exchange Rate Stability | ICRG (2011) |
| | | Risk for Foreign Debt | ICRG (2011) |
| | | Risk for Inflation | ICRG (2011) |
| | | Risk for International Liquidity | ICRG (2011) |
| Administrative Quality | aqi | | |
| Index | | Investment Profile | ICRG (2011) |
| | | Bureaucracy Quality | ICRG (2011) |
| | | Corruption | ICRG (2011) |
| Public Voice Index | pvi | | |
| | | Democratic Accountability | ICRG (2011) |
| | | Political Rights | FRH (2011) |
| | | Civil Liberties | FRH (2011) |
| GDP Growth | gdpgr | GDP Growth (annual %) | WDI (2016) |
| Human Capital | humcap | | |
| | | Completed Primary | WDI (2016) |
| | | Completed Secondary | WDI (2016) |
| | | Completed Tertiary | WDI (2016) |
| Infrastructure | infra | | |
| | | Access to Electricity (% of population) | WDI (2016) |
| | | Improved Water Source (% of population) | WDI (2016) |
| | | Internet Users (per 100 people) | WDI (2016) |
| | | Telephone Lines (per 100 people) | WDI (2016) |
| | | Roads, Total Network / Population | WDI (2016) |
| | | Rail Lines (total route-km) / Population | WDI (2016) |
| | | Air Transport, Passengers Carried / Population | WDI (2016) |
| Labor Supply | labfor | Labor Force / Population * 100 / Population 15-64 (% of total) | WDI (2016) |
| Natural Resources | natural | Total Natural Resources Rents (% of GDP) | WDI (2016) |
| Financial Depth | findep | Money and Quasi Money (M2) as % of GDP | WDI (2016) |
| International Trade | trade | Trade (% of GDP) | WDI (2016) |



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# Chapter 5
# The Fundamentals of Neuroeconomics

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## ABSTRACT

*Neuroeconomics is an emergent multidisciplinary field that strives to understand how and why humans make decisions. The field brings together behavioral methods and sophisticated computational theories from microeconomics, an understanding of emotional influences on behavior from psychology, and human functional neural imaging from neuroscience. This chapter presents the fundamentals of neuroeconomics, thus describing the concept of neuroeconomics; neuroimaging applications; neuroeconomics and loss aversion; neuroeconomics and temporal discounting; neuroeconomics of decision making in humans and animals; neuroeconomics, behavioral economics, and irrationality; neuroeconomics and utility theory; neural systems in economic decision making; neural systems in reward system; neural systems in cognitive control system; game theory, strategic interaction, and neuroeconomic studies; and the types of evidence about economic behavior.*

## INTRODUCTION

Neuroeconomics is an interdisciplinary field that incorporates psychology, economics, neuroscience, and computational science to investigate how people make decisions (Sharp, Monterosso, & Montague, 2012), and Davis (2010) states that the field is a new research program in economics in virtue of its adoption of neuroscience as a basis for the investigation of economic questions. Neuroeconomics focuses its approach in identifying some neuronal correlations specific to choices (Sebastian, 2014), and is the newest area of the economic sciences focusing on how the human brain interacts with its institutional and social environment to make economic decisions (McCabe, 2008).

Zak (2004) forwarded that neuroeconomics is a natural extension of bioeconomics, and the former is the study of evolved mechanisms that are in decision making at the neural level of the brain (Vromen, 2007). The application of conceptual structure and experimental techniques widely used in neuroscience to the study of economic behavior (Glimcher & Rustichini, 2004), neuroeconomics includes the

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theoretical and methodological developments of cognitive neuroscience, computational neuroscience, psychology, and economics to accomplish the examinations of the brain processes when individuals make economically relevant decisions (Montague, 2007; Sanfey, Loewenstein, McClure, & Cohen, 2006).

The strength of this chapter is on the thorough literature consolidation of neuroeconomics. The extant literature of neuroeconomics provides a contribution to practitioners and researchers by describing a comprehensive view of the functional applications of neuroeconomics to appeal to the different segments of neuroeconomics in order to maximize the business impact of neuroeconomics in the decision-making process.

## BACKGROUND

Neuroeconomics is a new field in economics (Glimcher, 2003; Montague & Berns, 2002), and its original program was to provide a test for a large number of competitive theories of decision making (Rustichini, 2009). Neuroeconomic methods combine behavioral economic experiments to parameterize aspects of reward-related decision making with neuroimaging techniques to record the corresponding brain activity (Sharp et al., 2012). In economics, the transfer of neuroscientific insights and methods led to the emergence of neuroeconomics (Hubert, 2010). Whereas traditional economic research explains behavior primarily through theoretical constructs such as utility or preferences, neuroscience considers the physiological aspects and somatic variables that affect decision making.

Neuroeconomics makes the positivistic assumption that the key to explaining human behavior is to understand the neural and physiological processes (Riedl, Hubert, & Kenning, 2010). Neuroeconomists recognize the specific brain activation during the perception of different marketing stimuli (Koenigs & Tranel, 2007). One of the most important intellectual challenges of neuroeconomic research is the translation of theoretical constructs into neurophysiological categories (Hubert, 2010). The integration of neuroscientific approaches and methods into economic research has led to the preliminary findings regarding economic marketing theory and practice (Kenning & Plassmann, 2005). In marketing research, the notion of neuroeconomics has gained attention because the interdisciplinary perspectives to explain the buying decisions are accepted in consumer research (Lee, Broderick, & Chamberlain, 2007).

## THE FUNDAMENTALS OF NEUROECONOMICS

This section describes the concept of neuroeconomics; neuroimaging applications; neuroeconomics and loss aversion; neuroeconomics and temporal discounting; neuroeconomics of decision making in humans and animals; neuroeconomics, behavioral economics, and irrationality; neuroeconomics and utility theory; neural systems in economic decision making; neural systems in reward system; neural systems in cognitive control system; game theory, strategic interaction, and neuroeconomic studies; and the types of evidence about economic behavior.

### Concept of Neuroeconomics

Neuroeconomics has its root in behavioral economics, a scientific subfield of economics that has adopted psychological research on social, cognitive, and emotional factors to better understand economic



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decisions (Mohr, Li, & Heekeren, 2010). Bermejo et al. (2011) stated that neuroeconomics is a new science that studies the brain processes involved in taking decisions, particularly related to economy. Neuroeconomics and neuromarketing are the emerging interdisciplinary fields at the interface between neuroscience, psychology, economics, and marketing (Sebastian, 2014).

Neuroeconomics relies on the two problematic steps; namely, the inference from brain activities to the engagement of cognitive processes in experimental tasks, and the presupposition that such inferred cognitive processes are relevant to economic theorizing (Bourgeois-Gironde, 2010). The first step only constitutes the reverse inference fallacy proper and ways to correct it include a better sense of the neural response selectivity of the targeted brain areas and a better definition of relevant cognitive ontologies for neuroeconomics. This second way allows the increased coherence between the cognitive processes involved in neuroeconomics experiments and the theoretical constructs of economics.

Economic decision making is a complex process of integrating and comparing the various aspects of the economically relevant options. Neuroeconomics has made the important progress in grounding these aspects of decision making in neural systems (Mohr et al., 2010). This progress includes the linking of the subfields of economics such as finance (Knutson & Bossaerts, 2007) and marketing (Plassmann, O'Doherty, & Rangel, 2007) with neuroscientific research methodologies. A wide range of studies in animals and humans have identified the neural mechanisms emphasizing the descriptions of value, reward, and risk, which are the important factors affecting economic behavior (Platt & Huettel, 2008; Rangel, Camerer, & Montague, 2008).

Economic decision making is considered as a type of value-based decision making, where the values of different actions are first compared, and the action selected is that corresponding to the highest value (Weber & Johnson, 2009). Two major competing classes of models in economic decision making have been proposed (d'Acremont & Bossaerts, 2008; Glimcher, 2008). The first class of models – utility based models – which includes the expected utility theory and the prospect theory (Kahneman & Tversky, 1979), proposes that decision makers first determine the value and the relative weight of each possible reward and then calculate the overall value of a choice option as the weighted sum of possible outcome values. The second class of models – namely risk-return models – proposes that decision makers first determine the expected reward of each of the alternatives and the associated risk (e.g., variance of rewards), and calculate the value of the alternative as the risk-corrected expected reward (Bell, 1995; Sarin & Weber, 1993).

Both classes of models consider both reward and risk, which is explicitly defined in risk-return models and implicitly influences the value of an alternative in utility-based models via the curvature of the utility function. However, a third factor influences the value of a choice alternative which is specified in the models of intertemporal choice (Kirby, 1997; Laibson, 1997). In addition to the factors that are explicitly specified in models of risky decision making, there are a number of additional second-order factors which do not directly affect the value. These include subject-related factors such as anticipatory emotions (Loewenstein, Weber, Hsee, & Welch, 2001), cognitive abilities, and object-related factors such as framing (Tversky & Kahneman, 1981). Cognitive abilities (e.g., working memory capacity and processing speed) influence the integration of information while estimating risk or expected reward (Mohr et al., 2010).

Neuroeconomics-derived theoretical predictions about the optimal adaptation in a changing environment provide an objective metric to examine psychopathology (Sharp et al., 2012). Neuroeconomics provides a multilevel research approach that combines performance (behavioral) measures with intermediate measures between behavior and neurobiology (e.g., neuroimaging) and uses a common



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metaphor to describe decision making across the multiple levels of explanation. The potential payoff of neuroeconomics has been debated in different fields (Glimcher, Camerer, Fehr, & Poldrack, 2008).

The most visible debate has been within economics with some economists arguing for the transformative potential of neuroeconomics (Camerer, 2007), and others arguing to keep economics mindless (Gul & Pesendorfer, 2008). Neuroeconomics seeks to ground microeconomic theory in details about how the brain works (Chorvat & McCabe, 2005; Zak, 2004). Glimcher (2004) stated that neuroeconomics can bring a critical inspection concerning economic models and economic behavior. The dopaminergic and serotoninergic brain systems have been identified as the important neurotransmitter systems involved in economic behavior (Mohr et al., 2010). Like dopamine, serotonin sustains significant changes during the adult lifespan (McEntee & Crook, 1991).

The perspectives of neuroeconomics-inspired models that have emerged in the economics literature (Brocas & Carrillo, 2008; Fudenberg & Levine, 2006) presumably argue in favor of the former neuroeconomic concern. The extent to which neuroeconomics can inform consumer research (Egidi, Nusbaum, & Cacioppo, 2008), neuroscience (Camerer, 2008), psychology (Loewenstein, Rick, & Cohen, 2008), public policy (Hoffman, 2004), and basic business practices (Shane, 2009) is broadly recognized. Neuroeconomists have investigated several topics of interest to consumer researchers such as spending decisions (Knutson, Rick, Wimmer, Prelec, & Loewenstein, 2007), investment decisions (Kuhnen & Knutson, 2005), the price placebo effect (Plassmann, O'Doherty, Shiv, & Rangel, 2008), charitable giving (Harbaugh, Mayr, & Burghart, 2007), and self-control (Hare, Camerer, & Rangel, 2009). A great deal of contemporary decision research in economics, business, psychology, and neuroscience accepts the notion that emotions play a significant role in decision making (Reimann & Bechara, 2010).

## Neuroimaging Applications

Neuroimaging includes the use of various techniques to either directly or indirectly image the structure and function of the nervous system. Neuroimaging is a relatively new discipline within medicine and neuroscience. In exploring the decision making process, a growing number of researchers use an array of tools that record the electrical activity and metabolic activity of the human brain and electroencephalograph (EEG), transcranial magnetic stimulation (TMS), functional magnetic resonance imaging (fMRI), positron emission tomography (Sebastian, 2014). These tools are utilized to explain the neurobiological mechanisms of the decision-making process (Pradeep, 2010; Zurawicki, 2010).

The investigation of whether neuroscientific methods can define the topics of interest to consumer researchers is acknowledged to some extent as described by the fMRI-based studies published in various marketing journals (Hedgcock & Rao, 2009). Neuroeconomic methods combine the behavioral economic experiments to parameterize the aspects of reward-related decision making with neuroimaging techniques to record the corresponding brain activity (Sharp et al., 2012). By explaining economic behavior and decision theory, an attempt is made to elaborate a model that explains in a more accurate way how people make decisions (Glimcher & Rustichini, 2004). Hsu et al. (2005) indicated that neuroeconomics has begun to abandon its near-exclusive reliance on fMRI data in favor of utilizing the multiple methods to better determine causality.

There has been a movement of experimental work on self-control in social psychology where it is primarily conceived as a limited capacity that functions like a muscle (Baumeister, Vohs, & Tice, 2007), although there are great limitations to this concept (Kurzban, 2011). Within systems-level neuroscience research, a common approach relies on simple model tasks taxing behavioral inhibition that are easily



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paired with neuroimaging such as go/no-go and stop-signal tasks (Monterosso, Piray, & Luo, 2012). Given a systematic mapping between brain function and brain structure, imaging data becomes simply another dependent variable that can be utilized to test between theories (Henson, 2005). Henson et al. (1999) used an imaging experiment to test a dual process model of recognition memory against a single process model.

## Neuroeconomics and Loss Aversion

One phenomenon of particular interest to both consumer researchers (Novemsky & Kahneman, 2005) and neuroeconomists is loss aversion which refers to the tendency for losses to have greater hedonic impact than comparable gains. One interesting aspect of human decision making is a strong aversion to potential loss. Context effects refer to everything that biases an individual's affective forecast at the moment of the forecast such as the individual's environmental situation (Schwarz & Strack, 1999) and the motivational state (Buehler, McFarland, Spyropoulos, & Lam, 2007). Individuals fail to empathize with the requirements of their future selves, leading to a discrepancy between predicted utility and experienced utility (Lades, 2012).

Behavior in both risky and riskless contexts regularly reveals that individuals treat losses as if they were more effective than comparable gains (Rick, 2011). If losses are experienced no more intensely than comparable gains, then loss-averse behavior is misguided on both monetary and affective grounds (Kermer, Driver-Linn, Wilson, & Gilbert, 2006). In risky contexts, loss aversion can help to explain widespread risk aversion (Kahneman & Lovallo, 1993), as well as the so-called "St. Petersburg Paradox" (Camerer, 2005). In riskless contexts, loss aversion is normally advocated to explain the endowment effect (Thaler, 1980).

Loss aversion can help to analyze a broad range of phenomena, including the sunk cost fallacy, the attraction effect, the compromise effect, anticipated and experienced regret (Kardes, 1994), the status quo bias (Samuelson & Zeckhauser, 1988), brand choice (Hardie, Johnson, & Fader, 1993), labor supply (Camerer, Babcock, Loewenstein, & Thaler, 1997), the equity premium puzzle (Benartzi & Thaler, 1995), organ donation decisions (Johnson & Goldstein, 2003), and incumbency biases in elections (Quattrone & Tversky, 1988). Loss aversion is diminished for money or goods systematically allocated for exchange (Novemsky & Kahneman, 2005), gambles with small amounts of money (Harnick, Van Dijk, Van Beest, & Mersmann, 2007), gambles whose probabilities are concluded from outcome feedback (Erev, Ert, & Yechiam, 2008), and unattractive goods (Brenner, Rottenstreich, Sood, & Bilgin, 2007). Sellers with considerable marketplace experience (List, 2003) or influenced by incidental sadness (Lerner, Small, & Loewenstein, 2004) or positive mood (Zhang & Fishbach, 2005) tend to acknowledge reduced loss aversion.

## Neuroeconomics and Temporal Discounting

Temporal discounting, at a behavioral level, refers to the intertemporal reward preferences often characterized by a decrease in reward value as a function of the delay to its receipt (Rachlin & Green, 1972). Bickel et al. (2007) stated that temporal discounting, considered as a measure of one's location on the continuum of impulsive decision-making to self-control, represents the interaction of these valuation systems and their associated neural networks. The neuroeconomic approach applies the mathematically tractable economic formalizations to the nervous system and focuses on basic economic concepts



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such as utility (Kable & Glimcher, 2007), risk (Platt & Huettel, 2008), and temporal discounting (Kim, Hwang, & Lee, 2008), thus providing quantitative frameworks for examining the neural mechanisms emphasizing cognitive processes.

Temporal discounting has been examined with tasks that arrange other sequences of questions, questionnaires, and single-item choice assessments (MacKillop, 2013). Bickel et al. (2014) explained that these procedures, although all measuring preferences for smaller sooner versus larger delayed rewards, have been referred to with a variety of different names including delay of gratification, delay discounting, impulsive choice, intertemporal choice, and time preference.

## Neuroeconomics of Decision Making in Humans and Animals

Decision making refers to the process of using preferences, selecting and executing actions, and evaluating outcomes (Ernst & Paulus, 2005). Decision making requires the coordinated activity of motivational, emotional, and cognitive circuitry to weigh alternatives, take actions, and learn from feedback (McCabe, 2008). All animals and humans have an instinctive desire to explore their environment which requires neural mechanisms that detect rewards, identify punishments, and learn policies that map the predictive state representations onto a distribution of actions (McCabe, 2008).

Decision making includes preference formation, action selection, and execution and evaluation of outcomes (Sharp et al., 2012). Neuroeconomics, a discipline that marries the mathematical formalisms of classical economics, the psychophysical methods of behavioral economics, and contemporary neurosciences (Glimcher, 2009), provides a descriptive test of the functionality-based classification scheme for defining mechanistic pathologies in decision making (Kalenscher & van Wingerden, 2011).

In designing a cognitive neuroscience experiment, the experimenter must decide whether or not to study human or nonhuman brains (McCabe, 2008). Nonhuman brains are often used as models of the human brain based on the evolutionary hypothesis that the human brain evolved over time by extending homologous functions, and computations, in predecessor brains (Gazzaniga, Ivry, & Mangun, 2002). In nonhuman brains, the experimenter can use the lesion experiments, genetic manipulations, neuronal stimulation of specific neurons, and single-cell recordings methods to measure neuronal signals and neuronal connectivity in order to reconstruct neuronal mechanisms and learn how they compute (Gazzaniga et al., 2002).

Concerning the single-unit recordings methods in animals and neuroimaging in humans, the striatal dopaminergic signaling is critical for reward-related processing, motivation, and learning (Montague, Hyman, & Cohen, 2004). The dysfunctional dopaminergic signaling disrupts the reward anticipation in drug addiction (Schultz, 2011). Morris et al. (2006) indicated that the firing rates of midbrain dopamine neurons compute economic decision parameters (e.g., reward probability, reward delay, and reward uncertainty). Dopaminergic signaling is included in assessing the economic costs and benefits of upcoming rewards.

Neurons in rodent nucleus accumbens encode anticipated reward benefits without encoding response costs to achieve the reward (Gan, Walton, & Phillips, 2010). The nucleus accumbens has a significant role in the cognitive processing of motivation, pleasure, and reinforcement learning, and thus has significant role in addiction. The economic computations by the mesolimbic dopamine system contribute to addiction and other motivation-related disorders (Chang, Barack, & Platt, 2012).

Temporal discounting describes a time-dependent devaluation of economic value (Green & Myerson, 2004), and is a phenomenon observed across multiple species including rodents, monkeys, and humans



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(Hwang, Kim, & Lee, 2009). When provided an option to choose an immediate but smaller reward over a larger reward with a longer delay, animals reliably prefer the immediate option (Myerson & Green, 1995). Addicted individuals discount more than non-addicted individuals (Schultz, 2011). Single-unit recordings in monkeys demonstrate that neurons in the striatum mediate computations underlying temporal discounting (Cai, Kim, & Lee, 2011).

Cardinal et al. (2001) indicated that the rats with nucleus accumbens lesions display severe difficulty in choosing a delayed reward option in an intertemporal choice task, suggesting a critical role of nucleus accumbens in computing economic values of rewards in time. Parkinson et al. (1999) stated that the nucleus accumbens lesions do not abolish the reward sensitivity altogether but impair the implementation of an optimal strategy as if these animals cannot accurately compute temporally discounted utility to guide decisions. Neural correlates of temporal discounting are found in the prefrontal cortex (Kim & Lee, 2011).

## Neuroeconomics, Behavioral Economics, and Irrationality

Behavioral economics has its roots in the law of demand which states that the demand for a commodity decreases in a mathematically defined manner as its unit price increases (Hursh, 1984). Rowland et al. (2008) indicated that economists have used behavioral economics concepts to understand economies and consumer behavior, and it has become clear that groups of humans do not function in an economically optimal manner, defined, for example, as paying the least possible unit price among an array of choices. Behavioral economics emerges against the backdrop of the dominant normative approach to economic modeling recognized as the rational choice theory (Monterosso et al., 2012). Economic evaluation is often complicated by quality or perceived quality of goods, or too many concurrent choices (Wansink, 2004). The field of consumerism is the study of why people make particular choices in the particular markets (Dagevos, 2005).

Bickel et al. (2012) indicated that modern behavioral economic and neuroeconomic approaches consider addiction to function, in part, as a possible valuation disorder wherein normal decision-making mechanisms become dysfunctional, resulting in pathological reward processing. The study of human choice behavior and the neurobiology has received attention in recent neuroimaging studies (Padoa-Schioppa & Assad, 2006). Neuroeconomics seeks to understand the neural basis of decision making (Glimcher, 2003). In some situations, humans strongly deviate from statistical optimality in their judgments, and exhibit inconsistent or irrational preferences (Summerfield & Tsetsos, 2015).

Humans choosing among economic alternatives are often unduly swayed by irrelevant contextual factors, leading to inconsistent or intransitive decisions that fail to maximize potential reward (Kahneman, Slovic, & Tversky, 1982). Rationality is operationalized with a small set of minimum requirements that need to be satisfied for behavior to be coherent and orderly over time (Arrow, 1986). When measurement of brain function became affordable and accessible, many behavioral economists welcomed the idea of incorporating brain data into modeling, in the hope that modeling could be improved by identifying neurobiological gears between input and output. Irrational economic behavior can arise if the brain computes and represents stimulus value relative to the context provided by other previously (Stewart, Chater, & Brown, 2006) or currently available options (Louie, Khaw, & Glimcher, 2013).

Behavioral economists have collaborated with neuroimaging researchers seeking to identify brain correlates of behavioral economic phenomena, especially the sources of irrationality (Breiter, Aharon, Kahneman, Dale, & Shizgal, 2001). Concerning irrationality, the deficiencies in many contexts motivated



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a breakaway group of economists and psychologists to pay special attention to irrationality to develop more descriptively accurate alternatives (Camerer & Loewenstein, 2004). These divergences include non-normative probability weighting (Edwards, 1954), incomplete search of option space (Simon, 1967), reference dependence in utility judgments (Kahneman & Tversky, 1979), weighing delays nonuniformly (Laibson, 1997), and emotional state dependent utility (Loewenstein, 1996).

## Neuroeconomics and Utility Theory

Although decision makers are reported to have difficulties in making comparisons among multidimensional decision outcomes, economic theory assumes a unidimensional utility measure (Witt & Binder, 2013). The decision makers' difficulties can be explained once the motivational aspects of utility (e.g., wanting) are disentangled from the experiential ones (e.g., liking) and the features of the different brain processes involved are recognized (Witt & Binder, 2013). At the essence of microeconomic theorizing lies the concept of individual preferences. It is the outcome of a century-long transformation of utility theory and its core notions (Bruni & Sugden, 2007).

In behavioral economics (Winkielman & Berridge, 2003), the two qualities of utility as motivator and experienced reward are identified with the concepts of wanting and liking, respectively. The motivational aspect of choosing an action can be identified with the notion of wanting (Berridge, 1999), which relates to appetite or incentive motivation in biology. The incentive value of an action (e.g., the reward) expected in terms of enjoying pleasures or relief from pain related to the forward looking preferences. Unless entirely random, the choice of an action is contingent on some form of expectations (Kahneman, Wakker, & Sarin, 1997). The wanting and liking features are not causally independent of each other and possess different neural correlates (Knutson & Peterson, 2005).

Without going into the details of brain imaging (e.g., EEG, TMS, fMRI, and positron emission tomography), studies on reward processing have opened up to some extent what was previously a "black box"; namely, the brain activities that are triggered when an individual encounters a rewarding object (McClure, York, & Montague, 2004). By considering how pleasure is coded in the brain (Kringelbach & Berridge, 2010), the neurobiology of reward can differentiate between the three psychological components of reward (Berridge & Kringelbach, 2008). The components are the learning, liking, and wanting. Individual organisms learn that goal objects are rewarding because of their affective (hedonic) qualities and because of the incentive salience (the wanting) that is attached to these hedonic qualities. All three component parts (learning, liking, and wanting) are mediated by the interactive neural systems (Witt & Binder, 2013).

While different tasks in general activate different brain regions, rewarding stimuli seem to consistently activate the same specific regions. Dopamine systems project from the ventral tegmental area to the nucleus accumbens (i.e., a part of the ventral striatum), amygdala, and frontal cortex and from the substantia nigra to the dorsal striatum (Becker & Meisel, 2007). The substantia nigra is a brain structure located in the mesencephalon (midbrain) that plays an important role in reward, addiction, and movement.

Besides these core areas, the orbitofrontal cortex (i.e., a part of the prefrontal cortex), the ventral pallidum, and the ventral striatum play an important role as the brain substrates of reward processing. The orbitofrontal cortex has been found to receive the direct input from primary taste and olfactory cortices as well as from higher-order visual and somatosensory areas (Kringelbach, 2005). It is an ideal place for the storage of reward values of sensory stimuli (McClure et al., 2004). The amygdala seems to be involved in processing the intensity of positive and negative stimuli. The ventral striatum plays an important role



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concerning rewards because of its connection with the mesencephalic (midbrain) dopamine system and the orbitofrontal cortex and amygdala (Holland & Gallagher, 1999).

The release of the neurotransmitter dopamine from the ventral tegmental area on the nucleus accumbens has been recognized as the mediating pleasure (Salamone, Correa, Farrar, & Mingote, 2007). The release of dopamine does not seem relevant for generating liking (Robinson & Berridge, 2003). Activation or suppression of mesolimbic dopamine systems does not change the liking of sweet tastes (Leyton, 2010). Lesions that eliminate dopamine in the nucleus accumbens do not impair the liking either (Berridge & Robinson, 1998). Dopamine plays a role in reward processing by mediating the wanting and learning (Caplin & Dean, 2008).

## Neural Systems in Economic Decision Making

Evidence from a range of fMRI studies indicates that the ventral striatum and the ventromedial prefrontal cortex are implicated in the representations of reward (Elliott, Newman, Longe, & Deakin, 2003). These brain regions are not only shown to code for the reward itself at the time of its delivery, but also activated by reward-predicting stimuli in the anticipation of reward (Preuschoff, Bossaerts, & Quartz, 2006). In the context of risk processing, many studies have shown the following four key regions to be involved: the anterior cingulate cortex, the anterior insula, the dorsolateral prefrontal cortex, and the ventral striatum (Rushworth & Behrens, 2008). The anterior insula plays an important role in affective influences on decision making (Winkielman, Knutson, Paulus, & Trujil, 2007) and is related to the aversive emotions such as disgust (Adolphs, 2002). Risk-related activity in the anterior insula can reflect the processing of affective responses to risk, as suggested by some theories on risk (Loewenstein et al., 2001).

Basic neuroeconomic games allow for the modeling of the effects of beliefs and affect on reward processing (Sharp et al., 2012). Delgado et al. (2005) used a neuroeconomics game (e.g., trust task) to show that prior social and emotional information on trust game partners modulates reward responses in the brains of healthy adults. Sharp et al. (2011) showed that the modulation of insula responses is absent in the brains of boys with externalizing behavior problems. King-Casas et al. (2008) indicated that the norms used in perception of social gestures are pathologically perturbed among individuals with the borderline personality disorder, with differential insula activation in these patients compared with normal control subjects. The contribution of neuroeconomics games is the largest in the domain of social interaction (King-Casas & Chiu, 2012) where social-cognitive research with traditional methods has struggled to find ways to reach the real-life social interaction with ecological validity.

Neuroeconomics has started investigating the effect of delayed rewards resulting in partly ambiguous results (Ballard & Knutson, 2009). Neuroeconomic tasks are designed to more closely mirror the physical mechanisms of reward processing by tapping directly into utility functions while outcome uncertainty during anticipation in a monetary reward task is probed (Knutson, Bhanji, Cooney, Atlas, & Gotlib, 2008). Declerck et al. (2013) indicated that the motivation to cooperate generated by the reward system in the brain (extending from the striatum to the ventromedial prefrontal cortex), is modulated by two neural networks: a cognitive control system (centered on the lateral prefrontal cortex) and a social cognition system (including the temporo-parietal junction, the medial prefrontal cortex, and the amygdala) that processes trust and threat signals.

The mesolimbic reward system is formed by dopaminergic projections emanating from cell groups in the ventral tegmental area in the midbrain which loop through the limbic nuclei, the dopamine-rich nucleus accumbens in the ventral striatum, and connect to the ventromedial prefrontal cortex (Tekin &



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Cummings, 2002). This medial dopaminergic pathway is applied to facilitate the affective and appetitive behavior (Schultz, 2002) and incentive motivation (Depue & Collins, 1999). It is activated when people receive or expect to receive a reward (Tricomi, Rangel, Camerer, & O'Doherty, 2010).

The ventromedial prefrontal cortex is implicated when subjects make an active choice and select the most valuable option (Rangel & Hare, 2010) and has been recognized to have a more general role in response selection and action planning (Schoenbaum, Setlow, & Ramus, 2003). Hare et al. (2008) stated that the brain region acts as an information aggregator, comparing and selecting the best option from a set of alternatives. However, the brain region responds to the reward value of a single item, when there is no choice required and no immediate alternative with which to compare (Knutson, Taylor, Kaufman, Peterson, & Glover, 2005).

## Neural Systems in Reward Systems

The reward, called experienced utility in economics, is unidimensional as regards its neural correlates, lending support to the unidimensional measure for utility. Reward is processed along a single final common pathway in brain regions (McClure et al., 2004). The brain converts multidimensional payoff records into one single common currency (Kringelbach & Berridge, 2010). The plausibility of the common currency hypothesis of reward does not seem to be affected (Leknes & Tracey, 2008). The neural currency is the foundation of experiencing the reward associated with the goal objects (Witt & Binder, 2013). Basic research on the neuromodulation of reward processing (Schultz, 2006) indicates that economic decision making (e.g., reward processing) is influenced by dopamine (Fiorillo, Tobler, & Schultz, 2003).

While dopamine is associated with incentive motivation and wanting, the intense pleasurable feelings, gratification, and liking systematically involve the opioids and the gonadal steroids oxytocin and vasopressin (Declerck et al., 2013). In the striatum, the nucleus accumbens shell has been recognized as a site of integration of incentive information because it receives projections from many corticolimbic structures and contains opiate and oxytocin receptors (Depue & Morrone-Strupinsky, 2005). Functional interactions between dopamine and opioids (Depue & Morrone-Strupinsky, 2005) and between dopamine and oxytocin (Skuse & Gallagher, 2008) contribute to the hedonic effects accompanying reward, but these contributions appear to be independent of dopamine's role in assessing the salience of reward cues (Depue & Morrone-Strupinsky, 2005).

Fehr and Camerer (2007) indicated there is the extensive overlap of activation in the striatum between rewards for oneself (e.g., receiving or expecting a sum of money) and rewarding others (e.g., voluntarily giving money away). Izuma et al. (2010) confirmed with an fMRI experiment that the ventral striatum is activated when publically donating money to charity as well as when privately receiving money. For the brain, extrinsic lucrative rewards are equivalent to the intrinsic affective rewards stemming from socially motivated decisions (Declerck et al., 2013). Within the medial system, the ventromedial prefrontal cortex is well-positioned to serve as an interface between emotional and motivational processes, and therefore to shape the anticipation of reward. Being a highly connected integration center, it represents what a current choice is worth to the decision makers (Fellows, 2007) in accordance with their own moral goals (Hare et al., 2009). Regarding the emotional input of the ventromedial prefrontal cortex, Tekin and Cummings (2002) indicated that the medial system mediates the empathic and motivated behavior.

Dopamine neurotransmission in the reward system plays a critical role in the process of evaluating whether or not on its value, the cooperative decisions making can be maintained or interrupted to be replaced by decisions that lead to more satisfying outcomes (Declerck et al., 2013). The dopamine-rich



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caudate nucleus, previously linked to learning and memory, is an essential component in the reinforcement of actions potentially leading to reward (Tricomi, Delgado, & Fiez, 2004). The dopamine-rich caudate nucleus is involved in updating information to either modify future behavior in accordance with environmental changes, or to keep the status quo as long as expectations are met (Delgado, 2007). Decisions to donate effectively activate the oxytocin-rich subgenual area that is a brain region connected to the mesolimbic dopamine reward system related to the social attachment formation (Bartels & Zeki, 2004).

Both ventral striatum and dorsal striatum integrate inputs from other networks, including regions located in the lateral prefrontal cortex implicated in cognitive control (Staudinger, Erk, Abler, & Walter, 2009), and the temporal parietal junction included in the social cognition (Hare, Camerer, Knoepfle, & Rangel, 2010). Baumgartner et al. (2008) stated that the activity in the dorsal striatum can be developed by oxytocin or by information regarding the trustworthiness of others. Oxytocin, the neurotransmitter involved in the trusting behavior (Kosfeld, Heinrichs, Zak, Fischbacher, & Fehr, 2005), can interact with dopamine release in the ventral striatum to affect the social motivation (Skuse & Gallagher, 2008).

## Neural Systems in Cognitive Control System

Paralleling the medial dopaminergic system, which is related to the forming expectations of reward, runs a lateral dopaminergic pathway that originates in a different population of cells in the ventral tegmental area and connects the substantia nigra in the midbrain with the dorsal striatum and stimulates the lateral regions of the prefrontal cortex (Tekin & Cummings, 2002). This lateral system evolved in full more recently during primate evolution and supports the executive functions which are crucial to adapt the goal-directed behavior to the changing environmental contingencies (Previc, 2009). The dorsolateral prefrontal cortex is an essential component of the working memory and executive functions (Miller & Cohen, 2001) and provides the cognitive capacities needed to resolve the conflict generated by the mixed intentions of a social dilemma (Carter & van Veen, 2007). An additional function of the dorsolateral prefrontal cortex is to provide the impulse control to resist the immediate selfish dedication in order to acknowledge the greater cooperative benefits at a later time (McClure et al., 2004).

Working in harmony with the dorsolateral prefrontal cortex, the dorsal anterior cingulate cortex is included in the conflict monitoring whenever there are the competing motives such as those presented in the social dilemmas (Carter, Botvinick, & Cohen, 1999). The dorsal anterior cingulate cortex is located in the posterior medial part of the frontal cortex and interconnected with the dorsolateral prefrontal cortex and the ventral striatum (Alexander, DeLong, & Strick, 1986). The human orbitofrontal cortex is an important brain region for the processing of rewards and punishments, which is a prerequisite for the emotional and social behaviors which contribute to the evolutionary success of humans (Kringelbach & Rolls, 2004). McClure et al. (2004) hypothesized that the discrepancy between the short-term and long-term choices in human time discounting reflects the differential activation of distinguishable neural systems. McClure et al. (2004) measured the brain activity of participants as they made an array of intertemporal choices between early and later monetary rewards. The early rewards have a lower value than the later rewards (McClure et al., 2004).

## Game Theory, Strategic Interaction, and Neuroeconomic Studies

Game theory is the formal study of decision making where several players must make choices that potentially affect the interests of other players. Game theory provides models, known as games, to study



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the interactions with formalized incentive structures (Braeutigam, 2005). Such games are of profound theoretical importance in economics where individual wishes to model the processes in which the optimality of a course of economic action is affected by decision makers and competitors (Glimcher, 2002). Game theory relates to strategic thinking implicit in the notion of equilibrium and common knowledge of rationality (Griessinger & Coricelli, 2015). The emergence of bounded rationality models (Gigerenzer & Selten, 2002) and the behavioral game theory provide a theoretical framework in order to solve the neural roots of strategic reasoning and emphasize the decision-making mechanisms involved in social interaction. Game theory defines the strategic interactions as games representing decisions between agents where individual's payoffs depend on the other's actions, thus extending the model of individual's decision making to the understanding of the interactions in multi-agents situations (Griessinger & Coricelli, 2015).

The Nash Equilibrium, also called strategic equilibrium, is a list of strategies, one for each player, which has the property that no player can unilaterally change his or her strategy and obtain a better payoff. Several experimental and empirical studies show behavioral responses that deviate from the prescription of standard game theory and report the evidence of non-equilibrium play (Costa-Gomes, Crawford, & Broseta, 2001). Equilibrium play in normal form games corresponds to a distinctive pattern (in terms of transitions in the visual information acquisition between own and other player's payoffs), and any deviation generates non-equilibrium responses. Quantal response equilibrium (QRE) belongs to a class of bounded rationality models that relaxes the assumption of the best response and considers errors in choices, keeping the assumption of statistically accurate beliefs and equilibrium responses (McKelvey & Palfrey, 1995). QRE theory has several features in common with findings in recent neuroeconomics literature on noisy and stochastic choice (Haile, Hortacsu, & Kosenok, 2008). QRE can be reduced to a form of bounded accumulation models (Dickhaut, Rustichini, & Smith, 2009), a class of models that has been proven relevant to capture under a common theoretical framework stochasticity in value-based decision, reaction time, and visual fixation (Krajbich, Armel, & Rangel, 2010).

Neuroeconomic studies of coordination games have taken advantage of the established correlations between the populations of neurons in various brain areas and the mental processes in an attempt to validate theoretical models of how people solve the coordination problems (Bourgeois-Gironde, 2010). Coricelli and Nagel (2009) identified the neural substrates of strategizing in the beauty contest games. The successful strategic reasoning in that game effectively correlates with neural activity in the medial prefrontal cortex (Coricelli & Nagel, 2009). Jeankins et al. (2008) examined the repetition suppression of a brain region in cognitive tasks that consist in the introspection of individual's own mental states versus inferences about whether other people are having similar mental states. The neural bases of the human mentalizing ability have immediate neuroeconomic importance in order to clarify the cognitive basis of strategizing as it is captured by game theory (Singer & Fehr, 2005).

Sanfey et al. (2003) investigated by the neural basis of economic decision making in the ultimatum game by using the fMRI. The subjects act as responders in a game where they can either accept or reject an offer made by a proposer who decides how to split a given sum of money between the two. Standard utility theory (Frank, 2003) predicts that the responders accept any offer in this game, on the grounds that any monetary gain is better than none. The unfair offers have a significant chance of being rejected when the proposer is a human being as opposed to a computer (Sanfey et al., 2003). Activity in anterior insula is significantly increased for the rejected unfair offers, suggesting a key role for the emotion in choice and decision making (Braeutigam, 2005).



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Smith et al. (2002) utilized the positron emission tomography to study neuronal responses in subjects choosing between risky games (i.e., known payoffs with well-defined probabilities) and ambiguous games (i.e., known payoffs with undefined probabilities). The main finding in that study is a behavioral interaction effect between outcome structure (e.g., risk and ambiguity) and payoff structure (e.g., loss and gain). The interaction effect observed in that study is contrary to standard economic reasoning, where individual assumes the evaluations of outcomes and payoffs to be independent (Braeutigam, 2005). McCabe et al. (2001) applied the fMRI to study the neuronal mechanisms indicating the cooperation in the two-person reciprocal exchange. The observations made in that study suggest that in a game of trust and reciprocity, the cooperative subjects considerably exhibit more activity in the frontal pole (e.g., Brodmann area 10 in neural systems) than non-cooperative players. The main finding in that study can bear on the studies of pervasive developmental disorders (e.g., autism) associated with deficits in theory of mind processes (Siegal & Varley, 2002).

Rilling et al. (2004) tested the possible role of the dopamine prediction error in evaluating the outcome of a cooperative decision in the fMRI experiment using the prisoner's dilemma paradigm. The prisoner's dilemma is a classic non-zero sum game often used to investigate cooperation in evolutionary biology, social psychology, and behavioral economics. Two players have to independently choose to cooperate (C) or defect (D) and will be awarded a sum of money in the function of the choices that they make. There are the four possible outcomes of the game: both players cooperate (CC); both players defect (DD), player 1 cooperates and player 2 defects (CD), or vice versa (DC).

The payoffs for these different outcomes are such that DC > CC > DD > CD. When played only once, DC is the dominant strategy because, irrespective of the strategy of the other player, a rational player has no incentive to deviate from this choice. The brain contrasts between reciprocated and unreciprocated cooperation indicated that only reciprocated cooperation activated the ventral striatum and the ventromedial prefrontal cortex (Declerck et al., 2013). This activity reflects a positive prediction error (i.e., the discrepancy between reward estimate and actual outcome) from which the player can learn whether to keep on cooperating or to switch to a different strategy (Declerck et al., 2013).

The intrinsically rewarding value of cooperation without remuneration has been illustrated with fMRI. Decety et al. (2004) compared the neural correlates of cooperation and competition during a computer game whereby players had to construct a target pattern either alone, with another person (cooperation) or against another person (competition). Compared to competition, cooperation is associated with increased activity in the ventromedial prefrontal cortex and the posterior cingulate cortex. Decety et al. (2004) interpreted these results to be consistent with prepositions that people seek cooperation because it is socially more rewarding than competing. Krajbich et al. (2009) stated that the role of the ventromedial prefrontal cortex in generating positive affect from social interaction is confirmed by a study of patients with the ventromedial prefrontal cortex lesions.

The ventromedial prefrontal cortex patients are less generous and less trustworthy in a battery of economic games concerning the inability to experience social emotions (Bechara & Damasio, 2005). The hedonic rewards deriving from cooperation result from the fact that many people are intrinsically motivated to cooperate out of fairness considerations (Tabibnia & Lieberman, 2007). People are motivated to make decisions they consider to be morally right (Declerck et al., 2013). Moral judgments whether or not it is right to seize the life of one person to save several others activate the ventromedial prefrontal cortex. Patients with the ventromedial prefrontal cortex lesions are more likely to authorize utilitarian responses (Young & Koenigs, 2007).



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## Types of Evidence about Economic Behavior

Neuroeconomics provides three types of evidence regarding economic behavior as follows: (1) evidence which suggest the influence of new variables that are implicit, underweighed, or missing in the rational choice theory; (2) evidence which show mechanisms that implement the rational choice (e.g., utility maximization and the Bayesian integration of information), typically in tasks that are highly sculpted to make decisions that are useful for survival across species (e.g., vision, food, sex, and safety); and (3) evidence which support the kinds of variables and parameters introduced in behavioral economics in terms of time discounting, ambiguity aversion, nonlinear probability weighting, and limited strategic thinking. Firstly, the goal at the evidence for new psychological variables is to show that understanding biology and the brain can make fresh predictions about observed choices. Debates between rational choice and behavioral models usually revolve around psychological constructs, such as loss aversion (Kahneman & Tversky, 1979), the role of learning and limited strategic thinking, a preference for immediate rewards, and precise preferences over social allocations, which have not been observed directly.

Secondly, the evolution regarding evidence for the rational choice principles has either created neural circuits which reach the Bayesian rational choice, or learning mechanisms that generate the Bayesian rational choice with sufficient experience in a stationary environment, putting to use the highly developed capacities for sensory evaluation (e.g., vision, taste, and smell), memory, and social imitation. Platt and Glimcher (1999) found the remarkable neurons in monkey's lateral intraparietal cortex correlated with the expected value of juice rewards, triggered by a monkey's eye movement (Bayer & Glimcher, 2005). Deaner et al. (2005) stated that monkeys can reliably negotiate the juice rewards with exposure to the visual images.

Thirdly, the behavioral economics principles concerning evidence for behavioral economics principles explain the four areas in which neuroscience has established the tentative neural foundation for ideas from behavioral economics which are derived from experiments and field data. The four areas of behavioral economics principles involve time discounting, ambiguity aversion, nonlinear probability weighting, and limited strategic thinking.

1. Time discounting: Extensive experiments with animals, and later with humans, established that the discount factor put on future rewards is closer to a hyperbola, $1/(1+kt)$, than an exponentially-declining discount factor $\delta^t$.
2. Ambiguity aversion: In subjective expected utility theory, the willingness to take bets on events is taken to reveal subjective probabilities of those events. The Ellsberg Paradox showed that for a small majority of subjects, when two events are equally likely but poorly understood, the revealed decision weights seem to combine judgment of likelihood and an additional factor which leads to an aversion to betting under ambiguity.
3. Nonlinear probability weighting: In the expected utility theory, the utilities of gamble outcomes are weighted by their probability p. But many experimental studies suggest that people actually weight probabilities nonlinearly with a function $\pi(p)$, overweighting low probabilities and underweighting probabilities close to the certainty effect.



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4. Limited strategic thinking: In game theory, players are in equilibrium when they guess correctly what other players will do. When their beliefs about other players' strategies match the actual strategies others choose. Camerer et al. (2004) described an alternative cognitive hierarchy theory in which players use various steps of strategic thinking. Some step-0 players randomize, other step-1 players anticipate randomization and best-respond to it, step-2 players best-respond to a mixture of step-0 and step-1 players, and so on. Since the highest-step players anticipate correctly the distribution of what other players will do, their beliefs are in equilibrium, but the beliefs of lower-step thinkers are not in equilibrium because they do not guess correctly what higher-step players will do.

## FUTURE RESEARCH DIRECTIONS

The strength of this chapter is on the thorough literature consolidation of neuroeconomics. The extant literature of neuroeconomics provides a contribution to practitioners and researchers by describing a comprehensive view of the functional applications of neuroeconomics to appeal to the different segments of neuroeconomics in order to maximize the business impact of neuroeconomics in the decision-making process. The classification of the extant literature in the domains of neuroeconomics will provide the potential opportunities for future research. Future research direction should broaden the perspectives in implementation of neuroeconomics to be utilized in the knowledge-based organizations.

Practitioners and researchers should acknowledge the applicability of a more multidisciplinary approach toward research activities in implementing neuroeconomics in terms of knowledge management-related variables (e.g., knowledge-sharing behavior, knowledge creation, organizational learning, learning orientation, and motivation to learn). It will be useful to bring additional disciplines together (e.g., strategic management, marketing, finance, and human resources) to support a more holistic examination of neuroeconomics in order to combine or transfer existing theories and approaches to inquiry in this area.

## CONCLUSION

This chapter presented the fundamentals of neuroeconomics, thus describing the concept of neuroeconomics; neuroimaging applications; neuroeconomics and loss aversion; neuroeconomics and temporal discounting; neuroeconomics of decision making in humans and animals; neuroeconomics, behavioral economics, and irrationality; neuroeconomics and utility theory; neural systems in economic decision making; neural systems in reward system; neural systems in cognitive control system; game theory, strategic interaction, and neuroeconomic studies; and the types of evidence about economic behavior.

Research in neuroeconomics has revealed the potential representations of value and costs within the brain. Understanding how the brain uses information about uncertainty when making decisions, and the brain circuits and chemicals involved in that process, effectively form the foundation for this emerging field. Studying the brain's decision-making processes using a combination of techniques from the fields of psychology, neuroscience, and economics, neuroeconomics determines the practical understanding of the brain's decision-making processes, thus challenging age-old assumptions to support more tailored research, treatment options, and greater insight into how and why judgments are formed.



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Regarding neuroeconomics, the studies of decision making in social environments have explained the emotional components of decision making that may help to explain some deviations from optimal decision making in humans. Neuroeconomics brings together behavioral methods and sophisticated computational theories from microeconomics, an understanding of emotional influences on behavior from psychology, and human functional neural imaging from neuroscience. It is essential for modern organizations to understand their neuroeconomics applications and develop a strategic plan to regularly check their practical advancements of neuroeconomics toward achieving improved organizational performance.

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## KEY TERMS AND DEFINITIONS

**Behavioral Economics:** The study of the effects of social, cognitive, and emotional factors on the economic decisions of individuals and institutions and the consequences for market prices, returns, and the resource allocation.

**Decision Making:** The cognitive process resulting in the selection of a course of action among several alternative scenarios.

**Game Theory:** A model of optimality taking into consideration not only benefits less costs, but also the interaction between participants.

**Loss Aversion:** People's tendency to strongly prefer avoiding losses to acquiring gains.

**Nash Equilibrium:** A stable state of a system that involves several interacting participants in which no participant can gain by a change of strategy as long as all the other participants remain unchanged.

**Neuroeconomics:** An interdisciplinary field that seeks to explain human decision making, to analyze the ability to process multiple alternatives, and to choose an optimal course of action.

**Neuroscience:** The scientific study of the nervous system.

**Utility Theory:** A theory used in economics that holds the belief that an item or service's utility is a measure of the satisfaction that the consumer will derive from the consumption of that particular good or service.

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Section 2

# Development and Design Methodologies

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# Chapter 6
# An Integrated Model of Perceived Risk and Risk-Reducing Strategies in the Tunisian Stock Market: Risk-Behavior Model

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## ABSTRACT

*This chapter examines the antecedents and consequences of the perceived risk of investors towards the Tunisian stock market. A questionnaire was developed and distributed to 411 individual investors chosen by 24 brokerage firms. Using the structural equation model, we operationalize the risk following the psychometric paradigm according to subjective variables (i.e. familiarity and controllability). Results prove that controllability is a significant factor in the formation of perceived risk. We also show that several factors related to the investor, the listed companies and to the stock market can influence the perceived risk by the investor towards the Tunisian stock market. Similarly, we find that perceived risk leads to intensive information search, good performance and a strong reinvestment intention. These results attest the importance of the risk perception in the decision-making process.*

## INTRODUCTION

Risk is a very important topic of investing since apprehending what it is and how it is measured is crucial for developing an investing strategy (Ricciardi, 2004). For this end, many researchers continue to look for a more thorough understanding of what constitutes risk and how it should be measured and priced in

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financial markets. In spite of previous and subsequent researchers, there is no widely accepted definition in the extent literature. Earlier studies such as Lopes (1981) and March and Shapira (1987) consider risk as the product of the consequences of an event and it probability of occurrence whereas other studies like Kaplan and Garrich (1981) define risk as the sum of danger and opportunity. By emphasizing on a 'negative connotation', some researchers prefer to define risk as virtually expected loss after a decision making (Loppe, 1988), or everything that leads to involuntarily harm (Cuny and Gaillard, 2003), or the possibility of harm, loss, destruction or an undesirable event (Ricciardi, 2004). The lack of consensus about straightforward definition of risk is not without impact at the empirical level. Indeed, academic research in finance distinguishes two different approaches of risk namely: traditional and behavioral approaches. The traditional approach of risk is based on the Efficient Markets Hypothesis and the rationality of investors. Under these assumptions, investors process information instantaneously and the prices entirely reflect all existing information (Fama, 1965a and 1965b). Besides, investors make financial decisions based on their own approach toward risk and to the actual degree of risk (Ricciardi, 2004). In this regard, Garland (2002) pinpoints that persons focus on objective risk "they have in minds that have been confirmed scientifically utilizing the obtainable knowledge and data". Indeed, objective risk is quantitative which relies on past occurrences of an event and incorporates into numerical assessments to estimate risk. So, the traditional approach of risk is based on quantitative (or objectives) measures (e.g. beta, standard deviation, semivariance, skewness, and kurtosis) which rely on a number of observations (i.e. long-term data over a specific time period) and are generally computed from sophistically statistical methods.

On the other hand, the behavioral approach of risk is based on the behavioral finance theory which is "an interdisciplinary field, developing theoretical basis, know-how, and research from the diverse making sciences of psychology and behavioral economics" (Ricciardi, 2008). Individuals make irrational decisions due to their limitations of capacity to process the information (Simon, 1986) and are influenced by heuristics, cognitive factors and affective issues. Moreover, behavioral finance scholars claim that the objective aspect of risk within decision-making and an individual's understanding of it, known as subjective (or perceived risk), are not necessarily the same (Ricciardi, 2004). So, the behavioral approach of risk attempts to pay more attention to a person and explore risk, not at the aggregate or market level, but at the individual level. In this respect, McDonald and Stehle (1975) pinpoint that "perceived risk is an exante measure which may be based on past returns, fundamental analysis, present hunches and all other information that portfolio managers and analysts believe to be germane". So, the behavioral approach of risk develops subjective measures of risk based on methods of experimental, exploratory, or survey research or psychometric paradigm.

Interestingly, the present research attempts to contribute to this line of research through an investigation of the risk perception of individual investors in the Tunisian stock market. In this respect, we study the risk perceived by investors toward the stock market by proposing a risk-behavior model which includes the antecedents and consequences of perceived risk. In the marketing literature, the perceived risk consists of two distinct components, namely: uncertainty and importance (or significance) of consequences (Mallet, 2000; Dandouau, 2000; Verhage et al., 1990; Mitchell and Greatorex, 1989) causing the information search and reduction of the amount at stake (risk-reducing strategies) in order to decrease risk (Cho and Lee 2006; Taylor, 1974; Cox, 1967a). For instance, Taylor (1974) claims that "uncertainty about the outcome can be reduced by acquiring and "handling" information. Uncertainty about the consequences can be dealt with by reducing the consequences through reducing the amount at stake or putting off the choice". So, we examine the information search and reduction of amount at stake as two



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different modes of behavioral responses to attenuate the perceived risk of individual investors. Also, we investigate the effect of risk perception on the investment behavior through the investment performance and the reinvestment intention.

Aside from consequences, we examine factors related to listed companies (the perceived quality of disclosed information and the satisfaction with yield reallocation), the investor (investor's individual profile) and the stock market (the information asymmetry and social influences) as key antecedents of the perceived risk.

From empirical standpoint, sets of questions were identified as items in questionnaire (distributed to individual investors). In particular, we use the two-dimension psychometric model of Slovic (1987) (i.e. familiarity and controllability) as a measure of risk perceptions for Tunisian individual investors.

The outline of the paper is as follows. Section 1 exhibits the model development as well as the empirical literature of risk perception. In section 2, we expose the data set used in this research. The different estimation results are provided in section 3. Discussion is reported in section 4.

## SECTION 1. RISK-BEHAVIOR MODEL DEVELOPMENT

The following section reports the empirical literature of risk perception in the investment context and discusses conceptual grounds for the different constructs and relationships described in our model.

### 1.1. Risk Perception in the Investment Context: Some Empirical Evidence

The risk perception can be defined as an assessment of risk in an uncertain investment environment (Mahmood et al., 2011) which may or may not actually prove because of many factors (Douglas and Wildavstry, 1982). Traditionally, Gooding (1975) attempted to study the risk perception in the investment context. By testing if investors perceive difference among nine stocks in terms of risk and return. To do this, a survey was mailed to randomly selected participants (professors, portfolio managers and individual investors) based on their investment related to experience and education. Results show that "while investor groups' average stock perceptions are highly related to relevant risk and return measures, significant differences may exist between portfolio managers and nonprofessional investors' average multidimensional perceptions". Subsequently, many studies attempt to examine and explain the differences of risk perception between investors (e.g. Yates and Firer, 1997 ; Gendron and Genest, 1993 ; Capstaff, 1989 ; Mear and Firth, 1988 ; Farrelly et al., 1984, 1985, 1987 ; Firer et al., 1986). For example, Farrelly et al. (1985) investigate the relationship between perceived risk and the accounting based proxies for risk identified by Beaver et al. (1970). Results prove that leverage, variability in earnings and current ratio explained 79% of the variation in average perceived risk. Farrelly et al. (1987) try to identify the accounting variables which predict risk classes as defined by investors' risk ratings. Results display that the debt ratio has a positive relationship with risk ratings whereas profit margin, return on equity, times interest earned, book value and current ratio have a negative relationship with risk perceptions.

Firer et al. (1986) attempt to study the risk perception of individual and institutional investors in the Johannesbourg stock exchange. By means of questionnaires, they show no significant differences in the risk perception between the two sets of investors. Firer et al. (1986) also display that individual's risk perceptions are correlated with other measures of risk. Moreover, Mear and Firth (1988) show that six accounting variables (e.g. liquidity ratio, industry concentration, profitability) explain approximately



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93% of the variation in the mean risk perceptions by developing a regression model. Results show that earning variability, total risk, four year price performance and familiarity with the firm explain the risk perceptions of financial analysts. In particular, knowledge and familiarity with stocks are factors that influence the risk perception. This finding was confirmed by Yates and Firer (1997). Besides, Gendron and Genest (1993) examine the impact of socioeconomic and institutional factors on the risk perception of portfolio managers. They display the importance of some factors (e.g. management quality) in the risk perception. Recently, Veld and Veld-Mercoulova (2008) study the risk perceptions of individual investors by asking experimental questions to 2226 members of a consumer panel. Results prove that most investors implicitly use more than one risk measure to assess the market risk. Vlaev et al. (2009) pinpoint the influence of some factors on the risk perception of investors.

Another studies point out the importance of psychological factors in the formation of the risk perception and investment decisions (e.g. MacGregor et al., 2000 ; MacGregor and Slovic, 1999 ; Olsen, 1997 ; Slovic, 1983). For example, MacGregor et al. (2000) attest that imagery and affect influence the risk perception of investors. Olsen (1997) show that four risk features which investors assign to their perceptions of risk are the concern for a large loss, the feeling of control, the potential for a below-target return and a perceived degree of knowledge. Other contextual factors can influence the risk perception of investors (MacGregor et Slovic, 1999).

Mahmood et al. (2011), Cho and Lee (2006) and Wang et al. (2006), among others, prefer to study the risk perception of investors by proposing a conceptual model in order to highlight this "complex psychological process" (Yates and Firer, 1997). Indeed, Mahmood et al. (2011) develop a psychological based investment model which includes past investment experience of investors, variations in regulatory policies, information asymmetry, sensational attitude, marital status and gender. These antecedents affect the reinvestment intentions of investors and their return propensity and risk perception. Moreover, Wang et al. (2006) develop a risk perception centered model for psychological mechanism of investment behavior. The proposed model encompasses factors (variations in policies related to stock market, information asymmetry, satisfaction with information dissemination by listed company and satisfaction with yield reallocation by listed company) which influence the investment behavior of Chinese individual investors (investment performance, reinvestment intention and investment satisfaction) via the risk perception toward the stock market. To measure the risk perception of investors, Wang et al. (2006) use the two-dimension psychometric model of Slovic (1987). By using a 42-item questionnaire distributed to 1547 investors, results display a speculative orientation and a low level of risk perception among investors. On the other hand, Cho and Lee (2006) investigate the role of perceived risk in consumers' adoption of risk-reducing strategies in the context of household investment decisions. Results display that higher self-efficacy, greater wealth position and risk-taking propensity lower an individual's perceived risk for investing in the stock market. Cho and Lee (2006) also find that perceived risk increases the amount of information search and transaction frequency whereas it reduces the proportion of assets invested in the stock market.

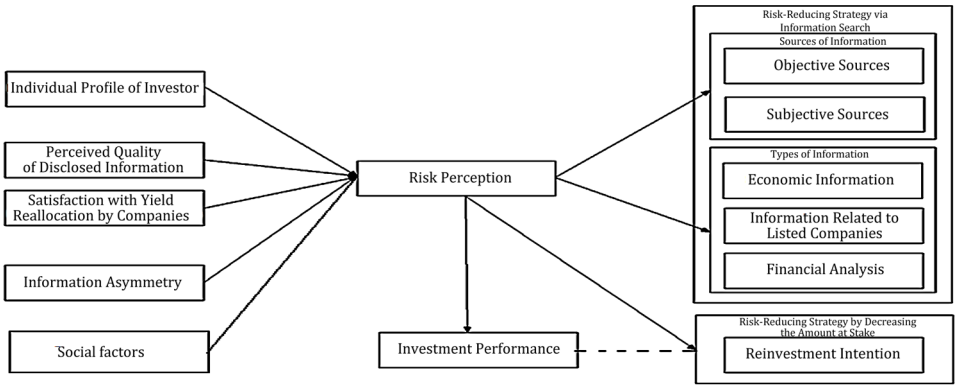
## 1.2. Conceptual Framework

The model investigated in this study is depicted in figure 1. The proposed model encompasses the antecedents and consequences of the perceived risk when investing in the stock market.



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*Figure 1. Conceptual Model of Antecedents and Consequences of Perceived Risk*




The model (figure 1) is based on the following propositions: **(1)** The investor's individual profile (factor related to investor), the perceived quality of disclosed information and satisfaction with yield reallocation by listed company (two factors related to company) and the information asymmetry (factor related to stock market) influence the investor's risk perception; **(2)** The risk perception affects the behavior intended to manage uncertainty and significance of consequences; **(3)** The risk perceived by the investor has an impact on his investment performance.

As reported in figure 1, the proposed model rests on the following propositions: **(1)** The investor's individual profile (factor related to investor), the perceived quality of disclosed information and satisfaction with yield reallocation by listed companies (two factors related to company) and the information asymmetry and social influences (factors related to stock market) influence the investor's risk perception; **(2)** The risk perception affects the behavior intended to manage uncertainty and significance of consequences; **(3)** The investment performance plays a mediating role in affecting risk perception's impact on reinvestment intention.

### 1.2.1. Definitions of Perceived Risk

Despite of the abundance of research studies on risk perception, it is still difficult to pinpoint a straightforward definition of perceived risk. To illustrate this, Mallet (2001) reveals that "*the vagueness which characterizes the concept of perceived risk stands out as well at the level of the proposed definitions as at the level of its various facets*". Besides, Brunel (2002) reports that "*if there is no agreement around the definition of the perceived risk, there does not exist either of consensus relating to nature even contents of the latter*". Nevertheless, some attempts to define the perceived risk exist in the literature. Indeed, Bauer (1960) introduces the perceived risk by indicating that "consumer behavior involves risk in the sense that any action of a consumer will produce consequences which he cannot anticipate with anything approximating certainty, and some of which at the least are likely to be unpleasant". So, the perceived risk involves two components: the uncertainty and the negative consequences (losses). As matter of fact, Cox and Rich (1964) assert that perceived risk is "a function of two main factors, namely the amount at stake in the purchase decision, and the individual's feeling of subjective certainty that he/she will "win" or "lose" all or some of the amount at stake". As reported by Kogan and Wallach (1964), the perceived risk includes "[…] two somewhat different facets: a "chance" aspect where the focus is on probability:



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and a "danger" aspect where the emphasis is on severity of negative consequences". By emphasizing on the first component, Yates and Stone (1992) point out that there is no risk if there is no uncertainty. More explicitly, a decision situation is so-called risky when a person is uncertain about consequences of his choices (Cox, 1967a). Such a situation is likely on the one hand when possible outcomes generated by a decision vary considerably (Libby and Fishburn, 1977) and on the other hand, obtaining the desired results is strongly affected by chance. The degree of such uncertainty is judged differently from one person to another (i.e. perceived risk) (Cho and Lee, 2006). So, if the immanent uncertainty of a decision situation corresponds to objective risk, then perceived risk would be a subjective and biased evaluation of this objective risk encouraging afterward a decision-maker to choose a particular behavior (Dowling and Staelin, 1994).

Perceived risk also has a second component: significance of consequences. According to Dandouau (2000), uncertainty is "*a necessary but not sufficient condition, in order to have risk perception. Perceive uncertainty without buyer having to bear any consequences does not lead to represent his choice problem in terms of perceived risk*". The consequences relate to how the financial losses related to negative consequences are harmful (Mitchell, 1999). Cox (1967a) indicates that potential losses include the unachieved goals, loss incurred in the purchase (e.g. money and time), the penalties imposed on the person by his environment and other hazards associated with the purchase. In particular, if this loss affects significantly their financial situations, then people will tend to perceive such a risky decision situation.

Sitkin and Pablo (1992) define risk perception as a decision maker's assessment of the risk inherent in a situation. In this regard, Sitkin and Weingart (1995) refer perceived risk to "an individual's assessment of how risky a situation is in terms of probabilistic estimates of the degree of situational uncertainty, how controllable that uncertainty is, and confidence in those estimates". According to Ricciardi (2004), perceived risk is a person's opinion of the likelihood of risk related to engaging in as specific activity. Perceived risk seems to be an individual's biased assessment of a risky situation and its assessment is dependent on one's psychological and situational features.

## 1.2.2. Antecedents of Perceived Risk

Slovic (1988) reports that many factors that may influence the person's risk perception. Indeed, "several factors influence it, but some of the models suggested for risk perception have failed to explain more than a small fraction of it" (Sjöberg, 2000). In marketing research, these factors can be classified according to belonging to the characteristics of the individual, the product and the situation (e.g. Mallet, 2004; Volle, 1995). We attempt to identify factors influencing risk perception in the investment context as belonging to the investor, the listed company and the stock market.

### *1.2.2.1. Antecedent Related to Investor*

Among factors that influence risk perceived by investor is his individual profile. This profile can be defined in terms of two personality traits namely: self-confidence and optimism. According to Ricciardi and Simon (2000), the self-confidence can be depicted as "the belief in oneself and one's abilities with full conviction". Wright (1975) considers self-confidence as the individual's ability to think after observations over time, in order to understand several problems of everyday life. Self-confident individuals perceive themselves as able to manage and cope with inherent risk of investing in the stock market. So, the self-confidence can influence the way the investors perceive risk towards the stock market. Opti-



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mism is defined as "the overestimation of one's chances or one's ability" (Page, 2009). According to Weinstein (1980), individuals have unrealistic views of their own abilities. Many studies attest its existence in students' behavior (Grimes, 2002), professionals' behavior (Olsen, 1997), managers' behavior (Malmendier and Tate, 2005, Cooper et al., 1988; Larwood and Whittaker, 1977) and investors' behavior (Barber and Odean, 2001, Gervais and Odean, 2001; Bernatzi and al., 1999). This personality trait may affect the risk perceived by a person. This was confirmed by Roy and Tvszka (2005) who argue that "a robust finding on risk perception is that most people tend to be optimistic in evaluating their own future. That is, comparing to objective criteria, people assign too high probabilities to their attainments of desired outcomes". Kouabenan et al. (2006) report that optimism is an obstacle to assessing risk in the extent where people feel they are less exposed to risk than others. Moreover, Kouabenan et al. (2006) point out that "this perception is underpinned; it seems, by some overestimation of his personal ability to cope with risks involved and to perception rather poor capabilities of others to manage them". Thus, optimistic people tend to perceive risk level lower than pessimists in the investment context. Therefore, we posit the following hypothesis:

**H1:** The higher the optimism and self-confidence of investor the lower the perceived level of risk toward the stock market

#### *1.2.2.2. Antecedents Related to Listed Company*

a. Perceived Quality of Disclosed Information by Listed Company

The quality of information transmitted to the stock market play crucial role in the financial theory. Indeed, Rogers (2008) indicates that "well-functioning capital markets rely on high quality disclosure". According to Djongoue (2007), it is deemed relevant when it offers the opportunity to its users to evaluate all events in a correct manner (past, present and future). In this regard, Boisselier and Mekaoui (2005) reveal that the choice of disclosure strategy is an important constraint which a company has to deal with in the response of the stock market's expectations. Therefore, the quality of information delivered to stock market is the only guarantee to satisfy investors. Moreover, Declerck and Martinez (2004) indicate that "the information disclosure aims to better developing company by improving perception of investors and other market participants". Gao (2008) asserts that information disclosure influences the investor's perception. As a matter of fact, he reports that "while disclosure reduces the risk of per unit investment, it could increase the total investment."

Unlike the previous studies which explore the quantitative aspect of the information reporting, we focus on the impact of the disclosed information's perceived quality on the investor's risk perception. The perceived quality of disclosed information can be defined as the individual judgment experienced by the investor toward the information communicated by the listed company. In other words, it could indicate the level of information's quality as it was perceived, in a subjective way, by investor. Perceiving good quality of disclosed information leads to a lower level of risk perceived toward the stock market. Moreover, Wang et al. (2006) specify that "good quality of information disclosure (e.g. transparency, timely release, integration and authenticity) could reduce investors' risk perception". We thus formulate the following hypothesis:



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**H2.1:** The higher the perceived quality of disclosed information by listed companies the lower the perceived level of risk toward the stock market.

b. *Satisfaction with Yield Reallocation by Listed Companies*

Satisfaction with yield reallocation by listed company is an antecedent of perceived risk related the features of listed companies. Investors can be concerned with the manner in which listed companies reallocate the profits from their activities. Thus, the choice of particular strategy in terms of reallocation of profits inevitably determines the relationship between the company and the investor. In fact, we can define satisfaction with yield reallocation as judgment experienced by an investor with respect to the choice of company's reallocation of profits. Given the importance of this element for market participants, satisfaction with yield reallocation by listed companies could exert significant influence on their risk perception. People satisfied with yield reallocation by listed companies perceive lower level of investment risk compared to persons who are less satisfied, as stated in the following hypothesis:

**H2.2:** The higher the satisfaction with yield reallocation by listed companies the lower is the perceived level of risk toward the stock market.

### *1.2.2.3. Antecedents Related to the Investment Context*

In marketing research, many studies show that antecedents related to purchase situation may affect individual's risk perception (Mallet, 2004; Dowling and Staelin, 1994; Lumpkin and Dunn, 1990; Dash et al., 1976). For example, Mallet (2004) reveals that "*purchase situation in which is consumer influences on risk he perceives*". Besides, many psychological studies display that risk perception can be highly influenced by the context in which individuals find themselves when making their decisions (e.g. Cohen et al., 2007).

a. *Information Asymmetry*

The stock market (i.e. investment situation) can influence the risk perceived by the investor. Specially, information asymmetry is retained as an explanatory factor of risk perception. The information asymmetry refers to a situation where investors in stock market do not all have the same information; some investors are more informed than others. Liao et al. (2010) argue that information asymmetry refers to a situation where financial market participants have a set of unequal information. More explicitly, Chan et al. (2008) indicate that it exists when groups of investors hold different information; i.e. informed investors have private information while the uninformed investors have only publicly available information. Sveral studies investigated the information asymmetry between investors has been studied (e.g. Brown and Hillegeist, 2007; Chen, 2003; Admati and Pfleiderer, 1988, Kyle, 1985; Grossman, 1976). For example, Cheng (2003) reveals that information asymmetry is a salient feature of information on China's stock markets. Okpara (2010) indicates that "the level of information asymmetry can be characterized by the risk of trading with a privately informed investor". Thus, the less the investors share the same information, the more they perceive a high level of risk toward the stock market. Therefore, we posit the following hypothesis:



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**H3.1:** The greater the information asymmetry in the stock market, the lower the perceived level of risk toward the stock market.

b. Social Influences

The interpersonal relationships play generally an important role in a decision-making situation. Indeed, many researchers report that several social factors influence the risk perception of customers in the purchase situation (e.g. Poumadère, 2000). In the making-decision situation, people often rely on information which they collect from others. Leaders, family, reference groups, among others, can be one source of such influence since, through their knowledge; they can attenuate their risk perception. In the investment context characterized by high uncertainty, persons can reduce the risk perception of investors. Thus, we expect that social factors can influence negatively the perceived risk of investors toward the stock market, as stated in the following hypothesis:

**H3.2:** The social factors reduce the perceived level of risk toward the stock market.

## 1.2.3. Consequences of Perceived Risk

According to Ingene and Hughes (1985), the risk perception leads to risk-reduction activities. The perceived risk can be handled by using two different risk-reducing strategies. The first strategy is to diminish uncertainty through information search and the second strategy is to attenuate vulnerability by decreasing the amount at stake.

Besides, a person who invests in the stock market will inevitably seek to make gains. Cognizant of this fact, we attempt to investigate the impact of risk perception on investment behavior.

### *1.2.3.1. Information Search*

The relationship between perceived risk and information search activity was studied by several researchers in marketing (Cho and Lee, 2006; Murray, 1991; Lutz and Reilly, 1973; Sheth and Venkatesan, 1968; Cox, 1967a). For example, Murray (1991) indicates that "in the purchase decision process, search information behavior is motivated in part by perceived risk and consumer's ability to acquire relevant information which purchase uncertainty can be addressed". By attempting to explain this link, Cho and Lee (2006) note that high perceived risk drives individuals into a distressed and anxious state which thereafter incites them to pursue problem solving activities. Thus, they use information search as a problem-resolving strategy in order to mitigate perceived risk (Dowling and Staelin, 1994). Nevertheless, other researchers reject the existence of this link. In particular, Volle (1995) indicates that high risk perception causing more information search is questionable. Gemunden (1985) points out that the half of empirical studies in the risk perception literature rejects positive relationship between perceived risk and information search. Some proposals for explanation were provided by Simon (2000) such as the existence of information costs, a degree of risk perception below a minimum threshold, potential dissonance generated by additional information. According to Cho and Lee (2006), the absence of the relationship between the risk perception and information search is due to decision situations examined in previous studies which characterized by relatively low levels of risk (e.g. products that were bought



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routinely). That is why the consumer does not seek the information. In contrast, in another decision contexts where the level of risk is relatively high (e.g. investment in stock market), risk perception leads necessarily to important search information.

a. *Information Sources*

Each investor must bear the risk associated with fluctuating securities prices. So, searching for information is an essential activity in order to make the investment decisions (Lin and Lee, 2004). In this regard, Loibl and Hira (2009) pinpoint that risk of financial loss and high costs caused by the revision of a bad investment decision motivate investors to seek information. More precisely, Engel et al. (1993) and Locander and Hermann (1979), among others, indicate that information search would be equivalent to consult information sources. Several typologies of sources exist in the information search literature. For instance, Engel et al. (1993) classify information sources as either an internal source or external source. Internal information search is applied when individuals use information already stored in memory while external search involves gathering information from the environment.

In this study, external information can be categorized as objectives and subjective sources. In the investment context, the objective sources comprise the periodic reports, the websites specializing in information as well as the ratings agencies. The subjective sources include investor's entourage (friends, colleagues ...) and word of mouth. To cope with a high perceived risk, an investor who seeks information prefers to consult not only a particular source but different information sources. As matter of fact, Murray (1991) indicates that "consumers use various amounts and types of information sources to reduce perceived risk, depending on the amount and type of risk". Individuals seek information from a variety of sources when they perceive risk (Cox, 1967a). We thus predict the following hypothesis in our context:

**H4:** The higher the perceived level of risk toward the stock market the higher the number of information sources consulted.

b. *Information Types*

Perceived risk determines not only the number of information sources consulted but also the type of information used by the investor. By attempting to reduce uncertainty surrounding the decision situation, consumers will use more diverse types of information (Murray, 1991). The same behavior could be observed as well in the stock market given that information allows to limit uncertainty surrounding the investment situation. So, when facing high perceived risk, investor tends to use more different types of information. The information used by the investor is classified in three categories. The first category includes economic information (e.g. fluctuation of interest rate ...). The second category contains information related to listed companies (e.g. publication of financial statements...). Finally, the last category encompasses the financial analysis provided by engineering consulting firms and brokerage firms. So, we formulate the following hypothesis:

**H5:** The higher the perceived level of risk toward the stock market the greater the different types of information.



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#### *1.2.3.2. Decrease in the Amount at Stake*

Risk perception could be reduced by diminishing the amount at stake or vulnerability associated with adverse outcomes. Such behavior is intended to decrease the impact of negative consequences which result from a decision-making. In this study, the key behavior would be to revise the intention of reinvestment on the stock market. In social psychology, the intention is the best predictor of an individual's behavior since person can incorporate independently relevant factors which may influence current behavior (Fishbein and Ajzen, 1975). Among these factors, we could retain risk perception. Individuals perceiving a high level of risk would tend to change their intention to reinvest in the stock market. Like Lehu (2004), we could define reinvestment intention as the disposition of an investor to renew the next time his investment's experience in the stock market. So, we posit the following hypothesis:

**H6:** The higher the perceived level of risk toward the stock market the lower the perceived level the reinvestment intention in the stock market.

#### *1.2.3.3. Investment Performance*

By opting for investment in stock market, each investor tries to make profitable his financial placements. Thayer (2008) indicates that "[…] one universal factor in making an investment decision is the desire to realize a positive return". Swanson and Lin (2005) point out that investment performance is the result of the investor's behavior in stock market. Although the research is limited, performance achieved by an investor in the stock market (i.e. investment performance) can be affected by risk perception. By investigating the psychological mechanisms of risky investment behavior of 1547 individual investors in Chinese stock markets, Wang et al. (2006) show a positive relationship between risk perception and investment performance. Thus, higher risk perception can engender higher investment performance. Perceiving a high level of risk toward stock market leads the investor to carry out a good investment performance. In this study, we attempt to examine if the investment performance play a mediating role in the relationship between risk perception and reinvestment intention, as stated in the following hypothesis:

**H7:** The investment performance plays a mediating role between the risk perception and the reinvestment intention.

## SECTION 2. QUESTIONNAIRE, DATA AND OPERATIONALIZATION OF CONSTRUCTS

### 2.1. Questionnaire

Questionnaire is the most commonly used tool in survey research. In this study, the questionnaire is distributed to individual investors via the brokers in the Tunisian stock market. The Tunisian stock market was founded in 1969 and was privatized in 1994. It has been an electronic pure order driven market. Orders are placed by investors via 24 brokers. The Tunisian stock market is a pure order driven market without market makers and operates as continuous market for the more actively traded stocks and a call auction (fixing) for the less liquid stocks. In 2015, the Tunis stock exchange lists 78 stocks.



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The trading system used by the Tunisian stock market provides a good transparency; in that the five best quotes on the sell and buy sides of the book with the corresponding cumulated volumes are available to investors in real time via computer screens. However, the limit order book is entirely visible to regulatory authorities and brokers. In 1969, the stock market represents 23% of Tunisia GDP and the share of foreigners in stock market capitalization represents 21.92%. To encourage many companies to access on the stock market, a law was promulgated by reducing the rate tax to 20% during 5 years for companies that issues more than 30% of their capital. Finally, the questionnaire was structured around seven themes as follows:

**Theme 1:** Knowledge about the stock market ;
**Theme 2:** The individual's behavior when making an investment decision ;
**Theme 3:** Factors that may change the investor's behavior ;
**Theme 4:** Information (information search, perceived quality of disclosed information, satisfaction the yield by companies, asymmetric information) ;
**Theme 5:** Risk perception ;
**Theme 6:** Investment behavior (performance, satisfaction investment, reinvestment intention) ;
**Theme 7:** Sociodemographic characteristics.

## 2.2. Description of Data

The data set used to examine the proposed conceptual framework was collected by using a self-administered questionnaire to the individual investors in the Tunis Stock Exchange. Surveyed individuals were chosen by twenty-four brokers in the Tunisian stock market. About 600 questionnaires were distributed among which 487 were recovered, showing a response rate of 81%. Nevertheless, after counting, seventy questionnaires were removed because of a high number of non-responses. Finally, only 411 questionnaires were considered to be exploitable.

### 2.2.1. Typology of Respondents

Table 1 reports the key sociodemographic features of individual investors including gender, age, status, employment and income.

Table 1. summarizes the main social sociodemographic characteristics of individual investors. The majority of investors are men who generally are between 40 and 49 years old. Most of investors are married with children and earn between 1000 and 1500 TND.

80.3% of investors were men while women represented only 19.7%. The most important age group in the sample is that of 30-39 years (37%), followed by the 40-49 years (27.5%) and then those aged 20 to 29 (20.2%). Finally, the least important age group is that of more than 60 years (4.1%). Moreover, the majority of respondents are married and has children (54.4%). Besides, the sample includes senior officials (40.1%), middle managers (28.6%), employees (12.1%), freelancers (12.1%), retirees (4.7%), students (2.2%) and unemployed persons (0.2%). Finally, 26.5% of respondents earn between 1500TND and 2000TND while only 5.3% have incomes below 500TND.



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*Table 1. Description of Sociodemographic Profile of Respondents*

| Characteristics | | Frequency (%) |
|---|---|---|
| Gender | Man<br>Woman | 80.3<br>19.7 |
| Age | 20-29 years<br>30-39 years<br>40-49 years<br>50-59 years<br>More than 60 years | 20.2<br>37<br>27.5<br>11.2<br>4.1 |
| Statuts | Unmarried<br>Widowed or Divorced<br>Married without Children Married with Children | 31<br>1.2<br>13.4<br>54.4 |
| Employment | Employee<br>Freelancer<br>Middle Manager<br>Senior Official<br>Student<br>Unemployed<br>Retiree | 12.1<br>12.1<br>28.6<br>40.1<br>2.2<br>0.2<br>4.7 |
| Income | Less than 500 TND<br>Between 500 TND and 750 TND<br>Between 750 TND and 1000 TND<br>Between 1000 TND and 1500 TND<br>Between 1500 TND and 2000 TND<br>Plus de 2000 TND | 5.3<br>8.5<br>20.8<br>26.5<br>16.5<br>22.5 |

### 2.2.2. Characteristics of Investment Behavior in Stock Market

Table 2. reports the features related to knowledge of investors about the Tunisian stock market and their investment behavior.

Table 2. summarizes the main characteristics of individual investors in terms of investment behavior. In general, the majority of respondents think that have professional knowledge and lost money by investing in a financial asset. Besides, 40.3% of respondents are quite satisfied with their investments and they are quite satisfied with the Tunis Stock Exchange.

2.7% of respondents admit that they do not have any knowledge on the investment in stock market, whereas only 37.8% feel they have professional knowledge, although the majority of investors (94.4%) believe that a better knowledge of the investment in the stock market makes the investment more profitable. Also, most respondents (98.8%) indicate that they already invested in the stock market via one or more investment channels (internet, banks, private manager or others) while less than 2% of investors (1.2%) are inexperienced. Moreover, 29% of respondents have experience ranging between 2 and 5 years followed successively by those with more than 10 years (25.8%) and between 5 and 10 years (20.9%) while those having only experience of 1 and 2 years and less than one year are respectively about 14.4% and 10%.

Only 79% of respondents lost money by investing in a financial asset. Besides, the majority of respondents (76.6%) choose one broker, whereas 21% opt to two or several financial institutions when investing in the Tunis Stock Exchange. Meanwhile, 38.8% of the individual investors spend less than 25% of their savings to invest in a financial asset. 31.7% and 15.1% of respondents devote between 25% and 50%, 50% and 75% respectively for investment.



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*Table 2. Description of Sample in terms of Investment Behavior*

| Characteristics | | Frequency (%) |
|---|---|---|
| **Self-assessment of investment knowledge** | No knowledge<br>Basic knowledge<br>Good knowledge<br>Professional knowledge | 2.7<br>28.3<br>31.2<br>37.8 |
| **Judgment on the impact of knowledge on the profitability of stock market investment** | No<br>Yes | 5.6<br>94.4 |
| **Previous investment** | No<br>Yes | 1.2<br>98.8 |
| **Pecuniary loss by investing in financial asset** | No<br>Yes | 21<br>79 |
| **Number of brokerage firms** | None<br>One<br>Two or more | 2.4<br>76.6<br>21 |
| **Proportion of saving for investment** | Less than 25%<br>Between 25% and 50%<br>Between 50% and75%<br>More than 75% | 38.8<br>31.7<br>15.1<br>14.4 |
| **Investment horizon** | No idea<br>Short term<br>Medium term<br>Long term | 8.8<br>32.3<br>49.4<br>9.5 |
| **Average holding period of a security** | Less than 3 months<br>Between 3 months and 6 months<br>Between 6 months et one year<br>Between one year et 3 years<br>More than 3 years | 21.2<br>30<br>26.6<br>17.1<br>5.1 |

| **Investment experience** | | | | |
|---|---|---|---|---|
| Less than one year | Between 1 and 2 years | Between 2 and 5 years | Between 5 and 10 years | More than 10 years |
| 10% | 14.4% | 29% | 20.9% | 25.8% |

| **Investment Satisfaction** | | | | | |
|---|---|---|---|---|---|
| | Not at all satisfied | Unsatisfied | Somewhat satisfied | Satisfied | Quite satisfied |
| Investment satisfaction last year | 7.6% | 21.4% | 40.3% | 24.8% | 5.9% |
| Satisfaction about the Tunisian stock market | 5.1% | 18.8% | 38.6% | 30.6% | 6.8% |

Results also show that almost half of respondents (49.4%) invest in the medium term. 32.3% and 9.5% of people invest respectively in the short and long term. Moreover, we find that 30% of investors keep, on average, a stock between 3 and 6 months, while 26.6% hold it from 6 months to one year. However, 21.2% of respondents hold it less than 3 months while 17.1% preserve it between one year and 3 years.

We also note that 40.3% of respondents are quite satisfied with their investments last year while only 7.5% are not satisfied at all. In addition, 6.8% of respondents are completely satisfied with the investment on the Tunis Stock Exchange whereas 5.1% are unsatisfied. The majority of the individuals are quite satisfied with the Tunis Stock Exchange (38.6%).



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## 2.3. Operationalization of Constructs

First, the exploratory factor analysis (or principal component analysis) is used to purify and test the homogeneity of the constructs. Specifically, the principal component analysis is useful because it allows us to identify the dimensions (Churchill, 1979). Evrard et al. (2003) report that the principal component analysis allow "from a theoretical point of view [...] to pass measures to theoretical concepts that can be measured directly; variables are considered to be combinations of a number of unobservable common underlying factors (latent variables)". Then, the confirmatory factor analysis enables us to verify the factor structure extracted from the exploratory phase. In this regard, Roussel et al. (2002) reveal that unlike the exploratory factor analysis with "a posteriori factor structure" confirmatory factor analysis defines "a priori factor structure that we are trying to confirm". According to Gerbing and Hamilton (1996), the confirmatory factor analysis offers the opportunity to test "strictly a model that must be specified a priori". In this study, confirmatory factor analysis was conducted using the structural equation modeling[1].

Exploratory and confirmatory factor analyzes of the different constructs were performed on the data set (N = 411) through SPSS version 17 and AMOS version 18 respectively. The following section reports results of exploratory and confirmatory factor analyzes.

### 2.3.1. Measures of Perceived Risk's Antecedents

As previously indicated, the antecedents of perceived risk are:

- Individual Profile of Investor
- Perceived Quality of Disclosed Information
- Satisfaction with Yield Reallocation by Companies
- Information Asymmetry
- Social Factors

#### *2.3.1.1. Measure of Individual Profile of Investor's Construct*

To operationalize the individual investor profile, we ask each respondent to self-assess personality traits (Table 3). In this respect, we use the semantic differential (i.e. the Osgood scale) which takes the form of a 5-point bipolar scale. The scale is thus encoded from (-2) to (+2) where the neutral point is zero. The two antonyms adjectival words are placed on the two extreme points (e.g. cautious - go-getter).

Table 3. reports the different personality traits. In this table, two antonyms adjectival words are placed on the two extreme points.

*Table 3. List of Items of the Individual Investor Profile's Measure*

| Items | Investor's Individual Profile |
|---|---|
| **TRAIT_PERS1** | Cautious Person/Go-Getter Person |
| **TRAIT_PERS2** | Intuitive Person/ Cartesian person |
| **TRAIT_PERS3** | Pessimistic Person/ Optimistic Person |
| **TRAIT_PERS4** | Skeptical Person / Confident Person |



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Following a first principal component analysis on data (N = 411), the item TRAIT_PERS1 (Cautious /Go-Getter) and the item TRAIT_PERS2 (Intuitive/Cartesian) should be removed given their very poor communalities (0.442 and 0.10 respectively). A second factor analysis with varimax rotation shows that items are related and are therefore factorizable (KMO = 0.500 and Bartlett's sphericity test is significant). Results show hence that the investor's individual profile is a one-dimensional structure. Factor explains 76.971% of the variance of the concept. Reliability of the construct is satisfactory ($\alpha > 0.5$ and Jöreskog's rhô is close to 0.7). Table 4 below summarizes all the results obtained from the exploratory factor analysis.

By performing a principal component analysis of the data (Table 4), we find one-dimensional structure of the concept of Investor's individual profile.

Table 5 reports results of confirmatory factor analysis which allows us to confirm one-dimensional structure of the concept.

By performing a confirmatory component analysis of the data (Table 5), we show the one-dimensional structure of the concept of Investor's individual profile.

Table above includes the standardized (i.e. column 5) and non-standardized (i.e. column 3) loadings related to the items (i.e. column 2) of the factor (i.e. column 1). Results show that the factor loadings are significantly different from zero since all values of t-statistics (or CR) are greater than 1.96 for a significance level of 0.001. These results are then satisfying in order to confirm the factor structure extracted from the exploratory phase.

By checking that all loadings are significantly different from zero, we can a priori ensure the convergent construct validity. The coefficient of convergent validity ($rh\hat{o}_{vc}$=0.531) shows hence that the average variance extracted for this factor is acceptable.

*Table 4. Results of Exploratory Factor Analysis on the Individual Profile's Investor*

| **Investor's Individual Profile** | | | | | |
|---|---|---|---|---|---|
| **Items** | **Loading** | **Communality** | **MSA** | **Cronbach's Alpha** | **Jöreskog's Rhô** |
| **TRAIT_PERS3** | 0.877 | 0.770 | 0.500 | 0.701 | 0.694 |
| **TRAIT_PERS4** | 0.877 | 0.770 | 0.500 | | |
| **Eigenvalue** | 1.539 | | | | **KMO = 0.500** |
| **Bartlett's Sphericity Test** | $\chi^2$=135.659; *d.f*=1; *p*=0.000 | | | | |
| **Explained Variance** | 76.971% | | | | N = 411 |

*Note*: *d.f*: degree of freedom.

*Table 5: Results of Confirmatory Factor Analysis and Test of Convergent Validity related to the Individual Profile's Investor*

| **Factor** | **Items** | **Non Standardized λ** | **CR** | **Standardized λ** | **$\rho v_c$** |
|---|---|---|---|---|---|
| ***Investor's Individual Profile*** | TRAIT_PERS3 | 0.957 | 3.521*** | 0.727 | **0.531** |
| | TRAIT_PERS4 | 1.000 | | 0.731 | |

*Notes*: - *** Signification Level: 0.001 ; - CR: CRITICAL RATIO.



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*Table 6. List of Items of Perceived Quality of Disclosed Information's Measure*

| Items | Perceived Quality of Disclosed Information |
|---|---|
| **QUAL_PERC_INF1** | Complete information |
| **QUAL_PERC_INF2** | Transparent information |
| **QUAL_PERC_INF3** | Authentic information |
| **QUAL_PERC_INF4** | Real-time information |
| **QUAL_PERC_INF5** | Relevant information |
| **QUAL_PERC_INF6** | Timely information |
| **QUAL_PERC_INF7** | Regular information |

### *2.3.1.2. Measure of Perceived Quality of Disclosed Information's Construct*

The perceived quality of disclosed information's construct is created using seven items (Table 6). Investors are asked to assess the degree of (dis)agreement according to a 5-point Likert scale to the following question: "Do you think that the information disclosed by listed companies is…"

Table 6 reports the different items used to measure the concept of the perceived quality of disclosed information.

After conducting an exploratory factor analysis, the item QUAL_PERC_INF7 (i.e. regular information) is removed due to the communality (i.e. 0.466) is less than 0.5. A new factor analysis on the remaining 6 items converges to a one-dimensional structure of the perceived quality of the disclosed information. This structure explains 61.299% of the concept (Table 7). Furthermore, the perceived quality of the disclosed information's construct is deemed reliable (i.e. $\alpha = 0.872$) since the exclusion of any item does not improve the coefficient of internal consistency. The Jöreskog's rhô coefficient exceeds 0.7 confirming consequently the good reliability.

All results in Table 7 allow us to retain the one-dimensional structure of the concept of perceived quality of disclosed information.

*Table 7. Results of Exploratory Factor Analysis on Perceived Quality of Disclosed Information*

| **Perceived Quality of Disclosed Information** | | | | | |
|---|---|---|---|---|---|
| **Items** | **Loading** | **Communality** | **MSA** | **Cronbach's Alpha** | **Jöreskog's Rhô** |
| **QUAL_PERC_INF1** | 0.794 | 0.630 | 0.872 | **0.872** | **0.866** |
| **QUAL_PERC_INF2** | 0.843 | 0.711 | 0.834 | | |
| **QUAL_PERC_INF3** | 0.802 | 0.643 | 0.853 | | |
| **QUAL_PERC_INF4** | 0.737 | 0.543 | 0.920 | | |
| **QUAL_PERC_INF5** | 0.791 | 0.625 | 0.855 | | |
| **QUAL_PERC_INF6** | 0.725 | 0.526 | 0.844 | | |
| **Eigenvalue** | 3.678 | | | **KMO = 0.860** | |
| **Bartlett's Sphericity Test** | $\chi^2$=1068.183; *d.f*=1; *p*=0.000 | | | | |
| **Explained Variance** | **61.299%** | | | N = 411 | |

*Note*: *d.f*: degree of freedom.



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Table 8. reports results of confirmatory factor analysis which allows us to confirm one-dimensional structure of the concept.

Results in Table 8 show the one-dimensional structure of the concept of the perceived quality of disclosed information.

All factor loadings are significantly different from zero (i.e. t > 1.96). In addition, the convergent construct validity is good ($\rho_{vc}$= 0.522). These results lead us to validate the one-dimensional structure extracted from the principal component factor analysis.

### *2.3.1.3. Measure of Satisfaction with Yield Reallocation's Construct*

Satisfaction with Yield Reallocation was measured by considering five items simultaneously. The satisfaction's degree of investors with reallocated yield (ranging from 'not at all satisfied' to 'very satisfied') was assessed via a 5-point Likert scale. Respondents were asked to answer the question "Are you satisfied with the yield reallocation of listed companies?". Table 9 reports the five items which measure the concept of satisfaction with yield reallocation of listed companies.

Table 9. reports the different items used to measure the concept of the yield reallocation of listed companies.

After the first principal component factor analysis, there was a deletion of two items REAL_YIELD4 (i.e. the yield reallocation as split) and REAL_ YIELD 5 (i.e. the yield reallocation as reinvestment in future projects), since the communality is less than 0.5 (respectively about 0.446 and 0.4). Results from a new factor analysis (Table 10) display that three items are factorisable (KMO = 0.662 and Bartlett's

*Table 8. Results of Confirmatory Factor Analysis and Test of Convergent Validity related to the Perceived Quality of Disclosed Information*

| Factor | Items | Non Standardized λ | CR | Standardized λ | $\rho v_c$ |
|---|---|---|---|---|---|
| ***Perceived Quality of Disclosed Information*** | QUAL_PERC_INF1 | 1.201 | 11.123*** | 0.753 | **0.522** |
| | QUAL_PERC_INF2 | 1.299 | 10.496*** | 0.833 | |
| | QUAL_PERC_INF3 | 1.277 | 12.091*** | 0.780 | |
| | QUAL_PERC_INF4 | 1.086 | 12.647*** | 0.638 | |
| | QUAL_PERC_INF5 | 1.044 | 11.860*** | 0.689 | |
| | QUAL_PERC_INF6 | 1.000 | | 0.615 | |

*Notes*: - *** Signification Level: 0.001 ; - CR: CRITICAL RATIO.

*Table 9. List of Items of Satisfaction with Yield Reallocation of Listed Companies' Measure*

| Items | Satisfaction with Yield Reallocation of Listed Companies |
|---|---|
| **REAL_ YIELD1** | Yield Reallocation as Dividend |
| **REAL_ YIELD2** | Yield Reallocation as Allocation of Shares |
| **REAL_ YIELD3** | Yield Reallocation as Cash Capital Increase |
| **REAL_ YIELD4** | Yield Reallocation as Split |
| **REAL_ YIELD5** | Yield Reallocation as Reinvestment in Future Projects. |



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*Table 10. Results of Exploratory Factor Analysis on Satisfaction with Yield Reallocation*

| Satisfaction with Yield Reallocation by Companies | | | | | |
|---|---|---|---|---|---|
| **Items** | **Loading** | **Communality** | **MSA** | **Cronbach's Alpha** | **Jöreskog's Rhô** |
| **REAL_ YIELD1** | 0.846 | 0.715 | 0.671 | **0.810** | **0.824** |
| **REAL_ YIELD2** | 0.908 | 0.824 | 0.612 | | |
| **REAL_ YIELD3** | 0.802 | 0.644 | 0.738 | | |
| **Eigenvalue** | 2.183 | | | **KMO = 0.662** | |
| **Bartlett's Sphericity Test** | $\chi^2$=443.183; *d.f*=3; *p*=0.000 | | | | |
| **Explained Variance** | **72.752%** | | | N = 411 | |

*Note*: *d.f*: degree of freedom.

sphericity test is significant). So, we show the one-dimensional structure of satisfaction with yield reallocation. Furthermore, this factor explains 72.752% of the concept with satisfying reliability (i.e. α= 0.810 and ρ= 0.824).

Results in Table 10 display the one-dimensional structure of the concept of satisfaction with yield reallocation by companies.

The confirmatory factor analysis enables us to confirm the one-dimensional structure extracted from the exploratory factor analysis. Results are reported in Table 11.

All results in Table 11 permit us to confirm the one-dimensional structure of the concept of the satisfaction with yield reallocation by companies.

Results show that coefficients are significantly different from zero (i.e. t > 1.96). This reassures us a priori the convergent validity. By computing the coefficient of convergent validity ($\rho_{vd}$), we find that the extracted average validity for this factor is good since $\hat{rho}_{vc}$ is equal to 0.615. Hence, we can validate the factor structure obtained from the exploratory phase.

### *2.3.1.4. Measure of Information Asymmetry*

Asymmetric information plays critical role in the finance theory. However, Hautcoeur (1994) reports that there is a paucity of attempts to directly measure it. This is attributed to the degree of information asymmetry which is not directly observable (Liao et al., 2010). Therefore, researchers most often use variable proxies (Clarcke and Shastri, 2000).

*Table 11. Results of Confirmatory Factor Analysis and Test of Convergent Validity related to Satisfaction with Yield Reallocation*

| Factor | Items | Non Standardized λ | CR | Standardized λ | $\rho v_c$ |
|---|---|---|---|---|---|
| ***Satisfaction with Yield Reallocation by Companies*** | REAL_YIELD1 | 1.157 | 12.649*** | 0.734 | **0.615** |
| | REAL_ YIELD2 | 1.398 | 12.262*** | 0.940 | |
| | REAL_ YIELD3 | 1.000 | | 0.651 | |

*Notes*: - *** Signification Level: 0.001 ; - CR: CRITICAL RATIO.



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*Table 12. List of Items of Social Factors' Measure*

| Items | Social Factors |
|---|---|
| **SOCIAL_ FACT1** | Your relatives (children, parents, spouses) |
| **SOCIAL_ FACT2** | Your friends and knoweledge |
| **SOCIAL_ FACT3** | Your mood |
| **SOCIAL_ FACT4** | Avariation of your fortune |
| **SOCIAL_ FACT5** | Weather |
| **SOCIAL_ FACT6** | An investment advisor |

There are three main categories of information asymmetry's measures, namely: measures based on analysts' forecasts (Brennan and Subrahmanyam, 1995; Elton et al., 1984; Blackwell and Dubins, 1962), measures of investment opportunities (Chung and Charoenwong, 1998; Collins and Kothari, 1989) and measures of market microstructure (Huang and Stoll, 1997; Lin et al., 1995; Choi et al., 1988). In this study, information asymmetry is measured by asking investors to answer the following closed question: "Do you think that the Tunisian stock market is characterized by asymmetric information?" ('no idea'; 'the asymmetry does not exist in the Tunisian stock market'; 'we hear of information asymmetry but it was not supported by evidence'; others). In order to ensure that the question is understood by respondents, information asymmetry is defined in our questionnaire as follows: "The information asymmetry corresponds to the idea that the same information is not shared equally by all agents".

### *2.3.1.5. Measure of Social Factors*

We measure social factors by using six items simultaneously. Social factors were measured by considering five items simultaneously. Each item was assessed via a 5-point Likert scale ('never', 'not at all', 'quite frequently', 'often', 'always'). Table 12 shows the six items measuring social factors.

Table 12. reports the different items used to measure the concept of social factors.

After the first principal component factor analysis, there was a deletion of three items SOCIAL_FACT4 (i.e. a variation of your fortune) and SOCIAL_ FACT3 (i.e. your mood) and SOCIAL_FACT5 (i.e. weather) since the communality is less than 0.5. Results (Table 13) from a new factor analysis prove that three items are factorisable (KMO = 0.662 and Bartlett's sphericity test is significant). So, we show the one-dimensional structure of social factors. Besides, factor explains only 72.752% of the concept with acceptable reliability (i.e. $\alpha$= 0.500 and $\rho$= 0.500).

Results in Table 13 indicate that we can retain one dimension for the concept of social factors.

The confirmatory factor analysis allows us to confirm the one-dimensional structure obtained from the exploratory factor analysis. Results are reported in Table 14.

Results in Table 14 clearly show the one-dimensional structure of the concept of social factors.

Results show that coefficients are significantly different from zero (i.e. $t > 1.96$), which reassures us a priori the convergent validity. By calculating the coefficient of convergent validity ($\rho_{vc}$), we conclude that the extracted average validity for this factor is acceptable since $\hat{rho}_{vc}$ is equal to 0.505. Hence, we can validate the factor structure obtained from the exploratory phase.



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*Table 13. Results of Exploratory Factor Analysis on Social Factors*

| Social Factors | | | | | |
|---|---|---|---|---|---|
| **Items** | **Loading** | **Communality** | **MSA** | **Cronbach's Alpha** | **Jöreskog's Rhô** |
| **SOCIAL_FACT1** | 0.722 | 0.521 | 0.571 | **0.500** | **0.500** |
| **SOCIAL_FACT2** | 0.692 | 0.500 | 0.582 | | |
| **SOCIAL_FACT6** | 0.693 | 0.500 | 0.611 | | |
| **Eigenvalue** | 1.409 | | | **KMO = 0.585** | |
| **Bartlett's Sphericity Test** | $\chi^2$=43.900; *d.f*=3; *p*=0.000 | | | | |
| **Explained Variance** | **46.977%** | | | N = 411 | |

*Note*: *d.f*: degree of freedom.

*Table 14. Results of Confirmatory Factor Analysis and Test of Convergent Validity related to Social Factors*

| Factor | Items | Non Standardized λ | CR | Standardized λ | $\rho v_c$ |
|---|---|---|---|---|---|
| ***Social Factors*** | SOCIAL_FACT1 | 1.086 | 11.349*** | 0.638 | **0.505** |
| | SOCIAL_FACT2 | 1.034 | 11.062*** | 0.509 | |
| | SOCIAL_FACT6 | 1.000 | | 0.595 | |

*Notes*: - *** Signification Level: 0.001 ; - CR: CRITICAL RATIO.

## 2.3.2. Measures of Perceived Risk's Consequences

As previously reported, the consequences of perceived risk are:

- The sources of information ;
- The types of information ;
- The reinvestment intention ;
- The investment performance.

### *2.3.2.1. Measure of Information Sources' Construct*

Information sources are measured by using items reported in Table 15. Respondents must assess, using a scale ranging from "not at all important" to "very important", the degree of importance it attaches to the question "Before your investment decisions, you consult ...".

Table 15. reports the different items in order to measure the concept of the information sources.

By performing a principal component factor analysis on the data, no item has been deleted since they all have a high communality. All items are factorisable (KMO = 0.648 and Bartlett's sphericity test is significant). Besides, there are two distinct dimensions namely: Objectives Sources (SOURC_OBJ) and Subjective Sources (SOURC_SUB). This bidimensional structure is used to explain 64.030% of the variance of the concept.

The reliability of construct's information sources is considered relatively good since the values taken by the Cronbach's alpha and Jöreskog's rhô coefficients exceed 0.7. Table 16 shows all the results already mentioned.



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*Table 15. List of Items of Information Sources' Measure*

| Dimensions | Items | Information Sources |
|---|---|---|
| **OBJECTIVE SOURCES** | **SOURC_OBJ1** | Specialized financial information websites (Tustex ...) |
| | **SOURC_OBJ2** | The daily media such as newspapers, television ... |
| | **SOURC_OBJ3** | Periodic reporting |
| | **SOURC_OBJ4** | Rating agencies |
| **SUBJECTIVE SOURCES** | **SOURC_SUB1** | Word of mouth |
| | **SOURC_SUB2** | The environment (circle of friends, colleagues ...) |

*Table 16. Results of Exploratory Factor Analysis on Information Sources*

| **Information Sources** | | | | | | |
|---|---|---|---|---|---|---|
| **Items** | **Loading** | | **Communality** | **MSA** | **Cronbach's Alpha** | **Jöreskog's Rhô** |
| | **F1** | **F2** | | | | |
| **SOURC_OBJ1** | 0.760 | | 0.591 | 0.725 | **0.722** | **0.707** |
| **SOURC_OBJ2** | 0.690 | | 0.502 | 0.733 | | |
| **SOURC_OBJ3** | 0.721 | | 0.543 | 0.738 | | |
| **SOURC_OBJ4** | 0.759 | | 0.580 | 0.701 | | |
| **SOURC_SUB1** | | 0.897 | 0.822 | 0.540 | **0.779** | **0.784** |
| **SOURC_SUB2** | | 0.893 | 0.804 | 0.527 | | |
| **Eigenvalue** | 2.439 | 1.402 | **KMO = 0.648** | | | |
| **Bartlett's Sphericity Test** | $\chi^2$=560.860; *d.f*=15; *p*=0.000 | | | | | |
| **Explained Variance (%)** | 40.655 | 23.375 | N = 411 | | | |
| | **64.030%** | | | | | |

*Note*: *d.f*: degree of freedom.

By performing the principal component analysis of the data (Table 16), we show the bidimensional structure of the concept of information sources.

Next, we attempt to confirm the bidimensional structure of information sources' construct obtained from exploratory factor analysis. To do this, we conduct a confirmatory factor analysis on all the data (N=411). Table 17 summarizes all the results.

Results in Table 17 allow us to retain two dimensions in order to measure the concept of information sources.

From Table 17, results indicate that the loadings are all significantly different from zero since all values of t-statistics (or CR) are strictly greater than 1.96. Moreover, the converging construct validity of information sources is acceptable since $\hat{rho}_{vc}$ for each dimension is greater than or equal to 0.5 (0.646 and 0.5 respectively for the subjective and objective sources). So, we can confirm the two-dimensional structure for information sources' construct.



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*Table 17. Results of Confirmatory Factor Analysis and Test of Convergent Validity related to Information Sources*

| Factor | Items | Non Standardized λ | CR | Standardized λ | $\rho v_c$ |
|---|---|---|---|---|---|
| ***Objective Sources*** | SOURC_OBJ1 | 1.000 | | 0.635 | **0.500** |
| | SOURC_OBJ2 | 0.775 | 8.577*** | 0.535 | |
| | SOURC_OBJ3 | 0.842 | 9.832*** | 0.640 | |
| | SOURC_OBJ4 | 0.984 | 9.834*** | 0.641 | |
| ***Subjective Sources*** | SOURC_SUB1 | 1.000 | | 0.728 | **0.646** |
| | SOURC_SUB2 | 1.192 | 5.046*** | 0.873 | |

*Notes*: - *** Signification Level: 0.001 ; - CR: CRITICAL RATIO.

### *2.3.2.2. Measure of Information Types' Construct*

The information types are measured using a set of items which are shown in Table 18. Investors are invited to assess the degree of importance that they attach to the question "When making your investment decisions, you use the following information ...".

Table 18. reports the different items used to quantify the concept of information types.

After purification items, three independent dimensions are found: Economic Information (INF_ECQ), Information related to Listed Companies (INF_COMP) and Financial Analysis (ANAL_FIN). Results also show that items are factorisable (KMO = 0.790 and Bartlett's sphericity test is significant). Items

*Table 18. List of Items of Information Types' Measure*

| Dimensions | Items | Information Types |
|---|---|---|
| **ECONOMIC INFORMATIONS** | **INF_ECQ1** | The information about the fluctuation of policy interest rate |
| | **INF_ECQ2** | The information about the fluctuation of inflation rate |
| | **INF_ECQ3** | The information about the fluctuation of rates of economic growth |
| | **INF_ECQ4** | The macro-economic information |
| | **INF_ECQ5** | The micro-economic information |
| | **INF_ECQ6** | International information (economic, political ...) |
| | **INF_ECQ7** | The information related to public persons, parallel information |
| **INFORMATIONS RELATED TO LISTED COMPANIES** | **INF_COMP1** | Provisional statements |
| | **INF_COMP2** | Information about future investment of the company |
| | **INF_COMP3** | Information about top management |
| | **INF_COMP4** | Consultation of financial statement |
| | **INF_COMP5** | Information about capital transactions |
| | **INF_COMP6** | Monitoring the price evolution |
| | **INF_COMP7** | Rumors on the stock market |
| **FINANCIAL ANALYSIS** | **ANAL_FIN1** | Analysis communicated by engineering office |
| | **ANAL_FIN2** | Analysis communicated by brokerage firms |
| | **ANAL_FIN3** | Echoes |



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INF_ECQ6 (international information) INF_ECQ7 (information related to public persons, parallel information) INF_COMP5 (Information about capital transactions) INF_COMP7 (rumors on the stock market) and ANAL_FIN3 (echoes) are deleted because their communality is less than 0.5. Item INF_COMP6 (monitoring the price evolution) is removed due to its communality is less than 0.5 (i.e. 0.435). Furthermore, the three factors alone are enough to explain 67.956% of the variance of the concept. Table 19 summarizes these results.

Results in Table 19 related to loading, communality, Cronbach's alpha as well as the Jöreskog's rhô indicate that three factors can measure the concept of information types.

The reliability of the information types' construct is satisfying since the values taken by the Cronbach's alpha and Jöreskog's rhô coefficients exceed 0.7.

Results in Table 20 show the three factors can measure the concept of information types.

Table 20. shows that loadings are all significantly different from zero. Besides, the convergent validity's rho of each dimension is greater than or equal to 0.5. Hence, we can validate the tridimensional structure of the information types' construct retained from the exploratory analysis.

### *2.3.2.3. Measure of Reinvestment Intention*

In order to operationalize the reinvestment intention, we adopt the measure proposed by Wang et al. (2006), we measure the reinvestment intention. Indeed, each respondent must answer to the question "What is your investment plan in the stock market next year? while choosing one of the answers: Invest more; Keep the same setting; Reduce investment and ultimately Withdraw from the stock market.

*Table 19. Results of Exploratory Factor Analysis on Information Types*

| **Information Types** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Items** | **Loading** | | | **Communality** | **MSA** | **Cronbach's Alpha** | **Jöreskog's Rhô** |
| | **F1** | **F2** | **F3** | | | | |
| **INF_ECQ1** | 0.811 | | | 0.701 | 0.772 | | |
| **INF_ECQ2** | 0.834 | | | 0.776 | 0.765 | | |
| **INF_ECQ3** | 0.761 | | | 0.660 | 0.927 | **0.851** | **0.845** |
| **INF_ECQ4** | 0.744 | | | 0.709 | 0.751 | | |
| **INF_ECQ5** | 0.676 | | | 0.671 | 0.736 | | |
| **INF_COMP1** | | 0.747 | | 0.602 | 0.828 | | |
| **INF_COMP2** | | 0.780 | | 0.676 | 0.836 | **0.776** | **0.780** |
| **INF_COMP3** | | 0.689 | | 0.516 | 0.866 | | |
| **INF_COMP4** | | 0.712 | | 0.594 | 0.881 | | |
| **ANAL_FIN1** | | | 0.807 | 0.764 | 0.719 | **0.838** | **0.834** |
| **ANAL_FIN2** | | | 0.860 | 0.806 | 0.688 | | |
| **Eigenvalue** | 4.415 | 1.783 | 1.278 | **KMO = 0.790** | | | |
| **Bartlett's Sphericity Test** | $\chi^2$=1967.303; *d.f*=55; *p*=0.000 | | | | | | |
| **Explained Variance (%)** | 40.134 | 16.205 | 11.618 | N = 411 | | | |
| | **67.956%** | | | | | | |

*Note*: *d.f*: degree of freedom.



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*Table 20. Results of Confirmatory Factor Analysis and Test of Convergent Validity related to Information Types*

| Factor | Items | Non Standardized λ | CR | Standardized λ | $\rho v_c$ |
|---|---|---|---|---|---|
| **ECONOMIC INFORMATIONS** | INF_ECQ1 | 1.000 | | 0.800 | **0.526** |
| | INF_ECQ2 | 1.036 | 17.443*** | 0.846 | |
| | INF_ECQ3 | 0.987 | 15.315*** | 0.746 | |
| | INF_ECQ4 | 0.811 | 12.759*** | 0.639 | |
| | INF_ECQ5 | 0.722 | 10.940*** | 0.557 | |
| **INFORMATIONS RELATED TO LISTED COMPANIES** | INF_COMP1 | 1.000 | | 0.699 | **0.500** |
| | INF_COMP2 | 0.980 | 12.377*** | 0.751 | |
| | INF_COMP3 | 1.003 | 10.783*** | 0.631 | |
| | INF_COMP4 | 0.865 | 11.249*** | 0.660 | |
| **FINANCIAL ANALYSIS** | ANAL_FIN1 | 1.000 | | 0.862 | **0.716** |
| | ANAL_FIN2 | 0.917 | 10.142*** | 0.830 | |

*Notes*: - *** Signification Level: 0.001 ; - CR: CRITICAL RATIO.

#### *2.3.2.4. Measure of Investment Performance*

Following again Wang et al. (2006), the investment performance is measured using a closed question. Indeed, each investor is asked to answer the following question: "What was your investment performance of the previous year?" (Gain; Neither gain nor loss; Loss).

### 2.3.3. Measures of Perceived Risk

Slovic (1987) indicates that people have "intuitive judgments of risk typically named perceptions of risk". Risk Perception seems to be "*more complex than that depicted by the most common conceptions*" (Cadet and Kouabénan, 2005). Renn (1992) suggests that individuals perceive risk as a multidimensional phenomenon. Hence, risk perception cannot define as the product of probability and consequences. Slovic (1992) reveals that risk is subjective and does not exist independently of cultures and minds of human beings.

Many psychology studies attempt to understand and assess people's perceptions towards risks by developing the psychometric paradigm (Fischhoff et al., 1987; Lichtenstein et al., 1978; Slovic et al., 1979, 1980, 1985). According to Slovic (1987), the psychometric paradigm uses "psychometric scaling and multivariate analysis techniques to produce quantitative representations or 'cognitive maps' of risk attitudes and perceptions". Results show that there are major differences between lay people and experts in terms of risk perception. In particular, lay persons assess any risk event from two dimensions namely familiarity and controllability.

According to Gigerenzer and Todd (1999), familiarity is "a degree of knowledge or experience a person has respect to a task or object". In this regard, Ricciardi (2004) reveals that familiarity is "an inclination or prejudice that alters individual's perception of risk". Other than familiarity, controllability is broadly defined as "the ability to foresee and navigate potential hazards, thus erasing risk in a material way" (Natalier, 2001). Slovic (1987) affirms that controllability is the most important factor in



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risk perception. Indeed, people tend to perceive less risk for situations where they feel they can control them. Thus, we use these two factors in order to quantify the risk perceived by investors. In operational terms, familiarity and controllability were measured by a set of items representing the instruments necessary for investment (e.g. financial ratios, fluctuation of interest rates...) but as the two dimensions of perceived risk can be distinguished from each other. Once measured, we believe that the degree of familiarity and controllability of tools used for investment in stock market determine risk perceived by investors. In other words, these two dimensions are not manifestations of perceived risk but conversely are constructive (or formative) of this construct. Thus, we assume that the perceived risk is a second-order formative construct.

#### *2.3.3.1. Measure of Familiarity's Construct*

The concept of familiarity is measured using seven items reported in Table 21 below. For each item, the degree of familiarity of investors has been assessed based on a 5-point Likert scale (ranging from 'not at all familiar' to 'very familiar'). In order to ensure the understanding of the term by investors, we define the familiarity in the questionnaire as "the feeling of the individual about situations that he has personal knowledge".

Table 21. reports the different items used to quantify the concept of familiarity.

By conducting an exploratory factor analysis, item FAM7 (excessive speculation) should be removed, since the communality was low (0.251). Results related to a second exploratory factor analysis are reported in Table 22 below. Ensuring that the items are factorisable (KMO = 0.886 and Bartlett's test is significant), one-dimensional structure explain 62.088% of the variance of the concept of familiarity.

Results in Table 22 related to loading, communality, Cronbach's alpha as well as the Jöreskog's rhô indicate that one factor can measure the concept of familiarity.

The Reliability of construct is satisfying since Cronbach's alpha is equal to 0.876. This is confirmed by the Jöreskog's rhô which exceeds 0.7 (i.e. 0.863).

#### *2.3.3.2. Measure of Controllability's Construct*

The construct of controllability is measured by using seven items listed in Table 23. These items are assessed on a 5-point Likert scale (ranging from 'not controlled' to 'very controlled').

Table 21 reports the different items used to quantify the concept of controllability.

*Table 21. List of Items of Familiarity' Measure*

| Items | Familiarity |
|---|---|
| **FAM1** | Fluctuation of Interest Rate |
| **FAM2** | Knowledge of the Stock Market |
| **FAM3** | The Bond Market |
| **FAM4** | The Management of Listed Companies |
| **FAM5** | The Intervention of the Authorities in the Financial Market |
| **FAM6** | Financial Ratios |
| **FAM7** | Excessive Speculation |



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*Table 22. Results of Exploratory Factor Analysis on Familiarity*

| Familiarity | | | | | |
|---|---|---|---|---|---|
| **Items** | **Loading** | **Communality** | **MSA** | **Cronbach's Alpha** | **Jöreskog's Rhô** |
| **FAM1** | 0.786 | 0.619 | 0.884 | **0.876** | **0.863** |
| **FAM2** | 0.756 | 0.572 | 0.907 | | |
| **FAM3** | 0.821 | 0.674 | 0.872 | | |
| **FAM4** | 0.800 | 0.640 | 0.882 | | |
| **FAM5** | 0.820 | 0.673 | 0.873 | | |
| **FAM6** | 0.740 | 0.548 | 0.905 | | |
| **Eigenvalue** | 3.725 | | | **KMO = 0.886** | |
| **Bartlett's Sphericity Test** | $X^2$=1076.627. .p=0.000 | | | | |
| **Explained Variance** | **62.088%** | | | N = 411 | |

*Note*: *d.f*: degree of freedom.

*Table 23. List of Items of Controllability*

| Items | Controllability |
|---|---|
| **CONT1** | Fluctuation of Interest Rate |
| **CONT2** | Knowledge of the Stock Market |
| **CONT3** | The Bond Market |
| **CONT4** | The Management of Listed Companies |
| **CONT5** | The Intervention of the Authorities in the Financial Market |
| **CONT6** | Financial Ratios |
| **CONT7** | Excessive Speculation |

A first principal component factor analysis allows us to exclude the item MAT7 (excessive speculation) due to its low communality (0.356 <0.5). A second factor analysis leads to one-dimensional structure which can explain 61.614% of the concept.

The reliability of the concept is satisfying since the value of the Cronbach's alpha is acceptable (i.e. 0.874). The Jöreskog's rhô is greater than 0.7 (i.e. 0.863) which allows us to further confirm the good reliability of the construct. Table 24 below summarizes results related to the exploratory factor analysis.

By performing the principal component analysis of the data (Table 24), we show the one-dimensional structure of the concept of controllability.

### *2.3.3.3. Specification of Perceived Risk's Measurement Model*

Many researchers define the formative measurement model compared to reflective model (e.g. Diamantopoulos et al., 2008; Lacroux 2008; Crié, 2005). For example, Crié (2005) reveals that the formative measurement model specifies that "the observed variables are multiple causes of the concept which they determine by minimizing the residue of the structural equation" whereas the reflective indicator is "a reflection of the construct that accounts for their observed variance and covariance". As reported



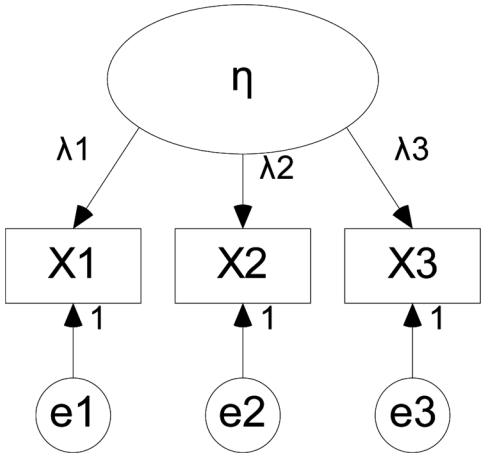
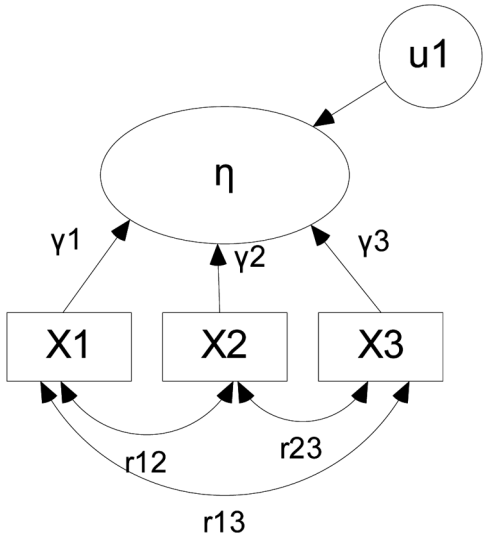
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*Table 24. Results of Exploratory Factor Analysis on Controllability*

| Controllability | | | | | |
|---|---|---|---|---|---|
| **Items** | **Loading** | **Communality** | **MSA** | **Cronbach's Alpha** | **Jöreskog's Rhô** |
| **CONT1** | 0.763 | 0.582 | 0.888 | **0.874** | **0.863** |
| **CONT2** | 0.776 | 0.602 | 0.895 | | |
| **CONT3** | 0.803 | 0.645 | 0.881 | | |
| **CONT4** | 0.809 | 0.655 | 0.879 | | |
| **CONT5** | 0.801 | 0.641 | 0.879 | | |
| **CONT6** | 0.756 | 0.571 | 0.898 | | |
| **Eigenvalue** | 3.697 | | | **KMO = 0.886** | |
| **Bartlett's Sphericity Test** | $\chi^2$=1017.210; *d.f*=15; *p*=0.000 | | | | |
| **Explained Variance** | **61.614%** | | | N = 411 | |

*Note*: *d.f*: degree of freedom.

*Table 25. Reflective Construct versus Formative Construct*

| | *Reflective Measurement Model* | *Formative Measurement Model* |
|---|---|---|
| **GRAPHICALLY** |  |  |
| **Mathematically** | $X_i=\lambda_i*\eta+e_i$<br>where:<br>*η: The construct ;<br>*$X_i$: The ith indicator of the latent variable η which affects it ;<br>*$e_i$: The random measurement error ;<br>*$\lambda_i$: The factor *loading* depicting the magnitude of the effect of η on the $X_i$. | $\eta = \sum_{i=1}^{n} \gamma_i * X_i + u_1$<br>where:<br>*η: Latent variable ;<br>*$X_1,X_2,\ldots,X_n$: The measures ;<br>*$\gamma_1,\gamma_2,\ldots,\gamma_n$: The structural parameters depicting the magnitude of the effects of the $(X_1,X_2,\ldots,X_n)$ on η;<br>*$u_1$: The disturbance term representing the part of the construct that is not explained by the $X_1,X_2,\ldots,X_n$ measures. |
| | **The direct reflective model specifies direct effects from a construct to its measures.**<br>(*Edward and Bagozzi, 2000*) | **The direct formative model specifies measures as correlated causes of a construct.**<br>(*Edward and Bagozzi, 2000*) |



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by Lacroux (2008), in reflective construct, "indicators are assumed o represent the influence of latent underlying construct, the causal relationship is supposed to operate from construct to its indicators". However, a formative construct is "a combination of indicators, not necessarily correlated, contributing to 'shape' the latent construct. The causal relationship to these 'formative' constructs is reversed: It proceeds from indicators to latent construct".

As previously indicated, we assume that the measurement model of perceived risk is a formative model. This construct is as a combination of two factors, namely familiarity and controllability. These two variables are not manifestations of the perceived risk. They are constitutive (or formative) of the perceived risk.

Results of the confirmatory factor analysis are reported in Table 26. The first part of Table reports the results of the reflective first-order model. The second part indicates results of formative second-order model.

Table 26. comprises two parts. The first part reports the results of the reflective first-order model. Our results show two different constructs of familiarity and controllability. The second part displays results of formative second-order model.

From the first part of Table 26, all factor loading relating the items $FAM_i$ and $CONT_i$ ($i = 1,..., 6$) to the two respective factors Familiarity and Controllability are significantly different from zero ($t > 1.96$). Besides, the convergent validity of each construct is acceptable since $\rho_{vc}$ are just above 0.5 (0.514 and 0.513 for the familiarity and controllability, respectively). Hence, we can retain the two measures used in the measurement model of perceived risk.

*Table 26. Results related to Perceived Risk's Measurement Model*

| **Reflective First-Order** | | | | | |
|---|---|---|---|---|---|
| **Factor** | **Items** | **Non Standardized λ** | **CR** | **Standardized λ** | $\rho v_c$ |
| ***Familiarity*** | FAM1 | 1.000 | | 0.704 | **0.514** |
| | FAM2 | 0.828 | 12.351*** | 0.675 | |
| | FAM3 | 1.148 | 13.805*** | 0.765 | |
| | FAM4 | 0.973 | 13.459*** | 0.742 | |
| | FAM5 | 1.098 | 13.672*** | 0.757 | |
| | FAM6 | 0.974 | 11.917*** | 0.651 | |
| ***Controllability*** | CONT1 | 1.000 | | 0.691 | **0.513** |
| | CONT2 | 0.904 | 12.541*** | 0.710 | |
| | CONT3 | 1.062 | 13.080*** | 0.745 | |
| | CONT4 | 1.002 | 1.084*** | 0.746 | |
| | CONT5 | 1.084 | 12.838*** | 0.730 | |
| | CONT6 | 1.031 | 11.966*** | 0.673 | |

| **Formative Second-Order** | | | |
|---|---|---|---|
| | **Non Standardized γ** | **CR** | **Standardized γ** |
| Familiarity ⟶ Risque Perçu | 1.000 | | 0.784 |
| Controllability ⟶ Risque Perçu | -0.251 | -5.121*** | -0.249 |

*Notes*: - *** Signification Level: 0.001 ; - CR: CRITICAL RATIO.



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From formative perspective, the second part of Table 26 contains standardized (i.e. column 4) and non-standardized (i.e. column 2) coefficients $\gamma_i$ (structural parameters) that capture the effect of both latent variables (Familiarity and Controllability) on the perceived risk (i.e. column 1). We note that the relationship between familiarity and perceived risk is positive and significant ($\gamma_1$= 0.784). However, the effect of controllability on perceived risk is negative and significant ($\gamma_2$= -0.249, $t$ = -5.121, $p$ = 0.001). On the one hand, an increase in the degree of familiarity of investors with investment tools does not cause inevitably a corresponding increase in the level of controllability of these instruments. On the other hand, the more the investor knows and does not control the necessary instruments for investment, the higher the perceived risk is towards the stock market. Clearly, the perception of risk is high when investor knows but does not control the tools necessary for investment by an investor. This finding is not surprising since Wang and al. (2006) argue, from a mapping of risk perceptions, that Chinese investors have a low perceived risk when they feel familiar and control some sources of risk existing in the stock market. In contrast, their risk perception is high when they are familiar and do not control other sources of risk. So, we can conclude that both latent variables, Familiarity and Controllability, are formatives of the construct 'Perceived Risk'.

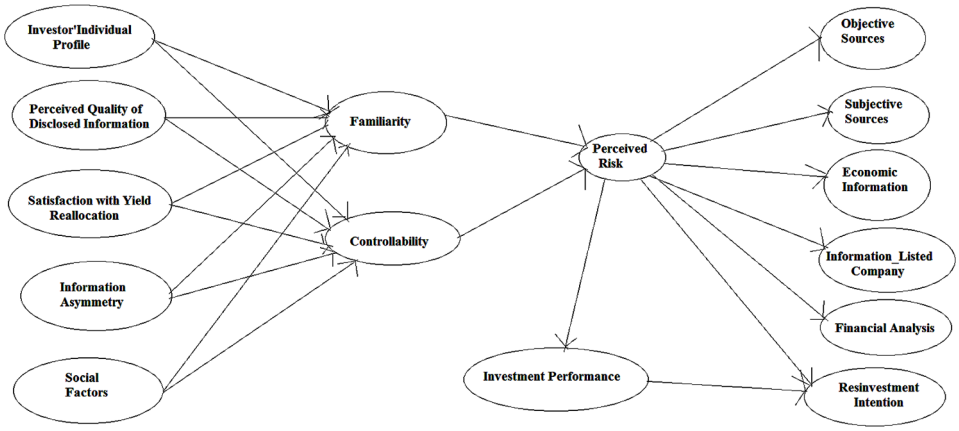
## SECTION. 3: RISK-BEHAVIOR MODEL

Since the measurement model of perceived risk is a formative model, factors influencing risk perception will be subsequently considered as antecedents of familiarity and controllability. More explicitly, as depicted in figure 2, the investor's individual profile, perceived characteristics of listed companies and information asymmetry will affect risk perception through familiarity and controllability of tools necessary to investment.

Figure 2. reports the risk-behavior model which illustrates the relationships between different constructs.

Before explaining results of model estimation, it is necessary to first introduce the structural equation method.

*Figure 2. Integrated Model of Antecedents & Consequences of Perceived Risk*






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## 3.1. Overview of Structural Equation Method

Since Jöreskog (1969), Keesling (1972) and Wiley (1973) first developed the statistical model of structural equations, it has become a fairly sophisticated statistical method. It is frequently used by many researchers in various fields such as psychology, marketing. The structural equation method attempts to examine the causal relationships in a complex theoretical model (Hoyle, 1985). According to Kaplan (2000), the structural equation models are a class of methodologies trying to represent certain assumptions about the average, variance and covariance of observed data in terms of a smaller number of structural parameters defined by an underlying theoretical model.

Raykov and Marcoulides (2006) pinpoint that the structural equation modeling which attempts to examine and quantify the substantive theories. Byrne (2006) reports that the structural equation modeling conveys two important aspects of the procedure: (a) « that the causal processes under study are represented by a series of structural (i.e. regression) equations » and (b) « that these structural relations can be modeled pictorially to enable a clearer conceptualization of the theory under study ».

Researchers propose several appellations to depict this method such as "structural equation models with latent variables" (Jöreskog and Sorbom, 1989), "model analysis of covariance structures" (Valette-Florence, 1988) or "structural equation models" (Pedhazur and Schmelkin, 1991).

Due to its ability to treat concomitantly a set of dependence relations, structural equation models are the most appropriate to be used in the current study. Unlike other conventional approaches (i.e. regression), this method allows to simultaneously estimate the multiple interrelated dependence relations and incorporate the measurement errors directly in the estimation process (Roussel et al., 2002).Also, Hair et al. (1998) indicate that taking into account measurement errors permits to estimate more accurately regression coefficients in comparison to classical methods. The structural equation method enables us to assess the model fit.

## 3.2. Evaluation of Model Fit

Assessing the quality of a model's fit to the observed data requires the use of the adjustment indices. Measures of goodness of fit typically summarize the discrepancy between observed values and the values expected under the model in question. To this end, researchers use three types of indices namely the absolute, incremental and parsimony indices. Table 27 reports the main results.

*Table 27. Model Fit*

| *Type of Index* | *Index* | *Observed Value* | *Key Value* |
|---|---|---|---|
| ***Absolute Indices*** | $\chi^2$<br>***d.f* (*prob*)** | **128.405**<br>**43 (0.000)** | ***None*** |
| | **RMSEA** | **0.070** | ***<0.08*** |
| | **GFI** | **0.951** | ***>0.9*** |
| ***Incremental INDICES*** | **CFI** | **0.957** | ***>0.9*** |
| ***PARCIMONY INDICES*** | $\chi^2/df$ | **2.986** | ***Entre 1 et 5*** |
| | **PNFI** | **0.611** | ***>0.5*** |



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Table 27. reports results of calculation of different indices (absolute, incremental and parcimony indices) to assess the model fit.

Results prove that RMSEA is less than 0.08 (equal to 0.070) and GFI is greater than 0.9 (equal to 0.951). So, our conceptual model can reproduce accurately the data. Besides, the value of CFI (equal to 0.930) is acceptable since it is above the key value. This shows therefore the good fit of the model tested against the restrictive model (or basic model) in which all the observed variables are not correlated (Roussel et al., 2002). These results are confirmed by the values of the parsimony indices. Indeed, the $\chi^2/df$ less than 5 (equal to 2.986) and PNFI greater than 0.5 (about 0.611) indicate that the model is parsimonious. In other words, the selected model shows a good fit for each estimated coefficient. Thus, the model is acceptable and fits satisfactorily with empirical data.

## 3.3. Estimation Results and Interpretation

Table 28. reports results of the non-standardized and standardized coefficient estimates as well as the value of t statistics (CR).

Table 28. reports results of the estimation of the conceptual model. All coefficients are statistically significant.

First, results indicate that the investor's individual profile has a significant and positive effect on familiarity ($\beta = 0.165$, $t = 2.632$, $p = 0.01$) and controllability ($\beta = 0.168$, $t = 2.601$, $p = 0.01$) which

*Table 28. Structural Relationships in the ModelLire phonétiquementLire phonétiquement*

| *Path* | Regression Coefficients | Standardized Regression Coefficients | CR |
|---|---|---|---|
| R1.1: Individual Profile → Familiarity | 0.135 | 0.165 | 2.632** |
| R1.1: Individual Profile → Controllability | 0.175 | 0.168 | 2.601** |
| R2.1: Perceived Quality of disclosed Information → Familiarity | 0.356 | 0.363 | 6.113*** |
| R2.2: Perceived Quality of disclosed Information → Controllability | 0.342 | 0.275 | 4.836*** |
| R3.1: Satisfaction with yield Reallocation → Familiarity | 0.19 | 0.205 | 3.892*** |
| R3.2: Satisfaction with yield Reallocation → Controllability | 0.259 | 0.22 | 4.038*** |
| R4.1: Information Asymmetry → Familiarity | 0.16 | 0.273 | 5.495*** |
| R4.2: Information Asymmetry → Controllability | 0.194 | 0.26 | 5.130*** |
| R4.3: Social Factors → Familiarity | -21.603 | -0.611 | -1.101 |
| R4.4: Social Factors → Controllability | -42.237 | -1.26 | -0.917 |
| R5.1: Perceived Risk → Objective Sources | 1.005 | 0.901 | 11.199*** |
| R5.2: Perceived Risk → Subjective Sources | 1 | 0.628 | 10.197*** |
| R6.1: Perceived Risk → Economic Information | 0.823 | 0.656 | 11.567*** |
| R6.2: Perceived Risk → Information related to Listed Companies | 0.884 | 0.866 | 10.415*** |
| R6.3: Perceived Risk → Financial Analysis | 0.896 | 0.671 | 3.321*** |
| R7 : Perceived Risk → Reinvestment Intention | 0.208 | 0.178 | 3.560*** |
| R8 : Perceived Risk → Investment Performance | 0.196 | 0.192 | |

*Notes*: -***Significance level: 0.001 ; -**Significance level: 0.01; -CR: *CRITICAL RATIO*.



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leads us to keep R2.1 and R2.2. Thus, we can support H1. Second, we find that the perceived quality of information disclosed by listed companies has a positive and significant influence not only on familiarity ($\beta = 0.363$, $t = 6.113$, $p = 0.001$) but also controllability ($\beta = 0.275$, $t = 4.836$, $p = 0.001$), retaining R3.1 and R3.2. Consequently, we can support H2.1. Third, the effect of satisfaction with yield reallocation by listed companies on familiarity and controllability is positive and significant (respectively $\beta = 0.205$, $t = 3.892$, $p = 0.001$, $\beta = 0.259$, $t = 4.038$, $p = 0.001$). Thus, we support H2.2. Fourth, we report that information asymmetry has a positive and significant impact on familiarity ($\beta = 0.273$, $t = 5.495$, $p = 0.001$). In addition, the effect of information asymmetry on controllability is significant and positive, instead of being negative ($\beta = 0.260$, $t = 5.130$, $p = 0.001$). Therefore, we reject H3.1. Results show that social factors do not affect both familiarity and controllability, rejecting R4.3 and R4.4. Therefore, we do not support H3.1.

Results also suggest to retain R5.1indicating that perceived risk has a positive and significant effect on the number of objective sources ($\beta = 0.901$, $t = 11.199$, $p = 0.001$). We also find that risk perception increases the number of subjective sources ($\beta = 0.628$), retaining R5.2. Therefore, we support H4. Results show that the higher the perceived risk of investor is, the more he will try to use simultaneously the economic information ($\beta = 0.656$, $t = 10.197$, $p = 0.001$), information related to listed companies ($\beta = 0.866$, $t = 11.567$, $p = 0.001$) and financial analysis ($\beta = 0.671$, $t = 10.415$, $p = 0.001$). We retain R6.1, R6.2 and R6.3. The hypothesis H5 is supported. We also find that risk perception has a significant and positive, instead of being negative, effect on the reinvestment intention ($\beta = 0.178$, $t = 3.321$, $p = 0.001$). This result leads us to reject H6. Results also display the risk perception influences positively investment performance ($\beta = 0.192$, $t = 3.650$, $p = 0.001$), retaining R8.2. Thus, we support H7.

Lastly, we check the possibility that investment performance plays a mediating role between risk perception and intention to reinvest. According to Baron and Kenny (1986), a mediator variable is defined as "the generative mechanism through which the focal independent variable is able to influence the dependent variable of interest". A mediator variable sheds light on the relationship between the independent variable and the dependent variable.

Mathematically, we estimate two different models. In the first model (constrained model), we impose two simultaneous constraints on the regression coefficients,

$$\beta_{PERC_RISQ \rightarrow INVES_PERF} = 0 \text{ and } \beta_{PERC_INVES \rightarrow INTEN_REINV} = 0,$$

whereas at the second model (complete model) no constraint has been imposed. Results obtained from estimating two models are reported in Table 29.

Results of the estimation of different coefficients (Table 29) indicate the partial mediator between risk perception and reinvestment intention.

The relationship between investment performance and reinvestment intention is significant and positive ($\beta = 0.193$, $t = 3.931$, $p = 0.001$). Besides, perceived risk has always significant and positive effect on intention to reinvest. Nevertheless, while passing from constrained to complete model (i.e. when investment performance is taken into account), we find that the influence of risk perception on intention reinvestment becomes weaker ($\beta = 0.178 < 0.214$) but remains significant ($\beta = 0.178$, $t = 3.321$, $p = 0.001$). So, we support that investment performance plays role of a partial mediator between risk perception and reinvestment intention.



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*Table 29. Results of Both Models' Estimation*

| | | Constrained Model | Complete Model |
|---|---|---|---|
| Perceived Risk → Reinvestment Intention | $\beta^{st}$ | 0.214 | 0.178 |
| | β | 0.249 | 0.208 |
| | CR | 3.959*** | 3.321*** |
| Perceived Risk → Investment Performance | $\beta^{st}$ | 0.000 | 0.192 |
| | β | 0.000 | 0.196 |
| | CR | - | 3.560*** |
| Investment Performance → Reinvestment Intention | $\beta^{st}$ | 0.000 | 0.193 |
| | β | 0.000 | 0.222 |
| | CR | - | 3.931*** |

*Notes*: -***Significance level: 0.001 ; -CR: *CRITICAL RATIO* ; $\beta^{st}$*:* Standardized Regression Coefficients ; -$\beta$*:* Regression Coefficients.

## SECTION. 4: LESSONS FROM RISK-BEHAVIOR MODEL

This research investigates the interactions between antecedents of risk perception, perceived risk and behavioral responses induced by risk in the investment context. Results of this study leads to the following implications.

### 4.1. Antecedents of Perceived Risk

Results show that when the investor is familiar and does not control the tools necessary for investment in stock market his risk perception is high. Conversely, when investor is familiar and controls these instruments he perceives a low level of risk towards the stock market. We explicitly recognize that the controllability is a significant factor in the formation of perceived risk. This finding is confirmed by Slovic (1987) which highlights its importance in the risk perception.

Results also indicate that individual profile of investor is positively related to familiarity and controllability of investment tools. These findings confirm that a self-confident and optimistic investor believes he knows and controls instruments necessary for investment. So, he will perceive a low level of risk towards the stock market. We explicitly recognize that these two personality traits (self-confidence and optimism) play a crucial role in risk perception through the two psychometric variables (familiarity and controllability).

Besides, the perceived quality of disclosed information and the satisfaction with the yield reallocation by listed companies display a positive relationship with familiarity and controllability. The more the investor perceives that listed companies transmit to the stock market good quality information (e.g., relevant, complete) the more he feels familiar and controls the tools of investment. Similarly, a great satisfaction with yield reallocation encourages better understanding and controlling of the tools of investment. Hence, the perceived quality of disclosed information and satisfaction with yield reallocation by listed companies both strengthen the familiarity and controllability of investment instruments. Henceforth, the investor's risk perception toward the market will be even lower.



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Lastly, results do not support that the more the market participants do not share the same information the higher the degree of familiarity and controllability of investor. This could be explained by the fact that an investor who feels more informed than others tends to feel more familiar with and controls the tools of investment. Therefore, he will perceive a lower level of risk toward the stock market. AS argued by Wang et al. (2006) "investors' risk perception was not increased by asymmetric information although they knew that information asymmetry would greatly influence their decision". Besides, the social factors do not affect the familiarity and controllability of investment tools. That is, the existence of investment advisor, family, among others, do not reduce the perceived level of risk toward the stock market. Contrary to many studies which prove the impact of social factors in the purchase situation, the current study do not support the relationship between the social influences and the perceived risk of investors.

## 4.2. Behavioral Responses to Perceived Risk

The proposed model suggests that risk perception influences the activity of information search and investment behavior.

The activity of information search is measured through the information sources and types. Results indicate that the higher the perceived risk of investor the higher the investor will consult various information sources. Thus, we show that as perceived risk increases, a greater number of information sources are consulted. The current study was not limited only to information sources but it was interested in the type of information. Indeed, results suggest that by facing a high perceived level of risk toward the stock market the investor will tend to use different types of information (economic information, financial analysis, information relative to listed companies). In other words, investor uses various types of information in order to decrease his perceived risk. We conclude that the link between risk perception and information search can be established within the investment context. This finding is confirmed by Cho and Lee (2006) who argue that "the link between perceived risk and the extent of information search (a link that has often been rejected in the extant literature) can be established within the context of investment".

Results also indicate that a higher perception of risk has simultaneously created a strong intention to reinvest in the stock market and higher investment performance. Facing a high level of perceived risk, investors reinforce (rather they decrease) their intention to reinvest. This behavioral response clearly shows that investors do not seek to reduce the vulnerability associated with negative outcomes. Although they perceive a high risk toward the stock market, investors do not adopt the second risk-reducing strategy (i.e. decrease in the amount at stake) in the investment context. However, persons with higher perceived risk toward the stock market have a higher investment performance. According to Wang and al. (2006), these results can explain the frequent stock exchange behaviors prevailing on the stock markets. Moreover, we find that investment performance can play the role of partial mediator between risk perception and intention to reinvest. Although the perceived risk towards the stock market is high the investor seeks to reinvest more by making frequent stock trading under the attraction and reinforcement of returns generated from the invested funds.

## CONCLUSION

In this study, the proposed model examines the antecedents and consequences of perceived risk in the investment context. Results show that controllability plays a crucial role in the formation of perceived



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risk. Moreover, we find that the individual profile of investor, the factors related to the listed company and the stock market have an impact on perceived risk. A future study could examine the effect of other variables on risk perception such as investment experience and sociodemographic characteristics of investors (age, gender, income ...). Besides, we conclude that investors seek to mitigate the perceived risk toward the stock market through information search. The attraction of returns generated from the invested funds strengthens the reinvestment intention of investors in spite of the fact that they perceive risk toward the stock market. Thus, the specific context (i.e. the stock market investment) leads the investor not to adopt the second risk-reducing strategy namely the decrease in the amount at stake.

Our research could be extended by including the concept of the ethic in the investment context. In marketing research, many researchers consider the ethics is a very important. Unfortunately, the questionnaire of this study does not comprise items related to ethical attributes perceived by the individual investors. A future study would examine the relationship between the perceived ethics toward the stock market and the risk-reducing strategies.

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## KEY TERMS AND DEFINITIONS

**Controllability:** The ability to foresee and navigate potential hazards, thus erasing risk in a material way.

**Decrease in the Amount at Stake:** The decrease of vulnerability associated with adverse outcomes.

**Familiarity:** A degree of knowledge or experience a person has respect to a task or object.

**Formative Construct:** A combination of indicators contributing to form the latent construct. The causal relationship proceeds from indicators to latent construct.

**Information Search:** The activity that each investor must do to make the investment decisions. Search for information is to consult information sources.

**Risk Perception:** A person's assessment of the risk inherent in a situation.

**Risk-Reducing Strategies:** Two different modes of behavioral responses to decrease the risk perception of decision's maker.

**Structural Equation Method:** The method that attempts to examine the causal relationships in a model.



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## ENDNOTE

[1] The structural equation method will be presented in the following section.

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# Chapter 7
# Determinants of the Risk-Taking Attitude among Small Equity Investors

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## ABSTRACT

*This study explores the personality traits, perceived personal control, behavioral biases, culture, and socio-demographics in determining individual equity investor's risk assumption attitude. The study uses a survey approach to collect responses from small equity investors. A conceptual model is developed and hypotheses are tested through structure equation model (SEM). The result identifies personality traits, perceived personal control, behavioral biases, cultural factor and socio-demographic variables as strong determinants of small equity investor's risk assumption attitude.*

## INTRODUCTION

Risk is a difficult construct to define. The outcomes of risk depend on the situation and the decision maker. Risk assumption attitude involves participation in certain activities that might results in harm, loss or undesired outcomes (Ricciardi, 2004). Risk assumption attitude often referred as risk appetite, risk tolerance, risk acceptance and risk propensity is decision maker's general disposition to a particular risk in a consistent way (Roskowzki and Davey 2010). Kahneman and Tversky (1979) also hold that individual investor tend to seek risk in loss realm and avoid risk in profit realm. Risk assumption attitude varies among different people depending their personality traits, personal control, behavioral

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factors, cultural factors and other socio-demographics including; age, gender, income level, financial needs, investment objectives, investment strategies. Slovic (1987) holds that the construct of risk means somewhat different among different people.

Identifying determinants of small investor's risk attitude is an important part of research in behavioral finance. It provides better understanding of various factors that influence risk assumption attitude of individual equity investors. It enables investment professionals to offer customized financial services and investment instruments that best match the risk assumption attitude of individual equity investors. It also facilitates regulatory authorities to improve legislations while having better understanding of investors' risk attitude.

The current study provides significant contribution by identifying the determinants of investor's risky attitude in a developing country's context. The study extends the model of investor's risk assumption attitude proposed by Dulebohn (2002). The study introduced some new variables in the existing models of individual investor's risk assumption behavior.

## BACKGROUND, CONCEPTUAL MODEL AND HYPOTHESES

### Personality Traits and Risk Assumption Attitude

#### Openness to Experience

Researches in behavioral finance provide ample evidence regarding influence of personality traits on investor's behavior, for instance Goldberg (1999), and Lin (2011) examined the role of personality trait on investor behavior. This study has used big five personality traits including, openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism proposed by Costa & McCrae (1992). The first personality trait considered in this study is openness to experience. Openness to experience personality trait allows investors to come up with new ideas, and use active imagination in investment decision making. The investors who are open to experience are overconfident and tend to assume higher risk in their investment decision making (Barber and Odean, 1999). Nicholson et al. (2005) also noted the relationship between openness to experience personality trait and investor's risk behavior. Gullone and Moore, (2000); Markey et al. (2006); and Deck et al. (2008) also examined the role of personality traits (openness to experience, conscientiousness, agreeableness, extraversion and neuroticism) in understanding investor's risk propensity. The study also assumes significant association between openness to experience and investor's risk assumption attitude.

#### Conscientiousness

Conscientiousness investors believe more in themselves. They feel confident to perform job thoroughly and believe to produce results better than other investors. Conscientiousness investors exhibit overconfidence bias in investment decision making. Conscientiousness is considered as striving force for achieving excellence and competence (Costa and McCrae, 1992). Conscientiousness personality trait aspire investors to use money as a tool to impress and inspire others (Lim and Toe, 1997). Nicholson (2005) believe conscientiousness as a force that influence investor's risk investment behavior. Mayfield et al. (2008) also asserted conscientiousness as personality trait that influences investment behavior of



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individual investor. Lin (2011) also describes the significance of conscientiousness on Taiwanese investors' behavior. The study also examines the role of conscientiousness in determining risk assumption attitude of individual equity investor.

## Extraversion

Investors with extraversion personality traits are communicative talkative, more outgoing and social in nature. Such types of investors feel more confident and enjoy risk taking in their investment decision making. Extraversion personality trait, allows investors to think more optimistically and feel energetic while investing. Nicholson (2005) also asserted that extraversion personality motivates investors to resume higher risk. Filbeck et al. (2005) also investigated the effect of extraversion personality trait on investor's risk propensity. Mayfield et al. (2008) and Lin (2011) also associated extraversion personality trait with individual investor behavior. However the nature of influence of extraversion on investor's risk assumption attitude is not conclusive for instance Filbeck et al. (2005) found the negative influence of extraversion on investor's risk behavior whereas Mayfield et al. (2008) found a positive association between extraversion and investor's risk behavior. This study also proposes the role of extraversion personality trait in determining individual equity investor's risk assumption attitude.

## Agreeableness

Investors with the agreeableness personality trait are forgiving in nature, considerate and kind to others. Such type of investors are modest, tolerate and friendly, they often make their decision on information easily available in the market which lead them to herd behavior (Lin, 2011). In stock markets where the majority of investors is inclined towards the risky investment behavior, the other investors with agreeableness personality traits would follow them due to their considerate nature. Nicholson et al. (2005) also examined the influence of agreeableness personality trait on investor's risk behavior.

## Neuroticism

The last personality trait considered in this study is neuroticism. Investors with neuroticism personality traits tend to get worried a lot and get nervous easily. They find it hard to handle stress efficiently when faced with complex situations. Neuroticism personality trait also influence investor's risk assumption attitude, Lin (2011) identified that such investor are inclined to sell their stock holdings in advance due to fear of loss. Nicholson (2005) and Deck et al. (2008) also examine the influence of neuroticism on investor's risk attitude. Overall, openness to experience and extraversion motivate investors for risk taking, whereas, agreeableness, conscientiousness and neuroticism discourages investors to resume higher risk in their investment decision making (Nicholson, 2005). On the basis of this theoretical discussion, the study proposes the following hypothesis.

**Hypothesis 1:** There is a significant relationship between personality traits and investor's risk assumption attitude.



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## Perceived Personal Control

### Internal Locus of Control

Internal locus of control refers to individual beliefs about the outcomes of one's actions depends on his/her decision skills or some external factors that are beyond control. Locus of control is an important dimension of perceived personal control (Greenberger and Strasser, 1991). Researches in behavioral finance have associated internal locus of control with investor's risk assumption attitude (March and Shapira, 1987; and Shapira, 1995). Dulebohn (2002) also considered an internal locus of control as determinants of individual investor's risky behavior. Dulebohn and Murray (2008) also considered an internal locus of control as a determinant of investor's risk assumption behavior.

### Financial Self Efficacy

Self-efficacy is personal belief that one can achieve and succeed a given task and related to self-confidence, motivation, optimism and belief that one can achieve various challenges in life (Bandura 1997, 2006). Financial self-efficacy is another dimension of perceived personal control considered in this study. Dulebohn (2002) used self-efficacy in his model of investor's risky investment behavior. This study has introduced financial self-efficacy in this model. Financial self-efficacy is more relevant to investor behavior than self-efficacy only (Lown, 2011). Financial self-efficacy also influence investor's risk assumption attitude, investors with a higher level of financial self-efficacy feel confident to assume higher risks in their investment decision making. Krueger and Dickinson (1994) noted a strong and significant correlation between self-efficacy and investor's risky behavior.

### Knowledge of Investment Principles

The literature supports the relationship between knowledge of investments and investors risky attitude. For instance Wang (2009) identified two types of knowing; objective and subjective. Objective knowledge is concerned with knowledge/information investor posses whereas subjective knowledge refer to the knowledge is the degree of confidence investor has on his/her knowledge. According to Brucks (1985) investors with a high level of knowledge regarding financial market find it easier to process market information and make accurate decisions. Wang (2009) holds that investors with higher knowledge of investment principles are more prone to higher financial risks because of their confidence in the financial market. The following hypothesis can be extracted from the above discussion.

**Hypothesis 2:** There is significant relationship between perceived personal control and investor's risk assumption attitude.

## Behavioral Factors

### Overconfidence

Small investors tend to be overconfident about their risky decision making skills. There are two types of over confident; miscalibration and better than average effect. Miscalibration refers to state of mind when



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investors are too confident about their knowledge and skills to investment decision making. Better than average means that the investor believes that he/she is having more knowledge and expertise regarding investment decision making than other investors (Vledder, 2010). Overconfident investors do excessive trading and display aggressive trading behavior (Baker and Nofsinger, 2010). Lichtenstein et al., (1981) holds that overconfidence behavior is sever when investor analyze various stock prices. Webber and Milliman (1997) identify that investor's overconfidence behavior determines the success or failure of investment decisions. The above mentioned studies postulate that investor overconfidence behavior influence investor's risk assumption attitude.

### Herding Behavior

Herd behavior refers to investors' attitude to follow other investors trading plan without adequate information and appreciation of risk-return tradeoff. In herding behavior traders imitates each others. Herd behavior influences the trading behavior of individual investors in stock markets (Bikhchandani and Sharma, 2001). Herd behavior accelerates market volatility, destabilizes the market and increases the vulnerability of financial markets (Shiller, 1990; Morris and Shin, 1999; and Persaud, 2000). Herd behavior is also identified as a source of fluctuations, bubbles, and crashes in the stock markets (Topol, 1991). Herd behavior is practiced highly in small stock markets where investors lack financial skills. In volatile stock markets like Pakistani stock markets, investors imitates others investors who invest in risky stocks without taking into account the technical and fundamental factors. Bearden et al. (1989) also investigated herd behavior among individual equity investors, and identified that investors display herd behavior to conform the expectation of other investors. Investor exhibit herding behavior due to lack of confidence in their trading skills and assessment of risk involved in investing. The following hypothesis can be framed from this discussion.

**Hypothesis 3:** There is significant relationship between behavioral biases and investor's risk assumption attitude.

## Cultural Factor

### Uncertainty Avoidance

Investor's risk assumption attitude is also influenced by cultural factors. Different definitions and dimensions of culture have been identified by various scholars. The study used Hofstede (1983) model of national culture. Hofstede (1983) proposed four dimensions of national culture including; individualism versus collectivism, power distance, uncertainty avoidance, and masculinity versus femininity. Later on another dimension of national culture, long-term orientation versus short-term orientation was also incorporated in Hofstede (1983) model of national culture. This study considers only one dimension of national culture i.e. uncertainty avoidance due to its higher relevancy with investor's risk assumption attitude.

**Hypothesis 4:** There is significant relationship between uncertainty avoidance and investor risk assumption attitude.



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## Scio-Demographics and Investor's Risk Assumption Attitude

Socio-demographic variables such as age, education, income level, investment objectives, investment strategies and investor type, also plays important role in determining risk assumption attitude of individual equity investor. Studies including Sahm (2007); Hayat et al. (2007); and Lin (2011) identified the influence of investor demographics on investor risk behavior. Studies on investor risk behavior indicate female as more risk averse than male investors. To quote few, Powell and Ansic (1997); Gustafson (1998); Donkers & van Soest (1999); Slovic (1999); Barber and Odean (2001) and Weber et al. (2002) indicate male investors having more risk assumption propensity than female investors. Age is also considered another determinant of investor's risky attitude. Finance literature postulates that young investors are more risky than older investors. Previous studies also identified age as strong factor that influence investor's risk behavior, for instance Lewellen et al. (1977); Dulebohn (2002); Vledder (2010) found age as the primary determinant of investor's risky behavior. Another important determinant of investor's risky attitude among demographics is the investor's level of income. Investors with higher levels of income are generally expected to exhibit the risky attitude in the financial decision making. Financial risk taking requires some additional monetary resources that can supplement investor in case of any loss. Investors with meager financial resources find it hard to take risky investment decision due to their inability to bear higher losses. Previous studies in literature also support this notion, for instance, Lewellen et al. (1977); Barber and Odean (2001) put forward income as factor that influence investor's risk assumption attitude. The other socio-demographic variables considered in this study are investment objectives which include considering stock market as a platform of saving for retirement, investing in the stock exchange as a hobby after retirement, building financial buffer, to satisfy the speculative nature, and to grow one's capital. Another socio-demographic variable is investment strategies which include; using technical analysis, fundamental analysis or a combination of both, using one's own intuition and taking advice from some investment professional in investment decision making. Based on the above discussion, we propose the following hypothesis:

**Hypothesis 5:** Individual equity investor's risk assumption attitude is influenced by his/her socio-demographic factors.

# RESEARCH METHOD

## Sample and Data Collection

The study examines the determinants of small equity investor's risk assumption attitude. The unit of analysis is a small individual investor engaged in trading shares in the stock exchange. The individual equity investors are selected for Lahore Stock Exchange of Pakistan. The data are collected through self-administered structured survey questionnaire technique. A total of 500 questionnaires were distributed to individual equity traders registered with various member/brokers on the Lahore Stock Exchange. Amongst the distributed questionnaires, only 287 completed questionnaires were received back with a response rate of 57% response rate.



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## Measures

The instrument to measure big five personality traits including, openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism is adopted from Costa & McCrae (1992) as used by Lin (2011). The instrument consists of 15 items measured in 5 point Likert scale (1 does not apply to me at all to 5 strongly apply to me). The instrument to measure internal locus of control is adopted from Levenson (1981) and measuring levels of knowledge towards stock investment is taken from Vanguard Funds Group (Updegrave, 1996). The measure of financial self-efficacy from is derived from as used by Schwarzer and Jerusalem (1995) Lown (2011), the scale consists of six items (1 for strongly disagree to 5 for strongly agree). The study includes two behavioral biases; over confidence and herding behavior. The instrument to measure these variables is taken from Hon-Snir et al. (2012). The instrument is based on the work of Scharfstein & Stein (1990); and Devenow & Welch (1996). Cultural factor includes the uncertainty avoidance dimension of culture only. The instrument to measure uncertainty is taken from Hofstede (2001). The instrument consists of 4 items measured at 5 points Likers scale. Investor's socio-economic demographics are also considered as a determinant of investor risk assumption attitude in this study. Investor's socio-demographic variables are selected on the basis of studies conducted by Hayat et al. (2007); Lin (2011). The demographics includes, age, gender, marital status, income, investor type, investment objective, investment frequency and stock market investment experience.

## Procedure

The data analysis techniques used in this study includes, reliability and validity testing, correlation analysis and regression analysis. The statistical techniques are applied through SPSS and AMOS software. Cronbach alpha is calculated to analyze reliability through SPSS and Confirmatory Factor Analysis (CFA) is applied through AMOS to examine the validity of measurement scales used in this study. Structural equation model (SEM) technique is also performed to analyze data and test hypotheses proposed in this research.

# RESULTS AND DISCUSSION

## Preliminary Analysis

The results of preliminary analysis given in Table 1 show validity and reliability analysis, computed through AMOS and SPSS. The factor loading is calculated from Confirmatory Factor Analysis to examine the validity of data and measurement scales used in this study. The results of the factor loading analysis depict that only one item of overconfidence scale is having value -0.992, depicted with gray shade. The standard criteria for measuring the validity requires the factor loading value should be ($\geq$ 0.40), therefore this item should be deleted from scale to have good results from our analysis. All other items have scored factor loading higher than 0.40, which postulates good overall validity of data used in this study. The results of reliability analysis also exhibit good results, the Cronbach alpha of all variable is well above 0.50. Nunallay and Bernstein (1978) hold that the value of Cronbach alpha should be greater than 0.5 and reflects the acceptable reliability of data in social sciences.



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## Hypotheses Testing

Figure 2 provide the results of hypotheses tested in this study. The study used five exogenous variables – personality traits, perceived personal control, behavioral biases, cultural factor and socioeconomic demographics, and one endogenous variable – risk assumption attitude. The SEM model obtained good model fitness with CMIN (Chi-Square) = 1431.342, Degree of Freedom (DF) = 371, probability level (p-value) = 0.000, CMIN/DF 3.858. Various statisticians, for instance Wheaton et al. (1977) and Marsh and Hocevar (1985) argued value of CMIN/DF as standard measure for model fitness should be less than 5 and between 5 and 2 for good model fitness. The model fitness of SEM is also within 5 to 2; hence this study also achieved good model fitness. Gerbing and Anderson (1992); and Hair et al. (2003) also used another measure for model fitness and proposed that the model fitness ratios including GFI, CFI and NFI should be closer to 0.90 and the value of RMSEA should be less than one. The model fitness ratios are also satisfactory according to these criteria's as well as therefore, data can be used for further analysis.

## Personality Traits and Investor's Risk Assumption Attitude

The standardized coefficients of path analysis between determinants of investor's risk assumption attitude are presented in Figure 1 and 2 respectively. Figure 1 describe the results of hypotheses testing among determinants of investor's risk assumption attitude. The determinants included in this model are; personality traits, perceived personal control, behavioral biases and cultural factor. The role of investor's socio-demographics in determining risk assumption attitude is presented in Figure 2. The study found positive and significant relationship between personality trait openness to experience and individual investor's risk assumption attitude ($\beta = 0.60$ and p-value = 0.000). This finding supports our H1 and establishes that personality traits determine the risk assumption attitude of individual equity investors'. Lin (2011) also noted significant influence of personality traits on individual equity investor's decision making for the cases of Taiwan.

## Perceived Personal Control and Investor's Risk Assumption Attitude

The next hypothesis proposed in this study consider perceived personal control as a determinant of investor's risk assumption attitude. Perceived personal control consists three dimensions including; internal locus of control, financial self efficacy and knowledge of investment principles. The study found a significant relationship between perceived personal control and investor's risk assumption attitude ($\beta = 0.24$ and p-value = 0.040), we therefore accept our H2. Dulebohn (2002) also identified perceived personal control as a determinant of investor's risk propensity.

## Behavioral Biases and Investor's Risk Assumption Attitude

The study also proposed behavioral biases including; herding behavior and overconfidence as determinants of small equity investor's risk assumption behavior. The empirical evidence found significant influence of behavioral biases on investor's risk assumption attitude ($\beta = 0.51$ and p-value = 0.000), supporting our H3. Many previous studies also support this finding, for instance, Hayat et al. (2007) noted the influence of overconfidence on investor's risky behavior Overconfident investors tend to trade aggressively and assume a higher risk attitude (Barber and Odean, 1999, 2000; Baker and Nofsinger, 2010).



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*Table 1. Validity and Reliability Testing*

| Variables | Factor Loading | Cronbach Alpha (α) |
|---|---|---|
| Openness to Experience | 1.000<br>.907<br>1.164 | 0.85 |
| Conscientiousness | 1.000<br>.574<br>.642 | 0.75 |
| Extraversion | 1.000<br>.712<br>2.403 | 0.66 |
| Agreeableness | 1.000<br>.714<br>.527 | 0.63 |
| Neuroticism | 1.000<br>.749<br>.395 | 0.81 |
| Internal Locus of Control | 1.000<br>1.041 | 0.74 |
| Financial Self-efficacy | 1.000<br>.687<br>2.586<br>1.218<br>1.604<br>.596 | 0.79 |
| Knowledge about Investment Principles | 1.000<br>1.288 | 0.95 |
| Overconfidence | 1.000<br>1.865<br>3.474<br>-.992 | 0.53 |
| Herding Behavior | 1.000<br>.683 | 0.83 |
| Uncertainty Avoidance | 1.000<br>1.428<br>1.655<br>2.138 | 0.62 |
| Risk Assumption Attitude | 1.000<br>.682<br>.843<br>.504 | 0.92 |



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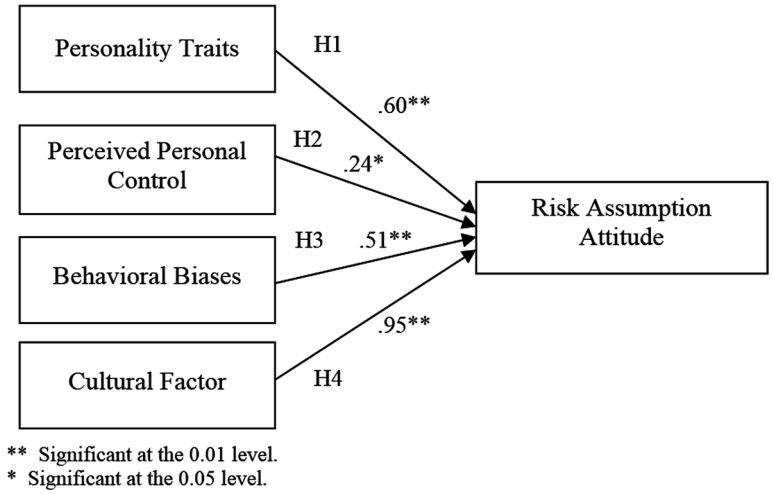
## Cultural Factor and Investor's Risk Assumption Attitude

Cultural factor also influence investor's risk assumption attitude. The investors tend to avoid uncertainty do not resume higher risk in their investment decision making. Whereas the investors having lower level of uncertainty avoidance seeks more risky investment alternates to yield higher returns. The study found a significant influence of uncertainty avoidance on individual equity investor's risk assumption attitude ($\beta = 0.95$ and p-value = 0.000), which supports our H4 as depicted in Figure 1. Kwok and Solomon (2006) noted that investor's risk assumption attitude varies in different countries having diversified national cultures. Velleder (2010) hold that people belonging to countries with higher uncertainty avoidance, tend to avoid risky behavior in financial investment decision making.

## Socio-Demographics and Investor's Risk Assumption Attitude

Investor's socio-demographic variables including; age, education, income level, investment objective, investment strategies, information source and investor type are also considered as determinants of investor's risk assumption attitude in this study. The study found significant influence of investor's socio-demographic variables on investor's risk assumption attitude with their values ($\beta = 0.50$ and p-value $< 0.05$), ($\beta = 0.33$ and p-value $< 0.05$), ($\beta = 0.36$ and p-value $< 0.01$), ($\beta = 0.22$ and p-value $< 0.01$), ($\beta = 0.22$ and p-value $< 0.01$), ($\beta = 0.17$ and p-value = 0.000), ($\beta = 0.09$ and p-value $< 0.05$), respectively. Previous studies have also analyzed role of investor demographics in determining investor's risky investment behavior, for instance, Sahm (2007); Hayat et al. (2007); and Lin (2011) identified the influence of investor demographics on investor risk behavior Figure 2 presents the structural equation model of investor socio-demographics and investor's risk assumption attitude.

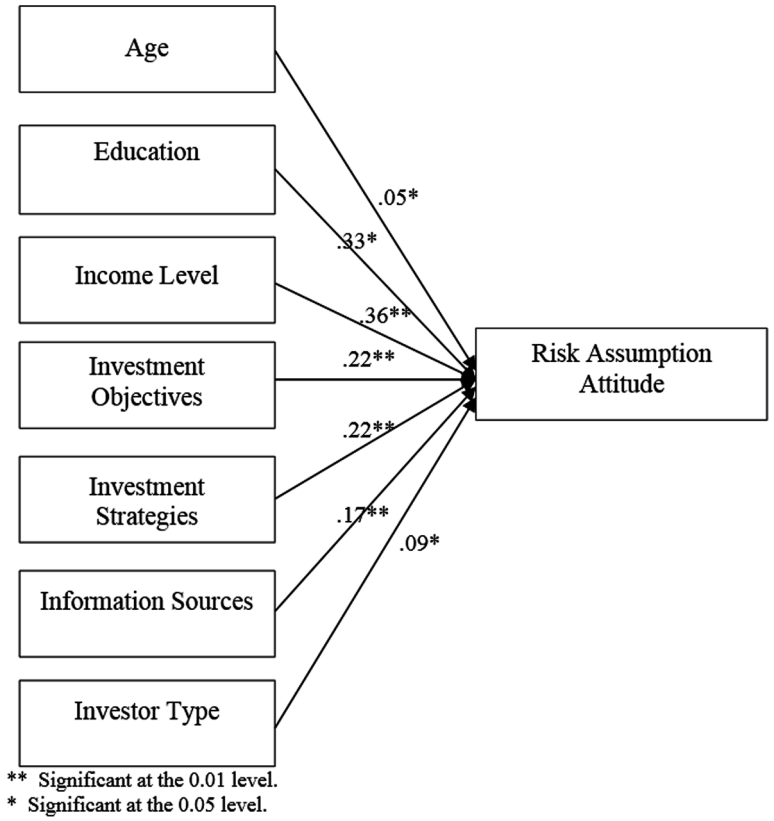
*Figure 1. Structural equation model of determinants of investor's risk assumption attitude*






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*Figure 2. Structural relationship of investor's socio-demographics and risk assumption attitude*




## CONCLUSION

Risk is ubiquitous in behavioral finance and much attention has been given in the literature to measure risk. This study also attempts to identify the factors that determine the risk assumption attitude of individual equity investors. The study found personality traits including openness to experience, extraversion, agreeableness, conscientiousness and neuroticism having a significant relationship with investor's risk assumption attitude. Perceived personal control is also having significant influence on investor's risk assumption attitude. Behavioral biases, including herding and overconfidence have also significantly influenced investor risk attitude. Culture is also observed as a determinant of investor's risky attitude. Investor's socio-demographic variables including; age, education, income level, investment objectives, investment strategies and investor type also determine in one way or another, the risk assumption attitude among individual equity investors.

### Research Implications

The implications of this research are manifold. It provides a theoretical framework that identifies the psychological, behavioral and socio-demographic factors influencing investor's risk assumption attitude. The study empirically tested the proposed theoretical model and explained the statistical significance



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of various factors that influence investor's risk assumption attitude. The study also provides important findings for investment professionals, stock market regulators, equity investors and research scholars on investor behavior.

## Future Research

The study examined the collective influence of personality traits on investor's risk assumption attitude. The future research may investigate the role of each personality trait in determining the risk assumption attitude on individual equity investors'. Only one dimension of national culture is considered in this study, future research may also incorporate other related dimensions of national culture that can influence investor's risk assumption attitude. Moreover, a detailed analysis of investor's socio-demographic variables can also provide interesting information toward investor's risky behavior.

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# Chapter 8
# Overcoming Challenges to Long-Term Financing:
## A Behavioral Perspective

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## ABSTRACT

*A concern that has emerged repeatedly in the support for long-term sustainable development is the insufficient availability of long-term finance for projects such as infrastructure. This paper considers some of the possible strategies to overcome obstacles (cognitive or otherwise) to ensure the provision of long-term financing. The author discusses several behavioral interventions to surmount hurdles both from the demand and supply sides as well as creating enabling environments for better access to finance. This effectively requires challenging the rationale underlying private financial flows that are driven by short-term profits and rents, and strengthening mechanisms for mobilizing and allocating both domestic and external finance for value creation and development over a longer time horizon. It also involves properly designed projects that contractually distributes risks and shares returns within economically rational financing structures and create the right incentives for the various partners.*

## 1. INTRODUCTION

Private financial markets cannot be relied upon to fully fund long-term investment projects because such investments typically involve longer tenures and entail greater risk and uncertainty about eventual outcomes, even while they create significant positive externalities for the rest of the economy (UNCTAD, 2015). These factors produce differences between private profitability and social returns on such investment. Also, private financial markets seldom finance directly such classes of borrowers like start-ups or small and medium-sized enterprises (SMEs), or activities whose returns are not immediately evident and at times cannot be readily calculated. This negatively affects activities that could be crucial for future growth and which could produce considerable social benefits, such as innovation, technological progress and environmental protection.

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Financing for purely public goods necessarily requires appropriate public domestic revenues, and in the context of external financing this is most likely to be supported by official development assistance (ODA) or other forms of development cooperation. In the case of warrant goods and services, as well as other activities with large positive externalities, a mix of public and private arrangements is involved, usually some degree of explicit or implicit government subsidies, which in turn would require either internal or external resources, usually channelled through the public coffers. Finally, there are some activities that generate changes in productive structures and are potentially profitable (such as some kinds of infrastructure investment), which are nevertheless avoided by private investors because of uncertainties associated with lumpy investment requirements with large initial costs, long gestation periods and perceived risks.

This article considers some of the possible strategies to overcome obstacles (both cognitive and otherwise) to ensure the provision of long-term financing. Also, greater financial integration has not delivered on expectations of easier access to the kind of long-term financing needed to boost growth and development. In section 2, we suggest ways on how to facilitate long-term financing activities, both in public as well as private sector using variable forms of funds, including those from sovereign wealth funds and multi-lateral development banks. In our scope of discussion, we argue for necessary change in traditional practices of financial risk-assessment and enriching them with a behavioural orientation, as well as the specification of possible useful tools, and a reassessment in investment focus and horizon. In section 3, we discuss several interventions from behavioral perspectives to surmount hurdles both from the demand and supply sides as well as creating enabling environments for better access to finance via suitable long-term capital market instruments as well as regulatory improvements.

## 1.1 Challenges to Long-Term Financing

In providing for long-term financing, the challenge lies in promoting a financial system that incentivizes sustainable development. Both domestic and international private sources (banks, institutional investors, direct investors) and public resources will be necessary. Public and private resources should, however, not be necessarily seen as substitutes, as they have different investment objectives. Despite small (but growing) pockets of socially conscious investors, most private capital remains driven by the profit motive. As a result, the private sector will under-invest in public goals when the expected return underperforms other investment opportunities on a risk adjusted basis. Hence it is important to recognize plainly that public financing and public sector policies are instrumental to a long-term financing strategy.

Another challenge in channelling investor funds into long-term projects like infrastructure, is the apparent mismatch between investment demand and the supply of finance — there is a lack of properly structured projects. For instance, infrastructure investments entail complex legal and financial arrangements, requiring a lot of expertise (BIS, 2014). Building up the necessary expertise is costly, and investors will only be willing to incur these fixed costs if there is a sufficient and predictable pipeline of infrastructure investment opportunities. Otherwise, the costs can easily outweigh the potential benefits of investing into infrastructure over other less complex asset classes.

A few common economic characteristics differentiate long-term project assets like infrastructure from other asset classes. These characteristics also make it more difficult to match investment demand and financing supply:



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1. Even though the direct payoffs to an owner of an infrastructure project may not cover its costs, the indirect externalities can still be hugely beneficial for the economy as a whole. Externalities include large benefits of infrastructure services to a wide range of other sectors. Such benefits are fundamentally difficult to measure. Even if they can be measured, charging for them may not be feasible;
2. Long-term projects are often complex and involve a large number of parties. Such projects like infrastructure often comprises natural monopolies such as highways or water supply, and hence governments want to retain the ultimate control to prevent an abuse of monopoly power. This requires complex legal arrangements to ensure proper distribution of payoffs and risk-sharing to align the incentives of all parties involved. But any measures needed to restrict monopoly power must still ensure that governments respect pre-agreed contracts;
3. Many infrastructure investments generate cash flows only after many years and the initial phase of an infrastructure project is subject to high risks. In addition, the uniqueness of certain long-term projects like infrastructure in terms of the services they provide makes infrastructure investments less liquid. These three elements — the time profile of cash flows, high initial risks and illiquidity — make purely private investment complicated and expensive.

Although infrastructure investments are likely to be highly profitable for the economy as a whole, they are especially subject to market failures. As a result, infrastructure investment from the private sector in many cases cannot be realised without some form of public support or government assurance. This may take the form of co-financing or some form of insurance. In turn, the necessary involvement of a wide range of parties in infrastructure projects — construction companies, operators, government authorities, private investors, insurers and the citizens most directly affected — make it a complex but essential task to design an efficient set of contracts which should include tackling issues such as the incentive-compatibility of contracts, the nature of contingencies and the proper distribution/sharing of risks among the different parties. The quality of institutions in place and the rule of law are often determining factors in the supply of such financing, even when a project on its own appears to be financially viable.

## 2. LONG-TERM FINANCE FOR SUSTAINABLE DEVELOPMENT

For the purpose of financing long-term sustainable development, long-term investment should meet two main criteria: the investor's time horizon should be sufficiently long to finance long duration assets, say 10 to 20 years, and the investor should be able to hold a position through economic cycles and downside events.

In other words, long-term investors should have the ability not only to buy long-term liquid assets, but to buy and hold long-term illiquid assets. Short-term investors that need liquidity are often willing to pay a higher price for liquid assets; hence long-term investors can buy cheaper illiquid assets, and earn the higher return, or the 'liquidity premium'. During the 2008 global financial crisis, this liquidity premium jumped to levels not seen in decades as investors around the globe demanded cash (UNTT, 2015). More broadly, long-term investors can play a stabilizing role in the market because they act counter-cyclically to liquidity cycles. In summary, stability and sustainability can be and are actually mutually reinforcing.



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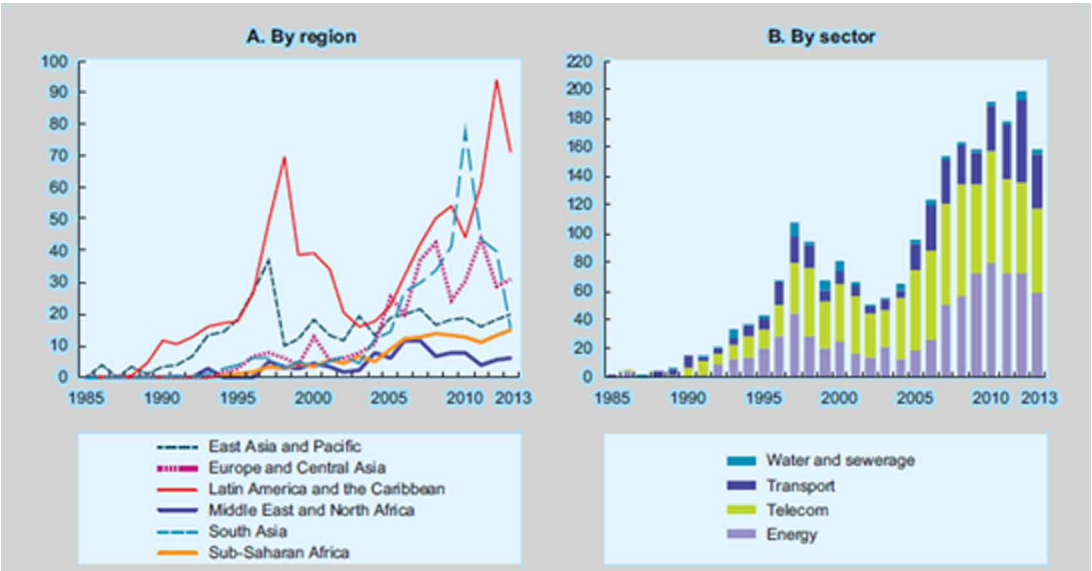
## 2.1. Public-Private Partnerships for Development

A public-private partnership (PPP) is a contract between a government and a private company under which the private company finances, builds and operates some element of a service which was traditionally considered a government domain. In some forms of PPP, the private company even "owns" the underlying assets needed to provide the service for a period of time. The company is paid over a number of years, either through charges paid directly by users, or by payments from the public authority, or a combination of both. PPPs have been used widely in developed and developing countries over the past 20 years, and are currently seeing a revival of interest in the context of negotiations on finance for development and the UN Sustainable Development Goals (UNCTAD, 2015). There are hopes that engaging the private sector in this way can help multiply capital into sustainable development projects.

PPPs may appear to be effective in terms of generating and implementing infrastructure projects when public budgets are constrained. If properly managed, they can also improve the efficiency of the public service through the technical expertise provided by the private sector (ECLAC, 2015).

PPP investment has been concentrated in relatively few countries and sectors. Almost 60 per cent of the total private participation in projects recorded in developing countries was in China, Brazil, the Russian Federation, India, Mexico and Turkey (by order of magnitude). This is an indication that PPP investors are not dissimilar from other institutional investors, preferring large and dynamic markets to the more vulnerable economies where financing needs are greatest. According to UNCTAD, of the developing regions, Latin America has traditionally hosted the largest share of PPPs and still accounted for 45 per cent of the total in 2013. Only 10 per cent of the total went to Africa, although in sub-Saharan Africa investments have been steadily rising (primarily because of investments in telecoms) (see Figure 1).

*Figure 1. Private Sector Participation in Infrastructure, 1985-2013 (Billions of US$). Note: Regions in chart A are the source of investments referenced to the year of implementation (Source: UNCTAD calculations based on World Bank Private Participation in Infrastructure Project Database (as on July 2015)).*






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Also, PPP investments have been concentrated in relatively few sectors, with telecoms accounting for 37 per cent of the total, or US$58 billion, in 2013, and energy for 37 per cent of the total, or US$59 billion (chart B). Water and sanitation are among the most needed infrastructure services to relieve human suffering, and yet they are the least likely to be financed through this method, having received a mere US$3.5 billion in 2013 (see also UNCTAD, 2013). Predictably, most commercial interest has been directed to ICTs and energy-related activities, while socially challenging sectors attracted almost no private investment (AICD, 2010). It appears that PPPs are more likely to invest in brownfield projects (changing ownership of assets that already exist) than in completely new greenfield projects or risky transformative activities such as those related to climate change (WEF, 2014). Also, for the 128 PPPs in its sample, the World Bank concluded that it was not possible to show how much risk was being borne by the private or public partners because "downstream contingent liabilities are rarely quantified at the project level" (IEG, 2014: 40). This is partly due to a lack of standardized financial reporting, which makes it difficult for both investors and governments to accurately judge the risks involved in PPP projects.

However, proponents of PPPs relates to their greater efficiency and ability to deliver better value for money[1]. Similarly, the European Investment Bank states that a "PPP project yields value for money if it results in a net positive gain to society which is greater than that which could be achieved through any alternative procurement route" (European Investment Bank, 2015). According to measures of business performance during the construction phase, most of the PPPs supported by the World Bank were successful in the sense of being completed on time or within budget, with 62 per cent of those reviewed by the IEG rated satisfactory or better. However, broader measures that indicate longer term sustainability over the lifetime of a project are not estimated. Out of 128 projects studied, only 10 recorded results of service quality, 8 recorded results in terms of efficiency, and 1 reported fiscal results. Improved access to services for the poor could be confirmed in only about 10 per cent of cases (IEG, 2014). Clearly, more research and data analysis are required to understand advantages of PPPs better as they may remain a useful source of long-term financing for development, given the paucity of other external resources.

## 2.2. Sovereign Wealth Funds

Many national governments or regional authorities that have been accumulating large amounts of foreign assets in recent years have established sovereign wealth funds (SWFs) as a more profitable way to use such assets instead of further increasing their international reserves. The total value of these public assets currently stands at more than US$7 trillion (SWF Institute, 2015; UNCTAD, 2015). This has raised hopes in some quarters that SWFs could complement the existing sources of development finance, particularly since more than 40 of the 52 SWFs established since 2000 are based in developing countries and 32 of them hold more than US$10 billion in assets. Their total assets were estimated to be nearly US$6 trillion in March 2015 (SWF Institute, 2015), 87 per cent of which were funds from SWFs in only seven developing countries (China, Kuwait, Qatar, the Republic of Korea, Saudi Arabia, Singapore and the United Arab Emirates).

Apart from the funds held for macroeconomic stabilization purposes only (which therefore hold swiftly deployable, highly liquid instruments such as government bonds or cash), many SWFs are mandated to build up capital reserves for future generations, and can therefore consider deploying their remaining funds for equity and "alternative investments" that are illiquid and long term. Some are even explicitly expected to support national or regional development through investments in infrastructure. SWFs typically have more freedom in their choice of asset classes compared with more risk-averse funds



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operated by central banks, pension funds and other funds. Such portfolio choices by various SWFs are: the Norwegian Government's SWF recently pledged to exit global equities in coal, Singapore's Temasek Holdings has investments in national and regional infrastructure, and the Fund for Productive Industrial Revolution in Bolivia has investments in medical, cement and food industries, among others.

In practice, few SWFs take advantage of this freedom to invest in ways that would support developing countries' long-term investment needs. Instead, their investment decisions mirror those of private market players, favouring some countries (e.g. China, the United Kingdom and the United States) and what they deem to be low-risk and short-term market sectors (Inderst and Stewart, 2014; IPE and Stirling, 2013). And while more than half of all SWFs invest some resources in infrastructure (typically in energy, transport and telecommunications), these investments are again mostly in developed countries (Inderst and Stewart, 2014).

SWFs' decision-making processes are not well known, as fewer than half disclose details of their activities (Bauer, 2015). However, since the declared aim of SWFs is typically to save for their country so that future generations may benefit from today's (possibly windfall) successes, this necessarily requires an emphasis on long-term and low-risk investments that yield positive returns, whether in social or financial terms.

## 2.3. Multi-Lateral Development Banks

Multilateral development banks have played and can continue to play a crucial role as providers of long-term financing that is not delivered by private lenders. Typically, transformative development requires, among other things, large-scale projects of long maturity, which involve risks that private banks are unwilling to assume, especially when their own liabilities are short term in nature. Development banks (both national and multilateral) are specifically designed to compensate for these shortcomings of private capital flows and markets for social returns that are bigger than private returns. They have a clear mandate to support development-oriented projects that typically require long-term finance and a funding base whose liabilities are predominantly long term too. Their capital is, for the most part, owned by highly rated sovereigns, which permits the banks to borrow long term in financial markets at relatively low costs. In addition to their provision of long-term finance, development banks act as "market makers" by creating and providing financing instruments that better spread risks, both between creditors and borrowers and over time, including through co-financing with private investors.

Development banks can also help to overcome some of the informational deficiencies facing the private sector by assisting in the screening, evaluation and monitoring of projects. Unlike private banks, development banks tend to have in-house technical and managerial expertise which allows them to participate in decisions involving choice of technology, scale and location. This reinforces their ability to leverage resources, as they can attract other lenders that do not have the same technical capabilities to assess a project's viability and potential. Development banks, therefore, have unique features that give them a strong comparative advantage over private financial institutions, including the tools to mitigate specific risks that the private sector is unwilling to take on, and the ability to exploit the complementarities between them and their private partners effectively (Buiter and Fries, 2002).

These banks are generally mandated to provide credit on terms that render industrial and infrastructural investment viable. They provide working capital and finance for long-term investments, sometimes in the form of equity. To safeguard their investments, they often closely monitor the activities of the firms to which they lend, sometimes nominating directors to the boards of those firms.



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Over more than half a century, the World Bank and various regional development banks such as the Asian Development Bank (ADB), the African Development Bank (AfDB), the Inter-American Development Bank (IADB) and EIB, have played a vital role in financing long-term projects around the world. They have helped to fill some financing gaps, especially in large-scale infrastructure projects, and, more recently, in social and environmental projects. Despite their presence, however, given the relatively modest size of their loans, they have been able to only slightly reduce these gaps[2]. One of the ways to increase loan capacity and reduce financing gaps is to extend appeal of such projects to residents of member countries (through the AfDB for African countries for instance) — extending it to the resident public reaches out to a larger base of capital where individually they may have smaller capital (savings or investible funds) but collectively it may be quite substantial. The extension to partake (which also extends risk-sharing) in such financing may be administered by member countries which is eventually funneled back to the initiating institution. Also, if the residents share into an infrastructure investment, there is a great deal of financial inclusion that takes place, instead of returns being limited to institutional investors. Small stable returns to micro-investors can possibly turn lives through wealth accumulation in the long run.

## 3. BEHAVIORAL PERSPECTIVES AND REQUIRED ENABLERS

Insights from behavioral economics, psychology and documented game-theoretic experiments reveal that human behaviors are shaped by habits, inclinations and conflicts between intentions and actions. Analysis of individual decision-making that is grounded in psychology and behavioral economics offers a different view where one can analyze successes and failures of choices. This approach also provides an opportunity to improve product design and cost-effectiveness of development programs (Datta & Mullainathan, 2012) and similarly, to encourage long-term investment. Evidence has shown that loss aversion — a stronger dislike of a monetary loss than the pleasure of an equal-sized gain — and mental accounting — ways in which individuals and households categorize and evaluate their financial transactions — play an important role in financial decision-making (Thaler, 1999).

Behavioral finance emphasize the social, cognitive, or emotional factors that lead investors to depart from the rational behavior that traditional economists presume. Marketing techniques and product design features that take into account cognitive biases can have surprisingly strong effect on demand. For investing, the media plays a crucial role in shaping markets and subsequently framing choices for investors. This role of the media on people's perceptions underlies the global marketing industry, which highlight and colour events mentally and emotionally to affect people's financial decision-making (Davis, 2005; Elliot et al, 2012). If investors are given consistent information from different media, they weigh the information more heavily, or when media coverage highlights specific issues or "angles" it gives selective attention or perceived importance to a given issue, which subsequently influences investors' judgments.

When faced with huge amounts of data and information and an array of decision problems, people are incapable of doing the complex optimization calculations that are expected of them under standard finance theory. Instead, they rely on a limited number of cognitive strategies or heuristics that simplify the complex scenarios faced by them in making decisions. By nature, heuristics are imperfect and consequently will result in biases and errors (on risk/return or valuation of assets for instance). These imperfections are inherent in everyone and are based on our beliefs, social interactions, the information consumed that frame choices. Behavioral intervention opportunities come from these areas — to shape



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the information consumed by investors, to start conversations on multi-lateral benefits of risk-sharing and socially-responsible investments to balance the profit motive, and construct those choices in a way that investors would want to and likely choose.

## 3.1. Institutional Investor Behavior

Collective effects of large groups of individual investors and traders on financial decision-making have been reviewed to grasp the understanding of what constitutes as market forces. Institutional investors (endowment, hedge and mutual funds, insurance companies, investment banks, pension funds, SWFs, etc.) are the best candidates for keeping markets efficient because they have the ability, knowledge and capital required to move markets but yet in many situations institutional investors have incentives to "ride" rather than trade against mispricings (Ramadorai, 2010). They do not even attempt to arbitrage apparent market inefficiencies in the process of making returns for their investors.

Shiller and Pound (1989) used a questionnaire to survey institutional and individual investors. They found that direct interpersonal communication is very important in one's investment decision-making process. Hence, people who have information, and can use it well, will be 'better off' than people who do not, because information is what enables arbitrage, market control and speculation — all of which are short-term investing strategies.

Also, it should be noted that analysts, money managers, and pension plan executives often promote or invest in glamour stocks for a variety of inappropriate reasons that may betray the interests of their clients. Analysts may have conflicts of interests, leading them to recommend growth stocks; money managers may offer advice to investors that promote their own careers; and excitement over emerging technologies may lead advisers to select glamorous, but unwise, investments (Billett et al, 2012).

### 3.1.1. Investor Time Horizon: Short-Termism

The shrinking time horizon in the investment market is evident. Stocks are being held for shorter periods than at any time since the 1920s, as the New York Stock Exchange (NYSE) average holding period data shown in Figure 2. On average, a stock is being held for approximately 8 months. This reflects investment transactions driven by both individuals and institutional investors.

It would be expected that professional investment managers take a more long-term perspective but data suggests otherwise; the average holding periods of investment managers of stocks in equity mutual funds is 1.56 years. This data comes from Morningstar Direct which reflects largest 20 US open-end equity mutual fund categories as of 1 December, 2015. Holding periods were calculated by taking 1 over the most recent average annual turnover ratio for different categories[3].

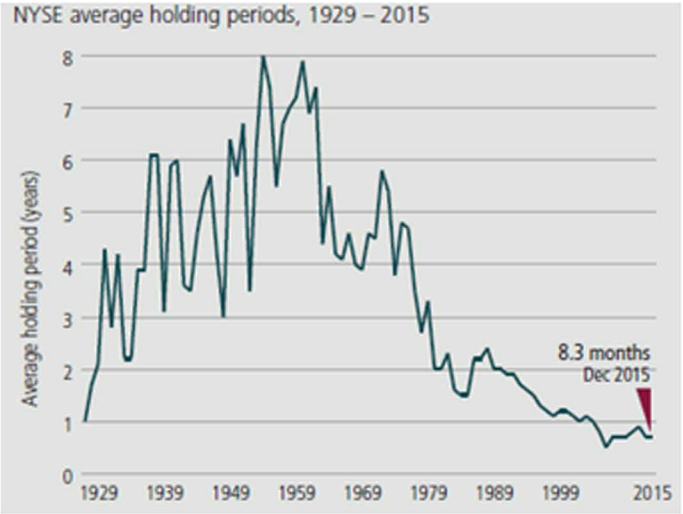
A number of reasons have been posited for the short-term investor behavior observed, which include incentives, media and financial reporting and decision-making biases:

- **Incentives:** A significant proportion of investment management professionals (43%) receive more than half of their compensation based on their annual performance[4]; similarly, nearly 80% of investment management professionals surveyed have less than half of their compensation based on longer-term performance measures. The incentive structure in place encourages the manager to take excessive risk in order to optimize his or her compensation in the current period. The risks taken may not be appropriate for the portfolio and are also likely not reflective of the fact that most



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*Figure 2. Investors are holding stocks for shorter time periods (Source: Ned Davis Research, December 2015)*




clients have a time horizon that is longer than eight weeks. Furthermore, investment performance in short time frames are more likely driven by market noise than relevant investment signals;

- **Media and Financial Reporting:** The media, analysts and various pundits churn out a vast amount of information and commentary on the markets. While investors need information from various sources to make decisions, it is important to make a distinction between general market noise and pertinent investment signals. The emphasis on quarterly earnings is another example of the short-term focus of the investment community. While there is an abundance of short-term earnings estimates, there is a dearth of longer-term estimates, i.e. beyond three years. The lack of sell-side research that extends beyond the near term, along with the additional uncertainty implicit in taking a longer-term view, suggests that there is a role for independent research focused on adding value over longer time horizons. Additionally, the market trend of reduced trading commissions could be placing additional pressure on brokerage firms to increase short-term trading volume;
- **Decision-making Biases:** The field of behavioral finance has stressed the psychological reasons why individuals fall prey to certain decision-making pitfalls, including short-term behavior that prejudices long-term investment performance. These include loss aversion, which refers to one's tendency to strongly prefer avoiding losses to acquiring gains; the availability bias that occurs when one makes judgments about the probability of events based on how easy it is to think of examples (the availability heuristic operates on the notion that if something can be recalled, it must be important); and the party effect, or recency bias, which operates when stock market participants evaluate their portfolio performance based on their perspective on recent results. These biases, along with others, result in less than optimal results for the investor in the longer-term.



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### 3.1.2. Lengthening Investor's Time Horizons

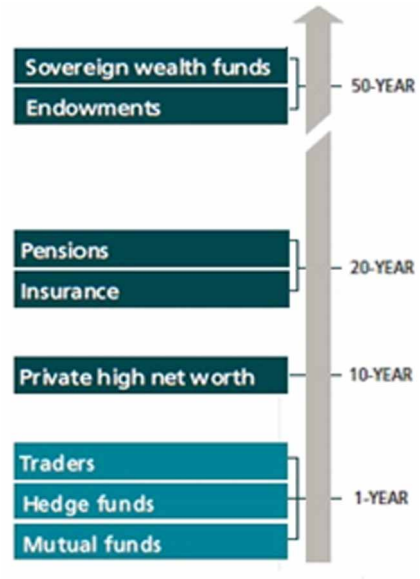
When the investment time horizon of clients were examined — ranging from high net-worth private clients to pension funds, insurance companies, endowments and sovereign wealth funds — it was found that the clients typically have time horizons of a decade or more, and, in many instances, have an explicit multigenerational objective. For example, endowments, foundations, sovereign wealth funds and many private HNWIs fall into a group that invests for both current and future generations. This suggests that it would be rational for these investors, in particular, to adopt a longer-term perspective in their investment practices. The increased short-term focus of investors indicates a misalignment with those asset owners with a long-term time horizon (see Figure 3).

Also, investment managers with a longer-term view and a focus on stock selection can find abundant investment opportunities. Figure 4 shows the return dispersion for stocks held for various time periods ranging from one day to five years. There is greater return dispersion between the tenth and ninetieth percentiles as the holding period extends, bolstering the view that there are more opportunities for differentiated performance when one holds securities for three to five years.

Forward total cumulative returns around the mean in US$ within the 10th to 90th percentile range.

Logically, it is difficult for a portfolio manager to profitably trade markets on a weekly basis because stocks tend to move in tandem in the short term and the opportunity to add value after trading costs is very limited. However, beyond five years there is much greater return dispersion, which creates the potential for investment managers to benefit from. This time horizon arbitrage opportunity may be a significant factor in generating long-term performance. Over a longer time period, there is an opportunity for investors to focus on meaningful investment signals that point to sustainable earnings growth in the medium-to-long term and express differentiated views that translate into positive performance.

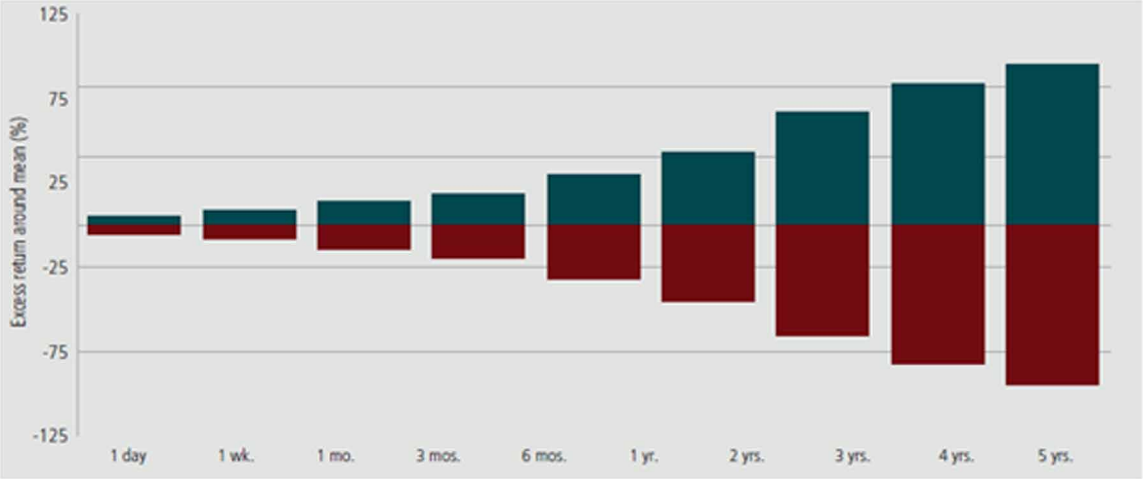
*Figure 3. Investment horizon of different funds and investors (Source: Based on "Making Better Investment Decisions", Morningstar, 2012)*






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*Figure 4. MSCI World Total Return Dispersion around the Mean Return (2011–2015) (Source: MFS Research. MSCI World holdings as of 1 January, 2011.)*




### 3.1.3. Brownfield to Greenfield Projects

Traditional infrastructure-market players, such as governments and public utility companies, are under financial pressure, and their budgets are strained. They are increasingly looking to private investment to fund infrastructure projects. PPPs can offer a number of benefits, including a whole-life costing approach that optimizes construction, operation and maintenance costs, better risk management and efficient project delivery. Well-structured PPPs can help ensure that greenfield projects are delivered on time and within budget and at the same time generate attractive risk-adjusted returns for investors.

To secure this greenfield premium, investors must ensure that the risks associated with a project are properly managed. Greenfield projects need to begin with a clearly defined contractual framework that allocates risks to the most natural owners. Strict contract frameworks bring structure and discipline to the execution of greenfield infrastructure projects. Also, experienced project owners know that construction risk associated with greenfield projects is typically greater than brownfield projects. By choosing experienced contractors and by establishing fixed prices and specific design and build deadlines, project managers and investors can protect against the delays and cost overruns that can plague infrastructure projects. For investors to secure long-term returns, contracts must address the key risks inherent to all infrastructure projects, not only greenfield projects. Examples include revenue and volume risk, which relate to the effective use of the infrastructure at expected tariff levels (for instance, road traffic), or the availability and affordability of a critical input (for example, gas supply to a gas-fired power plant). These risks can be managed through risk-sharing mechanisms like disclosing minimum traffic volumes from public authorities and long-term off-take agreements.

Political risk assessment and management is also essential over the long term. An infrastructure asset is captive by essence, and its performance relies on the willingness of local counterparties to respect the commitments made at inception.



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## 3.2. Designing Effective Behavioral Interventions

Behavioural economics offers new perspectives on interventions that authorities or regulatory institutions could use, for behavioural and other problems in the market. Ordered from least to most interventionist, there are four ways in which these institutions could tackle behavioural problems related to short-termism:

- **Provide Long-term Returns Information:** Require financial institutions or financial-reporting (media) firms to provide information on long-term returns as compared to quarterly or annual reporting;
- **Modify the Choice Options:** Adjust how choices are presented to investors. ESG or SDG benefits should be presented along with profitability. Choices can be linked to a social good or corporate responsibility;
- **Manage Product Distribution:** Require long time horizon products to be promoted or sold through heavily-monitored channels or through proven sound structures like asset-backed structures and performance-based risk-sharing models;
- **Control Speculative Products:** Restrict speculative product features or whole products that appear designed to exploit, or products that mimic long-term investment features but inculcate short-termism.

The behavioural intervention toolkit for long-term investment can be expanded by using more 'nudges' — small prompts that, if designed well, have low costs and can lead to better decisions by biased investors without restricting choice. Providing information or changing the choice environment can be nudges. As these less interventionist measures do not constrain consumer choice, they are preferable, if they are effective in preventing short-term misinformation. Understanding how the investor make decisions can also improve the effectiveness of elevating ESG or SDG goals. Investor psychology, like consumer psychology, is nuanced, and specific interventions can succeed or fail based on small details. Interventions should therefore ideally be tested in practice before implementation, possibly using randomised controlled trials (RCTs). Often investor biases are just one part of a problem, and a package of market-wide or structural measures will be required.

Applying behavioural interventions bring additional challenges too. Difficult questions that need to be tackled are: what is in the investor's versus the project's versus society's best interests, and how effective are less interventionist measures, such as nudges, or more interventionist measures, such as regulatory enforcement? When choosing between different measures, or no intervention at all, the author recommends to assess their costs and benefits, to the extent that this is practically possible. He proposes a modified variety of factors that should be considered:

1. Negative and positive impacts of financial innovation for long-term growth;
2. The impact on the investor's incentives to learn and align to SDG goals;
3. Preferences and risk assessment between the different types of brownfield and greenfield projects;
4. Whether the problem is one for the regulator or best left to the government.



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Traditional impact assessment approaches, for example, for estimating benefits to the society, may need to be adapted when biases are present (both the investor as well as the beneficiaries, including regulatory biases even). Integrating insights from behavioural perspectives with traditional intervention and market failure analysis has much scope for helping regulators choose the best interventions.

## 3.3. Enabling Environment for Long-Term Financing

Despite its potential benefits, there are cyclical and structural impediments to long-term investment. For instance, the current environment of low interest rates and uncertainty over future growth prospects and over policy developments can hinder the willingness of institutional investors to invest in long-term assets. Population ageing may have also reduced the risk appetite and time horizon of investors.

However, governments and other competent authorities such as the regulators and supervisors of institutional investors can play a key role in facilitating long-term investment by creating an enabling environment. The government can create appropriate and consistent policies around a framework that addresses regulatory and institutional impediments to long-term investment and avoid interventions that may distort the proper functioning of markets.

### 3.3.1. Pipeline of Investment Opportunities

Investors will only develop internal knowledge and skills in a specific sector, such as infrastructure, if concrete investment opportunities exist. Similarly, government agencies must establish clear guidelines and reasonable timelines from project announcement to award in order to convince investors to explore and engage, whilst developing their expertise and skills. In order to make development risk manageable for investors, procurement agencies must avoid any false starts when launching infrastructure projects. This will be instrumental to building credible pipelines of investable opportunities and enabling institutional investors to actually engage.

### 3.3.2. Transparency into Cashflows

PPP frameworks, and in particular, contracted cash flows, provide this visibility and also ensure predictability. Predictability, in addition to the natural correlation of cash flows to inflation, contributes to the attractiveness of PPP projects for institutional investors seeking assets that match their long-term goals. By providing greater and enduring visibility to investors, typically under contractual arrangements akin to PPPs, governments could attract long-term investors by providing some investment predictability.

### 3.3.3. Financial Regulation, Valuation and Tax Treatment

Policymakers at both the national and international levels could work to create regulatory frameworks that include mandatory practices that financial institutions may adopt, such as guidelines for making business operations more sustainable at all levels. For example, stock exchanges may promote sustainability among their listed companies by making ESG disclosure part of their listing requirements. On a domestic level, policymakers could encourage the development of a long-term investor base, focused on 'gap sectors' and illiquid asset classes such as infrastructure and renewable energy, which incorporate ESG criteria.



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Solvency, accounting and funding requirements for institutional investors should avoid creating incentives for pro-cyclical investment strategies. Any risk-based solvency rules should reflect the suitability of long-term assets for asset-liability management purposes, taking into account the level of predictability of cash flows.

The tax environment and policies should remain stable and avoid creating impediments to long-term investment by institutional investors, including cross-border investment. They should also be subject to regular monitoring to prevent abuse, in particular in terms of international competition and regulatory arbitrage.

In addition, risk-sharing measures by home countries and international organizations can help mobilize private financing in infrastructure projects in developing countries. Finally, countries can take measures to better align private sector incentives with longer-term investment goals, such as new direct co-investments for primary intermediaries, or new financing instruments which would be more attuned to the long-term investment needs of infrastructure.

### 3.3.4. Address Market Failures

Government agencies can play a key role in addressing market failures, either directly or through public development banks. They can act as facilitators and provide credibility to infrastructure projects. By funding transactions or supporting active market players, development banks (like ADB and the World Bank) provide a powerful signal to the private sector. Their presence suggests political support and stability over the long term. In addition, dedicated financial instruments — such as guarantee instruments, long-term funding, seed investment, and early-development stage facilities — can encourage long-term investment.

Regulatory and supervisory authorities overseeing institutional investors and other actors within the investment management chain should monitor the governance, agency relationships, remuneration, and risk management mechanisms underpinning long-term investment and take adequate prompt measures when relevant. They should, where appropriate, provide guidance to institutional investors regarding the governance and risk management requirements to meet long-term investment objectives.

## 4. CONCLUSION

The main obstacle to financing long-term development is not the lack of financing capacity but rather, the question is how to move resources from suitable financing sources to entities that require them in a structurally and contractually sound manner that meet both demand and supply side objectives. Project finance has tended to be geographically concentrated in high and middle-income countries and in sectors in which profitability is more assured, rather than in risky projects or projects with long gestation periods that may be more necessary for industrialization and development. With behavioral understanding of investors (their inherent cognitive biases and consumption of financial media bias) coupled with an enabling environment, the financing of long-term projects like infrastructure can be encouraged through incentives skewed towards longer time horizons, better long-term investment information through media and finance reporting, and interventions to counter decisions biased towards the short-term. Channel-



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ling private and sovereign wealth and savings into productive investments with longer time horizons, including greenfield projects, will be essential for the global economy to grow and to continue to do so sustainably and responsibly.

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## ENDNOTES

[1] Value for money is achieved when an infrastructure project can generate greater positive net gain to society than if the project were to be procured via a conventional (other than PPP) approach.



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This happens when a PPP project is able to generate (1) cost efficiencies, through lower construction, operational and/or maintenance costs; (2) time savings, through an earlier completion of the project; and/or (3) quality enhancements, through enhanced service provision.

[2] In 2014, gross disbursements by EIB (US$78 billion) and the World Bank (US$44 billion) were by far the most significant, compared to IDB and ADB (about US$10 billion) and AfDB (almost US$5 billion), as noted in the banks' annual reports.

[3] The different categories include diversified emerging markets, global real estate, domestic and foreign small/mid/large blends, small and mid-cap growth, small and mid-cap value, health, technology.

[4] CFA Institute Short-Termism Survey, May 2008 (over 1,100 portfolio managers and analysts surveyed).

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# Chapter 9
# Mutual Fund:
## Marketing Mix and Promotional Strategies

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*Aklank Girls P. G. College, India*

## ABSTRACT

*Mutual funds provide various facilities that make saving and investing simple, accessible and affordable, by using professional management, diversification, variety of products, liquidity, affordability, convince. Moreover, strict government regulation and full disclosure of information makes the investment more secures in India. In India mutual funds market the key area of interest of market experts are understanding the investor's expectations and meeting those expectations. The mutual fund sector is one of the fast growing sectors in Indian economy and has tremendous potential for sustained future growth. The present era of exponential growth has seen changes, refinements and innovation etc. the industry needs to identify the expectation and houses of the investors and meet their expectations in a better way by overcoming the challenges the mutual fund industry is facing. Keeping in view that ever increasing competition of similar or alternative product, marketing has been concerned the most vital area of operation of Mutual funds industry. Mutual fund Marketing is different from marketing of other goods. The present chapter tries to explore the marketing strategies adopted by Mutual funds, the different 7 Ps that are involved by the various mutual funds for attracting the investors.*

## CHAPTER OBJECTIVES·

- To understand the Concept of mutual funds, ·
- To study the Elements of Mutual Fund Marketing Mix and the 7 Ps concept,
- To study the preferred distribution channels of mutual funds industry
- To study methods adopted by mutual funds for the promotion and advertisement,
- To study the challenges faced by the mutual fund industry related to Marketing strategy.

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## INTRODUCTION

A mutual fund is a financial intermediary that pools the savings of investors for collective investment in a diversified portfolio of securities. A fund is "mutual" as all of its returns, minus its expenses, are shared by the fund's investors (Meena, 2011). The Securities and Exchange Board of India (Mutual Funds) Regulations, 1996 defines a mutual fund as a fund established in the form of a trust to raise money through the sale of units to the public or a section of the public under one or more schemes for investing in securities, including money market instruments. According to the above definition, a mutual fund in India can raise resources through sale of units to the public. It can be set up in the form of a Trust under the Indian Trust Act. The definition has been further extended by allowing mutual funds to diversify their activities in the following areas: · Portfolio management services · Management of offshore funds · Providing advice to offshore funds · Management of pension or provident funds · Management of venture capital funds · Management of money market funds · Management of real estate funds A mutual fund serves as a link between the investor and the securities market by mobilizing savings from the investors and investing them in the securities market to generate returns. Thus, a mutual fund is akin to portfolio management services (PMS). Although, both are conceptually same, they are different from each other. Portfolio management services are offered to high net worth individuals; taking into account their risk profile, their investments are managed separately. In the case of mutual funds, savings of small investors are pooled under a scheme and the returns are distributed in the same proportion in which the investments are made by the investors/unit-holders. Mutual fund is a collective savings scheme. Mutual funds play an important role in mobilizing the savings of small investors and channelizing the same for productive ventures in the Indian economy.

## BACKGROUND

The growth of the mutual fund industry in India can be divided into four phases: Phase I (1964-87), Phase II (1987-92), Phase III (1992-97), and Phase IV (beyond 1997).

### Phase I

The mutual fund concept was introduced in India with the setting up of UTI in 1963.The Unit Trust of India (UTI) was the first mutual fund set up under the UTI Act, 1963, a special act of the Parliament. It became operational in 1964 with a major objective of mobilizing savings through the sale of units and investing them in corporate securities for maximizing yield and capital appreciation. This phase commenced with the launch of Unit Scheme 1964 (US-64) the first open-ended and the most popular scheme. UTI's investible funds, at market value (and including the book value of fixed assets) grew from Rs 49 crore in1965 to Rs 219 crore in 1970-71 to Rs 1,126 crore in 1980-81 and further to Rs 5,068 crore by June 1987 (Tarun and Bodla,2001). Its investor base had also grown to about 2 million investors. It launched innovative schemes during this phase. Its fund family included five income-oriented, open-ended schemes, which were sold largely through its agent network built up over the years. Master share, the equity growth fund launched in 1986, proved to be a grand marketing success. Master share was the



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first real close-ended scheme floated by UTI. It launched India Fund in 1986-the first Indian offshore fund for overseas investors, which was listed on the London Stock Exchange (LSE). UTI maintained its monopoly and experienced a consistent growth till 1987. (Sarish, 2012)

## Phase II

The second phase witnessed the entry of mutual fund companies sponsored by nationalized banks and insurance companies. In 1987, SBI Mutual Fund and Can bank Mutual Fund were set up as trusts under the Indian Trust Act, 1882. In 1988, UTI floated another offshore fund, namely, The India Growth Fund which was listed on the New York Stock Exchange (NYSB). By 1990, the two nationalized insurance giants, LIC and GIC, and nationalized banks, namely, Indian Bank, Bank of India, and Punjab National Bank had started operations of wholly-owned mutual fund subsidiaries. The assured return type of schemes floated by the mutual funds during this phase was perceived to be another banking product offered by the arms of sponsor banks. In October 1989, the first regulatory guidelines were issued by the Reserve Bank of India, but they were applicable only to the mutual funds sponsored by FIIs. Subsequently, the Government of India issued comprehensive guidelines in June 1990 covering all 'mutual funds. These guidelines emphasized compulsory registration with SEBI and an arms length relationship be maintained between the sponsor and asset management company (AMC). With the entry of public sector funds, there was a tremendous growth in the size of the mutual fund industry with investible funds, at market value, increasing to Rs 53,462 crore and the number of investors increasing to over 23 million. The buoyant equity markets in 1991-92 and tax benefits under equity-linked savings schemes enhanced the attractiveness of equity funds. (Jayadev, 1996).

## Phase III

The year 1993 marked a turning point in the history of mutual funds in India. Tile Securities and Exchange Board of India (SEBI) issued the Mutual Fund Regulations in January 1993. SEBI notified regulations bringing all mutual funds except UTI under a common regulatory framework. Private domestic and foreign players were allowed entry in the mutual fund industry. Kothari group of companies, in joint venture with Pioneer, a US fund company, set up the first private mutual fund the Kothari Pioneer Mutual Fund, in 1993. Kothari Pioneer introduced the first open-ended fund Prima in 1993. Several other private sector mutual funds were set up during this phase. UTI launched a new scheme, Master-gain, in May 1992, which was a phenomenal success with a subscription of Rs 4,700 crore from 631akh applicants. The industry's investible funds at market value increased to Rs 78,655 crore and the number of investor accounts increased to 50 million. However, the year 1995 was the beginning of the sluggish phase of the mutual fund industry. During 1995 and 1996, unit holders saw an erosion in the value of their investments due to a decline in the NA V s of the equity funds As stated in the research paper of (Tarak, 2012). Moreover, the service quality of mutual funds declined due to a rapid growth in the number of investor accounts, and the inadequacy of service infrastructure. A lack of performance of the public sector funds and miserable failure of foreign funds like Morgan Stanley eroded the confidence of investors in fund managers. Investors perception about mutual funds, gradually turned negative. Mutual funds found it increasingly difficult to raise money. The average annual sales declined from about Rs 13,000 . crore in 1991-94 to about Rs 9,000 crore in 1995 and 1996.



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## Phase IV

During this phase, the flow of funds into the kitty of mutual funds sharply increased. This significant growth was aided by a more positive sentiment in the capital market, significant tax benefits, and improvement in the quality of investor service. Investible funds, at market value, of the industry rose by June 2000 to over Rs 1,10,000 crore with UTI having 68% of the market share. During 1999-2000 sales mobilization reached a record level of Rs 73,000 crore as against Rs 31,420 crore in the preceding year. This trend was, however, sharply reversed in 2000-01. The UTI dropped a bombshell on the investing public by disclosing the NAV of US-64-its flagship scheme as on December 28,2000, just at Rs 5.81 as against the face value of Rs 10 and the last sale price of Rs 14.50. The disclosure of NAV of the country's largest mutual fund scheme was the biggest shock of the year to investors. Crumbling global equity markets, a sluggish economy coupled with bad investment decisions made life tough for big funds across the world in 2001-02. The effect of these problems was felt strongly in India also. Pioneer m, JP Morgan and Newton Investment Management pulled out from the Indian market. Bank of India MF liquidated all its schemes in 2002. The Indian mutual fund industry has stagnated at around Rs 1,00,000 crore assets since 2000-01. This stagnation is partly a result of stagnated equity markets and the indifferent performance by players. As against this, the aggregate deposits of Scheduled Commercial Banks (SCBs) as on May 3, 2002, stood at Rs 11,86,468 crore. Mutual funds assets under management (AUM) form just around 10% of deposits of SCBs. The Unit Trust of India is losing out to other private sector players. While there has been an increase in AUM by around 11% during the year 2002, UTI on the contrary has lost more than 11% in AUM. The private sector mutual funds have benefited the most from the debacle ofUS-64 of UTI The AUM of this sector grew by around- 60% for the year ending March 2002. Types of Mutual Fund Schemes The objectives of mutual funds are to provide continuous liquidity and higher yields with high degree of safety to investors. Based on these objectives, different types of mutual fund schemes have evolved (Umarani, 2012).

## TYPES OF MUTUAL FUNDS SCHEMES

### Functional Classification of Mutual Funds

#### Open-Ended Schemes

In case of open-ended schemes, the mutual fund continuously offers to sell and repurchase its units at net asset value (NAV) or NAV-related prices. Unlike close-ended schemes, open-ended ones do not have to be listed on the stock exchange and can also offer repurchase soon after allotment. Investors can enter and exit the scheme any time during the life of the fund. Open-ended schemes do not have a fixed corpus. The corpus of fund increases or decreases, depending on the purchase or redemption of units by investors. There is no fixed redemption period in open-ended schemes, which can be terminated whenever the need arises. The fund offers a redemption price at which the holder can sell units to the fund and exit. Besides, an investor can enter the fund again by buying units from the fund at its offer price. Such funds announce sale and repurchase prices from time-to-time. UTI's US-64 scheme is an example of such a fund. The key feature of open-ended funds is liquidity. They increase liquidity of the investors



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as the units can be continuously bought and sold. The investors can develop their income or saving plan due to free entry and exit frame of funds. Open-ended schemes usually come as a family of schemes which enable the investors to switch over from one scheme to another of same family.

### Close-Ended Schemes

Close-ended schemes have a fixed corpus and a stipulated maturity period ranging between 2 to 5 years. Investors can invest in the scheme when it is launched. The scheme remains open for a period not exceeding 45 days. Investors in close-ended schemes can buy units only from the market, once initial subscriptions are over and thereafter the units are listed on the stock exchanges where they dm be bought and sold. The fund has no interaction with investors till redemption except for paying dividend/bonus. In order to provide an alternate exit route to the investors, some close-ended funds give an option of selling back the units to the mutual fund through periodic repurchase at NAV related prices. If an investor sells units directly to the fund, he cannot enter the fund again, as units bought back by the fund cannot be reissued. The close-ended scheme can be converted into an open-ended one. The units can be rolled over by the passing of a resolution by a majority of the unit--holders.

## Interval Scheme

Interval scheme combines the features of open-ended and close-ended schemes. They are open for sale or redemption during predetermined intervals at NAV related prices. Portfolio Classification Here, classification is on the basis of nature and types of securities and objective of investment:

1. **Income Funds:** The aim of income funds is to provide safety of investments and regular income to investors. Such schemes invest predominantly in income-bearing instruments like bonds, debentures, government securities, and commercial paper. The return as well as the risk is lower in income funds as compared to growth funds.
2. **Growth Funds:** The main objective of growth funds is capital appreciation over the medium-to-long- term. They invest most of the corpus in equity shares with significant growth potential and they offer higher return to investors in the long-term. They assume the risks associated with equity investments. There is no guarantee or assurance of returns. These schemes are usually close-ended and listed on stock exchanges. Functional Portfolio Geographical Other Open-Ended Event Income Funds Domestic Sectoral Specific Close-Ended Scheme Growth Funds Off-shore Tax Saving Interval Scheme Balanced Funds ELSS Money Market Special Mutual Funds Gilt Funds Load Funds Index Funds ETFs PIE Ratio Fund
3. **Balanced Funds:** The aim of balanced scheme is to provide both capital appreciation and regular income. They divide their investment between equity shares and fixed nice bearing instruments in such a proportion that, the portfolio is balanced. The portfolio of such funds usually comprises of companies with good profit and dividend track records. Their exposure to risk is moderate and they offer a reasonable rate of return.
4. **Money Market Mutual Funds:** They specialize in investing in short-term money market instruments like treasury bills, and certificate of deposits. The objective of such funds is high liquidity with low rate of return.



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## Geographical Classification

### Domestic Funds

Funds which mobilize resources from a particular geographical locality like a country or region are domestic funds. The market is limited and confined to the boundaries of a nation in which the fund operates. They can invest only in the securities which are issued and traded in the domestic financial markets.

### Offshore Funds

Offshore funds attract foreign capital for investment in 'the country of the issuing company. They facilitate cross-border fund flow which leads to an increase in foreign currency and foreign exchange reserves. Such mutual funds can invest in securities of foreign companies. They open domestic capital market to international investors. Many mutual funds in India have launched a number of offshore funds, either independently or jointly with foreign investment management companies. The first offshore fund, the India Fund, was launched by Unit Trust of India in July 1986 in collaboration with the US fund manager, Merril Lynch.

## Others

### Sectoral

These funds invest in specific core sectors like energy, telecommunications, IT, construction, transportation, and financial services. Some of these newly opened-up sectors offer good investment potential.

### Tax Saving Schemes

Tax-saving schemes are designed on the basis of tax policy with special tax incentives to investors. Mutual funds have introduced a number of tax saving schemes. These are close--ended schemes and investments are made for ten years, although investors can avail of encashment facilities after 3 years. These schemes contain various options like income, growth or capital application. The latest scheme offered is the Systematic Withdrawal Plan (SWP) which enables investors to reduce their tax incidence on dividends from as high as 30% to as low as 3 to 4%.

### Equity-Linked Savings Scheme (ELSS)

In order to encourage investors to invest in equity market, the government has given tax-concessions through special schemes. Investment in these schemes entitles the investor to claim an income tax rebate, but these schemes carry a lock-in period before the end of which funds cannot be withdrawn.

### Special Schemes

Mutual funds have launched special schemes to cater to the special needs of investors. UTI has launched special schemes such as Children's Gift Growth Fund, 1986, Housing Unit Scheme, 1992, and Venture



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Capital Funds. 5. Gilt funds: Mutual funds which deal exclusively in gilts are called gilt funds. With a view to creating a wider investor base for government securities, the Reserve Bank of India encouraged setting up of gilt funds. These funds are provided liquidity support by the Reserve Bank.

### Load Funds

Mutual funds incur certain expenses such as brokerage, marketing expenses, and communication expenses. These expenses are known as 'load' and are recovered by the fund when it sells the units to investors or repurchases the units from withholders. In other words, load is a sales charge, or commission, assessed by certain mutual funds to cover their selling costs. Loads can be of two types-Front-end-load and back-end load. Front-end-load, or sale load, is a charge collected at the time when an investor enters into the scheme. Back-end, or repurchase, load is a charge collected when the investor gets out of the scheme. Schemes that do not charge a load are called 'No load' schemes. In other words, if the asset management company (AMC) bears the load during the initial launch of the scheme, then these schemes are known as no-load schemes. However, these no-load schemes can have an exit load when the unit holder gets out of the scheme before a I stipulated period mentioned in the initial offer. This is done to prevent short-term investments and redemptions. Some funds may also charge different amount of loads to investors depending upon the time period the investor has stayed with the funds. The longer the investor stays with the fund, less is the amount of exit load charged. This is known as contingent deferred sales' charge (CDSL). It is a back-end (exit load) fee imposed by certain funds on shares redeemed with a specific period following their purchase and is usually assessed on a sliding scale.

### Index Funds

An index fund is a mutual fund which invests in securities in the index on which it is based BSE Sensex or S&P CNX Nifty. It invests only in those shares which comprise the market index and in exactly the same proportion as the companies/weightage in the index so that the value of such index funds varies with the market index. An index fund follows a passive investment strategy as no effort is made by the fund manager to identify stocks for investment/dis-investment. The fund manager has to merely track the index on which it is based. His portfolio will need an adjustment in case there is a revision in the underlying index. In other words, the fund manager has to buy stocks which are added to the index and sell stocks which are deleted from the index. Internationally, index funds are very popular. Around one third of professionally run portfolios in the US are index funds. Empirical evidence points out that active fund managers have not been able to perform well. Only 20-25% of actively managed equity mutual funds out-perform benchmark indices in the long-term. These active fund managers park 80% of their money in an index and do active management on the remaining 20%. Moreover, risk adverse investors like provident funds and pension funds prefer investment in passively managed funds like index funds.

## MARKING MIX OF MUTUAL FUNDS INDUSTRY

In case of Mutual fund, Returns are determined by Managerial efficiency and investment strategy. Mutual fund marketing strategies is successful if it creates confidence among potential investors and strengthens their desire to put their money with a particular fund.



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## Product

Mutual fund as a product is the investment, which the investors hold. The steps, which are involved in the formulation of the schemes or product designing, are conceptualization, drafting, test marketing, approval and authorization of the scheme. Since mutual fund is a service, there is a little element of physicality. Physical evidence is the Mutual fund documents and the statements that are received periodically. Mutual fund managers want to deliver good quality at a reasonable cost, but the managers cannot make any promises about the future performance of the investment since a mutual fund is not a consumer product with consistency of performance. There are number of mutual fund schemes that are floating in the market. One mutual fund house deals in many schemes. The product line of the mutual fund houses ranges from 30 to 300 schemes in India as market segmentation is done to cater to all the specific investment demands of the customers. Market segmentation increases product differentiation, limiting competition to the funds belonging to the same category, while fund proliferation increases market coverage. It relies either on the creation of many funds in order to hide the poor performers merging them into the best ones. Sponsors of the mutual funds make efforts to differentiate their products and bring in recognition of their brand names in the consumers as it leads to product identification at the market place. It is seen that Mutual funds in India have been quite successful in brand policy and brand identification.

## Place

Place or the marketing channel describes the groups of individuals and companies, which are involved in channelizing the flow and sale of product and services from the provider to the eventual customer. In mutual fund also there are channels broadly defined as ‘direct’ or ‘indirect’. Direct channels involve the movement and sale of products directly between the provider and the customer as in the traditional branch network, whereas in the case of indirect channels product flows via intermediaries and middlemen. Traditionally mutual fund has been via the branch network, but now different approaches are adopted.

## Promotion

With globalization the entry of multinational corporations propelled due to which the market changed into a buyers’ market and due to the sudden competition growth, the domestic mutual fund industry was shaken. Promotional efforts should be stimulating and motivating enough to generate interest in and promote a positive attitude towards a Mutual fund house so that they will be considered favorably in comparison with the competitors. As there are so many players in the Mutual fund Industry, to choose one mutual fund over the other becomes very difficult for the investors. This has led the mutual fund to follow aggressive promotional techniques. Besides leading National Dailies, funds regularly advertise in business newspapers and magazines.

## Pricing

Price competition involves using low prices as a competitive tool to attract customers. As the price of the mutual fund is dependent upon the price of the underlying shares. Therefore it is the distribution cost not the manufacturing cost in Mutual fund that separates one competitor with another. One of the advantages of Mutual funds that it discloses its entire fee charged.



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## People

Mutual fund marketers need to develop a high level of inter personal skills and customer oriented attitude in employees for the simple reason that employees in services are the key to service experience. All employees in the mutual fund house have an effect on the sale of the products. This is true of frontline a staff that has direct control with customers; they provide the link between the Mutual fund and the investors. To the investor they represent the Mutual fund company. Success of mutual fund is highly dependent upon the relationship of the investors with the employees as there is a little difference between the products the different fund houses are offering, it is mainly the commitment that a mutual fund house makes.

## Physical Evidence

The allocation of greater amount of space in a mutual fund house is likely to have a positive relationship between the company and the investors. Physical evidence also means the offer documents and Mutual fund statements that the investors are provided with. In order to have a better relationship with the investors, the statements should be regular, easily understandable and all the facts should be mentioned in it.

## Process

Process means the process through which the investors' money is invested in different schemes and the returns are provided to them. The process should be less complex. The revision of schemes should not be a very frequent task as it leads to increase in cost. The mutual fund houses make efforts to standardize the process. In order to customize the process, so lot of different schemes is coming into market.

## DISTRIBUTION CHHANELS

There are number of distribution channels that are existing and the channels are still expanding. The channels can be divided into the following heads:

- Direct Marketing.
- Personal selling.
- Telemarketing.
- Direct Mail.
- Selling through intermediaries like brokers, agents, banks, etc.

Joint calls According to SyedSahabuddin, the essentials of a Good Distribution System are:

- Product selection should be done carefully.
- Internal sales staff should be carefully selected.
- Right targeting of customers should be done. A proper strategy based on a demographic study will lead to a smooth, seamless customer penetration and sales volumes.



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- Proper training - Training is the key on which the entire distribution revolves. It is essential that sales force should be continuous trained in this dynamic environment.
- Educating/ counseling the customer about products is required keeping in mind rising customer expectations and increasing buyer expertise.

## ADVERTISEMENT OF MUTUAL FUNDS

Nowadays the Advertising content has changed. Now they are concept selling ads which used to be selling specific schemes that defined objectives /goals. Thus an advertising campaign must have the following elements present:

- Creating awareness of the product,
- Comparative advantage of the product,
- Future potential of the product,
- Past performance of similar products,
- Superiority of the fund in relation to others in the area of asset management and performance servicing.

However, One of the limiting factor that prevents Mutual Fund advertising is the regulatory framework. For instance, the MF are required to mention the fund objective in very clear terms in the offer document, and risk factor also to be mentioned. SEBI also prohibits any content that mislead the investors. All the Mutual fund have to first understand the meaning and implications of the SEBI Guidelines pertaining to mutual fund Marketing before designing a Marketing strategy.

## METHODS ADOPTED BY AMC FOR PROMTION AND CAMAIGNING OF MUTUAL FUNDS

### Through Advertisement

Each AMC spends a lot of money in order to advertise for its Mutual Fund. The amount spend is high in case New Fund Offers. Various mediums of advertisement use are given below:

- Television and Radio,
- Print Media,
- Hoardings.

According to Kaushik Raja, the following are the forms of advertising adopted by Mutual Funds.

1. Tombstone Advertisement,
2. Product Launch Advertisement,
3. Advertisements through Hoardings/Posters,
4. Advertisements through Audio-Visual Media.



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### Online Blogs

Various AMC's promote their product through online blogs. They advertise their product on various online sites.

### Telephonic Calls

Almost all the distributors promote the Mutual Fund with the help of telephone. They have the phone numbers of existing clients and potential clients. A trained person makes a call to the clients and promotes the Mutual Fund.

### By Providing More Commission to Distributors

The distributor gets a variable commission from the AMC when they sell their Mutual Fund. The commission varies from 0.5% to 5%. Thus by providing more commission to the distributor, the AMCs influence the distributor to promote their products only.

### By Putting Canopies

This method is adopted by both distributor and AMCs in order to campaign for the product. They put canopy at a place where they could interact with maximum number of probable clients

### Credit Rating Agencies Report

Rating agencies give ratings to the mutual fund according to their performance. Agencies like Money control rates the Mutual fund that also acts a promotional tool for the fund and facilitates its investment

## MARKETING STRATEGIES ADOPTED BY MUTUAL FUNDS

(For selling and distribution). According to him the present marketing strategies of mutual funds can be divided into three main headings:

1. **Direct Marketing:** This constitutes 20 percent of the total sales of mutual funds. Some of the important tools used in this type of selling are:
   a. Personal Selling,
   b. Telemarketing,
   c. Direct mail,
   d. Advertisements in newspapers and magazines,
   e. Hoardings and Banners.
2. **Selling Through Intermediaries:** Intermediaries contribute towards 80% of the total sales of mutual funds. These are the distributors who are in direct touch with the investors. They perform an important role in attracting new customers. Most of these intermediaries are also involved in selling shares and other investment instruments. They do a commendable job in convincing investors to



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invest in mutual funds. A lot depends on the after sale services offered by the intermediary to the customer. Customers prefer to work with those intermediaries who give them right information about the fund and keep them abreast with the latest changes taking place in the market especially if they have any bearing on the fund in which they have invested. Most of the funds conduct monthly/ bi-monthly meetings with their distributors. The objective is to hear their complaints regarding service aspects from funds side and other queries related to the market situation. Sometimes, special training programs are also conducted for the new agents/ distributors. Training involves giving details about the products of the fund, their present performance in the market, what the competitors are doing and what they can do to increase the sales of the fund.

3. **Joint Calls:** This is generally done when the prospect seems to be a high net worth investor. The BDA and the agent (who is located close to the HNIs residence or area of operation) together visit the prospect and brief him about the fund. The conversion rate is very high in this situation, generally, around 60%. Both the fund and the agent provide even after sale services in this particular case. Meetings with HNIs is a special feature of all the funds. Whenever a top official visits a particular branch office, he devotes at least one to two hours in meting with the HNIs of that particular area. This generally develops a faith among the HNIs towards the fund.

## Methods Adopted Asset Management Companies According to Distribution Network

### Get in Touch with Customers

Various AMC directly contact the customers through various database. Then the AMC convince the client to invest in their mutual fund. Many of the times due to promotion the customers also contact AMC for investment. Most of the Mutual fund houses are following this route.

### Online Investment

Some mutual fund Web sites allow customers to invest online. However, the customer must have an account with the banks AMC have partnered with. For example, Prudential ICICI Mutual Fund allows customers to buy funds online if he have a banking account with any of the following banks: Centurion Bank, HDFC Bank, ICICI Bank, IDBI Bank and UTI Bank.

### Through Distributors

Each AMC sell its products through various distribution channels. The distributor in turn gets a variable commission from the AMC .The distributor have a client base of their own in which they promote the mutual fund. Some of the major distributors are India infoline Limited, Karvy, Sharekhan, Religare, Blue Chip India Limited.



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### Through Banks

Some of the AMCs are sister concern of the bank example Prudential ICICI Mutual Fund is a sister concern of ICICI BANK. These AMCs aggressively promote their mutual fund to their client and develop a interest in them to invest in mutual fund in order to get higher returns.

### Through Online Finance Portals

Some of the AMCs sell their Mutual Fund through online trading account example ICICI Direct sell funds online through online trading account. But the client must have a trading account with them. Some of the AMCs which sell their product through online trading accounts are: HDFC Securities, ICICI Direct, Kotak Street

## MARKETING OF MUTUAL FUNDS AND ITS CHALLENGES

When we consider marketing, we have to see the issues in totality, because we cannot judge an elephant by its trunk or by its tail but we have to see it in its totality. When we say marketing of mutual funds, it means, includes and encompasses the following aspects:

- Assessing of investors needs and market research
- Responding to investors needs;
- Product designing;
- Studying the macro environment;
- Timing of the launch of the product;
- Choosing the distribution network;
- Preparing offer documents and other literature;
- Getting feedback about sales;
- Studying performance indicators about fund performance like N A V;
- Sending certificates in time and other after fia1es services;
- Honoring the commitments made for redemptions and repurchase;
- Paying dividends and other entitlements.

Creating positive image about the fund and changing the nature of the market itself. The above are the aspects of marketing of mutual funds, in totality. Even if there is a single weak-link among the factors, which are mentioned above, no mutual fund can successfully market its funds. Conclusion: Mutual Fund Marketing is different from marketing of other goods. The present study try to explore the marketing strategies adopted by mutual funds, the different 7Ps that are involved in the marketing of mutual fund and also the Marketing strategies that are involved by the various mutual fund houses for attracting the investors. Mutual funds are not absolutely free to choose their material fro advertisement or promotion, as SEBI has issued some mandatory guidelines for the fund houses. Mutual fund houses are more dependent on the intermediaries and presently the fund houses are using all the available option for advertisement and promotion.



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## CONCLUSION

Mutual fund Marketing is different from marketing of other goods. The present chapter tries to explore the marketing strategies adopted by Mutual funds, the different 7 Ps that are involved by the various mutual funds for attracting the investors. Mutual funds are not absolutely free to choose their material for advertisement or promotion, as SEBI has issued some mandatory guidelines for the fund houses. Mutual fund houses are more dependent on the intermediaries and presently the fund houses are using all the available option for advertisement and promotion.

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# Chapter 10
# Foreign Direct Investment Opportunities in Infrastructure Development:
## A Study on India

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## ABSTRACT

*India's rising growth trajectory requires rapidly expanding infrastructure facilities to support it. The availability of efficient infrastructure services is an important determinant of the pace of market development and output growth. Access to affordable infrastructure services for consumption purposes serves to improve household welfare, particularly among the poor. The potential contribution of infrastructure to economic growth and poverty reduction has not been fully realized, and existing infrastructure stock and services fall far short of the requirements. The Government recognises the fact that domestic resources alone may not be adequate to sustain the required expansion in infrastructure, and hence it has followed a strategy to create incentives for Foreign Direct Investment in infrastructure sector. This study examines the current state of infrastructure in emerging India, use of FDI is infrastructure sector and policy measures to be taken up to speed up infrastructure growth in India.*

## INTRODUCTION

Infrastructure sector is a one of the key drivers of Indian economy. The sector is highly responsible for propelling India's overall development. A country's economic development is directly related to its infrastructural development. Infrastructure of a country can be divided into two parts- primarily as physical and social infrastructure. Social infrastructure consists of better education facility, better health services availability etc. The Reserve Bank of India has defined infrastructure sector as power, telecommunications, railways, roads including bridges, sea port and airport, industrial parks, urban infrastructure

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(water supply, sanitation and sewage projects), mining, exploration and refining, cold storage and cold room facility, including for farm level pre-cooling for preservation or storage of agricultural and allied produce, marine products and meat. The physical infrastructure facilities in India are not adequate to meet the increased demand at present. In most cases, India's infrastructure is of poor quality, by world standards. Traditionally, infrastructure was the exclusive province of the public sector, with large, state-owned enterprises (SOEs) being responsible for investment and service delivery. These entities were costly and inefficient providers of infrastructure services. International organisations such as World Bank, has encouraged privatization which has been a major component of the economic reform programmes pursued by many developing countries over the past two decades. Privatization is perceived to provide better use of resources, more efficient operations, reduced financial burden on government and increase in the level of foreign and domestic private investment (World Bank, 1995). Private sector has become increasingly involved in the financing and delivery of infrastructure services. A large number of developing countries have introduced private participation into their infrastructure industries. Of the total quantum of FDI flows across the globe, a large fraction has gone into infrastructure projects. Growing pressures on Government budgets and a general concern about the quality of service provision by incumbent entities saw an explosion of private sector FDI into infrastructure, particularly in the developing countries. Between 1990 and 1998, infrastructure projects in the developing countries attracted about US$ 63 billion through the following routes: Privatisation sales, Concessions, Leases and other contractual agreements, new capacity creation through build-operate-transfer (BOT) Agreements. The bulk of infrastructure FDI in terms of quantum of investment has flowed into the telecom and power sectors. There are two routes available for foreign direct investment in India: (i) Automatic route under which companies receiving Foreign Direct Investment need to inform the Reserve Bank of India within 30 days of receipt of funds and issuance of shares to the foreign investor (ii) For sectors that are not covered under the automatic route, prior approval is needed from the Foreign Investment Promotion Board (FIPB). The Table below lists the FDI ceiling under automatic route in India.

Government of India promoted FDI in infrastructure through increase in proposed investment limit in FDI sector to US$1000 billion in coming years. More than 70% of it is expected from private and foreign players. For infrastructure sector, India is relying mainly on private sector investment through Public Private Partnership. The PPP is planning to invest more than US$ 400 billion in infrastructure sector in the next 5 years. The Government of India is also planning to set up a dedicated panel to enhance the approval process of infrastructure projects. As per the research reports, an investment inflow of more than US$1 trillion will be required in different projects such as harbour, highways and power plants and more than 1.8 trillion US$ will be required to be invested in infrastructure projects in India.

*Table 1. FDI Ceiling under automatic route*

| | Sector | Percent |
|---|---|---|
| 1 | Telecom | 49 |
| 2 | Electricity generation, transmission and distribution (except nuclear power) 100 | 100 |
| 3 | Roads and Highways | 100 |
| 5 | ports and harbours | 100 |
| 6 | Civil Aviation | 100 |

Source: Department of Industrial Policy and Promotion, Government of India. www.dipp.nic.in



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The Indian power sector itself has an investment potential of US$ 250 billion in the next 4-5 years, providing immense opportunities in power generation, distribution, transmission and equipment. The Indian construction equipment industry is expected to grow US$ 5 billion by 2020, from current size of US$ 2.8 billion (Indian Construction Equipment Manufacturers' Association (ICEMA) Report). Foreign Direct Investment (FDI) received in construction development sector from April 2000 to December 2015 stood at US$ 24.18 billion, according to the Department of Industrial Policy and Promotion (DIPP).

## PAST SCENARIO AND STUDIES

Research evidence suggests the importance of FDI inflows into infrastructure sector in India. Vijaykumar *et al.* (2010) examines the factors determining FDI inflows of BRICS countries using annual dataset from the period 1975 to 2007 using panel data analysis and finds that the market size, labour cost, infrastructure, currency value and gross capital formation are among the potential determinants of FDI inflows of BRICS countries. The Economic Stability and Growth prospects (measured by inflation rate and Industrial production respectively), Trade openness (measured by the ratio of total trade to GDP) seem to be the insignificant determinant of FDI inflows of the BRICS countries.

Sanu (2013) in his study on India, concluded that Infrastructure is the basic physical and organizational structures needed for the operations of a society or enterprise or the services and facilities necessary for an economy to function. He defined infrastructure a set of interconnected structural elements that provide support for the development of the economy. The author reported that foreign investment in infrastructure remains low even after efforts taken up by the Government of India in promoting an investor friendly environment. The research paper discussed infrastructure deficiency of India, the foreign direct investment in Infrastructure sector.

Agarwal (2015) focussed on the importance of good social and physical infrastructural facilities for rapid economic growth, rapid human development, and poverty reduction. His study compares the levels of development of the social and physical infrastructure in India with those in other major emerging countries as well as developed countries. The study finds that India substantially lags behind other emerging countries in the access to and quality of health facilities, education, and vocational or skill training,, probably a key reason why India has been so slow in eliminating poverty. Similarly, India's physical infrastructure also lags behind other emerging countries, especially in the sphere of electricity access and consumption per capita, internet access, level of air travel, and quality of sea ports. Given the urgent need for rapid development of our social and physical infrastructure, the study tries to identify key challenges to infrastructure development and discusses some possible ways in which some of these challenges can be addressed.

Expanding infrastructure investments are viewed as critical adjuncts to the policy of stepping up the growth rate of the economy. This is coupled with the view that domestic sources alone may not be adequate to provide commensurate resources. Table 2 and 3 highlight the increase in FDI flows in India during 2013 and 2014 in aggregate and sector specific. There is a 61% increase in FDI inflows as compared to 2013. Recently, the Reserve Bank of India has allowed overseas investors, including foreign portfolio investors (FPIs) and non-resident Indians (NRIs), to invest up to 26 per cent in insurance and related activities via the automatic route. "Effective from February 4, 2014, foreign investment by way of FDI, investment by foreign institutional investors (FIIs)/FPIs and NRIs up to 26 per cent under automatic route shall be permitted in insurance sector," as per the RBI. Long-term investors who are registered with



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Securities and Exchange Board of India (SEBI) are also deemed as eligible investors. In an effort to bring in more investments into debt and equity markets, the RBI has established a framework for investments which allows FPIs to take part in open offers, buyback of securities and disinvestment of shares by the Central or State governments. Under a new scheme named 'Foreign Portfolio Investment', the RBI said portfolio investors, which includes FIIs and qualified foreign investors (QFIs) registered as per SEBI guidelines, will be called registered foreign portfolio investors (RFPIs). In 2013, FDI was witnessed in sectors such as automobiles, chemicals, computer software and hardware, construction development, pharmaceuticals, power, services, and telecommunications. France, Germany, Japan, Mauritius, the Netherlands, Singapore, the UK, and UAE invested in India during that year.

The 1990s saw an unprecedented increase in private foreign investment in infrastructure projects in developing countries. Much of this investment was in the telecommunications and electricity industries. For the private sector, infrastructure investment is associated with a sizeable investor risk linked to the long-term sunk cost characteristics of infrastructure projects. Although India has seen growth in FDI inflows in infrastructure, it still ranks 89 in basic infrastructure as per the Global Competition Report 2011-12. This indicates poor development compared to other countries of the world. A major improvement is required in the areas of physical and social infrastructure to sustain further progress and high rate of economic growth. To meet this need for infrastructure improvement, the Government of India raised the investment in infrastructure from 4.7 per cent of GDP to around 7.5 - 8 per cent of GDP in the eleventh five year plan, and further plans to double the investment in infrastructure from INR 20.5 trillion to INR 40.9 trillion during the Twelfth Plan period, raising the share of infrastructure investment in GDP to more than 10 per cent. If these infrastructure investment plans are properly implemented, they can propel India's economic growth to a higher trajectory. While direct investments into infrastructure certainly forms one part of the government's new strategies, the budget also includes some important measures aimed at improving the environment for private infrastructure investment as well. The recent financial budget proposed creation of a 'National Investment in Infrastructure Fund' with an initial annual allocation of USD3.25 billion. The fresh allocation of USD2.25 billion to roads and USD1.6 billion to railways is also intended to improve liquidity in the system. The current state of FDI equity inflow in various sectors is depicted in Table 4. It is evident that service sector is the one attracting the highest FDI equity inflows, followed by construction, software and telecommunication sector respectively. Still there is lot of scope for the equity FDI in infrastructure sector.

*Table 2. FDI Equity inflows during the financial year 2014-15*

| **Financial Year 2014-2015** | **FDI Equity Inflows** |
|---|---|
| | In Rs. Crore |
| April 2014 | 10,290 |
| May 2014 | 21373 |
| June 2014 | 11,508 |
| July 2014 | 21,022 |
| From April 2014 to July 2014 | 64,193 |
| From April 2013 to July 2013 | 39,932 |
| Percentage growth over last year | (+)61% |

Source: Department of Industrial Policy and Promotion, Government of India. www.dipp.nic.in



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*Table 3. Sectors attracting highest FDI inflows*

| Ranks | Sector | 2013-14 (April - March) | 2014-15 (April-March) | 2015-16 (April,15 – May, 15) | Cumulative Inflows (April '00 - May '15) | % Age to Total Inflows (In Terms of US$) |
|---|---|---|---|---|---|---|
| 1. | *Service Sector | 13,294 (2,225) | 19,963 (3,253) | 3,091 (488) | 208,634 (43,202) | 17% |
| 2. | Construction and dev. | 7,508 (1,226) | 4,582 (758) | 12 (2) | 113,152 (24,066) | 9% |
| 3. | Telecommunications | 7,987 (1,307) | 17,372 (2,895) | 2,320 (364) | 86,412 (17,422) | 7% |
| 4. | Computer hardware and software | 6,896 (1,126) | 13,564 (2,200) | 14,428 (2,273) | 87,665 (17,291) | 7% |
| 5. | Automobile Industry | 9,027 (1,517) | 15,794 (2,570) | 6,355 (1,007) | 70,347 (13,390) | 5% |
| 6. | Drugs and Pharmaceuticals | 7,191 (1,279) | 9,211 (1,523) | 1,010 (159) | 66,292 (13,280) | 5% |
| 7. | Chemicals (other than fertilizers) | 4,738 (878) | 4,077 (669) | 951 (150) | 50,262 (10,487) | 4% |
| 8. | Power | 6,519 (1,066) | 3,985 (657) | 976 (155) | 47,617 (9,712) | 4% |
| 9. | Trading | 8,191 (1,343) | 16,962 (2,761) | 4,187 (664) | 47,987 (8,724) | 3% |
| 10 | Metallurgical Industries | 3,436 (568) | 2,897 (472) | 467 (74) | 41,614 (8,621) | 3% |

Source: Department of Industrial policy and promotion www.dipp.nic.in

*Services sector includes Financial, Banking, Insurance, Non-Financial / Business, Outsourcing, R&D, Courier, Tech. Testing and Analysis.

## SCOPE FOR FDI IN INDIA

With the concept of "Make in India", proposed by the Indian Government, India has now become a vibrant market for manufacturers. For the products that are made out of the initiative, there is a strong domestic market with increasing demand. Infrastructure sector is where foreign investments can come in a big way. The major objectives behind the Make in India initiative are job creation and skill enhancement in 25 sectors of the economy, including automobiles, aviation, biotechnology, chemicals, construction, defence manufacturing, electrical machinery, electronic systems and mining. According to the Department of Industrial Policy and Promotion, FDI inflows under the approval route (which requires prior government permission) increased by 87% during 2014-15 with an inflow of $2.22 billion. More than 90% of FDI was through the automatic route. In 2015, foreign institutional investment rose by 717% to $40.92 billion. A state-wise analysis of FDI inflows by the economic survey shows that Delhi, Haryana, Maharashtra, Karnataka, Tamil Nadu, Gujarat and Andhra Pradesh together attracted more than 70% of total FDI inflows to India during the last 15 years. States with vast natural resources like Jharkhand, Bihar, Madhya Pradesh, Chhattisgarh and Odisha have lagged behind. To make the recently launched Make in India initiative a success, the states have a critical role in facilitating FDI in different sectors. Singapore, Mauritius, the Netherlands and the US account for the major share of FDI inflows into India.



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*Table 4. Sector Wise FDI Equity Inflows from April 2000 to December 2015*

| S.No | Sector | | Amount of FDI Inflows | %age of Total Inflows |
|---|---|---|---|---|
| | | In Crore | In Million | |
| 1 | Service Sector | 240,569.48 | 48,160.88 | 17.33 |
| 2 | Construction Development | 113,882.02 | 24,179.86 | 8.70 |
| 3 | Computer software & hardware | 108,136.16 | 20,419.28 | 7.35 |
| 4 | Telecommunications | 91,027.32 | 18,129.83 | 6.52 |
| 5 | Automobile industry | 76,361.60 | 14,318.27 | 5.15 |
| 6 | Drugs & pharmaceuticals | 67,388.74 | 13,446.82 | 4.84 |
| 7 | Chemicals (other than fertilizers) | 57,719.75 | 11,627.74 | 4.18 |
| 8 | Trading | 61,225.16 | 10,743.85 | 3.87 |
| 9 | Power | 51,145.64 | 10,257.68 | 3.69 |
| 10 | Hotel & tourism | 47,093.92 | 8,839.42 | 3.18 |
| 11 | Metallurgical industries | 42,740.62 | 8,788.59 | 3.16 |
| 12 | Construction (infrastructure) activities | 42,109.96 | 7,099.32 | 2.55 |
| 13 | Food processing industries | 39,453.72 | 6,695.26 | 2.41 |
| 14 | Petroleum & natural gas | 32,419.99 | 6,640.13 | 2.39 |
| 15 | Information and Broadcasting (including print media) | 23,457.87 | 4,553.98 | 1.64 |
| 16 | Non-Conventional energy | 22,830.26 | 4,185.25 | 1.51 |
| 17 | Electrical equipments | 20,591.73 | 4,147.65 | 1.49 |
| 18 | Industrial machinery | 20,555.43 | 3,844.74 | 1.38 |
| 19 | Hospital & diagnostic centres | 18,553.88 | 3,409.56 | 1.23 |
| 20 | Consultancy services | 16,877.77 | 3,246.50 | 1.17 |
| 21 | Cement and gypsum products | 14,725.14 | 3,101.44 | 1.12 |
| 22 | Miscellaneous mechanical & engineering industries | 14,676.49 | 2,993.45 | 1.08 |
| 23 | Fermentation industries | 12,814.53 | 2,365.15 | 0.85 |
| 24 | Mining | 12,022.36 | 2,215.41 | 0.80 |
| 25 | Rubber goods | 11,417.48 | 2,031.52 | 0.73 |
| 26 | Sea transport | 9,754.39 | 1,876.51 | 0.68 |
| 27 | Agriculture services | 9,235.50 | 1,838.37 | 0.66 |
| 28 | Textiles (including dyed,printed) | 9,325.06 | 1,810.16 | 0.65 |
| 29 | Ports | 6,730.91 | 1,637.30 | 0.59 |
| 30 | Electronics | 8,072.18 | 1,621.49 | 0.58 |
| 31 | Prime mover (other than electrical generators) | 7,657.45 | 1,413.02 | 0.51 |
| 32 | Education | 6,554.10 | 1,209.40 | 0.44 |
| 33 | Soaps, cosmetics & toilet preparations | 6,055.01 | 1,106.72 | 0.40 |
| 34 | Paper and pulp (including paper products) | 5,455.44 | 1,087.39 | 0.39 |
| 35 | Medical and surgical appliances | 5,556.64 | 1,035.99 | 0.37 |
| 36 | machine tools | 4,310.21 | 832.51 | 0.30 |

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*Table 4. Continued*

| S.No | Sector | | Amount of FDI Inflows | %age of Total Inflows |
|---|---|---|---|---|
| | | In Crore | In Million | |
| 37 | Diamond,gold ornaments | 4,044.05 | 751.37 | 0.27 |
| 38 | Ceramics | 3,594.90 | 741.37 | 0.27 |
| 39 | Railway related components | 3,886.05 | 705.07 | 0.25 |
| 40 | Air transport (including air freight) | 3,041.98 | 612.53 | 0.22 |
| 41 | Vegetable oils and vanaspati | 3,154.77 | 587.48 | 0.21 |
| 42 | Printing of books (including litho printing industry) | 3,047.16 | 557.69 | 0.20 |
| 43 | Fertilizers | 2,993.00 | 554.83 | 0.20 |
| 44 | Glass | 2,534.77 | 486.60 | 0.18 |
| 45 | Retail trading | 2,746.83 | 459.64 | 0.17 |
| 46 | Agricultural machinery | 2,184.74 | 422.96 | 0.15 |
| 47 | Commercial, office & household equipments | 1,560.86 | 316.15 | 0.11 |
| 48 | Earth-moving machinery | 1,613.78 | 309.74 | 0.11 |
| 49 | Sugar | 1,110.62 | 188.51 | 0.07 |
| 50 | Scientific instruments | 977.20 | 174.50 | 0.06 |
| 51 | Leather, goods and pickers | 828.12 | 156.73 | 0.06 |
| 52 | Timber products | 789.11 | 140.19 | 0.05 |
| 53 | Boilers and steam generating plants | 804.93 | 138.51 | 0.05 |
| 54 | Tea and Coffee (processing & warehousing coffee & rubber) | 505.49 | 109.62 | 0.04 |
| 55 | Dye-stuffs | 438.88 | 77.71 | 0.03 |
| 56 | Industrial instruments | 361.16 | 74.94 | 0.03 |
| 57 | Photographic raw film and paper | 273.76 | 67.29 | 0.02 |
| 58 | Glue and gelatin | 209.70 | 37.51 | 0.01 |
| 59 | Coal production | 119.19 | 27.73 | 0.01 |
| 60 | Mathematical surveying and drawing instruments | 39.80 | 7.98 | 0.00 |
| 61 | Defence industries | 24.84 | 5.02 | 0.00 |
| 62 | Coir | 22.05 | 4.07 | 0.00 |
| 63 | Miscellaneous industries | 44,655.60 | 9,328.09 | 3.36 |
| | Sub total | **1,424,067.24** | **277,954.25** | |
| | RBI's NRI Scheme | **533.06** | **121.33** | |
| | GRAND TOTAL | **1,424,600.30** | **278,075.58** | |

Source: Department of Industrial policy and promotion www.dipp.nic.in



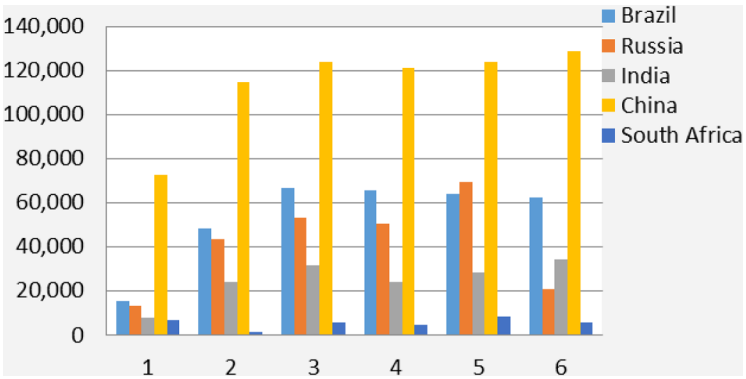
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Out of FDI equity inflows of $24.8 billion during 2015-16 (April-November), more than 60% came from two geographically small countries, Singapore and Mauritius. Government reforms will improve the returns on investment for the private sector, acting as an incentive for them to further undertake investments in infrastructure. With this policy impetus, India is in a relatively strong position to channelizing investment into infrastructure. According to a recent report by the Government of India, infrastructure sector of India will attract an investment of more than US$1.1 trillion in the next five years. This also includes ambitious projects such as National Highway Development Project (NHDP). In the next five years, an investment inflow of around US$75 billion will be required to boost the infrastructure sector in India which is projected to expand at 20% every year. Over the next decade, more than 90 million jobs would be generated across different sectors in India, which would create a need for more than 8 million square feet of office space. This would be one of the key attractions for foreign players who are looking for opportunities to invest in industrial infrastructure sector. Recently, the Indian cabinet has given its approval for private investment in Indian Railways (state-run) for constructing new plants and lines with enhanced capacity. This reform will help foreign players to connect railways with industrial plant, mines and port by offering services at lower costs. The Government of India has also projected the Indian Railways Vision 2020 which targets to tackle the issues related with infrastructure, by opening up doors for NRIs to invest in Indian infrastructure sector.

## Inward FDI Patterns of BRICS

The rise in FDI inflows to BRICS took place from 2003 to 2008, growing from US$77 billion to US$281 billion, in which China and the Russia were having the highest share. The FDI inflows to BRICS increased from US$77 billion in 2003 to US$252 billion in 2014, in which China was having the highest share. There is 50 percent of FDI flows of BRICS go to China, followed by Brazil 24 percent, India 13 percent, Russia 8 percent and 2 percent in South Africa in 2014. Figure 1, highlights that inward FDI flows were higher in China followed by Brazil, Russia, India and South Africa in the year 2014. The global slowdown of 2008-09 negative impact on the inward flows of FDI on all BRICS nations, but it has improved over the time.

*Figure 1. Inward FDI flows in BRICS countries in 2005-2014 (Million US$)*






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## SCOPE OF FDI IN INFRASTRUCTURE

In the Government of India's initiative to promote FDI in India, a 100% FDI is allowed under automatic route for infrastructure development in power sector; Foreign Direct investment of 100% is permitted under automatic route in infrastructure related to petroleum products, natural gas pipelines and petroleum refining by private sector; 49 percent FDI is allowed under Government route in any petroleum refining in Public Sector Undertaking (PSU). A 100 percent FDI is permitted under automatic route in setting up new and established industrial park. In order to ensure quicker execution of major projects, the Government of India has declared a single window clearance mechanism for issue and review of clearance associated with important projects under the Cabinet secretary. The clearance board is established on the lines of Foreign Investment Promotion Board (FIPB), which would act as investment tracker and problem solver for all the infrastructure projects worth more than US$150 million. The clearance board will possess representatives from ministries of defence, commerce, home, coal, environment and forest and department of space. The Indian Cabinet Committee on Investment is trying to ease bottleneck which restrict the expansion of infrastructure sector in the country. In order to attract private and foreign investment, some more sectors like telecommunication, oil, gas storage and irrigation have been allowed for viability gap funding under the scheme called 'Support to PPP in Infrastructure'. As per the budget 2016-17, India is planning to invest Rs 2.21 trillion in creating and upgrading infrastructure. Infrastructure investment is the fifth support pillar in the transformation of India, and the Govt. is speeding up construction of new roads and upgrading state highways to national ones. The total expenditure outlay for roads and railways in 2016-17 is around Rs.218,000 crores. Total capital expenditure outlay for infrastructure during 2016-17 is expected to be Rs.221, 246 crore. Recently, the Indian government has approved 9 different road projects worth US$ 2 billion to be implemented by State Governments under Public Private Partnership model. Indian Finance Ministry is ready to fund 20% of financial requirement, while the other 20% would come from Highways Ministry. Foreign investment may be invited in order to make all the projects financially feasible. According to the Government report, allocation for roads and railways is Rs.40, 000 crore each, an increase of Rs.14, 031 crore and Rs.10, 050 crore respectively over the year 2016. The government plans to streamline the regulatory structures across different sectors of infrastructure and tap additional financial resources. The finance minister announced the formation of an investment and infrastructure fund and tax-free bonds for raising funds for investment in rail, roads and irrigation. The year 2016-17 focuses on infrastructure development.

## CONCLUSION AND POLICY IMPLICATIONS

FDI investment in infrastructural sector is promoted by the Government of India. India is witnessed as one of the major FDI markets. Till recently, infrastructure was not taken as the main FDI Avenue, but with the policy changes in the recent budget, favourably impacted the investment level in the infrastructure sector in India. Foreign direct investment (FDI) in India has received a dramatic boost from the launch of the Make in India initiative, according to the latest Economic Survey. After the September 2014 launch of the initiative, which seeks to promote manufacturing and attract foreign investment, there was an almost 40% increase in FDI inflows from October 2014 to June 2015 over the year-ago period.



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India's infrastructure development is set to accelerate, backed by the underlying commitment that extra fiscal allowance will be channelled primarily into infrastructure spend. The Government has taken systematic initiatives to address the bottle necks in infrastructure development. The Indian Government's success in infrastructure provision will be measured not by the quantum of funds invested, but on how infrastructure contributes to the achievement of India's economic, social and environmental objectives. Challenges in infrastructure provision are not unique to India. Uncertainty, scarcity of available funds for investment, and competing priorities put challenges to all governments in infrastructure planning and delivery. Sustainability requires that future generations are not compromised by the investment decisions of current generations. Sustainably managing infrastructure through the appropriate pricing, funding and prioritisation frameworks is important to ensure the benefits that accrue from the significant investment. The combination of domestic private foreign investment and foreign direct investment is likely to propel India's economic growth momentum in future.

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## KEY TERMS AND DEFINITIONS

**Economic Growth:** Economic growth is an increase in the capacity of an economy to produce goods and services, compared from one period of time to another. It can be measured in nominal or real terms.

**Emerging Market:** An emerging market is a country that has some characteristics of a developed market, but does not meet standards to be a developed market. This includes countries that may become developed markets in the future or were in the past.

**Financial Sector Reforms:** Financial sector is the backbone of any economy and it plays a crucial role in the mobilisation and allocation of resources. The main objectives of the financial sector reforms are to allocate the resources efficiently, increasing the return on investment and accelerated growth of the real sectors in the economy.

**Foreign Direct Investment:** Foreign direct investment (FDI) is an investment in a business by an investor from another country for which the foreign investor has control over the company purchased.

**Infrastructure:** basic physical and organizational structures and facilities (e.g. buildings, roads, and power supplies) needed for the operation of a society or enterprise.

**Physical Infrastructure:** Physical infrastructure refers to the basic physical structures required for an economy to function and survive, such as transportation networks, a power grid and sewerage and waste disposal systems.

**Social Infrastructure:** Social Infrastructure is a subset of the infrastructure sector and includes assets that accommodate social services.

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# Chapter 11
# The Role of Strategic Outsourcing in Global Business

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## ABSTRACT

*This chapter reveals the role of strategic outsourcing in global business, thus describing the theoretical and practical concept of strategic outsourcing; the management theories related to strategic outsourcing; the applications of Business Process Outsourcing (BPO) and Information Technology Outsourcing (ITO); and the significance of strategic outsourcing in global business. The fulfillment of strategic outsourcing is vital for modern organizations that seek to serve suppliers and customers, improve business performance, enhance competitiveness, and reach continuous achievement in global business. Therefore, it is necessary for modern organizations to explore their strategic outsourcing, establish a strategic plan to usually check their practical advancements, and immediately respond to strategic outsourcing needs of customers in modern organizations. The chapter argues that applying strategic outsourcing in global business has the potential to increase organizational performance and attain business goals in the digital age.*

## INTRODUCTION

Outsourcing has become one of the most popular operations strategies in recent years that allows companies to reduce capital costs concerning customer requirements in the global marketplace (Kakabadse & Kakabadse, 2005) and to improve organizational performance (Bustinza-Sanchez, Arias-Aranda, & Gutuerrez-Gutierezz, 2010). Outsourcing is critical to the growth of a nation's economy (Corbett, 2004). Strategic outsourcing includes the integration of the firm's different functions to the firm's strategic decision-making level (Su & Gargeya, 2012).

There are a lot of studies on outsourcing and its strategic influence to sustainable growth in the organizations (Demirtas, 2013). Outsourcing is broadly recognized in management literature (Kotabe, Mol, Parente, & Murray, 2012; Petersen, Handfield, & Ragatz, 2005). Gunasekaran et al. (2015) stated that outsourcing, an operations strategy that influences the performance of a supply chain, has become

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an important component of global operations management. Resources of both the outsourcer and the outsourcee are important in turning potential complementarities into higher outsourcing performance (Unal & Donthu, 2014).

The strength of this chapter is on the thorough literature consolidation of strategic outsourcing. The extant literature of strategic outsourcing provides a contribution to practitioners and researchers by describing a comprehensive view of the functional applications of strategic outsourcing to appeal to different segments of strategic outsourcing in order to maximize the business impact of strategic outsourcing in global business.

## BACKGROUND

Outsourcing was initiated in the 1950s but became viable in the 1980s, when organizations used outsourcing as a process of reducing costs related to service-oriented operations (Lacity & Hirschheim, 1993) which were normally non-core business processes. Outsourcing has become a common strategy in the information system/information technology (IS/IT) field in recent years (Chen, Wang, & Wu, 2011). Outsourcing has moved from a non-core business activity to more critical business activities such as design, manufacturing, marketing, human resource management, and logistics. Current advancement in technology has made procurement a very specialized service (Camperi, 2005).

Outsourcing is strategically important (Jennings, 2002; Quinn & Hilmer, 1994). Outsourcing initiative becomes strategic when it is aligned with the organization's long-term strategies (Greaver, 1999; Shy & Stenbacka, 2003). Most organizations have tried to cope with enormous challenges such as the globalization of markets and the rapidly changing technology (Dirani & Kuchinke, 2011). Sourcing plays a significant role in a company's strategic decision-making process (Baum, Locke, & Smith, 2001; Kang, Wu, & Hong, 2009). Tactical plans (e.g., reducing costs, transforming fixed costs to variable, and liberating capital) are the basic reasons for turnings to an outsourcing service provider (Ventkatesan, 1992).

## ROLE OF STRATEGIC OUTSOURCING IN GLOBAL BUSINESS

This section describes the theoretical and practical concept of strategic outsourcing; the management theories related to strategic outsourcing (in terms of resource-based view, resource-advantage theory, transaction cost theory, the capability approach, knowledge-based theory, agency theory, and social exchange theory); the applications of BPO and ITO; and the significance of strategic outsourcing in global business.

### Concept of Strategic Outsourcing

Outsourcing is viewed as ongoing purchasing of services and parts from an outside company that is provided by the outsourcing company (Linder, 2004). Ellram and Billington (2001) defined outsourcing as the transfer of activities and processes conducted to an external party. Outsourcing refers to contracting a particular processor function in an organization to an external firm (Kotabe & Zhao, 2002). Outsourcing includes any good or service that organizations procure from outside their firms (Momme, 2002). Outsourcing is recognized as a tool for business transformation (Kumar & Arbi, 2008).



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Outsourcing is a useful way to adapt the firm's boundaries by restructuring its activities in order to stimulate the growth of its core business (Bustinza-Sanchez et al., 2010). Outsourcing involves the use of external providers and is a highly strategic decision with the ability to affect the competitive advantage (Gilley & Rasheed, 2000). Cost saving is a primary reason for outsourcing (Lau & Zhang, 2006; McCarthy & Anagnostou, 2004). Outsourcing makes it possible to control costs and achieve greater efficiency (Gonzalez, Llopis, & Gasco, 2013). Firms evaluate outsourcing to determine whether current operating costs can be reduced and whether the resources saved can be reinvested in a more competitive process, focusing on the core competence (Espino-Rodríguez & Lai, 2014).

Gilley and Rasheed (2000) classified outsourcing strategies into two types: core activity and peripheral activity. Power et al. (2006) divided the activities according to whether they are process-oriented or project-oriented activities, based on the attributes of each task. McIvor (2005) categorized the activities into non-critical and critical activities, based on the ability of an organization to achieve a competitive advantage. Quinn (1999) stated that there are three types of competences called core competences, essential competences, and non-core competences. Cox (1996) explained that the basic competences are made up of highly specific assets that are necessary to attain the firm's strategic goals.

Prior studies have examined the effects of vendor relationships on a client's competitive advantage (Kotabe, Martin, & Domoto, 2003), and advocated the importance of effective client-vendor relationship management for the outsourcing success (Berger & Lewis, 2011; Rai, Maruping, & Venkatesh, 2009). Project management and client-specific capabilities are critical for the success of outsourcing (Ethiraj, Kale, Krishnan, & Singh, 2005; Feeny, Lacity, & Willcocks, 2005). Considerable efforts have been devoted to investigating the role of a vendor's value proposition potential and the relational factors in outsourcing success, such as the vendor's capabilities in providing value proposition (Levina & Ross, 2003), partnership quality (Lee & Kim, 1999), relationship governance (Poppo & Zenger, 2002), cultural differences (Berger & Lewis, 2011), social embeddedness (Rai et al., 2009), and relational asset and capability (Fink, 2010).

Outsourcing service quality is central to both the vendor and client's concern (Poston, Kettinger, & Simon, 2009; Ramachandran & Gopal, 2010). Previous studies have recognized service quality as one of the critical indicators for outsourcing success (Grover, Cheon, & Teng, 1996; Kim, Chen, & Aiken, 2005). Clients tend to form long-term partnerships with their vendor, which facilitates the vendor's learning about the client's specific requirements and forging client-specific capabilities, thus achieving higher service quality (Grover et al., 1996).

There are four basic types of offshore outsourcing: BPO, ITO, offshore software development, and knowledge process outsourcing (KPO). Offshore outsourcing is the practice of hiring an external organization to perform some business functions (e.g., outsourcing) in a country other than the one where the products and services are practically developed. Offshore outsourcing can be contrasted with offshoring, in which a company moves itself entirely to another country, or where functions are performed in a foreign country by a foreign subsidiary.

As offshoring activities gain impetus spanning various industries in global business, more research is needed to better understand the specific success factors associated with this strategic device (Kenney, Massini, & Murtha, 2009; Mudambi & Venzin, 2010). The use of offshoring as a strategic device is typical among firms from advanced economies because it helps clients' firms reduce productions costs in the short run (Maskell, Pedersen, Petersen, & Dick-Nielsen, 2007), and has potential to become a strategic device for value co-creation in the long run (Contractor, Kumar, Kundu, & Pedersen, 2010; Liesch, Buckley, Simonin, & Knight, 2012).



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Offshore outsourcing occurs when firms relocate business functions that previously were performed in-house to independent service providers located overseas (Mukherjee, Gaur, & Datta, 2013). The process of offshore outsourcing includes the firm-specific disintegration of different functions or activities, the pursuit of suitable locations for suitable service providers, and the externalization of outsourcing processes to an independent provider in a foreign country (Kedia & Mukherjee, 2009).

In the context of offshore outsourcing, the process of value creation remains a central issue (Kedia & Mukherjee, 2009; Liesch et al., 2012). The value creation is the principal purpose of business (Conner, 1991). Global sourcing is an organizational design issue which encompasses both ends of the firm's value chain and the need to explore the firm-specific mechanisms that create value by offsetting the complexities and uncertainties regarding process (Manning, Lewin, & Massini, 2008).

Performance measures and metrics (PMMs) are the basic managerial tools for decision making in any organizational environment, including outsourcing (Gunasekaran et al., 2015). PMMs in outsourcing can be applied to the offshore outsourcing, nearshore outsourcing, and onshore outsourcing (Bunyaratavej, Hahn, & Doh, 2007; Hahn, Bunyaratavej, & Doh, 2011; Schmeisser, 2013), as well as pre-outsourcing stage decisions, during-outsourcing stage decisions, and post-outsourcing stage decisions. Outsourcing is a highly strategic decision toward achieving organization's sustainable growth (Holcomb & Hitt, 2007). Outsourcing enables a company's resources to be improved by achieving better quality services (Espino-Rodríguez & Padron-Robania, 2004). Outsourcing reduces both direct costs and opportunity costs (Corbett, 2004).

Greaver (1999) stated that strategic outsourcing takes outsourcing to a higher level by asking fundamental questions about outsourcing, core competence, and competitive advantage. Strategic outsourcing must be assessed for its effects on competitive advantage and its congruence with decisions (Rumelt, Schendel, & Teece, 1994). Strategic outsourcing can be characterized by a close link between outsourcing processes and the key success criteria of organization (Quelin & Duhamel, 2003). Strategic outsourcing integrates the different functions of a firm including engineering, purchasing, operations, logistics, and marketing (Gottfredson, Puryear, & Phillips, 2005).

Firms outsource operations ranging from IT management to entire functions such as logistics and supply chain management (Gunasekaran et al., 2015). Most of the research papers reviewed on outsourcing deal with issues in IT (Bapna, Barua, Mani, & Mehra, 2010; Hsu & Wu, 2006; Weiner, Vogel, & Amberg, 2010). Yang et al. (2007) stated that the potential determinants of outsourcing include cost savings, a focus on strengths and flexibility, information security, loss of management control, labor unions and morale problems, vendor's service quality, market maturity, and other firms' outsourcing decisions. Bertrand (2011) stated that outsourcing reduces productions costs and increases flexibility. Recent management literature stresses the significance of flexibility in modern competitive landscapes (Lahiri & Kedia, 2011; Mudambi & Tallman, 2010). By divesting its unwanted resources, the offshoring firm can achieve greater flexibility and create value. Firms must develop the core competencies and human capital to achieve strategic flexibility and modularity (Hitt, Keats, & DeMarie, 1998).

At the pre-outsourcing stage, decision making is based on whether outsourcing, being a major strategic decision, will permit organizations to develop and leverage the capabilities required to compete in today's global business environment. McIvor (2008) presented a practical framework that managers can use in the pre-outsourcing phase to identify suitable outsourcing strategies for their processes. Since companies are increasingly opting to outsource, supplier selection has become a major strategic decision (Huang & Keskar, 2007; Kannan & Tan, 2003). The following performance measures have been suggested for supplier selection such as product-related measures (e.g., reliability, responsiveness,



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and flexibility), supplier-related measures (e.g., cost status, financial status, assets, and infrastructure), and society-related measures (e.g., safety and environmental perspectives) (Gunasekaran et al., 2015).

At the during-outsourcing stage, outsourcing performance depends on the sharing of knowledge and resources, on the collaboration between the outsourcee and outsourcer. Aksin and Masini (2008) explained that the effectiveness of the shared-services project depends on the degree of complementarity that exists between the needs of a company and the specific capabilities developed to address the needs. The following factors have been considered to influence shared services: environmental factors (e.g., environmental dynamism, environmental heterogeneity, IT infrastructure, and firm size) and managerial decisions (e.g., offshoring, outward orientation, outsourcing, shared service organization (SSO) concentration, commitment, and the type of service monitoring mechanisms that are utilized) (Gunasekaran et al., 2015).

At the post-outsourcing stage, cost efficiency, profitability, productivity, switching costs, adaptation costs, transaction costs, and return on investment (ROI) tend to be used in terms of financial PMMs (Jiang, Belohlav, & Young, 2007; Mao, Lee, & Deng, 2008; Tate & van der Valk, 2008). In terms of non-financial PMMs, Tarakci et al. (2009) studied the learning effects based on maintenance outsourcing. Learning occurs when the contractor performs preventive maintenance that results in reduction in time and costs (Tarakci et al., 2009). Mao et al. (2008) found that trust has a significant effect on project quality, but little on cost adherence. Cai et al. (2009) presented a systematic approach for improving supply chain performance management through an iterative accomplishment of key performance indicators. Tate and van der Valk (2008) explained that quality improvements in both process and service delivery lead to decreased costs and this will enhance customer satisfaction and improve the company's buying performance at the post-outsourcing stage.

Most of the extant outsourcing frameworks (Javalgi, Dixit, & Scherer, 2009; Jiang, Frazier, & Prater, 2006; Marshall, McIvor, & Lamming, 2007) tend to focus on the pre-outsourcing stage of the decision-making process (Westphal & Sohal, 2013). Practitioners and researchers have attempted to classify the outsourcing decisions from different perspectives (Jiang & Qureshi, 2006; Mantel, Tatikonda, & Liao, 2006; Sanders, Locke, Moore, & Autry, 2007). Han et al. (2008) presented a theoretical framework for outsourcing decisions that include the firm's capability (e.g., technical and managerial capability, organizational relationship capability, and vendor arrangement capability), interaction processes (e.g., information sharing, communication quality, and collaborative participation), relationship intensity (e.g., trust and commitment), and performance (e.g., outsourcing success). Jiang and Qureshi (2006) emphasized the importance of considering intangibles and the strategic impact while making decisions about insourcing and outsourcing, similar to make-or-buy decisions.

Logistics outsourcing or third-party logistics is regarded as using external companies to perform all logistics functions, including transportation, distribution, warehousing, inventory management, order processing, and material handling, that have been executed within an outsourcing firm (Razzaque & Sheng, 1998; Sink & Langley, 1997). Logistics outsourcing functions can be treated as non value-added activities because they are critical to the smooth running of the business, but not a unique ingredient of the overall product (Sink & Langley, 1997).

Good relationships between an outsourcing recipient and a provider contribute to the outsourcing success. The less successful relationships increase the cost of outsourcing (Vorontsova & Rusu, 2014). Firms tend to outsource those activities to the external companies or the third-party logistics service providers, and focus on value-added activities to develop sustainable competitive advantage (Ho, He, Lee, & Emrouznejad, 2012). The selection of the third-party logistics service provider is a critical step in



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the logistics outsourcing process because an appropriate third-party logistics service provider will help the outsourcing firms reduce capital investment in facilities, increase the flexibility of the outsourcing firms in adapting to changes in the market, reduce inventory, improve the on time delivery (OTD), and reduce transportation cost (Liu & Wang, 2009; Razzaque & Sheng, 1998).

## Management Theories Related to Strategic Outsourcing

The management theories related to strategic outsourcing (in terms of resource-based view, resource-advantage theory, transaction cost theory, the capability approach, knowledge-based theory, agency theory, and social exchange theory) are described.

### Resource-based View

Outsourcing decision frameworks are most often approached with theoretical starting points taken from the resource-based view (RBV), either singularly or combined (Busi & McIvor, 2008). The RBV argues that firms' specific assets are heterogeneous, meaning they become competitive by focusing on resources that are rare, highly valuable for customers, and imperfectly imitable (Barney, 1991; Peteraf, 1993). According to the RBV, organizational resources generate unique capabilities, thus increasing a firm's competitive advantage (Amit & Shoemaker, 1993). Competitive advantage is a function of the resources that a firm develops toward implementing its marketing strategy (Wernerfelt, 1984).

The use of the RBV in outsourcing frameworks raises the question of what should be considered as a core competency and should be kept in-house (Quinn & Hilmer, 1994). A focus on people as a source of superior performance has gained notable prominence in the offshoring contexts (Kenney et al., 2009). Broedner et al. (2009) stated that keeping competencies in-house can outweigh the outsourcing cost advantages. Other peripheral activities can be outsourced in order to lower costs and access world-class innovation capabilities (Baloh, Jha, & Awazu, 2008; Quinn, 2000). The RBV is useful for understanding the link between outsourcing, resource allocation, and the resulting performance (McIvor, 2009).

The RBV emphasizes that firms are heterogeneous in terms of their internal resources (Peteraf, 1993). Only resources with the characteristics of heterogeneity and immobility (i.e., the degree of transferability between firms) can offer a basis for sustaining competitive advantage (Barney, 1991). According to Barney (1991), a competitive advantage can be sustained by resources that are (1) valuable for customers in contexts in which the firm operates, (2) rare compared to those of competitors, (3) difficult to imitate, and (4) have no equivalent substitutes available. Regarding RBV, Gilley et al. (2004) stated that the outsourcing of human resource activities has a positive effect on performance. Outsourcing enhances the value of the IT firms (Wang, Gwebu, Wang, & Zhu, 2008). Lai et al. (2008) found a positive relationship between technology capability and competitive advantage.

If a company's resources and skills are combined and used in the right manner, they are most likely to generate a competitive advantage for the company. Outsourcing procedures start when an organization lacking resources and skills seeks a vendor in order to address this shortage (Vaxevanou & Konstantopoulos, 2014). Alvarez-Suescun (2010) proposed a combined model on the basis of the RBV and the transaction cost theory that may interpret the procedures of IT task outsourcing. Barthelemy and Quelin (2006) proposed a model founded on the RBV and to a lesser extent on the transaction cost theory, in order to interpret the stages of preparation, vendor selection, relationship management, and reconsideration.



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## Resource-Advantage Theory

Resource-advantage theory is an integrative model that incorporates several perspectives such as RBV, dynamic capabilities, competitive-advantage theory, and competency arguments (Hunt, Lambe, & Wittmann, 2002). Resource-advantage theory categorizes resources as the human, physical, financial, legal, organizational, informational, and relational perspectives (Hunt, 1997). Resource-advantage theory considers dynamic capabilities and resources (Hunt & Morgan, 1995). Resource-advantage theory can be considered as a well-grounded theoretical model that can be applied to partnership relationships such as alliances, joint ventures, and outsourcing (Unal & Donthu, 2014). Superior performance can be attained by joining resources with firms that complement resource assortments (Teece, 1988).

## Transaction Cost Theory

Transaction cost analysis (TCA) takes the efficiency considerations into account in outsourcing a task (Rindfleisch & Heide, 1997). According to Williamson (2008), the three dimensions of transaction include (1) asset specificity, which is the degree to which an asset can be redeployed to alternative uses without a decreased productive value; (2) uncertainty of the transaction, which is the frequency of disturbance; and (3) the frequency with which the transactions occur. Williamson (2008) stated that, of the three factors, asset specificity will have the most explanatory value because it creates dependency for both parties. TCA considers economic rationales for companies to organize some transactions in either in-house or external governance (Williamson, 1985).

TCA is a dominant process of understanding outsourcing decisions over the last three decades (Holcomb & Hitt, 2007). Transactions can be handled without costs, which arise when resources must be allocated to organize transactions between parties (Johanson & Mattsson, 1987). Walker and Weber (1984) studied make-or-buy decisions for the United States automobile industry firms with the support of TCA. Tate and Ellram (2009) drew on TCA and studied six Fortune 500 companies to develop a supplier selection framework for purchasing offshore services. One of their key proposals was that there is a high risk of opportunism and supplier failure if the outsourcing firm's training and investments are inadequate. Holcomb and Hitt (2007) suggested that considering cost motives alone limits the outsourcing analysis. Quinn and Hilmer (1994) suggested the requirement to consider the strategic vulnerability that can arise while considering outsourcing.

## The Capability Approach

The capability approach is a theoretical framework that entails two core normative claims: first, the claim that the freedom to achieve well-being is of primary moral importance, and second, that freedom to achieve well-being is to be understood in terms of people's capabilities, that is, their real opportunities to do and be what they have reason to value. A firm's ability to manage capability is an important determinant of value creation in an increasingly competitive, complex, and uncertain global marketplace (Karim, 2009; Sirmon, Hitt, Ireland, & Gilbert, 2011). Organizational capability view argues that firm-specific capabilities result in competitive advantage through efficient knowledge creation and knowledge exploitation (Nonaka, 1994; Teece 2007). Prahalad and Hamel (1990) defined capabilities as the collective learning in the organization, and especially the ways to coordinate diverse production



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skills and incorporate multiple technology streams. Willcocks et al. (1995) investigated the strategic implications of outsourcing.

Client-specific capabilities refer to a stable pattern of collective activities and routines (Zollo & Winter, 2002) in dealing with a specific client, generated through repeated interaction with the client (Ethiraj et al., 2005; Levina & Ross, 2003). Client-specific capabilities can be considered as a result of investment in human assets specificity, embedded in tacit knowledge and routines that are developed through accumulating specialized information and know-how (Dyer & Singh, 1998; Ethiraj et al., 2005). Client-specific capabilities reflect mutual idiosyncratic understanding of the effective communication and collaborative routines (Fichman & Levinthal, 1991; Simeon, 2010). Client-specific capabilities can promote relational performance through higher communication effectiveness, lower transaction cost, greater service differentiation, higher quality, and faster service responsiveness (Asanuma, 1989; Dyer & Singh, 1998). For vendors, investing in client-specific capabilities and maintain trust as an effective informal self-enforcing safeguarding mechanism can result in attractive returns in terms of better service quality (Deng, Mao, & Wang, 2013).

Firms that can accumulate distinctive assets and capabilities achieve a competitive advantage over competitors (Barney, 1991; Lahiri, Kedia, & Mukherjee, 2012). Baden-Fuller et al. (2000) proposed a decision-making model for the stage of preparation based on the capability approach, aiming to improve the organization's competitiveness. Pati and Desai (2005) proposed a decision-making framework for outsourcing, focusing on the stage of preparation. The capability approach is used in conjunction with other theories such as the knowledge-based theory (Lee, 2001) and in research projects that use multiple theories to substantiate their models (Gottschalk & Solli-Sæther, 2006).

## Knowledge-based Theory

The knowledge-based theory is applied to outsourcing in order to demonstrate that the exchange of knowledge at the stage of the outsourcing relationship is a factor that contributes to the success of the outsourcing agreement (Vaxevanou & Konstantopoulos, 2014). Lee (2001) proposed a model by utilizing the knowledge-based theory and interpreted the relationship management among the two contracting parties of the outsourcing procedure. Thatcher et al. (2011) stated that knowledge management skills influence the success of an outsourcing procedure at the stages of vendor selection, transition, relationship maintenance, and reconsideration.

In alliance management literature, an external partnership leveraging capability is identified as a source of competitive advantage (Dyer & Singh, 1998; Kedia & Lahiri, 2007). Learning from external partners generates both proximate and distal benefits, such as improving productivity, incremental innovations, and particular dynamic capabilities that consistently improve competences in stable environments by increasing the efficiency of knowledge searches, absorption, and combination (Mudambi & Tallman, 2010).

## Agency Theory

Agency theory specifies mechanisms which reduce agency loss (Eisenhardt, 1989). According to the agency theory (Lafontaine, 1992), asymmetric information and opportunism result in high agency costs. The agency theory contributes to the substantiation of a variety of strategic goals such as quality management (Zu & Kaynak, 2012). The agency theory focuses on the preparation of the most effective



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contract able to regulate the financial aspects and obligations of the shipping company and the agent (Vaxevanou & Konstantopoulos, 2014).

### Social Exchange Theory

Early social exchange theory applications in family science arose out of the work of sociologists (Blau, 1964; Homans, 1961) who focused on the rational assessment of self-interest in human social relationships. Individuals seek rewards and avoid punishments. Social exchange theory proposes that social behavior is the result of an exchange process. The purpose of social exchange is to maximize benefits and minimize costs. When interacting with others, individuals seek to maximize profits for themselves while minimizing costs. Because it is not possible to know the actual rewards and costs involved in interacting with another before interactions occur, individuals guide their behavior through their expectations for rewards and costs. Social exchange is a constant mutual process in the context of which the actions of individuals or organizations depend on the reward reactions caused (Gottschalk & Solli-Sæther, 2006).

## Applications of Business Process Outsourcing and Information Technology Outsourcing

### Concept of Business Process Outsourcing

Business process outsourcing (BPO) refers to the delegation of one or more IT-enabled business processes to an external supplier who becomes responsible for managing the processes to achieve its client firm's defined and measurable set of performance goals (Bharadwaj, Saxena, & Halemane, 2010; Susarla, Barua, & Whinston, 2010). For example, banks may outsource their credit card application processing to third-party vendors to simultaneously minimize processing costs and improve customer experience. The standardized business involves high valued-added activities (e.g., engineering and research and development), and product design are moving to offshore external vendors (Jensen & Pedersen, 2011; Mudambi & Venzin, 2010). Global spending on BPO has significantly increased during the past decade (Rai, Pavlou, Im, & Du, 2012; Srivastava & Teo, 2012). The benefits of BPO include access to specialized resources, cost advantages, innovations, and higher quality services from service providers (Benlian & Hess, 2011; Mani, Barua, & Whinston, 2010).

Recent BPO projects (e.g., business analytics) require more knowledge-intensive activities compared with BPO activities (e.g., human resources, marketing, and supply chain functions) that have been examined in previous studies (Lacity, Solomon, Yan, & Willcocks, 2011). The knowledge-process outsourcing projects support the client's long-term and strategic goals that are related to innovation and competitive actions (Mani et al., 2010; Rai et al., 2012). BPO involves strategic processes (e.g., customer analytics) to facilitate innovation and business transformation, which business processes require the ongoing knowledge contribution from clients and customers (e.g., BPO requirements) and the services provider (e.g., business domain and the knowledge of process improvement) (Rai et al., 2012).

BPO emphasizes process-oriented knowledge sharing that requires not only the client's context-specific knowledge that is essential to perform the particular business process but also the service provider's knowledge about how to manage and execute the business process (Rai et al., 2012; Susarla et al., 2010). Long-standing relationships and effective governance mechanisms (e.g., behavior control) are required



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to ensure partners' contribution and to fully realize BPO goals and the associated benefits (Mani et al., 2010; Rustagi, King, & Kirsch, 2008).

Srikanth and Puranam (2011), while studying the distributed work setting of BPO, identified a distinct set of coordination mechanisms that can offset the adverse performance consequences of interdependence between onsite and offshore locations. Andersson and Pedersen (2010) emphasized the importance of appropriate coordination and control mechanisms that can create value by mitigating the costs arising from the complexities concerning offshoring. Offshoring is an organizational design issue which involves the significant reconfiguration of a firm's value chain activities and value is created through the development of firm-specific capabilities that help in the process of subsequent reintegration (Larsen, Manning, & Pedersen, 2013).

## Concept of Information Technology Outsourcing

Information technology outsourcing (ITO) is the use of a third party to successfully deliver the IT-enabled business process, application service, and infrastructure solutions for a cost-effective business outcome (Samantra, Datta, & Mahapatra, 2014). ITO is a common outsourcing activity for many organizations (Yang & Huang, 2000). The decision to outsource IT functions has been proved beneficial toward gaining increasing advantage in global business (Abdullah & Verner, 2012). ITO is defined as a decision taken by an organization to contract out or sell some or all the organizations' IT assets, people, and business activities to a third party vendor, who provides and manages these business activities (Lacity & Hirschheim, 1993; Loh & Venkatraman, 1992).

In the private sector the major international trend toward ITO from the early 1990s through to 2012 has been driven by a range of financial, business, technical, and micro-political factors (Clark, Zmud, & McCray, 1995; Kern & Willcocks, 2001). IT becomes one of the most common resources drawn upon to standardize work procedures and smooth information flows, and to make more efficient organizational procedures (Cordella & Willcocks, 2012). ITO uses external third parties to source IT services such as IS planning and management activities, data centers, telecommunications, and network management (Grover, Cheon, & Teng, 1994).

Karami and Guo (2012) proposed an integrated multi-criteria decision making (MCDM) framework for selecting IT service provider in IS outsourcing. Abdullah and Verner (2012) developed a risk framework for strategic IT development outsourcing from the clients' perspective. The critical risk factors (e.g., complexity, contract, execution, organizational environment, and user) are identified as the influencing factors on the outcome of strategic IT system development outsourcing projects. Rusu and Hudosi (2011) presented a design of ITO tool that includes a procedure concerning transaction cost theory for exploring the risk exposure in ITO. Susarla (2012) investigated renegotiation design in contracts for outsourced IT services using a sample of 141 ITO contracts. Contractual flexibility and rent seeking are analyzed in order to measure the effectiveness of ITO contracts. Zhang and Huang (2012) presented a fuzzy risk evaluation method for IT service outsourcing in which the risk factors are evaluated by fuzzy value and the risk grades of risk factors are calculated by fuzzy linguistic values.

Thouin et al. (2009) utilized transaction cost economics of ITO examining the effect of level of low asset specificity on firm level financial performance. Alaghehband et al. (2011) assessed transaction cost theory-based ITO models in terms of faithfulness and concluded that the ITO models hardly capture all the essential elements of transaction cost theory. Chou and Chou (2009) developed an IS outsourcing life cycle model considering various risks factors encountered during the three contracting phases (i.e.,



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pre-contract phase, contract phase, and post-contract phase). Chou and Chou (2011) explained several issues regarding innovation outsourcing, uncertainty, risks, productivity, and quality perspectives. Shi et al. (2011) proposed a linear mixed model (LMM) approach for outsourcing decisions recognizing heterogeneity among the experts in risk perception. Fan et al. (2012) proposed a methodology to identify ITO risk factors and their importance in decision-making process.

### Relationship between Business Process Outsourcing and Information Technology Outsourcing

Although the prior ITO literature has examined outsourcing relationship management, there are crucial distinctions between BPO and ITO that indicate that additional research efforts must be made to better understand how to manage BPO relationships (Lacity et al., 2011; Rai, Keil, Hornyak, & Wullenweber, 2012). The knowledge required to be integrated between the client and the service provider is different between BPO and ITO (Chou, Techatassanasoontorn, & Hung, 2015). Knowledge integration in ITO is goal-oriented and focuses on the provider's knowledge and expertise in reaching the client's goal such as performance of IT operations and IT development.

Although ITO emphasizes IS department performance (Arnett & Jones, 1994) and the client's technical and methodological capability (Kotlarsky, Oshri, van Hillegersberg, & Kumar, 2007), BPO objectives, in contrast, are more diverse and can extend beyond the technical focus of ITO projects. Both ITO and BPO research has highlighted the importance of satisfaction and commitment in outsourcing success (Goo & Huang, 2008; Han et al., 2008). Whereas satisfaction tends to be transitory (Choudhury & Sabherwal, 2003), commitment tends to be stable and reflects a more comprehensive assessment of the client's willingness to undertake efforts to develop and maintain lasting relationships with its provider (Goo & Huang, 2008; Levina & Su, 2008).

## Significance of Strategic Outsourcing in Global Business

The outsourcing evolution has been the primary focus of the early period of outsourcing, which emphasized efficiency through the division of work between different firms (Hatonen & Eriksson, 2009). Outsourcing has continued to be a key theme in the purchasing and supply chain literature (Westphal & Sohal, 2013; Zheng, Knight, Harland, Humby, & James, 2007). Firms have implemented the outsourcing strategies not only as a cost reduction tool but also as a strategic initiative for securing core competitiveness (Freytag & Kirk, 2003; Kremic, Tukel, & Rom, 2006). Firms have expanded the scope of their outsourcing to include their key functional cores (e.g., research and development, product design, and marketing) (Kaipia & Tanskanen, 2003).

Firms engage in offshoring to increase service quality, fend off competition, and augment their existing RBV by acquiring qualified human capital around the world (Demirbag & Glaister, 2010; Doh, Bunyaratavej, & Hahn, 2009). As offshore outsourcing moves to the next level and includes more value-added activities, the realization of such diverse objectives may become challenging, giving rise to complex questions such as how it can create business value (Doh, 2005; Mudambi & Venzin, 2010). Larsen et al. (2013) stated that that many companies have started to understand the difficulties and complexities associated with managing a globally dispersed organization. It is important that firms select appropriate outsourcing providers to increase the success rate of outsourcing (Li & Wan, 2014).



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The strategic intent of outsourcing is to secure and deploy multiple competitive advantages (e.g., cost reductions, innovativeness, and flexibility) in a turbulent market environment (Kremic et al., 2006; Quinn,1999). Holcomb and Hitt (2007) indicated that outsourcing under the strategic perspective implies that firms trust intermediate markets to provide specialized capabilities that supplement existing capabilities deployed along the firm's value chain. A developed supplier market is a basic outsourcing requirement (Rehme, Nordigården, Brege, & Chicksand, 2013). The outsourcing literature has predominantly assumed the existence of a developed supplier market and has addressed markets that are characterized by dominant supplier opportunism (Holcomb & Hitt, 2007; McIvor, 2008). A non-developed supplier market may occur in global sourcing situations where a key question is to plan what should be manufactured where and how supplier capacity and capabilities can be developed, particularly in low-cost countries (Kumar, Zampogna, & Nansen, 2010; Oke, Maltz, & Christiansen, 2009).

Kang et al. (2012) classified outsourcing strategies into two primary categories: efficiency-seeking outsourcing strategies and innovation-seeking outsourcing strategies. Using these outsourcing strategies, firms are not only able to transfer their non-core activities to specialized external experts to achieve efficiency (Harland, Knight, Lamming, & Walker, 2005; Kotabe, Mol, & Murray, 2008), but they try to build their organizational innovation capabilities through interorganizational collaboration (Chen et al., 2011; Hsuan & Mahnke, 2011). Organizational innovation, knowledge management, and strategic orientation are correlated with organizational performance in modern organizations (Kasemsap, 2014a). Organizations aiming to increase organizational innovation and achieve business goals should focus on developing organizational learning, knowledge management, and knowledge-sharing behavior (Kasemsap, 2014b). Outsourcing typically transfers production functions of goods and services to external providers (Araz, Ozfirat, & Ozkarahan, 2007).

Outsourcing research has primarily focused on outsourcing decisions and on outsourcing outcomes (Lacity, Khan, Yan, & Willcocks, 2010). Outsourcing decisions range from the most fundamental make-or-buy decision to more nuanced decisions regarding sourcing specific IT functions and strategic processes (Arnett & Jones, 1994; Grover et al., 1994). Outsourcing outcomes is measured in a number of business perspectives, including the client's general perceptions of the success, relationship quality, business performance, and IT management capability (Gopal, Mukhopadhyay, & Krishnan, 2002; Lee & Kim, 1999). Executives and managers desiring to enhance their organizational success should consider creating IT, technical alignment, IS capabilities, and IS effectiveness (Kasemsap, 2015a). The managerial practices of IT, knowledge management, and project management efficiently support each other in order to achieve planned goals (Kasemsap, 2015b).

Outsourcing relationships have been examined from a number of perspectives, including economic perspectives (e.g., transaction cost economics), strategic perspectives (e.g., resource dependency theory), and social perspectives (e.g., social exchange theory) (Goo, Kishore, & Rao, 2009; Han et al., 2008). Bharadwaj et al. (2010) investigated a successful outsourcing relationship from both an economic and a strategic perspective using transaction cost economics and RBV theories. Goo et al. (2009) explored factors that influence commitment in ITO, including formal contract factors (e.g., service level agreement) and relational governance factors (e.g., relational norms). Risk assessment appears to be an important contributor to the success of an ITO venture (Samantra et al., 2014).

The improvements in the technology of communication relate to international specialization and a tendency toward a vertical fragmentation of production across national borders (Leahy & Montagna, 2012). Outsourcing is a business decision that involves top management (Greaver, 1999). Outsourcing influences the resources allocated to business units and the level of vertical specialization of the firm's



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activities such as strategic corporate decisions (Grant, 2002). Outsourcing reduces the cost of assets, facilitates core competencies to reduce production costs, and leads to strategic flexibility (Gunasekaran et al., 2015).

Outsourcing externalizes activities by engaging suppliers located outside the firm and avoids the requisite investments associated with internalization (Mauri & de Figueiredo, 2012). The decision of outsourcing effectively attaches special significance in the strategic formulation in the firm (Patil & Patil, 2014). The outsourcing of non-core activities allows the firm to gain focus on activities which provide distinct competitive advantage, thus becoming leaner (Quinn, 1999). The outsourcing of non-core activities leads to increased strategic flexibility (Hitt et al., 1998; Shimizu & Hitt, 2004).

Theoretical framework explaining outsourcing derives from transaction cost economics (Klein, Crawford, & Alchian, 1978; Williamson, 1971), which examines conditions for efficiency under which firms prefer to buy in the external markets rather than make internally. Transaction cost economics proposes that firm-specific assets are a crucial determinant in the decision to vertically integrate (David & Han, 2004; Shelanski & Klein, 1995). Firm specific-assets cannot be easily redeployed outside a given relationship and do not have a higher value to other parties involved in a transaction (Mauri & de Figueiredo, 2012). The decision to invest in these firm-specific assets, implies an irreversible commitment (Ghemawat, 1991).

Outsourcing allows linkages in the supply chain to become more parallel than serial with the outcome that flexibility is added through increased sourcing alternatives (Mauri & de Figueiredo, 2012). The quest for flexibility is enhanced by advances in IT that reduce the costs of external transactions and facilitate coordination along contractors in the supply chain (Hitt, 1999; Rangan & Sengul, 2009). Flexibility is reached by establishing modular production systems (Kotabe, Parente, & Murray, 2007; Parente, Baack, Hahn, & Parente, 2011). In dynamic industries under pressure from foreign competition, sustainable capabilities are obtained through deintegration and flexible contracting with external suppliers (Hutzschenreuter & Grone, 2009).

For efficiency-seeking outsourcing, output control, and process control are appropriate in creating successful outsourcing practices (Kang, Wu, Hong, Park, & Park, 2014). Applying proper organizational control mechanisms is essential for achieving effective inter-firm cooperation as well as for achieving intended organizational goals (Hartmann, Trautmann, & Jahns, 2008; Senja & Mika, 2009). A lack of effective control over suppliers presents a crucial risk factor that may result in less than desirable outsourcing outcomes (Harland et al., 2005; Kotabe et al., 2008). Firms transfer non-core activities to external organizations that possess the required levels of expertise and the economies of scale in order to achieve operational efficiency and cost reduction goals (Jiang et al., 2006; Kotabe & Murray, 2004).

Formal control (e.g., process control and output control) plays an important role in reducing outsourcing risks and opportunistic behaviors, especially in transient economies (Li, Liu, Li, & Wu, 2008). Process control enhances innovativeness because it provides guidance tools and stimulates creative ideas (Poskela & Martinsuo, 2009). Effective organizational control measures are necessary in order to effectively implement outsourcing strategies (Chen, Park, & Newburry, 2009). Implementing outsourcing strategies successfully requires a suitable choice of organizational control strategy (Kang et al., 2014). Output control is a useful option for implementing an efficiency-seeking outsourcing strategy (Das & Teng, 2001; Eisenhardt, 1985). The precise knowledge of transformation process by which inputs are transformed into outputs as a results of behaviors facilitates the exercise of process control as a process of achieving desired output results (Chen et al., 2009; Turner & Makhija, 2006).



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Social control is a useful option for effectively implementing innovation-seeking outsourcing strategies due to low measurability characteristics (Das & Teng, 2001; Ouchi & Maguire, 1975). Social control is useful when encouraging suppliers to internalize norms and goals through repeated interactions, thus reducing uncertainty and discrepancy in innovation-seeking outsourcing (Jaworski,1988). Social control provides openness, autonomy, and creativity because it encourages the clear communication of organizational vision and task goals (O'Reilly & Tushman,1997). Social interaction is required to adjust detailed outsourcing specifications and solve problems because the tasks in innovation-seeking outsourcing have more flexible and complex characteristics (Hoecht & Trott, 2006).

## FUTURE RESEARCH DIRECTIONS

The strength of this chapter is on the thorough literature consolidation of strategic outsourcing. The extant literature of strategic outsourcing provides a contribution to practitioners and researchers by describing a comprehensive view of the functional applications of strategic outsourcing to appeal to different segments of strategic outsourcing in order to maximize the business impact of strategic outsourcing in global business. The classification of the extant literature in the domains of strategic outsourcing will provide the potential opportunities for future research. Future research direction should broaden the perspectives in implementation of strategic outsourcing to be utilized in the knowledge-based organizations.

Practitioners and researchers should acknowledge the applicability of a more multidisciplinary approach toward research activities in implementing strategic outsourcing in terms of knowledge management-related variables (e.g., knowledge-sharing behavior, knowledge creation, organizational learning, learning orientation, and motivation to learn). It will be useful to bring additional disciplines together (e.g., strategic management, marketing, finance, and human resources) to support a more holistic examination of strategic outsourcing in order to combine or transfer existing theories and approaches to inquiry in this area.

## CONCLUSION

This chapter revealed the role of strategic outsourcing in global business, thus describing the theoretical and practical concept of strategic outsourcing; the management theories related to strategic outsourcing (in terms of resource-based view, resource-advantage theory, transaction cost theory, the capability approach, knowledge-based theory, agency theory, and social exchange theory); the applications of BPO and ITO; and the significance of strategic outsourcing in global business. Strategic outsourcing paves the way for leading companies to compete globally and increase profitability into the new millennium. Strategic outsourcing means asking a third-party vendor to work for company on a contractual basis. Strategic outsourcing occurs when companies purchase products or services from outside suppliers, rather than performing the same work within their own facilities, in order to cut costs.

The benefits of strategic outsourcing involve (1) cost savings: many businesses embrace outsourcing as a way to realize cost savings and improve cost control over the outsourced functions; (2) staffing levels: the reasons for outsourcing are to achieve headcount reductions and minimize the fluctuations in staffing that may occur due to changes in demand for a product or service; (3) flexibility: companies outsource to reach greater financial flexibility, since the sale of assets that formerly supported the out-



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sourced functions can improve companies' cash flow; (4) knowledge: outsourcing effectively gains access to new technology and outside expertise; and (5) business innovation: outsourcing helps companies innovate in processes, skills, and technology, thus mediating financial risk through the vendor, in order to achieve competitive advantage.

Strategic outsourcing requires a strong understanding of organization's capabilities and future direction. The fulfillment of strategic outsourcing is vital for modern organizations that seek to serve suppliers and customers, improve business performance, enhance competitiveness, and reach continuous achievement in global business. Therefore, it is necessary for modern organizations to explore their strategic outsourcing, establish a strategic plan to usually check their practical advancements, and immediately respond to strategic outsourcing needs of customers in modern organizations. Applying strategic outsourcing in global business has the potential to increase organizational performance and attain business goals in the digital age.

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## KEY TERMS AND DEFINITIONS

**Business Process Outsourcing:** The contracting out of a particular business function to an outside company in order to reduce business costs.

**Horizontal Integration:** The merger of companies at the same stage of production in the same or different industries.

**Information Technology Outsourcing:** The transferring of information technology-related business functions from internal staff to outside contractors.

**Offshore Outsourcing:** The work done for a company by people in another country that it typically done at a much cheaper cost.

**Offshoring:** The moving of various operations of a company to another country for reasons such as lower labor costs and more favorable economic conditions in that other country.

**Outsourcing:** The contracting or subcontracting of non-core activities to free up cash, personnel, time, and facilities for activities in which a company holds competitive advantage.

**Resource-Based View:** A way of viewing the company toward approaching strategy.

**Transaction Cost Theory:** A theory accounting for the actual cost of outsourcing production of products and services including transaction costs, contracting cost, coordination costs, and search costs.

**Vertical Integration:** The merger of companies at different stages of production in the same industry.

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# Chapter 12
# Network Analysis for Economics and Management Studies

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## ABSTRACT

*Sociology and other social sciences have employed network analysis earlier than management and organization sciences, and much earlier than economics, which has been the last one to systematically adopt it. Nevertheless, the development of network economics during last 15 years has been massive, alongside three main research streams: strategic formation network modeling, (mostly descriptive) analysis of real economic networks, and optimization methods of economic networks. The main reason why this enthusiastic and rapidly diffused interest of economists came so late is that the most essential network properties, like externalities, endogenous change processes, and nonlinear propagation processes, definitely prevent the possibility to build a general – and indeed even partial – competitive equilibrium theory. For this paradigm has dominated economics in the last century, this incompatibility operated as a hard brake, and presented network analysis as an inappropriate epistemology. Further, being intrinsically (and often, until recent times, also radically) structuralist, social network analysis was also antithetic to radical methodological individualism, which was – and still is – economics dominant methodology. Though culturally and scientifically influenced by economists in some fields, like finance, banking and industry studies, scholars in management and organization sciences were free from "neoclassical economics chains", and therefore more ready and open to adopt the methodology and epistemology of social network analysis. The main and early field through which its methods were channeled was the sociology of organizations, and in particular group structure and communication, because this is a research area largely overlapped between sociology and management studies. Currently, network analysis is becoming more and more diffused within management and organization sciences. Mostly descriptive until 15 years ago, all the fields of social network analysis have a great opportunity of enriching and developing its methods of investigation through statistical network modeling, which offers the possibility to develop, respectively, network formation and network dynamics models. They are a good compromise between the much more powerful agent-based simulation models and the usually descriptive (or poorly analytical) methods.*

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## INTRODUCTION: DIFFERENT DISCIPLINARY PERSPECTIVES

Network analysis research has become so vast that it is almost impossible to give a synthesis of its developments and scope of applications. This impossibility holds also if restricting the review to Social Network Analysis (SNA), under which we can include network-based approaches in anthropology, psychology, sociology (SOC), and economic sciences in a broad sense, which can be further distinguished into economics (ECON), and management and organization sciences (MOS). The first three have been matter of many studies, even (to a less extent) from a historical perspective, while the latter two, which are the specific subject of this volume, have been not yet well reviewed, especially from a historical perspective. Moreover, the few existing contributions are very recent, in particular those concerning network economics, and while some contrasts SOC and ECON (Jackson, 2010a, 2010b) - with the partial exception of Knoke (2012), who restricts the view of network economics only to few themes - no one contrasts ECON and MOS. As it often happens, even though two scientific areas are largely overlapped[1], they remain encapsulated into the respective disciplinary boundaries, so hindering a fruitful cross-fertilization. Most researchers in one area do not know the works in the other area. Therefore, the main aim of this chapter is to fill in this gap by directly contrasting ECON and MOS perspectives on network analysis.

There are various accounts of the history of network analysis in general, and SNA in particular. Among the former there is Barabasi's (2002) fortunate and popular book, and the classic Biggs *et al.* (1976). Among the latter there are many contributions (Berkowitz, 1982; Leinhardt, 1977; Marsden & Lin, 1982; Scott, 1992), some of which quite recent (Freeman, 2004; Prell, 2011). Leaving aside books dedicated to specific methodological or real topics, there is a certain number of handbooks (Borgatti *et al.*, 2013; Hanneman & Riddle, 2005; Knoke & Kuklinski, 1982; Scott, 1992; Wasserman & Faust, 1994; and the more recent Borgatti *et al.*, 2013; Knoke & Yang, 2008; Robins, 2015; Scott & Carrington, 2011). And of course a lot of readings (Carrington *et al.*, 2005; Wasserman & Galaskiewicz, 1994; Wellman & Berkowitz, 1988; among the many). There are also many books and papers dealing with both fields of social and natural sciences (Barabasi, 2002; Biggiero, 2011; Bornholdt & Schuster, 2003; Caldarelli, 2007; Dehmer & Emmert-Streib, 2009; Lewis, 2009; Newman, 2010; Newman *et al.*, 2006), but with few exceptions they are written by mathematicians or physicists.

Although the mathematical base of network analysis is graph theory, and so even developments outside mathematics and physics (MAPH) must be based on this ground, substantially different stories took place in the development of SNA and graph theory[2] during the 80 years between the thirties of last century and these last years. An appropriate treatment of this subject would deserve an accurate and extensive research far beyond this section and also beyond a full dedicated paper, but in extreme synthesis we can say that the story told by mathematicians and physicists, like Barabasi (2002), Watts (2003) and Newman 2010), describe a network analysis which, besides the pioneering work by Euler and some early studies in the thirties, was systematized by Erdős and Rényi during the fifties. Their work – and that of their followers - focused mostly on random or regular graphs, until in the nineties Barabasi (2002), Barabasi & Albert (1999) on one side, and Watts (2003, 2004a, 2004b) and colleagues (Watts & Strogatz, 1998; Newman, 2001, 2005) on the other side discover the peculiarity and wide diffusion in social and natural networks of, respectively, the scale-free and the small-world topology. Indeed, scale-free topologies had been discovered already in the fifties by the economist Nobel Prize Simon (1955; Simon & Bonini, 1958), who indeed exploited previous studies from economics (Gibrat, 1931; Pareto, 1896) and linguistics (Zipf, 1932)[3]. And the small-world structure was baptized as such by the sociologist Milgram (1967; Travers & Milgram, 1969) in his studies in the sixties, which were



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further somehow anticipated by others few years before[4]. These "discoveries", and more generally the crucial relevance of "irregular" topologies to understand real networks, had a remarkable impact on network analysis applied to natural sciences. Moreover, MAPH authors underline the remarkable shift, occurring during the nineties, of the focus from a pure static analysis of mathematical and statistical properties of random networks to the processes with which irregular topologies *can be* generated: the famous preferential attachment mechanism for the scale-free structure and the rewiring mechanism for the small-world structure are such examples.

The story told by some SNA scholars (Freeman, 2004; Wasserman & Faust, 1994; Prell, 2011; Scott, 1992) is quite different: besides some precursors at the turn of the 20th century, a substantial impulse came already in the thirties with Moreno's work (1937), and right after in the forties and fifties mostly in US and UK with various research groups. Some of them were more familiar with (and oriented to use) graph theory and some other less, but all were sharing the common convincement that the explanations for – or at least the understanding of – social phenomena had to be discovered primarily – albeit not exclusively - into social structures. As in most structuralist perspectives, the role of the subject were not neglected, especially in the research area working on ego-networks, but it was argued that an actor's behaviour is constrained and also induced and influenced by his relational pattern and the position covered into the whole structure. This shared structuralist view is apparent in some SNA book (Berkowitz, 1982; Marsden & Lin, 1982) and papers titles, and exemplary underlined by Wellman & Berkowitz's (1988b) introduction to their edited influential book on social structures. They argue that structural analysis "is less and more than network analysis": less because network analysis provide powerful tools and theories, and more because structural analysis includes also rather different fields, like general systems theory, cybernetics, etc., which at that time could appear far from SNA[5], and includes also methods far from those typical of network analysis. Wellman (1988) remarks that network analysis is not only a method(ology) or a metaphor, but rather "a comprehensive paradigmatic way of taking social structure seriously by studying directly how patterns of ties allocate resources in a social system". A position that seems due more to the need to claim attention into the scientific landscape than to a real substance.

Though some mathematician and physician, like Harary and White, has been fully enrolled into SNA, others were just collaborating to one or more groups. They were supporting a theoretical, methodological and epistemological framework rather different from that that was being developed in graph theory. Two differences appear particularly interesting. The first one is that the major interest was less on random graphs, and more on networks that could realistically approximate social structures. The second one is the acknowledgment of the relevance also of nodes' attributes, and hence the interplay between the strength of positions with the peculiar characteristics of the node covering those positions. Things are moving towards a major interaction between SOC and MAPH even though maintaining some methodological and epistemological differences, which are well mirrored in its respective approaches to modelling network analysis. Recently, SNA needs to go more deeply into understanding the causes and antecedents of network formation a modelling methodology[6].

As addressed by Freeman (2004), Wasserman & Faust (1994), Prell (2011) and Scott (1992), methodological knowledge acquisition of SOC from MAPH started since the fifties with many works made by Harary, systematized into two important books (Harary & Norman, 1953, and Harary *et al.*, 1965). Recent good examples of such a MAPH direct involvement as researchers and not just as tool-givers are into the field of network analysis applied to international trade (see below next section). In particular, scale-free and small-world properties have been re-discovered and then intensively investigated by physicists and mathematicians, and then empirically applied with growing diffusion in SNA. More



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generally, these contributions come with a relatively recent renewed interest of physicists, statisticians, and mathematicians for a direct involvement into the theoretical development of social sciences. This phenomenon is all but new, if we think that, especially in economic theory, mathematicians have been directly (and often, primarily) involved in building theoretical pillars of social sciences. However, now there is an effort so extensive and numerous that two new branches have been nurtured: sociophysics and econophysics (Aoyama *et al.*, 2011; Chakrabarti *et al.*, 2006; Chatterjee & Chakrabarti, 2008; Cockshott *et al.*, 2009). Nevertheless, it is not yet clear whether this is an episodic intensification of an endemic phenomenon or a more systematic change in the dynamics of contemporary science.

For SNA history and concepts have been widely investigated, the main aim of this chapter is giving a picture of the way in which network analysis has been applied in ECON and MOS. Then I will proceed with discussing the "modelling revolution", which is in full development during last 15 years. The focus will be mostly on ERGM (Exponential Random Graph Models) and SAOM (Stochastic Actor-Oriented Models). Next, it will be underlined that statistical models of network analysis can combine and reconcile methodological individualism and structuralism. Finally, it is argued that the embrace of network analysis will force economics – and especially the general equilibrium research program - to depart from its neoclassical foundations.

## NETWORK ANALYSIS IN ECONOMICS

This section has two objectives: providing suggestions to explain the very late engagement of economics into network analysis, and depicting the main developments that such an involvement has taken from the beginning of this century. Both purposes are necessary because, with few exceptions (Knoke, 2012), SNA historical profiles have substantially neglected network economics, and because during last 15 years network economics literature exploded and applied to a number of different fields of applications (Jackson, 2014a, 2014b). Indeed, it is quite singular that the apparently network-like structure of economic phenomena has been neglected so long and rather systematically by mainstream economics. The explanation offered by Jackson (2014a), who adduces only "practical" reasons, like the lack of relational data or computing power, is not fully convincing, because other disciplines, like sociology, psychology, etc. had to face with the same problem, but they found that obstacle not so decisive. Moreover, other branches of economic theory, since Pigou's neoclassical economics (Screpanti & Zamagni, 2005), adopted network analysis to some extent, especially into the field of transportation problems. Was not there a lack of relational data? The main reason could have a rather different nature: a theoretical nature, lying on two main forms of incompatibility with mainstream economics. The first one occurs between the structuralist epistemology beneath SNA, which implies also a methodological structuralism, incompatible with the methodological individualism of standard economics[7]. The second one is standard economists' suspect – or perhaps reasonable doubt - that the acknowledgment of the network nature of economic phenomena makes its treatment incompatible with the obtainment of a general competitive equilibrium.

The second objective of this section is to outline the landscape of current network economics. There is only one contribution (Goyal, 2007) that covers (almost all) the main sectors in which current network economics is developing, but it is not very recent, and network economics is extremely rapidly growing. Knoke (2012) discusses SNA and ECON, but this latter field is rather under-treated, being mostly shifted on the MOS side, which is quite far from what is currently meant as network economics. In fact, his book titles "Economic networks", which concerns only one of the three main branches of network



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economics[8]. Conversely, Jackson (2008, 2010) presents SOC and network economics rather extensively, but he substantially neglects MOS. Therefore, though there is here space for only a brief discussion, this is a good occasion to fill in this gap and give a short outline of network economics and MOS network analysis, so to favor their reciprocal acknowledgment and comparison. To these aims, this section is divided into a first part dedicated to the first objective – explaining network economics delay - and a second part dedicated to outline the main sectors of network economics.

*Explaining network economics delay*. Excepted for applications mostly focused on transportation networks among which the pioneering contribution by Pigou in 1920 and some others published right after König's book on graph theory in 1936[9], the attention dedicated by economists to network analysis has been episodic until the end of nineties, and almost always limited to spatial and transportation problems. To see a substantial focus enlargement it is necessary to wait until last twelve years. Therefore, it could be argued that within social sciences economics has been the last one to adopt network analysis[10], and this is apparently paradoxical if one thinks that, intuitively, individuals and firms and banks and even nations are strongly interconnected. And it's even more surprising, if one considers that early economists' approaches (Screpanti & Zamagni, 2005; Landreth & Colander, 2001), like the *Tableau economique* of the French School in the second half of eighteen century or the Marx's schemes of simple and extended production are precisely matrices, and thus, economic networks. Further, recent Arrow's (2009) lapidary judgment that "network theory … may not be all that useful or needed" weighs as a rock on network economics. And this is even more relevant not only because of his prestige, but also because he has been among the founders of the Santa Fè Institute (Arrow *et al.*, 1988; Arthur, 2010; Blume & Durlauf, 2006; Waldrop, 1992), where complexity economics has been nurtured and network theory largely employed.

Nevertheless, during the last 15 years network economics is rapidly growing and extending to many areas of interest: two dedicated journals – the *Review of Network Economics*, and the *International Journal of Management and Network Economics* - and many special issues of important journals, like the *International Journal of Industrial Organization*, the *Review of Economic Design*, etc., mark the great attention paid to this research area. Not to say innumerable contributions, many of which appeared on top journals, like *American Economic Review*, *Journal of Economic Theory*, *Econometrica*, etc.

Hence, it remains to explain why such an enthusiasm came so late respect to other SNA areas. I speculate that the incompatibilities with neoclassical economics in general, and standard economics in particular, rose by structuralist methodology and network-related mathematical implications are the main reasons. An acknowledgment of complex networks properties prevent the acceptance of the theoretical assumptions required by general economic equilibrium, either in neo-Walrasias or in non-Walrasian versions (Bridel, 2012; Hahn & Petri, 2002; Ingrao & Israel, 1990; Kirman, 1976; Loasby, 1991; Screpanti & Zamagni, 2005; Zamagni, 1993). Consequently, this dominant economic paradigm hindered or overlooked a methodology like network analysis – and in particular its SNA formulations - that is incompatible with its fundamental methodological and conceptual/epistemological requisites. Indeed, this fact is typical of normal sciences, which try to protect its hard kernel (Kuhn, 1962)[11]. Consistently, observations, theories, facts, approaches and views that endanger the achievement of its goals, have been discharged or neglected by standard economics.

Indeed, economic theory is a large family[12] with a major group constituted by various types of neoclassical economics, and other minority approaches, like the neo-Marxian and, (relatively) more recently, evolutionary and cognitive economics (Dopfer, 2005; England, 1994; Foster, 1997; Foster & Metcalf, 2001; Gigerenzer, 2008; Gigerenzer & Selten, 2001; Hodgson, 1993, 2000; Kirman, 2011; Loasby, 1991; Witt, 1993). Neoclassical economics approaches share three common views (Landreth



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& Colander, 2001; Screpanti & Zamagni, 2005; Zamagni, 1993): one is methodological individualism (Udehn, 2002), according to which the basic unit of analysis is the *independent* individual; another one is the theory of utility-value, according to which the source of value is a good's utility (and scarcity) and capital is a productive factor perfectly and fully substitutable with labour; and the third is individuals' selfishness, according to which individuals pursue their own goals and interests, regardless of others' needs, goals and desires[13]. Within this majority group, which includes also Austrian economics and game theories, the mainstream is represented by neo-Walrasian approaches to general economic equilibrium (Bridel, 2012; Hahn & Petri, 2002; Ingrao & Israel, 1990; Kirman, 1976). This theoretical framework is so diffused that likely in almost all departments or business schools or masters in economics, that one is the main point of reference for teaching. So much, that it might be labelled "standard" economics, which can be found in all basic courses of microeconomics everywhere, at least in its version of partial equilibrium analysis.

Standard economics, especially in its version of *general competitive equilibrium*, adds to the three shared views of neoclassical "family" approaches some further fundamental requisites (Hahn & Petri, 2002; Ingrao & Israel, 1990; Kirman, 1976; Loasby, 1991; Screpanti & Zamagni, 2005; Zamagni, 1993): i) economic agents are not simply *independent* individuals pursuing their interests, but also so *cognitively strong* to be able to find optimizing solutions; ii) information must be completely (or almost completely) free and available[14]; iii) given the two previous conditions and a set of strong constraints[15], there should be a set of prices of all goods and services that optimize resource allocation and individual utility preferences; iv) such a set of prices should be a fixed point with the characteristics of stability (and hopefully, also of unicity) calculated respect to the system of differential equations describing the economic system. In short, economic theory is a price theory that defines the set of prices that keep the economic system in a stable (and hopefully unique) equilibrium state, such that all resources are efficiently (optimally) allocated and individuals' preferences efficiently (optimally) satisfied.

In a static approach, the entire economy can be assimilated to an immense auction where – with or without the support of an auctioneer, depending on the specific theoretical approach – with a series of declarations an adjustment – bargaining, in some theoretical approaches - process leads to an equilibrium point. There, price calibration – possibly negotiation in some theoretical approaches - stops and exchanges take place. However, for preferences and technologies do change – and as well states of nature changes, due to the discovery of new mines, to accidental events, etc. – the auction should be "convened" again, and restarted. As a consequence, *market exchanges are spot events that, moving from a given equilibrium point, occur any time that a change of the set of preferences, resources and technologies happens*. In fact, in a dynamic perspective, in order to find optimal solutions, economic agents continually change their counterparts, be them suppliers or buyers. Indeed, due to its substantial mathematical difficulty and to its endangering effects on the accomplishment of standard economics goals, dynamic approaches have been quite unexplored, and left more visited by other neoclassical approaches, like Austrian economics, or by sectoral and "softened" applications[16].

As can be seen, respect to the basic neoclassical "family", standard economics requires four more essential constraints, and it focuses on demonstrating the existence, uniqueness and stability of a general economic equilibrium. These demonstrations are so fundamental because, if they lacked, it could not be argued that self-interest, competition, and market mechanisms guarantee the perfect (efficient) allocation of resources and satisfaction of preferences. In short, it could not be argued any more that capitalism is an efficient governance mechanism, especially if left on its own dynamics. The effectiveness and efficiency of the "invisible hand" would vanish.



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There is a plethora of strong criticisms to the whole family of neoclassical approaches, and in particular to standard economics. Leaving aside those more related to technical aspects concerning the mathematical requisites and problems affecting the uniqueness and the stability of a fixed point, most criticisms focus on the absolute unrealism of its empirical requisites. Just to mention a few, let remind that information is not free, and often neither available, especially concerning future states of nature. On the other hand, the fulfilment of general economic equilibrium requires to know supply and demand (and production technology) of all goods under each state of nature. For instance, recalling a Hahn's famous example, in order to calculate umbrella prices today, one would need to know the demand and supply of any kind of umbrella in all future rainy days in Cambridge. Even if one would be less ambitious, who could "estimate" the demand of oil and gas in 2050? Further, due to their cognitive bias (Gigerenzer, 2008; Gigerenzer & Selten, 2001; Kahneman *et al.*, 1982), individuals are not able to correctly estimate neither well known information nor facts. Moreover, most problems cannot be optimized because they have a multicriteria nature (Biggiero & Laise, 2003)[17]. Still, capital and labour cannot be substitutes one another in all circumstances, and cannot move freely over territories.

Because of these and other reasons, mainstream economics has been challenged by many sides: neo-keynesian economics as concerning macro-economics, ecological economics as concerning environment and natural resources issues, behavioural and cognitive economics as concerning decision-making and information processing, MOS as concerning firms strategy and organization, neo-Schumpeterian and evolutionary economics as concerning growth and innovation, etc. Another set of criticism, which concerns not only standard economics but also many streams of applied economics, comes from experimental economics (Kagel & Roth, 1995; Plott & Smith, 2008), either with real or virtual labs experiments. Nevertheless, as it can be expected during decline phases of normal sciences, the "protective belt" (Lakatos, 1978) around its core concepts enlarges considerably and progressively appeal to a disproportionate use of unrealistic and ad-hoc hypotheses. As a result, notwithstanding the innumerable and conclusive criticisms, standard economics continues to dominate teaching courses, and – to a far less extent – to influence applied researches.

Let's focus on the aspects that involve directly the network view, because some of the issues just mentioned could be combined with the network view, and indeed it is what is happening in most network economics. A view of the economy as composed by networks contrasts frontally with many of the fundamental requisites of neoclassical – and even more with standard – economics. The most important points of incompatibility are the following three. If economic agents are interconnected into a multiplicity of relationships, among which also social and psychological ones, then it is hard to argue that they are independent and that they limit connections only to price declarations. Moreover, spot exchanges contrast with the (relatively stable) relationships that characterize real markets, and especially inter-firm relationships in industries and territories (see below the section on MOS network analysis). Not to say that, by definition, (radical) methodological individualism is incompatible with (radical) structuralism, which was SNA methodological and epistemological ground[18]. Thirdly, social and economic networks are characterized by many reciprocal connections and cyclical patterns, and thus, in a dynamic perspective, they should be seen as recursive nonlinear networks. This means that, not only there are network externalities, but also that network dynamics follows nonlinear ways, and both these characteristics vanish any attempt to find single, and especially, stable fixed points, as pursued by the standard economics research programme.



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A strong support of this argument concerning the standard economics "epistemological reluctance" to tackle with networks lies in its late and difficult development of a theory of the firm, and even later and more difficult development of a theory of organization. As well known, in general competitive equilibrium models there is no space for firms and organizations: only single consumers or producers confront to find equilibrium prices into a "fictitious universal and pervasive auction". Marshall and the Anglo-American research tradition were more aware that a theory of the firm could not be lacking, but a convincing micro-foundation of industrial economics and a sound orthodox rationale for building a theory of firm had to wait for the late fifties. Given the self-evident existence of firms – which from the beginning of the 20th century were rapidly assuming the form, size and *structure* of giant companies - this "theoretical hole" was lying as an embarrassing missing point in the whole edifice of standard economics. In his 1937 seminal paper on "The nature of firm" Coase was just trying to find a way to fill in that gap by linking the existence of firms to the presence and effects of transaction costs. An argument that remained relatively unfollowed until Williamson (1975, 1981, 1985, 1994, 1996) put it (at the beginning of the seventies) at the ground of transaction cost economics and organizational economics.

Other approaches to an economic theory of the firm and economic theory of organization, with few anticipations during the sixties (like that of Alchian, 1965), consolidated in the seventies with the theory of teams (Alchian & Demsetz, 1972; Marschak & Radner, 1972) and the theory of property rights (Furubotn & Svetozar, 1972; Hart & Moore, 1990), which have been developed into various forms of agency cost theory (Fama, 1980; Holmstrom & Milgrom, 1991; Jensen & Meckling, 1976) and mechanisms of design theory (Hurwicz, 1973; Hurwicz & Reiter, 2006)[19]. All these approaches are somehow orthodox with neoclassical economics, because they try to remain as closest as possible to its principles and possibly also to standard economics. In fact, such an orthodoxy was still keeping the economic theory of the firm and the economic theory of organization so far from real empirical problems and so late respect to other theoretical perspectives, that still in 1992 a prestigious scholar like Radner put the goal of persuading economists of the importance of analysing management and organization structures as a priority[20]. Conversely, approaches linked to innovation and evolution on one side, and to bounded rationality and behavioralism on the other side followed a more heterodox perspective respect to standard economics, converging currently into the galaxy of evolutionary and cognitive economics (Antonelli, 2011, 2014; Dopfer, 2005; Dosi *et al.*, 2000; Foster & Metcalf, 2001; Nooteboom, 2010; Saviotti, 1996, 2003; Teece, 2012)[21].

What mostly matters here within the extremely rich and complex history of the economic theories of firm and organization is that all of them have been forced to face with the fact that organizations – regardless whether profit or not-for-profit – are (more or less stable) structures connecting workers and managers with objects (machines, materials, ideas, information). Therefore, they are socio-technical and cognitive networks[22] (Carley, 1999; Monge & Contractor, 2003). This structural, deep and evident nature is incompatible with standard economics, as argued above, because it is unavoidably structuralist, and hence its theorization was always uneasy within standard economics. This is further confirmed by the efforts made by organizational economics, especially in its more orthodox versions, to dissolve the network nature of organizations into the same theoretical framework used for standard economics. Organizations and firms become a sort of special auctions where labour contracts are negotiated, and the typical network properties, which require a minimum of stability to produce its effects, are annihilated by supposing fast and spot contracts or by simply neglecting network properties. Needless to say, many of the (above listed) usual unrealistic hypotheses are required and adopted by these theories.



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The late development of an economic theory of firms and organizations shortly preceded the explosive development of network economics (which is discussed here below). That delay does not depend, of course, *only* on the incompatibility of networks with standard economics, but that latent theoretical conflict plausibly contributed to it.

*Last but not least*. Last comers into the field of social sciences to massively adopt network analysis, once the chains of general competitive equilibrium have been broken, economists have enthusiastically engaged with this methodology. In a short survey of network economics Shy (2011) lists the following topics: consumer demand under network effects, compatibility decisions and standardization, technology advances in network industries, two-sided markets, information networks and intellectual property, and social influence. Various forms of network externalities are put at the core of network economics (Economides, 1996; Nagurney, 2009; Nagurney & Dong, 2002; Saberi, 2010; Schuett, 2010). In an even narrower definition Bobzin (2006) delimits network economics to virtual and real transportation networks, including information as things that can be transported. In recent times, Goyal (2007) and Jackson (2010) delimit the field of network economics in a much broader way. After considering all these contributions, network economics can be divided into three main research streams: network formation, economic networks, and economic networks optimization. All the three are producing a growing number of contributions, and here below some of the main will be sketched.

*A first branch is network formation modelling*, which aims at building models that show how some simple rules lead an actor's decision to link to other actors to maximize his utility function. According to Jackson (2003), for most models define actor's behaviour in terms of strategic behaviour, we can call this branch of network economics as Strategic Network Formation Models (SNFM). Indeed, this emphasis on network formation is all but new, because into MAPH many models of network formation have been proposed and extensively applied, from the random graph models (Bollobas, 1985; Dorogovtsev & Mendes, 2003) to preferential attachment (Albert & Barabasi, 2002; Barabasi, 2002), or network rewiring (Watts, 1999; Watts & Strogatz, 1998), to mention just the most renowned[23].

In general, in SNFM linking provides costs and payoffs, which usually vary with (topological or geographical distance). At node's level networking goes on until an agent is in balance between costs and payoffs, and at network level the process stops when all nodes are balanced and equilibrium is reached. Underlying the lack of strategic models within SNA literature, Jackson (2003) remarks the "birth of a literature that uses game theoretic reasoning to develop such models of self-organizing network relationships"[24]. Respect to non-network games, here the whole network value and allocation rules and efficiency will depend not only on agents number and (when considered) differences, but substantially also on network structure. Equilibrium is defined in terms of Nash equilibrium, and then systematic problems in these models concern the frequent case of the existence of multiple equilibria instead of a single equilibrium point, of its stability, and (even more) of its efficiency. In fact, only under very strict hypotheses on agents' attributes and behaviour it becomes possible to accomplish the three objectives all together: just one stable and efficient equilibrium. Besides the usual categorization in cooperative and noncooperative games, another important distinction is made between pairwise and non-pairwise games. The former means that incumbent links can be deleted only one-by-one, and that to be established the consent of both players is needed, and any deviations can occur pair-by-pair. These were the early models to be created (Aumann & Myerson, 1988; Myerson, 1991), but it resulted difficult to converge to stable states. Hence, in further developments these constraints were relaxed, and the formation of coalitions allowed. Notice that in these models value allocation is separated and postponed to when net-



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work stabilizes and the whole value is determined. Therefore, some models (Currarini & Morelli, 2000) allow to jointly determine link formation and value allocation between two players through a bargaining process conditioning their value shares to the possibility to establish a link.

Other models (Jackson & Watts, 2002a) introduce some sort of dynamic link formation, where - starting from a random link distribution - players add or delete links depending on a contingent evaluation whether their new "ego-network" increases or reduces their payoff. The process goes on until no player finds convenient to add or delete a link. Clearly, the possibility to reach a stable state strongly depends on players' rationality (Page & Kamat, 2003): if they are provided by perfect rationality and under many other (mostly inexplicit) hypotheses, then it becomes not too difficult to build a game converging to a stable state.

Examples of applications range widely: friendship networks explored through the (pairwise) connections model (Jackson & Wolinsky, 1996), where links benefits typically deteriorate with distance, but costs hold only for maintaining direct relationships. Another model interprets network topology as geography, so to build a spatial connections model (Johnson & Gilles, 2000). By considering agents as countries, Furusawa & Konishi (2007) build a model on the formation of free-trade agreements network, where a link establishment gives the benefit of eliminating trade barriers. Two other fields investigated by network economics - that it is not possible to discuss in this paper, but that it is important to mention - are those of social learning and public goods. Bala & Goyal (1998, 2001; Goyal, 2003, 2007) proposed a model of social learning networks, with various extensions. Bramoullé & Kranton (2007) developed a first network model on public goods that are non-excludable along social or geographic links. Besides these, there are models on labour networks, buyer-seller networks, co-authorship, etc.

An interesting and recent contribution is that of Gallo (2012) on small-world networks with segregation patterns and brokers, who innovates and enriches previous SNFM (Jackson & Rogers, 2005, 2007). It represents a substantial advancement of network economics towards two directions: one is that of behavioural economics, because – drawing from a previous model (Galeotti *et al.*, 2006)[25] - in a SNFM it introduces agents heterogeneity under the form of a distinction between those with unlimited and those with bounded rationality. In fact, the majority of network economics models implicitly assume that agents have a complete knowledge of the network in which they are embedded. The other advancement is towards SNA and MOS by considering the problems of segregation (Girvan & Newman, 2002) and structural holes (Burt, 1992). Agents' utility to build connections decays with distance, in accordance with Bloch & Jackson (2007), but being conditioned by their cognitive capacity, agents' choices and benefits do not necessarily correspond to the real topology. Further, Gallo introduces the concept of cognitively stable networks, which are an adaptation of the concept of pairwise Nash stability (Calvò-Armengol & Ilkiliç, 2010), because equilibrium does not depend on the real network structure, but rather on that that is perceived by agents according to their cognitive "mapping" of the network. This way "for a broad range of the parameters, all the cognitively stable networks belong to a family of network architectures that are structurally richer and more realistic than equilibrium/stable networks previously characterized in the strategic network formation literature" (Gallo, 2012: 3). Finally, Gallo demonstrates that all the cognitively stable networks have a small-world and scale-free topology, and segregation patterns with brokers connecting the segregated communities[26].

The same logic of SNFM is followed by the mechanisms design approach (Hurwicz & Reiter, 2006), which deals not only with industrial problems, but it enlarges the spectrum to any problem of collective decisions. Analogously to game theory approaches, problems are reformulated into this perspective by bringing it at the abstraction level required to be formalized within a typical neoclassical framework,



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and hence to accomplish its usual objectives of finding an equilibrium, which (possibly) should be also efficient and stable[27]. The low degree of correspondence with real-world characteristics is, as usual, the price to pay for that accomplishment[28].

*Another branch of network economics identifies this field as economic approaches to economic networks,* usually applied to industries or phenomena whose products or services are characterized by one or more of the following aspects (Shy, 2001): complementarity, compatibility and standards, consumption or production externalities, switching costs and lock-ins. In particular, network effects[29] and externalities are usually stressed as key factors[30], especially in Internet, computer software and telecommunications sectors, but also in audio-video, airlines, and banking sectors. These markets and industries can be hardly treated by standard microeconomics and industrial economics, because they cannot function as competitive markets, characterized by a high number of price-taking agents. In this sense, this branch of network economics is consistent with the other two, because it also does not allow fitting general (or even partial) competitive equilibrium. Indeed, a specific, dedicated and systematic development of a form of network economics[31] can be dated back to the eighties and the full acknowledgment of network effects (Katz & Shapiro, 1985; Liebowitz & Margolis, 1994), and the network neutrality issue (Economides & Hermalin, 2012; Schuett, 2010).

However, in a certain sense, notwithstanding its self-definition as network economics, this collocation is misplaced, because it implies a confusion of interdependence with correlation. In fact, that effect means that a single node's benefit is correlated with that of one or more other nodes, and it is measured by correlations. However, two events can be correlated even without any kind of direct or indirect interdependence (or even simple dependence). At best, correlation indicates that there are some common factors that push two events to move into the same (or the opposite) direction with significant intensity. A high correlation coefficient holding between A and B absolutely does not mean that one can directly or indirectly influence the other. On the other hand, two (inter)connected nodes (or events) are correlated because the influence of a node (or any other entity) on another one is logically and mathematically expressed through a function, and its form determines the way in which (the rule with which) the two variables are (cor)related. Therefore, excepted for very complex phenomena[32], interconnectedness implies correlation, while correlation does not necessary implies interconnectedness. In fact, a collection elements is not necessary a network, even though such elements could be correlated.

This mistake occurs not only when network economics deals with network industries, but often also when it deals with the problem of coalitions, which are depicted as networks even when members are nor directly neither indirectly connected, that is when they do not constitute a network but just a group. Likely, this confusion is fed by game theory, which applies more or less the same logic and concepts to networks and groups. Shy (2011) warns that in most parts of his survey of network economics, "the term "network" will refer to a group of users (consumers or firms) who use products and services that are based on similar technologies". Quite strangely, this definition of network violates that that can be found in any textbook of graph theory or network analysis, because it lacks the fundament of networks: the (albeit potential) connections among nodes. Connections should not necessarily be incumbent, but at least its potential occurrence should be justified according to some theory or empirics. Hence, it seems that a significant part of network economics is based on a misinterpretation of what networks are.

Besides directly claiming input-output matrixes at macroeconomic level, in his recent emphasis on the relevance of networks also on industrial production, Carvalho (2014) shapes industry structures in terms of some prototypical network forms, and he shows very clearly that there are "network effects" else than externalities and the others listed by Shy. These effects refer to the typical nonlinear impact that



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could be called also "nested interconnection", which occurs when a sector enters into the production of others and these in turn into others, and so on. In these cases, a shock occurring in the upstream sector amplifies its (positive or negative) effects as a cascade. Further, the characteristics of such amplifications strongly depend on the topology on the interconnected industries. We could add that this is, indeed, the well-known research area of network propagation processes, investigated in reference to many kinds of what is propagated – viruses, innovations, information, financial shock, etc. – with its own specificity. The fact that these issues – production processes, like filière or value chains, seen as networks, and the instability generated by possible shocks, as well as the dependence of instability on network structure – are considered as novelties to be published into a leading journal marks the delay with which economics is dealing with network analysis, even after 15 years of explosive research developments[33].

Still belonging to this (mostly descriptive) approach to network economics is the research stream applying network analysis to international trade networks, which from episodic contributions published in marginal journals or in non-economics journals – mostly SOC and MAPH – and often done by sociologists or physicists, is now landing to top economic journals (Chaney, 2014; Furusawa & Konishi, 2007). This way, the very long research tradition on international trade patterns has been enriched by a streamline which, starting about 25 years ago, applied network analysis to this field (Kali & Reyes, 2007; Kali *et al.*, 2007; Kick & Byron, 2001; Kim & Shin, 2002; Snyder & Kick, 1979, Maoz, 2011, among the many). Further, during the second half of the past decade, a number of paper investigated the world trade web from the MAPH network analysis and econophysics perspective[34] (Barigozzi *et al.*, 2010a, 2010b; Bhattacharia *et al.*, 2008a, 2008b; Chakrabarti *et al.*, 2006; Fagiolo *et al.*, 2009; Garlaschelli and Loffredo, 2004; Ruzzenenti *et al.*, 2010; Serrano & Boguñà, 2003; Serrano *et al.*, 2007; among the many).

*The third branch of network economics is an area of operating research applied to economic networks*, not differently as some parts of neoclassical economics did and (still do), and at which prestigious economists like Arrow, Koopmans, and many others actively participated. Here the purpose of network economics is to optimize economic networks: traditionally, transportation and communication networks (Bobzin, 2006; Nagurney, 1999, 2000), supplier-buyer networks (Nagurney, 2006), and more recently financial networks (Kalyagin *et al.*, 2014; Nagurney, 2003; Nagurney & Siokos, 1997). This branch of network economics is only a little bit connected with the previous one – descriptive economic networks of network industries – and much less connected with SNFM. Moreover, it is totally extraneous to the other areas of SNA.

Economists' scientific interest for network analysis grew fast opening different research streams, enlarging the scope and weakening the rigidity – mostly due to the "neoclassical chains" – of network economics. A well picture of this process of transformation that network analysis is inducing on economics can be seen by confronting the recent presentations of network economics made by Jackson (2014b) and Carvalho (2014) with Zuckerman's (2003) review of a readings edited by Rauch & Casella (2001). This latter discusses if and how the traditional view of markets as constituted by independent firms and customers could be challenged by a view of markets as networks. Besides important methodological warnings on network identification and analysis – and other specific points that here it is not possible to discuss - what apparently emerges is the reviewer's caution and reluctance to accept the rather self-evident fact that many (most?) industries – and also many exchange markets, according to White (2002) - are networks. A fact that 10 years later Jackson (2014) and Carvalho (2014) do not hesitate to argue. Though in both these papers SNA and MOS references are rather residual, it seems that the usage and familiarization with network analysis is producing a sort of "side effect" on mainstream economics weakening its rigidity on traditional traits: a focus on equilibrium and stability at the price of adopt-



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ing unrealistic hypotheses, which condemn it to irrelevance in representing and interpreting real-world (Helbing & Kirman, 2013; Screpanti & Zamagni, 2005). Perhaps, *it was just this "mutation danger" that pushed Arrow to devalue network analysis for economics*.

There are other examples of economists' investigations – via network economics - into typical SOC or MOS topics: Ballester *et al.* (2006), Currarini *et al.* (2009), Goyal (2003, 2007), Goyal & Vega-Redondo (2005, 2007), among others. It is not possible to discuss all of them, but just a couple more, which are particularly significant because they are placed into two leading economic journals, traditionally representing neoclassical orthodoxy, and more particularly into its mainstream expression of general competitive equilibrium[35]. Ballester and colleagues explicitly establish a bridge with SNA by studying if Bonacich network centrality index (Bonacich, 1987; Hannemann & Riddle, 2005; Wasserman & Faust, 1994) can be an interesting indicator for players of a large set of network games. They demonstrate that, in conditions of Nash equilibrium, that index is proportional to each single player's advantage. Further, they introduce an "intercentrality" measure, which is able to individuate "the key-players, whose removal results in the maximal decrease in overall activity"[36]. Goyal & Vega-Redondo (2007) deals with the issue of structural holes in exchange networks, one of the main topics in SOC and MOS literature. Again, the main scientific added value respect to that literature is to explicitly and formally considering values coming to an actor by forming links "to create surplus, to gain intermediation rents, and to circumvent others who are trying to become intermediary". On the other side, the main scientific added value respect to network economics literature is introducing into a network formation model the advantages of filling in structural holes. Goyal & Vega-Redondo find some prototypical topologies emerging in equilibrium depending on some key parameters - links capacity to carry values, and players' heterogeneity in terms of payoffs.

The excellent and promising reformulation of microeconomics as an interaction-based microeconomics recently made by Elsner (2012), and the abovementioned contributions indicate that the "contagion" with network analysis – and especially with SNA – is producing remarkable mutations of the dominant economic paradigm. Even if a direct confrontation and hybridization between SNA and ECON does not always happen[37], it seems that in more recent works such a confrontation and mutual acknowledgment is growing, and so it could be that future developments will be more open to external contaminations. This speculation seems to be confirmed by looking at the more open and less rigid contributions coming from last years, like that of Gallo (2012) above discussed, and that of van der Leij & Goyal (2011), who examine the "celebrated "strength of weak ties" theory of Granovetter". In doing so they fruitfully and deeply entered into a typical SOC issue approaching it from a perspective and a style reasoning of network economics. Hopefully, along the road of network analysis the distances between SOC, MOS and ECON theoretical frameworks can reduce, and hence favour a cross-fertilization among them.

## NETWORK ANALYSIS IN MANAGEMENT AND ORGANIZATION SCIENCES

Knoke (2012) is currently the only book that reviews economic networks taking both SOC and MOS perspectives, at the same time giving some (few) hints to network economics. Therefore, that book is now a good reference point to visit MOS network analysis, and its connections with SOC, ranging over all levels of aggregation: from interpersonal to group and organizational level, and then proceeding from the inter-organizational – business groups and industrial clusters – to the international level – global value chains, international trade, and international corporate or political organizations. Knoke's book is among the few to discuss Burt's (1980, 1988) and White's (1981, 1993, 2002) studies on economic



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networks placing them into an organic theoretical framework. Indeed, excepted perhaps the field of interlocking directorates, there is no comparative and *integrative* analysis that combine SOC – which in this case could be ascribed also to MOS – with specialized network economics literature. The tradition of industry studies seems quite untouched by that related to SOC network analysis.

Some other works review the articulation and evolution of network analysis applications in MOS: Borgatti & Foster (2003), Brass *et al.* (2004), Carpenter *et al.* (2012), Kilduff & Brass (2010). In this section two of them are synthesized, then shifting the focus on one of the typical field reviewed in these general frameworks: the inter-organizational level of analysis, which has been also outlined by two recent works (Provan *et al.*, 2007; Zaheer *et al.*, 2010). Then, inter-organizational knowledge networks (Phelps *et al.*, 2012) will be zoomed, because this topic – and more in general that of *knowledge networks* in SNA - is becoming particularly relevant in MOS, and covering a large space within that of inter-organizational networks. This choice is led also by the idea that offering a set of topics overlapping with industrial economics enhances a comparison between the ways in which network analysis has been developed into economics and MOS[38]. In fact, the same concept of inter-organizational (and especially, inter-firm) network clearly implies the view that – at least many of industrial – markets are networks. Hence, the delay, caution and suspicion with which economics is (or at least, was) looking at this view will seem here rather unjustified and anachronistic, given the many and solid arguments and empirical analysis provided by MOS.

Borgatti & Foster (2003) underline the exponential grow during 1970-2000 of publications containing "social network" in the abstract and title, and they review the field of the network paradigm in organizational research by evidencing six fields, and four research dimensions. The first field is that of social capital (Lin, 2001), which drew its initial inspiration from Putnam's studies on the civics tradition in Italian provinces (1993). This issue refers to the density and pattern of connections around a focal node, if related to ego-networks, or in a whole network, depending on the level of analysis. The advantages of density have been emphasized by Coleman (1988, 1990) who, much in line with Putnam, underlines that density enhances mutual understanding and coordination. Conversely, Burt (1992) argues that social capital lies into the number of structural holes covered by a given position, that is, into an actor's potential (topological) power to broker other actors, which are eventually connected with him (ego) but not among them (alters). The dispute went on 25 years, and it is recently coming to a final (and combined) view (Burt, 2001, 2005), according to which both meanings matter, but its relative salience depends on the time in network evolution (Soda *et al.*, 2004), and on other variables like the type of network, the type of relationships, and the level of analysis – ego, dyad, sub-network, and whole network. The use of social capital as an explanatory variable to understand various types of advantages and performances is still a very interesting issue in many research fields, like innovation capacity, reputation, etc. The other issue reviewed by Borgatti & Foster (2003) is that of embeddedness, which seems now rather "dated", given that Granovetter (1985) raised the point addressing standard economists, who were quite reluctant to admit that economic relations are embedded into a dense texture of various types of social relationships, and that they influence one another. As seen already in the previous section, excepted undefeated supporters of the autonomy of economic sphere, even neoclassical economists acknowledge the embeddedness of economic relations within a net of social relations, and its mutual influence.

The third issue reviewed was that of "network organizations and organizational networks". The concept of network organizations is also rather dated, because it made sense when in organization theory and business strategy – and especially in organizational economics - it was traced a line of separation between hierarchies and (just) network organizations. The (wrong) idea was that hierarchies are not net-



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works, and thus, it was the case to separate the two. However, since long it is clear that hierarchies are networks, namely out-trees[39], and thus, the interesting question is not to argue a false dichotomy between hierarchies and network organizations, but rather it concerns how to express in formal network structures the main types of organizational forms (simple/artisan, functional, matrix, multi-divisional, etc.). In this view the idea of network organization refers more precisely and interestingly to those organizations whose boundaries are unstable, either because they are frequently (re)designed due to changing environmental features, or because some functions are managed in strict collaboration with other organizations, like in the cases of co-design, co-marketing, etc.

As "organizational networks" Borgatti & Foster addressed to what are properly defined inter-organizational networks, which indeed comprises various other topics: interlocking directorates, joint ventures, strategic alliances, and various other forms of collaboration and (voluntary or involuntary, formal or informal) exchanges, and among which knowledge exchanges and innovation diffusion are particularly interesting. It's impossible here to review a literature that has grown rapidly from the beginning of nineties up to now. Here, just the basic idea is outlined, with a brief comment on some paper[40]. In extreme synthesis, the basic idea is that the famous dilemma "make-or-buy" is indeed a trilemma "make-or-buy-or-ally" (Geyskens *et al.*, 2006**;** Mudambi & Tallman, 2010). In fact, there are many circumstances under which either producing on its own or purchasing from the "market" is rather inconvenient or too risky. According to transaction cost economics (Theurl, 2005; Williamson, 1975, 1981, 1985, 1994, 1996), these are the cases that were initially defined as relational or contractual governance mechanisms, characterized by high frequency and middle specificity of exchanges. Now, a transactional situation like this can occur not only for a pair of organizations, but also for triples or for many pairs, and if some of these small structures are connected, then they form an inter-organizational network[41]. Further, if an entire industry is characterized by these traits, then relational governance becomes the predominant mechanism, and thus, most (or many) organizations will issue some of the many possible forms of agreement. It becomes a network industry, in a much broader sense than the restrictive sense given by network economics to that label, which limits it only to industries or markets where some form of network effect or externality holds. What happened is that, after an initial metaphorical or analogic use of the network concept, after the end of the last century, theoretical and empirical researchers started to use the network concept in a formal and operating way, and therefore to apply SNA to the field of inter-organizational networks.

Another topic mentioned by Borgatti & Foster is knowledge management, which they refer to those of social cognition (Carley, 1989, 1999; Carley & Krackhardt, 1996) and transactive memory systems theory (Hollingshead, 1998, 2000), which both involves social influence theories (Friedkin, 1998, 2003), and interaction patterns[42]. Finally, their list closes with the topic of group structures (Friedkin & Johnsen, 2011), which of course crosses also the three previous ones, because groups are also cognitive networks that create, manage and transfer knowledge, whose efficiency and effectiveness depends on "who knows what" and "who knows who knows what": the basic questions of transactive memory systems theory.

As concerning the research dimensions, besides the already mentioned question of the levels of analysis, Borgatti & Foster focus on the question of the direction of causality, "whether the studies are about the causes of network structures or the consequences". They evidence that the majority of research is about the latter, but that – especially into the field of proximity and homophily (McPherson *et al.*, 2001) – the studies on network antecedents and network formation were at the beginning. Indeed, as we have seen in the previous section (and will treat deeper into the next one) SNFM came only during last 15 years in both ECON and MOS.



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Almost 12 years after, another review (Carpenter *et al.*, 2012) synthesizes the state of network analysis in MOS. Two of the research dimensions discussed by Borgatti & Foster – direction of causality and level of analysis - are used even in this paper to cross-classify all studies into a 2x2 table. Further, since social capital has been most frequently considered as an antecedent of network structure, they call this (half) dimension "social capital research", juxtaposed to "network development research", which would concern network consequences. On the other dimension, network levels have been compressed to two: interpersonal and inter-organizational ones. Forced by an expositive choice, here only the latter will be briefly discussed, and as well shortly addressed to one of its main research fields: inter-organizational knowledge networks.

Carpenter and colleagues enumerate many findings obtained by network research in the field of inter-organizational networks, concerning either network determinants and network structures or its effects and endogenous forces. Some years before, Provan *et al.* (2007) dedicated their paper on reviewing only inter-organizational networks literature, focusing on whole network analysis. By applying rather restrictive criteria of selection, they identified 26 publications, an outcome that motivated their evaluation of this as a relatively underdeveloped research area, respect to other fields of MOS network analysis. Later on, Zaheer and colleagues (2010) provided a further review suggesting a categorization of key findings and research issues articulated in two dimensions, one of which is again that of levels of analysis, while the other is articulated into the following four aspects: resource access, trust, power/control, and signalling. They call these aspects "theoretical mechanisms", because each of them refers to one or more theories, mostly created and developed within SOC and MOS. Strangely enough, among the list of the main aspects there is not economic convenience, and (consistently) among theories there is not transaction cost economics. Of special interest are some contributions that, though not applying algorithms and methods specifically designed for network dynamics analysis, adopt a clear dynamic perspective, either in empirical testing through longitudinal data or in theoretical modelling: Cowan & Jonard (2009), Gulati *et al.* (2012), Rivera *et al.* (2010), Schilling & Phelps (2007), Soda *et al.* (2004), Uzzi & Spiro (2005), and Zaheer & Soda (2009)[43].

This absence of an explicit and direct economic dimension – meaning that links have an economic value and purpose – characterizes, with few exceptions, most MOS literature at any of the three classical levels of analysis. This is a good reason for enhancing a substantial knowledge exchange between ECON and MOS, a cross-fertilization that does not imply sharing all of the "other side", but that could produce a great benefit on both sides. Moreover, as concerning inter-organizational networks it should be noted that most part of the specific and abundant literature – and basically all that was produced until the end of last century – use the network concept in a metaphorical or intuitive sense, but does not apply network analysis tools. With few exceptions (Nohria & Eccles, 1992), this holds also for studies explicitly dealing with inter-organizational network formation (Ebers, 1997) or structure (Grandori, 1999). Still recently, good reviews of this research field, like that of Parmigiani & Rivera-Santos (2011), consider network analysis applications in a non-crucial position.

Industrial cluster theory and research (Karlsson, 2008; Karlsson *et al.*, 2005) is starting to give a valid contribution to that type of inter-organizational networks that are geographically defined and (usually) also industrially specialized in one or few sectors. However, here too happened that until few years ago most literature was treating an industrial cluster network structure more as a metaphor or an intuitive concept, sometimes approximately visualized, than a formal methodology with its specific measures. Only recently[44], this formal approach has been taken systematically: Giuliani (2006), Arikan (2009), Staber (2001). Most industrial clusters[45] are *multi-level multiplex large socio-economic networks*, which



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means that they are micro-societies, because between heterogeneous organizations – artisans, small, medium and often also large firms, higher education institutions, local governmental institutions – there are various kinds of social, trade, informative, and personal relationships. Nodes are individuals, groups, firms, trade unions, trade associations, etc., and hence, there are multiple levels. Likely, it is due to this extremely high complexity that many research issues, like the supposed correlations, at the meso-level of firms, between single nodes positions and performance, or at the whole level researched correlations between some network properties – say, its small-worldliness - and some kind of industrial cluster performance, remain unanswered even after decades of inconclusive studies.

Notwithstanding this evident nature of industrial clusters as multilevel multiplex, Giuliani (2007) is one of the few studies that, with formal network analysis[46] and not just in a descriptive and intuitive way, approached them trying to grasp at least part of this complexity. She analyses the structural properties of knowledge networks in three wine clusters in Italy and Chile, and she compares knowledge topologies with trade topologies in each of them.

Strictly related to that of inter-organizational networks and industrial clusters is the topic of innovation networks (Ahrweiler, 2010; Pyka & Küppers, 2002), because large part of studies have focused those that, in both cases, have high innovating capacity. As for previous issues, most literature uses the network reference more as a metaphor or descriptive/intuitive phenomenon, rather than as a precise ontology whose investigation requires specific formal methods. However, as for the other topics, things are moving towards this *double acknowledgment*: ontological/epistemological on one side, and methodological on the other side. A clear example of this process is represented by the journal *Industry & Innovation,* which dedicated to the analysis of innovation networks with network analysis methods a special issue in 2011, followed by another one in the same journal during the same year, but focused on organizing inter- and intra-firm networks to improve innovation performance.

This (inevitably selective and partial) excursus on MOS network analysis ends up with a look at the literature on inter-organizational knowledge networks. Phelps *et al.* (2012) recently survey the field by building an articulated conceptual structure: their "typology organizes knowledge network research based on three important dimensions: knowledge outcomes (knowledge creation, knowledge transfer and learning, and knowledge adoption), knowledge network properties (properties of network structure, relations, nodes, and knowledge flows), and level of analysis (interpersonal, intraorganizational, and interorganizational)" (2012: 1119). Phelps and colleagues review literature that connects knowledge outcomes, like indicators of innovation performance, to firms network position, or its ego network structure or the whole network structure. As concerning correlations between network position and innovativeness, results are inconclusive, either for direct or indirect centrality. There are, in fact, a lot of contingent and moderating variables, like the type of knowledge[47], geographical proximity and the kind of performance parameter, not to say the industrial sector and the methods of data collection.

Things do not go better as concerning the role of social capital, meant à la Burt or à la Coleman, that is the effects determined by, respectively, open (as structural holes) or closed (complete) ego network structures on knowledge creation and transfer: studies are as well inconclusive. Some more agreement there is as concerning the relationship between network properties at network level and knowledge outcome, but as Phelps and colleagues underline this agreement depends to some extent on the scarcity of specific studies. They review Schilling & Phelps (2007) and Uzzi & Spiro (2005) who find that the small-world structure is particularly effective to enhance innovativeness, but with the need of a non-excessive intra-cluster density, because otherwise the side effect of strong closure reduces firms creativity (Gargiulo &



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Benassi, 2000). This idea has been elaborated by Nooteboom *et al.* (2007) in terms of optimal cognitive distance for knowledge absorptive capacity. Broekel & Boshma (2012) argue a similar idea with their proximity paradox, showing that while cognitive, social, organizational and geographical proximity were crucial for explaining the knowledge network of the Dutch aviation industry, too much proximity in one of these dimensions harms firms innovative performance. Considering another well-known network property, Lin & Li (2010) show that, respect to random, small-world, and regular topologies, the scale-free provides an optimal pattern for knowledge transfer.

Phelps and colleagues remark that even as concerning the role of tie strength there are conflicting results between those who find support for a positive relationships between strong ties and knowledge performance, and those who find the opposite. Finally, as concerning nodal similarity/proximity, it seems that the best conditions occur when the organizations constituting a network have an intermediate degree of similarity, because if they are too similar, then there is no interesting exchange[48], and if they are too diverse, then it becomes too difficult to understand the usefulness of one others' knowledge. A result consistent with Nooteboom and colleagues (2007) and Broekel & Boshma (2012).

Interestingly, the issue of inter-organizational knowledge networks crosses that of industrial clusters, because inter-organizational networks constitute the "structural backbone" of industrial clusters, and much of the competitiveness capacity of high-tech industrial clusters is supposed to come from the effectiveness and efficiency of knowledge creation and diffusion within industrial clusters and between an industrial cluster and its external inter-organizational network. Here much of literature on innovation networks, industrial clusters and inter-organizational knowledge networks can be placed. Examples are the abovementioned work of Giuliani (2007) on the wine clusters and those of Alberti & Pizzurno (2015), Biggiero & Sammarra (2010), Broekel & Boshma (2012), and Sammarra & Biggiero (2008) on the aerospace cluster. Remarkably, this topic of inter-organizational knowledge network, especially if combined with geographical aspects, has been matter of recent applications of ERGM (Broekel *et al.*, 2014; Hazir & Autant-Bernard, 2014; Zhang *et al.*, 2014), which are the theme of the next section.

## THE MODELING REVOLUTION

Despite methodological and epistemological differences, SOC, MOS and ECON – and to a less extent, MAPH too – are progressively overlapping on some common areas of research interests, namely small-world (Baum *et al.*, 2003; Schilling & Phelps, 2007; Soda *et al.,* 2004; Uzzi & Spiro, 2005) and scale-free structures (Biggiero & Angelini, 2015; Breschi & Cusmano, 2004; Di Guilmi *et al.*, 2003; Ebel *et al.*, 2002; Gaffeo *et al.*, 2008; Jackson & Rogers, 2007; Konno, 2009; Roediger-Schluga & Barber, 2006; Tseng *et al.*, 2009), social capital (Coleman, 1988, 1990; Lin, 2001), structural holes (Burt, 1992, 2005; Gallo, 2012), positional advantages (Doreian *et al.*, 2005; McBride, 2008; Wasserman & Faust, 1994) and equivalence (Wasserman & Faust, 1994), core-periphery structures (Borgatti & Everett, 1999; Hojman & Szeidl, 2008; Wasserman & Faust, 1994), community structures (Girvan & Newman, 2002). A growing attention is being paid to understand not just the properties and the consequences of these phenomena, but also how they have been generated, in relation to endogenous dynamics. A never ending descriptive and analytic research work is being accompanied by "retrodictive" (network formation) and predictive modelling. If in SFNM and MAPH network formation and statistical modelling has been standard scientific work, things evolved differently in SOC and MOS.



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Until the nineties, SOC and MOS network analysis have been done, with few exceptions (Breiger *et al.*, 2003; Doreian & Stockman, 1997), mostly with descriptive approaches and sometimes with analytic or descriptive statistical approaches: antecedents or (more frequently) consequences of a given network (or a set of similar networks) are analyzed in relation with that network structure. By the end of nineties, mostly due to Snijders and his colleagues, dynamic statistical modeling to SNA and MOS start developing[49], initially limitedly to longitudinal methods (Snijders, 1996, 2001, 2005; Snijders & van Duijn, 1997). With early studies during the nineties (Wasserman & Pattison, 1996), who built on seminal works by Holland & Leinhardt (1981) and Frank & Strauss (1986), and a substantial milestone represented by p* modeling (Wasserman & Robins, 2005)[50], during last years a statistical modeling is being developed and consolidating mostly into ERGM (Lusher *et al.*, 2013; Harris, 2014).

ERGM represent a methodological revolution because, in reference to a given (observed) network, they allow to make a sort of "reverse engineering" to understand its most probable combinatory "parent". Though the statistical methods can be quite sophisticated, the basic idea is very simple and can be summarized in the following steps:

1. Analyze your observed network to formulate what you consider its distinctive and fundamental elementary properties, which can be either first-order, like density, average degree centrality, etc. or second-order parameters, like reciprocity, transitivity, assortativity, clusterization, small-worldliness, etc.: these are your descriptors, some of which will be your explanans and some others your explanandum;
2. Take a random graph of the same size and density of your observed network, and within the sample space of all possible combinations, create a number of random graphs. Then, check if your observed network falls in the mean value respect to each of your selected statistics or if, conversely, they have a low probability. In the former case, the statistics you have selected do not identify a distinctive trait of the observed network, because it would (as well probably) occur randomly. Conversely, those statistics are a good candidate for building – alone or jointly with some others – an ERGM for your observed network;
3. Build the ERGM by "imposing" to a random graph the statistics you have selected. In other words, within the sample space of all possible combinations, create a number of random graphs with the constraint of having the selected statistics. This produces a distribution of statistics generated by the model;
4. Proceed to find the "right" weight (estimate) of each statistic, that is its parameter value, in order to fit the model respect to the observed network. It means that you should choose the best combination of all parameters "so that observed statistics are not extreme, but are central, in the distribution of graph statistics from the resulting ERGM" (Robins & Lusher, 2013: 35).

Though ERGM was originally focused on link formation constrained by other links distribution – for example, reciprocity degree or micro-patterns like in-2-stars – current developments are working to widening modeling potentialities[51]. *From a methodological point of view*, they are radically different from standard statistical approaches, which assume independence of observations, because link formation is based on some mechanism of dependence between (types of) links and local patterns. Thus, standard statistical approaches – with its typical methods such as t-tests, ANOVA, regressions - cannot be employed[52]. *From an epistemological point of view*, ERGM acknowledge many aspects of complex social systems, like mutual dependence, structural heterogeneity and specificity.



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A criticism raised by Newman (2010) and Jackson (2010) to ERGM application potentialities concerns the serious limitations imposed by the computationally intractable combinatorial space implied by non-small networks. In fact, the number of configurations to be computed to find and test the fittest one scales as $2^{n(n-1)}$ for directed and $2^{n(n-1)/2}$ for undirected graphs. Obviously, for network size major than a very small one, it would become impossible to compute all configurations. More recently, Chandrasekhar & Jackson (2014) argue that ERGM and SNFM belong to the general class of Statistical Exponential Random Graph Models, as defined by them. Further, they show that "by reformulating network formation as a distribution over the space of sufficient statistics instead of the space of networks, the size of the space of estimation can be greatly reduced, making estimation practical and easy". This way they offer a solution to the criticism abovementioned.

A generalization of that solution implies to escape from an abstract implementation, and cope with real-world networks, because it is unlikely to face with networks about which we have no other factual or theoretical information on its main characteristics else than one or two simple rules concerning link attachment. One could have diachronic information regarding more or less probable states that the network has assumed in the past, and a number of information concerning nodes attributes and link distribution, which could substantially reduce the degree of freedom of single nodes position and network topology. For example, suppose to deal with an inter-firm network corresponding to an industry. This means that there is a technology and a certain degree of heterogeneity among nodes: some of them will be direct rivals, while others only weak competitors, and others strong complementary within a same segment (parts of the production cycle) or across segments (phases of the filière). The joint action of technology and heterogeneity determines a number of forbidden combinations: for instance, firms of the type A cannot connect with those of type B because this would result in a technological nonsense. Vice versa, others would be preferred (or even forced) connections: A firms could be forcedly linked only to a C or D firm.

The key-point is that the more type and number of forbidden or forced combinations, the more dramatic is the reduction of combinatorial space. In fact, as the combinatorial space scales exponentially in the growing direction, so it does also in the opposite direction. Let's recall Simon's example in discussing the architecture of complexity (1962). Of course, the more constraints and forbidden combinations, the more tractable is calculation, but also the less generalizable is the resulting model.

Toivonen *et al.* (2009) propose the following categorization of socio-economic network modeling, slightly different from that of Chandrasekhar & Jackson (2014): network evolution models, nodal attribute models, and ERGM. The former class substantially coincides with that of SNFM, and thus, with network economics modeling, where links and node are added iteratively according to certain rules. This class can be further divided into growing and dynamic models. Growing models fix a predetermined network size (or density) at which "evolution" must stop, while dynamic models stop when "selected statistics no longer vary". This is proper of most SNFM, which end up when some sort of Nash equilibrium is reached. According to the classification advanced by Toivonen and colleagues, nodal attribute models are based on distributing links depending of nodes attributes similarities, that is on its homophily under some respect. Spatial models (Boguna *et al.*, 2004; Wong *et al.*, 2006) would belong to this class, because in this case similarity would be defined in terms of a node's "location" in a social or geographical space. Finally, ERGM "are used to test to what extent nodal attributes (exogenous factors) and local structural dependencies (endogenous factors) explain the observed global structure" (2009: 241)[53].

During the last 10 years – and especially in the last 2-3 years – a plenty of ERGM applications have been done, mostly within SOC[54] (Ellwardt *et al.*, 2012; Yap & Harrigan, 2015; Zappa, 2011), but also in MOS (Lusher *et al.*, 2012; Pahor *et al.*, 2008; Wong *et al.*, 2015; Zhang *et al.*, 2014) and other fields



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(Broekel *et al.*, 2014; Hazir & Autant-Bernard, 2014; Henry *et al.*, 2010). Among the many, and in line with the focus of this chapter and the previous section, a couple of them dealing with inter-organizational networks will be reviewed. Lee *et al.* (2012) study an inter-organizational collaboration network related to a regional economic policy development within the Orlando Metropolitan Area in Florida in 2006-2007. The network is made of 40 government and non-governmental organizations, which could coordinate or act independently for local policy development. The main aim of the study is to understand the logic of building connections so that the observed network results as a probable outcome. The theoretical problem is that each organization has good reasons to reciprocally exchange information and coordinate, because this would improve its policy effectiveness, but at the same time this behavior would subject to a high defection risk, because information obtained through interactions could give policy intervention advantages. In other words, in a game theorizing perspective, the setting involves either zero-sum or additive games. Lee and colleagues build an ERGM building on the following five statistics: reciprocity, clustering (transitive triads), popularity (in-k-stars)[55], brokerage (2-node paths), homophily. Notice that this latter is an attributive instead of a topological statistic, as the previous ones, which are the most used in the ERGM standard approach. Results show that organizations prefer connecting with dense clusters, but not necessarily with very popular (central) nodes. Further, it is strongly preferred to bond with non-brokers than with brokers. Coordination and information advantages drive to connect and reciprocate, but the high defection risk discourages to connect with popular and bridging alters.

Sharing the SOC and MOS view of industries as networks, Lomi & Fonti (2012) analyze the collaboration network of 72 Italian tiles producers, accounting for more than 90% of total industry sale. They hypothesize three endogenous factors explaining the observed network structure: 1) reciprocity, which makes connection more likely to be established among reciprocating firms; 2) transitivity, which makes connection more likely to occur between companies sharing the same partner; 3) bridging, which makes connection more unlikely to occur with companies playing a brokering role, that is filling in many structural holes. By building an ERGM they found confirm of all the three hypotheses, with a particular weight of the reciprocity mechanism.

Research on ERGM – and more generally on any kind of statistical network models - is under tumultuous development. Among some important advancements there has been the extension of ERGM methods to bipartite networks (Agneessens & Roose, 2008; Skvoretz & Faust, 1999; Wang *et al.*, 2009, 2013). Further developments concern that particular sub-set of the class of bipartite networks in which nodes (or the members/individuals) of one group can be affiliated only to one node of the other group. This is a way to look at multi-level networks, which have been developed by Snijders & Bosker (2012) with hierarchical linear models. Recently, Wang *et al.* (2013) advanced ERGM methods to deal with multi-level networks, and to remove the constraining requisite of hierarchical linear models according to which links between and within groups do not exist. Zappa & Lomi (2015) build a multilevel ERGM to study the effects of hierarchical relations between organizational subunits on the presence or absence of informal network relations among organizational members.

Besides ERGM, another network analysis simulation model has been developed and it is diffusing in SOC and MOS: stochastic actor-oriented modeling (SAOM), which has been introduced by Snijders and some colleague (Snijders, 1996, 2001, 2005, 2008; Snijders & van Duijn, 1997; Snijders *et al.*, 2010)[56]. As SNFM, these models are actor-based instead of link-based, and use objective functions - called evaluation functions - that drive actors' choice to (dis)connect with others, but differently from SFNM, actors do not necessarily seek to maximize some utility function[57], that is, connections could have no economic values. Further, though SAOM resemble SNFM because they aim at understanding network



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inner dynamics, they differ because – as ERGM – they do not start from a single or a kernel of actors and then let them grow until a fixed predetermined size or until some kind of algorithmic or ontological equilibrium is reached. On the contrary, they assume an initial (and expected) size, and let the network evolve without a predetermined final state. Jackson () reviews various types of statistical models for network analysis presenting SNFM as a different category respect to ERGM, underlining that, contrary to ERGM, SNFM are based on agent's choice about utility-driven (dis)connecting behavior and agents' dependence.

Model building is driven by actor-based probabilistic specifications that are proportional to the exponential transformation of the objective function, and parameters estimation occurs in a similar way to ERGM (Snijders *et al.*, 2010)[58]. To a larger extent than SNFM, which until now – due to its neoclassical chains - have been quite limited as respect to agent's behavior[59], SAOM allow to take into account either social influence or social selection mechanisms, and hence they allow to distinguish to what extent and how actor's attributes influence network structure and the reverse[60]. Only in recent developments ERGM are employing also actor's attributes, and thus, broadening its explanatory power and reducing its methodological distance from SAOM. And both can be used as simulation modeling and not only for identifying elementary patterns or predictive purposes: it is enough to impose instead of estimate parameters.

All the three types of modeling - ERGM, SNFM and SAOM – are progressively leaving the oversimplifying assumption of agents' behavioral homogeneity, that is their uniform way to (dis)connect and react to others' behaviors, but they are still far from incorporating actors' realistic behaviors, as depicted by cognitive and evolutionary economics (Gigerenzer, 2008; Gigerenzer & Selten, 2001; Kahneman *et al.*, 1982). The main difference between ERGM and MAPH models on one side, and SNFM on the other side is that these latter explicitly and formally interpret link formation or deletion as driven by its economic costs and payoffs, expressed through an utility function. The rationale justifying why (and also how) an agent – represented by a node – establishes or severs a connection to some other agent is because it provides an economic advantage, which should be evaluated respect to its cost. Conversely, in SNA and MAPH network formation modelling the rationale pushing a node to connect to another one does not have an explicit economic nature. It is usually related to the intuitive advantages to be directly or indirectly central or – more rarely – to be placed in specific areas of the network. In general, there are topological reasons to connect, which of course in certain contexts can be reinterpreted in an economic sense, but *per se* they are not conceived as economic reasons[61].

On the other hand, ERGM, SFNM and SAOM are particularly advanced for neoclassical economics – especially standard economics - because they allow taking account of endogenous processes. While in SOC and MOS they are all but new or "strange phenomena", in economics endogenous processes have curiously been eluded, especially from formal theorization[62]. In fact, general and partial equilibrium cannot deal with them, because equilibrium existence is not more guaranteed, nor it is guaranteed its uniqueness or stability (Ingrao & Israel, 1990; Kirman, 1976; Loasby, 1991; Screpanti & Zamagni, 2005). Game theorizing (Gintis, 2000) and network economics are starting to tackle with this issue, and in fact they are opening a sort of "Pandora box" of effects, which often, in order to obtain some sort of equilibrium, force adding further constraints to usual modeling.

ERGM are static, because they assume the observed network as a stable state and try to search for its fittest estimated model "rolling the dice" at each trial. Though the Markovian Chain Monte Carlo algorithm adjusts estimation parameters in order to increase fitness, that is, in order to guarantee convergence to the fittest models[63], trials are independent each other: there is not direct consequence from one to the



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nother. It is as if we had a given Lego construction – the observed network - and we hypothesize that, justified by some theory, that construction could (or perhaps, should) be obtained by assembling certain building blocks and joining rules. Further, the observation and disassembling of the real construction gives us information about the relative weight (relevance) of each block and rule. Once we know all this, we design a method to build models of the real construction, models that are built according to the specifications – blocks and rules – and its weights. In this methodology there is no dynamics, no path dependence, nor interactions among actors and links. All these aspects (and thus, dynamics and self-organization) can be – but not necessarily should be – into the theory that is behind the formulation of the hypotheses/specifications, but this does not imply that dynamics and self-organization are also (transferred) into the model.

Conversely, SAOM and (many) SNFM are dynamic models, because they are based on path dependence[64]: a network topology at time t+1 follows *entirely* from what happened at time t, and the transformation does not need exogenous events[65]. But this form of dynamics is rather poor and simplified respect to recursive processes, especially when such processes: i) influence agent's behavior; ii) links reciprocal influence[66]; iii) produce emergent effects, which eventually feedback to influence agent's behavior and links influence. This is the true complexity (Biggiero, 2001; Casti, 1994; Mainzner, 1994; Standish *et al.*, 1998), which of course is also path dependent, but besides being this, it is much more. To grasp "true dynamics" or complexity, path dependence is not enough. To the extent that analytical sociology has defined itself as mechanism-based or generative-based explanations (Manzo, 2014b), it does not seem that there has been a full understanding of what complexity means, at least in a deep epistemological sense, and not just as a synonym of "complication" (Biggiero, 2001). Provided that mechanisms and interactions are the same thing, in order to qualify *complex* systems/networks, a focus on mechanisms is not enough. It should occur another couple of features: such mechanisms should be connected in a recursive and nonlinear way. Nonlinearity, which is the main "ingredient" of (almost all) sources of complexity, requires recursiveness (of interactions) to produce complex behaviors.

ERGM are sophisticated methods to check whether a certain set of network descriptors can be "combined" to produce a given, specific observed network. It is an exercise in reverse engineering and not the generation of "true dynamics". ERGM represent an extremely powerful method for understanding the determinants of network structure, but they cannot incorporate recursive processes nor actors' reactions and changes in consequence of others actions/decisions. The potentiality of ERGM has a limit in the degree of complexity of the observed network and in the degree of the required accuracy of estimates. If both are high, they should leave the scene to agent-based simulation models (ABSM), which in principle have no limits in neither of the two aspects, and can truly be "generative explanations" (Epstein, 1999, 2007). Therefore, ERGM cannot deal with the true essence of complexity, which lies in recursive interactions among short-sighting complex agents. Conversely, ABSM (Carley, 2009, Davis *et al.*, 2007; Gilbert, 2008; Gilbert & Terna, 2000; Gilbert & Troitzsch, 2005; Harrison *et al.*, 2007; Tesfatsion & Judd, 2006) can take into account, at least in principle, as much "true" complexity as required, and thanks to this capacity they are qualitatively different from ERGM, SAOM, and the other kinds of SNFM[67]. This demarcation is controversial in current debate. For instance, Snijders & Steglich (2015) argue there are no substantial differences, so that an advanced SAOM model like the one they discuss "may be regarded as an agent-based model". Conversely, Hedstrom & Manzo (2015), in the editorial of the same special issue where Snijders & Steglich (2015) publish their paper, suggest "a preliminary distinction between ''statistical'' and ''theoretical'' models …, the former referring to models that are used for estimation purposes while the latter type of models seek to formally represent a process believed to have generated a



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specific type of outcome". This distinction between estimation and representation purposes is not sound, and it is full of ambiguities due to the vagueness and overlaps between the two concepts. Conversely, the distinction between models capacity to deal with nonlinear recursiveness is clear and strong, and thus, it is the best candidate to be a demarcation line between the two modelling families of ABSM on one side and many (perhaps most) other modeling methods on the other side.

It should be stressed that, if a relatively simple network-based methodology and epistemology like those implied and brought forth by static and descriptive network analysis is already rather incompatible with the methodology and epistemology standard (mainstream) economics (especially if meant as the traditional approaches to general competitive equilibrium theory), dynamic modeling as the various kinds of SNFM, SAOM, and ERGM remarkably enlarges the scope of incompatibility. This does not mean that it becomes impossible to build competitive equilibrium models, but that they cannot be general any more, and that they –even limited to partial equilibrium analysis - can hardly be grounded on stable and unique equilibria. As we have seen, most SNFM remain within neoclassical economics, and many of them are partial equilibrium models. according to the ways in which they have been built until now, SAOM assume actors' behaviors as optimization of utility (objective) functions, and in so doing they share a basic assumption of neoclassical economics. As well occurs generally (but not necessarily) with NK modeling (see next chapter of the book) and artificial neural network simulation (see chapter 3). ABSM are potentially much more disruptive for neoclassical economics, even for non-equilibrium approaches, because they allow any degree of freedom in complexity. Of course, it does not mean that it is impossible to design neoclassical models – and even equilibrium models - with agent-based methods, but only that with ABSM can be done what with neoclassical economics cannot be done. In other words, neoclassical models – and even more equilibrium models – become special restrictive cases of reality oversimplifications[68].

## FROM JUXTAPOSING TO COMBINING

In previous sections, neoclassical economics methodological individualism has been juxtaposed to SNA structuralism, and further it has been posed as the main reason why economics delayed to engage in network analysis. Now it is necessary to go deeper into this issue, in order to better specify its characteristics and implications. In fact, recent network modeling of ERGM and SAOM are realizing a fruitful and necessary combination and reconciliation of the old juxtaposition between methodological individualism and structuralism. In its radical formulations, the former perspective focuses exclusively on individuals choices, and structures dissolve into environmental constraints and resources. Neoclassical economics is a paradigmatic example, not only in its general competitive equilibrium approaches, but also in Austrian approaches: independent agents pursue their utility maximization, given their information, resources and technologies. Of course, Marxian approaches took the opposite view, because individuals are seen as strongly embedded – as we would say today – into their social, economic and technological production (and re-production) structures. Marx (and Marxism) was intrinsically structuralist. Granovetter's (1985) argument of under- and over-socialized agents is just another way to present the same problem. Sociology has been not immune from methodological individualism, which oriented a large part of sociological thought, even if usually in a less extreme version than that assumed by neoclassical economics. On the other side, radical structuralism – as that that dominated early sixty years of social network



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analysis from Moreno's time up to the nineties, and that was prevalent in large part of sociology during the same years – was denying (or heavily reducing) agent's attributes and discretionary power, besides the expected behavior defined by the "topological opportunities" determined by her position. Agents cannot do much more or different than what is determined by their positions.

A corresponding juxtaposition characterized methodological individualism on one side and systems science on the other side, and it is clearly reflected into the history of organizational thought (Biggiero, 1990; Pfeffer, 1997; Tsoukas & Chia, 2011). Usually, scholars dealing with organization design and structural aspects – including technological aspects – were emphasizing the relevance of structure respect to single individuals, while scholars dealing with organizational behavior and personnel management were underlining the opposite. The issue of organizational decision making is highlighting in this sense: on one side the hyper-rational view of who prescribes that agents should individuate, analyze, and compare alternatives, and then choose the optimizing one; on the other side who remarks that real agents could not be farther respect to the "ideal" view. Individual's choices within organizations are heavily influenced by the organizational context in terms of socio-cognitive ad social-psychological variables[69].

As some other methodological and epistemological juxtapositions[70], even this one revealed wrong, because agents' behavior is structurally constrained and co-determined by their (at least direct and close) interconnections, but often it can happen also that such constraints and co-determinations could be modified – to some extent – by the agent, and this capacity depends on the agent's attributes. Network modeling – and to a larger extent, ABSM – helps stopping the "ideological war" between individualism and structuralism by giving the possibility to combine the two. Boudon (1998) and (much more) Giddens (1984) have built theoretical frameworks in the perspective of overcoming the juxtaposition between individualism and structuralism. Especially Giddens' structuration is consistent with a dualist view, where individualism and structuralism are reconciled in a unified social theory. However, until the questions are put in very general (and correspondingly vague) terms, it becomes very difficult to confront and persuade one another. A bad use of scientific rhetoric (McCloskey, 1985, 1994; Simons, 1989, 1990) can "digest" almost everything.

More recently, Hedström (2005) and Udehn (2002) support the "reconciling perspective", and in the same view is moving current analytical sociology (Manzo, 2014a; Squazzoni, 2012). Manzo (2014b) refers to *structural methodological individualism* to synthesize the combination of individualism with structuralism, and he underlines the (obvious) fact that micro-behaviors (and mechanisms) precede the (emergent) macro-effects. Biggiero (2011) argues that social (and natural) evolution results from co-evolutionary processes in either horizontal sense, because elements (nodes) interact and influence each other, or in vertical sense, because emergent (macro) entities – be them concrete or symbolic or other kind of structures – are generated by the bottom interactions, but in turn they can influence them in various ways - by constraining, speeding, or qualifying bottom interactions. In this multi-level view of double (bottom-up and top-down) co-evolutionary processes, what is emergent and macro respect to the underlying level of description (aggregation) becomes the bottom (lower) level respect to its emergent outcomes, which are at a corresponding higher (meta-level) of description (aggregation). Each level is emergent respect to its lower one: groups are emergent respect to its members interactions, organizations are emergent respect to its groups, etc. Further, Biggiero (1990) proposes to interpret this ontological view in terms of Bateson's logical types (1972), and (in 2009 and 2012) he applies this interpretation to the distinction between information and knowledge: this latter would be an emergent property from information network dynamics.



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Indeed, much more effective than very general and broad frameworks and arguments is the capacity of a new approach to *produce concrete applications*, and it becomes even more convincing if it has the capacity to produce falsifiable predictions (Biggiero, 1997; Lakatos, 1978; Lakatos & Musgrave, 1970; Popper, 1972) through clear and controllable-replicable methods, like real and virtual experiments. And this is exactly what network (and agent-based) modeling enables.

By operationalizing agent's behavior respect to other agents and by imposing the presence of a certain share of motifs (configurations) or other kinds of structural specifications, SAOM and ERGM can dissolve the juxtaposition into concrete hypotheses about how, respectively, the network will evolve or how it was generated. The magic of operationalizing in concrete models is also demonstrating the sterility of ideological juxtapositions. Once we wonder what a specific type of agent - in a specific context respect to a specific problem – can or cannot do and how his ego-network or whole topology can constraint or enhance his behavior, ideological juxtapositions appear sterile and the debate is shifted to the plausibility of specific modeling choices and to the corresponding implications.

Clearly, being its modeling potentialities limited respect to what can be done with ABSM, network modeling cannot fully develop the scope of free combinations of individualism and structuralism. In fact ABSM, especially when are enough rich to consider the feedback from emergent effects on single agents, can fully take into account agent's potentialities and structural specificities (Squazzoni, 2012). On the other hand, network models offer the advantage to be less complex to be designed and interpreted. However, being (relatively) simpler, network models are more contendible, and in this sense they are more fruitful for scientific knowledge growth[71].

We can get explicit references and traces of this reconciling approach in Snijders', who initially argued that his "approach to network evolution is in line with the theoretical sociological principle of methodological individualism" (1996, 2001), but later moves towards the positions of Udehn (2002) and Hedström (2005): "The actors control their outgoing ties. This means not that actors can change their outgoing ties at will, but that changes in ties are made by the actors who send the tie, on the basis of their and others' attributes, their position in the network, and their perceptions about the rest of the network. This assumption is the reason for using the term 'actor-based model'. This approach to modeling is in line with the methodological approach of structural individualism (Udehn, 2002; Hedström, 2005), where actors are assumed to be purposeful and to behave subject to structural constraints. The assumption of purposeful actors is not required, however, but a question of model interpretation" (2010:).

## CONCLUSION

It seems that Arrows's (2009) judgment that network analysis is superfluous has been not shared even by economists. Schweitzer and colleagues' (2009) exhortation to deal with economic networks was confirmed by the prolific development of studies on economic networks. In fact, as we have seen there is currently a dramatic growth of network-based research in almost all fields of social sciences. The idea that life and nature are made of networks seems fully acknowledged, not only from an epistemological side, but also recognizing that a methodological revolution was needed to cope with this fundamental way in which social and natural phenomena occur. Standard statistics is not enough: better said, it is not appropriate, because it deals with attributes and not relationships. It presumes - and it matches well when there is - ontological independence, while it mismatches when elements (events, cases, agents)



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are structurally connected. As rightly and repeatedly emphasized by social network scholars during the seventies and eighties, what unifies the various network approaches is structuralism. Conversely, what perhaps they did not stress enough is that a structuralist view requires an appropriate methodology, which cannot be standard statistics. They underlined it "only" by stressing that the core idea of network analysis lies into the properties that a single node acquires regardless of its attributes, just because of the specific position it covers into the network. Putting relations and (relative) positions at the core of analysis means presuming and acknowledging elements dependence. This view is completely different than putting at the core of analysis attributes of independent elements.

This contrast is all but trivial, because it requires an epistemological and methodological revolution in the way of approaching real or virtual phenomena and the corresponding scientific analysis. And in fact this revolution is so less trivial that standard economics employed at least fifty years more than sociology and management and organization sciences to make it. Standard economics was – and it still is in the mainstream – firmly grounded into radical methodological individualism, and thus, exactly into the view of socio-economic phenomena as constituted by independent individuals, on whom what counts is their attributes: preferences, income, capital, etc. This methodological and epistemological view is juxtaposed to the (radical) structuralism of traditional social network analysis, and incompatible with structural methodological individualism of current analytical sociology, which is adopted by network modeling. In fact, this methodological and epistemological perspective combines the two sides, and thus, it does not coincide with only one of them, especially in the standard economics radical approach. Further, since socio-economic networks are (almost all) redundant in connections – that is, they are not efficient and characterized by cycles – then three more pillars of standard economics crumble: i) the hypothesis of homogeneous agents, and hence of the representative agent; 2) the hypothesis of constant returns and proportionality between causes and effects, due to eventual shocks; 3) the hypothesis of lack of endogenous processes and changes.

The extent and depth of such theoretical changes give an idea of the relevance of the methodological and epistemological revolution that network economics is bringing into standard economics. Put in this light, it becomes not surprising and not coincidental that economics embraced network analysis so late, and the arguments that the delay depends on the scarcity of (relational) data and computational power sound more as ex-post rationalizations, functional for reducing cognitive dissonance (Festinger, 1964) rather than the main explanation. They fail to grasp the essential and crucial rationale, which lies into the substantial incompatibility of network economics with many methodological and epistemological traits of standard economics, and in a particular way with competitive equilibrium approaches, and especially general competitive equilibrium, which during last century has been mainstream economics.

If the *methodological chains of neoclassical economics* have already been significantly broken, the same cannot be said for the *theoretical chains*. In fact, network economics is still bounded into the usual theoretical framework of utility and production functions optimization (Simon, 1997), of perfect (or quasi-perfect) and substantive rationality (Gigerenzer, 2008; Gigerenzer & Selten, 2001; Kahneman *et al.*, 1982; Simon, 1962, 1997), and - among the many other aspects - the obsessive focus on equilibrium conditions (Arthur, 2006, 2010; Loasby, 1991). This theoretical framework becomes particularly strict when considering the two main streams of research in which network economics is currently engaged: that on network formation, and (even more) network optimization, which indeed is a branch of operating research. However, most recent developments (Jackson, 2014, 2015) leave hoping that, likely with the substantial help of cognitive and evolutionary economics, the "silent methodological and epistemologi-



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cal revolution" brought forth by network economics could further make free from neoclassical chains[72]. This is exactly the matter on which, from different perspectives, recent scientific advancements in social sciences are putting most efforts, largely based on relational methodologies[73].

Besides the analysis of network industries, the main contribution of network economics has been in its emphasis on network formation studies, which indeed was less (and almost only recently) developed by SOC and almost no developed at all by MOS applications. Into this field network economics joined MAPH. In particular, concerning some issues, like the small-world or the power-law or the structural hole or the segregation patterns, network economics produced remarkable and promising contributions, different and richer than those originally proposed by MAPH.

SOC has had the great merit to stress the crucial relevance of structuralism, with its methodological and epistemological (revolutionary) implications. Network analysis constituted this way the formal and quantitative ground and backbone of structuralism, which however was often limited to a metaphorical or just qualitative approach. The problem is that a methodology is not, *per se*, a theory. It can be a way to look at it, that is, it can be also an epistemology, and a way to gather and elaborate data on a certain problem, but this is not yet a theory about it. In this sense, economists are right to side among the ones who argue that network analysis – including SNA – is a set of tools, a methodology, and not a set of theories.

Differences between ECON and SOC or MOS network modeling remain as concerning models degree of abstraction. As claimed by Manzo (2014b), analytical sociology requires: "(1) a realistic description of the relevant micro-level entities at work…; (2) a realistic description of their properties and activities…; and (3) a realistic description of the structural interdependencies that are likely to relate these entities" (p. 18). Conversely, network economics modeling usually employs abstract hypotheses as concerning agents' behaviors and interactions. Interestingly, this high abstraction degree has been adopted also by early developments of sociological ABSM, as exemplified by the so-called KISS approach (Gilbert, 2008), which has been recently challenged by the KIDS approach (Edmonds & Moss, 2004), sided on the realistic description methodology.

In order to build network-based theories of social and economic phenomena it is necessary to work on and combine two sides: empirical research through descriptive and explicative analysis, and theory-driven and empirically-grounded models of network formation. A third approach, which is growingly employed by economists and far less by sociologists and management scholars, is that of laboratory experiments (Kagel & Roth, 1995; Plott & Smith, 2008), which have been fruitfully employed in network economics to support network formation modeling with plausible parameters. Modeling network formation and evolution appears as the natural and promising field of research in all the three SNA areas, a field that has all the requisites to facilitate cross-fertilization. Scientific knowledge growth, especially when dealing with complex phenomena, can be realized only through methodological pluralism (Mingers & Gill, 1997; Salanti & Screpanti, 1997; Samuels, 1998), which does not mean "simply"[74] that more methodologies should be admitted and promoted, but also that the corresponding results should be carefully considered and employed in a fruitful recursive interaction.

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## ENDNOTES

[1] Economics has developed from its very beginning a theory of industrial and consumer markets, which has been consolidated in industrial economics (and industrial organization) and in a theory of the firm after the Second World War. From the sixties, economics started also developing an organization theory, later extended to a theory of bureaucracy and public administration. On the other "side", MOS was born just as a theory of the firm and organization theory, benefiting of substantial theoretical and empirical supports from sociology and psychology. Hence, ECON and MOS are overlapped since long in the fields of the theory of the firm and organization theory. Moreover, since the beginning of eighties, MOS developed its own theories of industrial organization. Therefore, since at least 35 years, ECON and MOS are fully overlapped also into this field.



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For some theoretical suggestions and epistemological implications of this progressive overlapping and competition, see Biggiero (1990) and Biggiero & Laise (1998a, 1998b), and Chapter 7 and 13 in this book.

[2] With this label it is meant either pure theoretical developments in mathematics and physics or its applications in natural sciences.

[3] Barabasi (2002) and Newman (2010) hint on these precursors, but for an historical deepening and the subtle distinctions between scale-free and lognormal (and other kinds of nonlinear) distributions see Caldarelli (2007), Gabaix (1999), Mitzenmacher (2011), and Newman (2005).

[4] Both Barabasi and Watts acknowledge such primacies of economists and sociologists, and their great merit is to have theoretically systematized and empirically confirmed (in an extensive and intensive ways) the two issues. Further, they offered a possible generative rule for scale-free and small-world topologies, respectively, with the preferential attachment mechanism and the link rewiring. Milgram's experiments has been replicated, extended and confirmed by Watts and his collaborators about 12 years ago (Dodds *et al.*, 2003). Historical hints and conceptual deepening on the small-world issue "from the two perspectives" of MAPH (first two) and SOC (second two) can be found in Barabasi (2002), Watts (1999, 2003), Freeman (2004), and Prell (2011).

[5] This is definitely not true if one think that during the fifties and sixties cybernetics, general systems theory, and graph theory were nurturing the development of automata studies, followed by cellular automata, and from there to artificial life and artificial societies. There are at least two key-scientists that, at that time, embodied with their own life and work the crossroads of all these research streams: one is Rapoport (1957; Solomonoff & Rapoport, 1951) and the other is von Foerster (1982, 2003). Though a deep and rich history of these two scientists and the thirty years between 1945 and 1975 should still be written, a good introduction can be found in Heims' two books (1982, 1991).

[6] See below the section on the "modelling revolution" and the Conclusions chapter of the book.

[7] Of course, other economic theories, above all neo-Marxian approaches, are completely structuralist.

[8] Further, he deals with economic networks almost exclusively from the sociology and MOS perspectives.

[9] See Nagurney (2003, 2009) for a short history.

[10] Depending on the various authors (Leinhardt, 1977; Freeman, 2004; Prell, 2011), sociology, psychology, and anthropology contend each other the early three positions, but only Prell does not neglect network economics.

[11] Biggiero (1988) applied the Lakatosian theoretical framework of "protective belt and hard kernel" (Lakatos, 1978; Lakatos & Musgrave, 1970) to neoclassical economics, and specifically to general competitive equilibrium models in the neo-walrasian version.

[12] Obviously, it is not possible to go deeply into the history of economic thought, which is so rich, long and complex. For recent contributions in this field, see previous references, and in particular Colander (2000), who reviews the history of economic thought in the light of complexity economics.

[13] Moreover, more or less explicitly, it is supposed that, being resources fixed and scarce, interests are conflicting, and thus, economy is (almost always) a zero-sum game. However, there is a florid literature also on cooperative games and non-zero-sum games.

[14] Indeed, information asymmetry is acknowledged in theorizing since long, but then, in order to prevent that is becomes too disruptive for maintaining the possibility to get – even only a partial or local – competitive equilibrium, a number of other ad hoc unrealistic hypotheses are introduced.



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The theoretical perspective facing with this attempt to introduce this issue within the neoclassical framework is developed into the fields of organizational economics (Milgrom & Roberts, 1992) and industrial organization (Schmalensee & Willig, 1989; Tirole, 1988). With many implications for the issue of (network or non-network) externalities, see Shapiro & Varian (1998).

15 They are: i) perfect competition of markets and industries, that is a high number of exchangers, all of them price-taking; ii) a *given and known* distribution of preferences and resources available now and predictable for all the future states of the world; iii) a *given and known* set of technologies that are now (and will be) available for all the future states of the world; iv) constant returns to scale; v) no technological discontinuities.

16 Here I refer to the fact that, albeit claiming a strong link with the standard model, its applications to sectoral aspects, like industrial economics, international economic, etc., do not maintain all requisites of the standard model. This is due to the fact that, if they did it, they would result even more unrealistic and inapplicable of what they already are.

17 On this point see notes lvii and lix.

18 Conversely, modern views reconcile and combine the two methodological perspectives. See below Section "From juxtaposing to combining".

19 See Milrom & Roberts (1992), Schmalensee & Willig (1989) and the more recent Dietrich & Kraft (2012) for surveys on these issues.

20 This fact is still more meaningful because that journal is also very prestigious, and so ideal "to convince the reader that managing is an activity worthy of economic analysis". In the same incipit, Radner points that "this phenomenon has not escaped the attention of our colleagues in schools of business and management, where many courses are devoted to the subject". And right after he complains that "the pure science of economics, however, has been slower to focus on this phenomenon, and pure theory even slower. The picture of the firm in most economic textbooks, and in much current economic research, is still that of a unitary "entrepreneur", bent on maximizing profits". The core issue of that contribution is an investigation around the question of optimal hierarchy, whose relevance is framed by Biggiero & Mastrogiorgio in the Chapter 7 of this book.

21 Some of these arguments can be found also in Hodgson (2000) and Loasby (1999).

22 Being free from "neoclassical chains", MOS had no problem to acknowledge the network nature of firms and organizations. All organization theories, and in particular its part dealing with organization design, have been developed in the (more or less explicit) structuralist perspective. This convincement has been especially evident in the scientific literature on the structural aspects of hierarchical power. See Biggiero & Mastrogiorgio in this volume for a definition and some references to the long and rich debate.

23 For an extensive discussion see Lewis (2009), Newman (2010), and Vega-Redondo (2007).

24 An excellent way to introduce the combinations between graph theory and game theory is in Easley & Kleinberg (2010). This book drives the reader also ahead to complexity economics (Antonelli, 2011; Arrow *et al.*, 1988; Arthur *et al.*, 1997; Blume & Durlauf, 2006) and agent-based modeling (Hommes, 2013; Leitner & Wall, 2014; Teglio *et al.*, 2012; Tesfatsion & Judd, 2006). For an overview of evolving game theory, see Gintis (2000).

25 They introduced the modeling of heterogeneous players respect to values as well as the costs of forming links.



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[26] Here, segregation patterns mean the presence of communities, and brokers are the bridge between them. In this sense, brokers do not simply fill in structural holes within triples but rather between entire sub-networks represented by the communities.

[27] Narahari *et al.* (2009) offer a good merge of the two perspectives.

[28] Not by chance, the *Review of Economic Design* hosts a lot of papers in network economics.

[29] Network neutrality is a typical topic of this research field (Economides, 1996; Economides & Hermalin, 2012; Schuett, 2010).

[30] Shy (2011) reclaims 10 years later that this definition encompasses the whole area of network economics.

[31] Overlooking some episodic contribution and the Santa Fè Institute, which has been supported by Arrow and other prestigious economists.

[32] Some nonlinear recursive function produces chaotic behaviors (Casti, 1989, 1994; Cohen & Stewart, 1995; Eve *et al.*, 1997; Kiel & Elliot, 1997; Prigogine & Stengers, 1984; Waldrop, 1992), and in this regime the relationship between variables becomes unpredictable, and thus, correlation vanishes. See also Chapter 2 of this book.

[33] For instance, into the MOS perspective of network analysis the representation of single industries or entire industrial clusters as networks dates at least 15 years before (see next section). As well, questions concerning innovation diffusion and other types of propagation processes have been addressed since long in MAPH and MOS perspectives of network analysis (Lewis, 2009; Newman, 2010; Valente, 1995, 2005; Vega-Redondo, 2007).

[34] Interestingly, a contribution on a typical theme of international economics has been recently published by two non-economists in a physics journal (Koskinen & Lomi, 2013).

[35] A crucial part of contributions to the debate on existence, uniqueness, and stability of a general competitive equilibrium – including Arrow's fundamental works (Arrow, & Hurwicz, 1958; Arrow *et al.*, 1959) – have been published in these two journals (Ingrao & Israel, 1990; Screpanti & Zamagni, 2005).

[36] This index improves Borgatti's (2003) algorithm to find key players by considering also links values and agents utilities.

[37] For instance, an author like Jackson, who is among the most open and available to draw concepts and tools from SOC, in a paper on communication networks Dutta & Jackson (2000) did not confront at all with SOC in a field like this, where it produced an intensive and extensive research.

[38] This research area is very much overlapped with that of economic geography, which in a timing parallel to MOS is progressively applying network analysis to regional (or local) innovation networks, industrial clusters, etc. And recently it is also deepening the issue of geographical (and inter-organizational) knowledge networks. However, for reason of space and (already oversize) length of this chapter, the review of this interesting literature is skipped.

[39] See Biggiero & Mastrogiorgio (Chapter 7 of this volume), who provide also a reference literature.

[40] The ponderous size of a recent handbook (Cropper *et al.*, 2008) witnesses the broad range of questions dealing with this research area.

[41] This extremely short synthesis would be enlighten by seeing Nooteboom (1999, 2004), who deepens the issue and enlarges the spectrum to the role played by many other variables and theories (else than transaction cost economics).

[42] For a smart connection of transactive memory systems theory with SNA see Monge & Contractor (2003).



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[43] Interestingly, inter-organizational network dynamics has started to be investigated also with statistical network methods, namely the stochastic actor-oriented models discussed in next nection. See van de Bunt & Groenewegen (2007) and Angelini (Chapter 8 of this book).

[44] It should be said that this delay was due also to the lack of empirical data that, respect to what happens in other fields, like international trade, is not provided by public institutions. Further, into this field there are a lot of methodological problems in data collection, which are discussed in many SNA handbooks (Marsden, 2005; Frank, 2005).

[45] In particular, that sub-class of industrial clusters which is represented by industrial districts (Biggiero, 1999), because they are characterized by denser networks, more interconnected with the local social networks. On the origins of industrial districts, and the distinction between industrial clusters and industrial districts see also Belussi & Caldari (2009).

[46] With agent-based modeling there are in fact various models, among which two in this volume: see Chapter 12 (Biggiero & Basevi) and 14 (Carbonara). In both there are references to this specialized literature.

[47] As for the other variables, there are many ways to distinguish knowledge types: created, absorbed, accessed, or transferred knowledge; managerial, technological or market knowledge; knowledge depth and breadth; tacit or explicit; etc.

[48] Moreover, if they are also rivals in terms of products, then the risk to be exploited during collaboration prevent it.

[49] As noticed above, in MAPH statistical modeling this is the constant and main approach to network analysis. Besides random graph networks, later on also scale-free and small-world became fields of systematic statistical modeling (for an outline see Jackson, 2008; Lewis, 2009; Newman, 2010).

[50] For some indications about the path followed by SNA scholars to reach ERGM, see Harris, 2014; Lusher *et al.*, 2013; Prell, 2011; Wasserman & Robins, 2005. Very briefly, the main steps have been the following: i) in 1981 Holland & Leinhardt developed a model for binary directed networks, called $p_1$ model, to estimate the amount of reciprocation and unequal in-degree distribution; ii) in 1986 Frank & Strauss developed the first dyadic dependence model (the former were always assuming links independence), and introduced exponential distributions and Markov chains into network modeling. They added *k-star* structures as elementary configurations to the initial ones (reciprocation and unequal in-degree distribution); iii) in 1996 Wasserman & Pattison extended previous models introducing conditional probability in ties distribution, so that the probability that two or more ties do exist is usually different than that of each single existence, and they called them $p^*$ models. In this generation of modeling, the original purposes of reciprocation, in-degree irregular distributions and *k-star* had been further extended to homophily; iv) the last generation started 10 years later (Robins *et al.*, 2007; Snijders *et al.*, 2006), extending possible model specifications and methods to avoid model degeneracy and non-convergence. From that time on, because the basic statistical distribution was maintained within the exponential random graph family, this modeling was preferably called ERGM.

[51] Indeed, after an early debate on whether it is possible to employ *any* kind of statistic, be it topological or node-attributive, now it seems that, in principle, there are no restrictions. Topological are statistics related to dyadic or local pattern or network characteristics. Dyadic statistics are those that, for instance, establish a certain probabilities of having a link if two nodes have certain features, while examples of local patterns are in- or out-k-star structures. Local patterns are called configurations, which are also called "motifs" (Ohnishi *et al.*, 2010), especially in network biology



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(Milo *et al.*, 2002). Network-level characteristics are reciprocity, density, degree distribution, (dis) assortativity, etc. Node-attributes can be any statistical or topological attribute. The former depend on the ontology of the specific network: for instance, in an inter-organizational network, nodes' attributes can be its juridical form, size, etc.

[52] In fact, though there are some conceptual similarities, ERGM estimating methods cannot be standard logistic regression procedures, because they assume independent observations.

[53] Notice that in a truly realistic (and complex) model nodal attribute could change according to nodal position within network topology.

[54] These appeared often in the journal *Social Networks*, especially those with a methodological content.

[55] When $k$ can be even more than 2.

[56] To know more on SAOM theoretical and methodological aspects, and to follow and application, see Angelini's Chapter 8 in this volume.

[57] Even though the model is designed to optimize actor's behavior, the model allows implementing also different algorithms. Seeking multiple objectives determined by more than one specification, it could happen that, if some objective-criteria are genuinely – that is, (onto)logically – independent, then standard optimization cannot be applied (Biggiero & Laise, 2003). See also Note lix.

[58] Indeed, it seems that Snijders brought into ERGM what he developed for SAOM. Likely, between the two modeling approaches it could be shared much more than what was thought in the pioneering stage of twenty years ago.

[59] As underlined by Angelini (chap. 8, this volume): "Actors are "memoryless" for Markov's chains assume that the next state only depends on the actual state and not on the sequence of events that preceded it. Moreover they are strategically myopic for they are not able to imagine conjectures about the countermoves of the other nodes and they cannot ally or coordinate their behaviors. On the other side they are omniscient on the relational dimension because they perfectly know the state of the networks; that is all the nodes and their connections. Obviously, such an assumption is hard to be sustained for large networks, in those cases the interpretation of the model results should be aware of it". Hence, SAOM current version is rather unrealistic as concerning actor's behavior – in this respect it is a rather neoclassical approach, because actors, albeit heterogeneous in terms of attributes, have the same objective function that consists in maximizing their utility. Moreover, agents have no computational limits and resolve possible conflicts inside their objective function through the standard multicriteria utility function. That is, they implicitly assume that among all specifications there are trade-offs, and thus, substitutability coefficients, which allow to express a given specification in terms of another one. In other words, the weight of a certain parameter is reduced in favor of another one. Specifications are like criteria into a multi-criteria objective function. (The same mechanism is employed also by ERGM.) However, if some specifications were truly independent, then a multi-criteria (or multi-specifications) objective function could not be built, and hence specifications parameters could not be varied as in a trade-off relationship. Consequently, and consistently with cognitive and evolutionary economics, agents had to be satisfiers and not maximizers, and instead of optimizing utility functions actors had to employ other heuristic algorithms, among which outranking methods (Bouyussou, 2001; Bouyussou *et al.*, 2000) are the



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most appropriate even though not the most practiced. To go deeper into these issues, see Biggiero & Laise (2003a, 2003b, 2007).

60 SAOM have been initially designed to study networks of individuals, but then van de Bunt & Groenewegen (2007) and Angelini (see Chapter 8 of this book) applied them to interorganizational networks. However, the fundamental SAOM methodological requirement of assuming nodes' behavior as driven by utility functions do remain.

61 Though not into the field of economic networks, Jackson & Rogers (2007) have created a very interesting model of network formation, which is rather simple and at the same time so powerful to generate all typical features of many social networks: small-wordliness, power-lawness, assortativity, and a negative relationship between a node's degree centrality and clusterization. Remarkably, network economics became so interesting for economics journals that such a *social* network model has been published in a leading journal of economics.

62 Austrian economics has been among the branches of economic theory that has given more emphasis on endogeneity, either in the form of self-organizing mechanisms to optimize resource allocation in competitive markets or in the form of innovation processes. Von Hayek and Schumpeter are the prominent scientists that stressed and developed these two issues, respectively. However, until the reformulations of their ideas into evolutionary economics (Dopfer, 2005; England, 1994; Foster, 1997; Hodgson, 2000; Kirman, 2011; Loasby, 1991; Witt, 1993), both issues were neither formalized nor modelled.

63 And it is just on this aspect that points some of the criticisms raised by Newman (2010) and Jackson (2010).

64 Many SNFM do not take into account path dependency, because they follows the "auction logic", which means that there is a sort of "virtual adaptation" while looking for equilibrium. In other models there is still such a powerful rationality that agents can evaluate the rational choices of all others and make the right (optimal) decision. In other SFNM there is path dependency in the form of Markov chains, as in SAOM.

65 On many aspects of path dependence see Garud & Karnøe (2001).

66 Here I mean that most social or economic networks are multiplex, that is its nodes are interconnected through more than one – usually many – type of relationship. And generally, the different types of relationship interact between themselves and with actors. For instance, in an inter-firm network representing an industrial cluster, firms are connected through trade relationships, friendship relationships, knowledge-exchange relationships, union relationships, labor mobility relationships, etc. And friendship relationships can likely influence trade relationships: link-link interactions. Moreover, an eventual change of position into the trade network could – and likely will - induce a different behavior into future link formations in that or in other topologies corresponding to the other dimensions (friendship, knowledge, etc.). see more in the Conclusions chapter of the book.

67 In the Conclusions chapter of this book, a comparison between the four relational methodologies under nine evaluation criteria is provided.

68 ABSM criticisms to neoclassical economics have been addressed by Gallegati & Richiardi (2009) and Moss (2009). The impact of relational methodologies on neoclassical economics is revisited also in the Conclusions chapter of this book.

69 Among the set of hyper-rationalist we can enroll most economists and also a large group of management scholars, while on the other side many sociologists and psychologists, and a significant group of organization scholars.



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[70] Another case of strile juxtaposition is that between epistemological realism and relativism, which have been combined and reconciled by pragmatism (Hack & Lane, 2006; Putnam, 1995; Rorty, 1979, 1982). For an approach to MOS inspired to epistemological pragmatism, see Biggiero (2001, 2009, 2012), Tsoukas (2005).

[71] For more on this issue, see also the Conclusions chapter at the end of the book.

[72] An excellent view of what a "new microeconomics" could become once acknowledging the various forms of social complexity – evolution, interaction, cognition, and institutions – is presented by Elsner (2012).

[73] Besides the works already recalled, the following are still noteworthy to mention: Edmonds & Meyer (2013), Jörg (2011).

[74] Indeed, this acknowledgment is all but simple, because entire theoretical frameworks – and even paradigms – are mono-methodological, that is encapsulated into a single methodological approach.

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# Chapter 13
# Financial Infrastructure and Economic Growth

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## ABSTRACT

*This chapter attempts to explore both a theoretical and empirical relationship between financial infrastructure and real sector of the Indian economy. It first presents an endogenous growth model where economic growth, proxied by the incremental output-capital ratio, depend on the financial infrastructure through three routes, namely, by changing the quantity of investible resources or by affecting the efficiency of utilization of a given quantity of resources or both, of which the former can either be through change in the amount of savings channeled to investment or change in the rate of savings. A time-series econometric analysis shows that the financial sector variables can explain near about 96% of the changes in real economic growth in India, which is an excellent goodness of fit. It concludes that the development of the financial infrastructure helps the Indian real sector grow both in the short-run and in the long-run. Unlike contemporary literature that prescribes diminished role, our study suggests a greater role of the govt. to ensure long-run economic growth.*

## INTRODUCTION

Until the end of 1970s governments of the developing countries have failed to recognize the need to develop the financial infrastructure and set up conditions favorable to financial development. In the past, financial sector was merely an instrument to finance the key industrial sectors referred to as the 'engines of growth' in form of directed cheap credit allocation. High reserve requirement, interest rate controls, inefficient instruments of taxation and other easy short-run revenue earning policies of the governments resulted in persistent budget deficits and severe external debt crisis.

Unlike yesterday, financial markets are now the key movers, with primary roles of (a) increase in the saving growth rate (b) efficient allocation of investment resources and (c) better utilization of existing resources. Exaggerating these roles, contemporary theories put forward the idea that financial development has a causal influence on growth, unlike the traditional theories that vehemently insists on the

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passive role of financial system which merely adapts to the financing needs of the economy's real sector and fits in with the autonomous development of the sector. Therefore, during the last three decades, many developing countries undertook programmes of financial liberalization, aimed at removing various policy induced distortions that limited the development of the financial sector.

The interdependence between real sector and the financial sector of an economy has become a prominent research agenda in development economics since the publication of the seminal works of McKinnon (1973) and Shaw (1973). This gained more importance, as far as policy prescriptions are concerned, during the 1980s with the emergence of debt crisis in the Latin American countries as financial inflows made them more vulnerable to external shocks.

World Bank (1989) report stated that "*It became widely acknowledged that economic growth without well-developed domestic financial markets would be detrimental to the longer run growth prospects of developing countries*." As a reaction, several developing countries designed and carried out economic reform programmes during the 1980s, in which financial market reforms received a prominent role.

## A BRIEF REVIEW OF LITERATURE

Prof. H T Patrick (1966) worked out a useful reference framework for the study of causal influence on growth, by distinguishing between "supply leading approach" & "demand following approach" to financial development. Demand following financial infrastructure development appears as a consequence of development of real sector. This implies a continuous widening of markers and a product differentiation, which makes necessary more efficient risk diversification, as well as better control of transaction cost. This type of financial infrastructure development therefore plays more permissive role in the growth process. On the other hand, supply leading financial development precedes demand for financial services and can have an autonomous positive incidence on growth. Its role is essentially to mobilize the resources blocked in the traditional sector, transfer them to modern sector which is capable of promoting growth, and ensure they are used of finance the most dynamic projects. The hypothesis put forward by Prof. Patrick is that supply leading financial development dominates the early stages of economic development, especially as it makes it possible to finance investments that embody technological innovations more effectively. Once the economic development process has reached maturity, demand following financial infrastructure development takes over. In addition, the wider the gap with developed countries, the more likely it is that developing country will follow the supply leading financial development model.

Professor Patrick's hypothesis is of tremendous interest as it highlights the two-way causality which may exists between financial development and growth. It is however incomplete as it does not account for the complementarily of the two phenomena in consideration. While "supply leading" financial development can in fact speed up economic growth, "demand following" financial development is not just a passive adaptation of the financial system to the development requirements of the real sector, instead real growth enables the financial system to accomplish its own autonomous evolution, since the sustained increase in real income provides the means to set up a costly and increasingly sophisticated financial intermediation.

Gerschencron (1962) stated, on studying a case for Japan, that wider the gap with developed countries, supply-leading approach will be followed. Gupta (1984) tested this hypothesis and had favorable results subjecting it to Granger Causality tests. Jung (1986) tested this hypothesis and had favorable results subjecting it to Sequential Causality tests. However, Patrick did not take into consideration the



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complementarities between the two approaches and could not account for the huge cost of setting up of financial infrastructure, which can only come from high real sector development.

Townsend (1983), Greenwood & Jovanovic (1990) and Levine (1992b) suggested that there may exist circular relationship between real growth and development of financial sector. As the establishment of financial sector is very costly, level of development of real sector determines the type of financial network. The reciprocity between financial development and growth can give rise to some exogenous threshold effects, which when passed in terms of per capita income; the economy can reap the benefits of financial system's positive influence on growth. The presence of these threshold effects raises the possibility of the following circular relationships. When the income level is high, the financial system is able to monitor investment projects and identify the most cost effective innovations and hence as the financial development is adequate, income level increases further. But when the income level is low due to underdevelopment trap, the financial system can only mobilize savings and manage productivity and liquidity risks and hence as the financial development is inadequate, income level cannot increases further.

Theoretical studies have considered various financial policy variables as determinants of economic growth. As has been termed by Gupta (1987), the theorists can be classified into two categories, viz. the *financial structuralist* and *financial repressionist* schools. The former comprises those who contend that the quantity of financial variables and its composition affect economic development. Thus, factors like financial deepening and the composition of aggregate financial variables gain relevance as financial factors determining economic growth. Such works have been done by Gurley & Shaw (1960); Goldsmith (1966,1969); Patrick (1966); and Porter (1966). The financial repressionist school, on the other hand, comprise of those who emphasize that price variables are more relevant financial factors influencing growth. They believe that financial liberalization in the form of a "realistic" real interest rate and real exchange rate promote economic growth, while financial repression, especially in the form of below-equilibrium real interest rate and domestic currency over-valuation, retard growth. This idea is of relatively recent origin and was first put forward by McKinnon (1973) and Shaw (1973). This idea was later refined by Galbis (1977), Malthieson (1980), Fry (1987), Greenwood & Jovanovic (1990), Benchivenga & Smith (1991), Levine (1991, 1992), Paul (1992), Roubini & Salai-Martin (1991, 1992), King & Levine (1993), etc.

The common aspect of the structuralist, repressionist and related aforementioned studies is the idea that the major channel through which financial variables affects economic growth is by enhancing the productive and efficient utilization of investible resources. This is possible through the role of higher level of financial development and also through financial liberalization.

At the empirical level, various tests have been carried out relating to *financial structuralist* hypothesis. Some of those used a case study approach of relating the cross-country growth rate with the level of financial development, e.g. McKinnon (1973) and Layni & Saracoglu (1983). Others simply examined the direction of causation between economic growth and level of financial intermediation. Some of the notable works are of Fritz (1984); Jung (1986); and Odedokun (1992). Some others like Wallich (1969); Jao (1976); Wan (1980); Gelb (1989); Lanyi & Saracoglu (1983); and Ghani (1992) have tested for financial intermediation variables in the economic growth equations. Other recent empirical studies based on similar approach are that of De Gregorio & Guidotti (1992); Gertler& Rose (1991); King & Levine (1993); Roubini & Sala-i-Martin (1991). Odedokun (1992) has stated some of the major limitations inherent in this approach of including financial intermediation variables in economic growth equations. These limitations have now prompted direct evaluation of their effects on economic efficiency, rather



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than on economic growth, by including them as regressors in the equations for incremental capital-output ratio. In virtually all the studies, the financial intermediation variables have been found to have positive association with economic growth and/or economic efficiency.

The financial *repressionist* proposition too has received a number of empirical tests. Lanyi & Saracoglu's (1983) case study is an example where interest rate regimes in various developing countries are classified into real interest rate with positive, slightly negative, and significantly negative values and this classification is related to economic growth across countries. A similar study has been made by Khatekhate (1988) but was unable to detect any relationship between real interest rate and economic growth. Others like Fry (1980); Gelb (1989); Agarwala (1983); Ghani (1992); King & Levine (1992); and Seck & El Nil (1993) included the real interest rate in economic growth equations and reported a positive relationship. However, the likely reverse causation from economic growth to real interest rate could not be identified due to various reasons stated by Gelb (1989). This and similar other econometric problems have encouraged the practice of directly testing for the effect of real interest rate on economic efficiency by relating it to incremental capital-output ratio instead of or in addition to economic growth. Such studies have been done by Fry (1979, 1981, 1984); Gelb (1989); Agarwala (1983); Odedokun (1992); and King &Levine (1992). Most of them have obtained a positive relation between incremental output-capitalratio and real interest rate. Very few studies, however, have tested for the other aspect of the financial repressionist proposition, viz. concerning the effect of exchange rate valuation either on economic growth or efficiency. Amongst them, Agarwala (1983) related exchange rate distortion to economic growth and incremental output-capital ratio. Gallagher (1991) adopted a similar approach by including a parallel market exchange rate premium as a proxy for exchange rate distortion in the composite "rent-seeking" variable included in the estimated equation for incremental output-capital ratio. Similarly, Ghani (1992) included the black market exchange rate premium in the estimated economic growth equations.

## OBJECTIVE

As it is well known that financial policies in all ramifications constitute a means for promoting economic growth in developing economies, to prescribe policies, we require some knowledge of whether and how the variables affect growth. Generally, in broad terms, they can be described to influence growth either by changing the quantity of investible resources of by affecting the efficiency of utilization of a given quantity of resources or both. Some of the studies have examined the effects of financial variables on the quantity of investible resources as an indirect way of identifying their effects on economic growth. Some other studies have directly related the financial indicators to growth. However, very few studies have investigated their effects on the efficiency of resource utilization. This is one of the reasons, which attracts me to this relatively neglected aspect. In addition, this analysis considers broader range macroeconomic variables that are financial in nature. To be exhaustive, this chapter studies the effects of such variables on economic efficiency, proportion of savings channeled to investment, savings rate and hence growth, thus considering all the routes how financial sector might influence the real sector.

Theoretical and empirical works on this issue of relationship between financial infrastructural development and economic growth raises some basic questions which warrant more academic importance in form of theoretical and empirical studies. The following are to mention a few.



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- How the performance of the financial sector contribute to growth.
- How the level of economic development influences, and is influenced by, the development and structure of the financial system.
- How natural imperfections in the financial sector affect growth.
- How the structure of the financial sector affects growth.
- How to design and organize financial institutions and markets for a proper and effective financial reform.
- Should there be an optimum level of competition to ensure long-run growth? If so, what should be the degree?
- What are the comparative effects of different types of financial intermediation on growth and vice-versa?
- What should be the proper growth strategies taken in a Developing Economy that can be supplemented by the financial sector developments and simultaneously make the financial sector robust to all macroeconomic and financial shocks?
- Should financial development be 'demand-following' 'supply-leading' or an optimum blend of the two in order to ensure a long run stable growth in the developing Economics?
- What are the preconditions that a Developing Economy should have in order to ensure a safe journey to Financial Globalization?
- Do the fruits of Financial Globalization need the Globalization of some other sectors in a Developing Economy?

Various theoretical and empirical works done in this area are quite broad in their respective right. To assay all such aspects simultaneously is undoubtedly a magnum opus. Though difficult to choose between the savory areas of further research, this chapter would like to concentrate on the basic inter linkage between the real growth and financial infrastructure of a developing economy trapped in a low level equilibrium, striving for the big push to break free. Policy prescriptions, in such cases, are supposed to depend on the structural parameters of an economy, as has been stated in the literature. Hence, it becomes very difficult to estimate and understand the various aspects and linkages between the real and financial sectors of an economy when multiple economies are concerned as economies widely differ in their structural parameters. Hence this study therefore considered a particular case – that of the Indian economy, as it is perhaps the major point of concern in the perspective of a LDC and also that being a resident of this developing country, I would like to confine such study to India.

## THEORETICAL FRAMEWORK OF THE STUDY

This chapter attempts plausible frameworks for studying jointly some basic elements of endogenous growth that relate to the main aspect of the behavior of the financial sector. Particularly, this chapter extends a model of a Lucas (1988), Romer (1989) and Pagano (1993) type endogenous growth economy with an essence of Odedokun (1995) in order to incorporate the effects of the financial sector.

Following Odedokun, we derive the relationship between economic growth and economic efficiency,



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$$\frac{dY}{Y} = \frac{dY}{dK} \cdot \frac{dK}{Y} \tag{1}$$

where, dY/Y, i.e., rate of change of output is referred to as economic growth(g); dY/dK is the incremental output-capital ratio (IOCR); and dK/Y is the share of investment spending (dK) in the total output (Y). Thus,

$$g = IOCR \cdot \frac{dK}{Y} \tag{2}$$

In other words, economic growth is the product of economic efficiency (IOCR) and the ratio of investment to GDP. Thus, the channels of the effect of financial variables on economic growth is either through changes in investible resources (dK/Y) or through changes in productiveness or efficiency of resource utilization (IOCR) or both. Odedokun has however analyzed only the efficiency route, i.e. through IOCR.

To be exhaustive, we emphasize both the channels by incorporating Pagono(1993) type endogenous growth model into equation [2]. Change in capital stock 'dK' is referred to as investment spending 'I'. The growth equation is adjusted with the rate of depreciation of capital 'δ'. Thus, equation [2] can be renovated as:

$$g = IOCR.\ I/Y - d \tag{3}$$

At equilibrium, gross investment (I) equals gross savings (S). However, it is reasonable to assume some leakage, of proportion (1-θ), out of the flow of savings during the intermediation process. Hence,

$$I = qS \tag{4}$$

Equation [4] captures the interaction between the savings function (for the supply of funds) and the investment function (for the demand for funds). The firms and the government sector are the net demanders of funds and equivalently net suppliers of bonds and/or stocks. The household and overseas sectors are the net suppliers of loanable funds and equivalently net demanders of bonds and/or stocks.

In the light of identity [4], equation [3] can be rewritten as:

$$g = ICOR\ .s\ .q - d \tag{5}$$

where s = S/Y. This equation suggests that, at steady state, the growth rate is some composite of economic efficiency of capital, the propensity of total savings that gets transformed into investment, and the savings ratio. In identity form, a re-representation equation [5] can be written as:

$$g = \ln IOCR + \ln q + \ln s \tag{6}$$

We argue that the financial markets can raise θ, the proportion of savings channeled to investment; they may increase IOCR, the incremental output-capital ratio or social marginal productivity of capital; they may influence **s**, the private savings rate. Through these mechanisms, the growth rate of real per



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capita income rises and the conclusions of endogenous growth are upheld. The first mechanism is perhaps most important for the process of economic growth. When savings are transformed into investment, it so happens that a rupee saved(S) by households, generates less than a rupee of investment (I=θS). Thus, the fraction (1-θ) goes into the financial markets in forms of spread between lending and borrowing rates, commissions and fees to securities and brokers, etc. This leakage (1-θ) of the financial resources might reflect the in-efficiency of the financial markets. Thus, with the decrease in (1-θ), θ increases and leads to the increase in the real per capita growth rate. The second mechanism claims that the financial markets increase the productivity of investment in various ways. As stated by Benchivenga & Smith (1991), financial markets play an informational role so that economic agents can evaluate alternative investment projects. King & Levine (1993) and Saint-Paul (1992) opine that financial markets help in sharing liquidity risks through portfolio diversification. As producers specialize and raise their productivity, economic growth is enhanced. By the third mechanism, financial markets affect economic growth by altering the savings rate **s**. The development of the financial markets leads to change in the rate of savings which leads to change in the rate of economic growth.

Due to multicolinearity arising from time-series nature of data and due to lack of sufficient observations for a time-series econometric analysis, we frame the following course of study for the rest of this chapter.

1. Regress ln(IOCR) on financial variables that are supposed to explain it.
2. Regress ln(θ) on financial variables that are supposed to explain it.
3. Regress ln(s) on financial variables that are supposed to explain it.
4. Regress g on financial variables considered in (i), (ii) and (iii) above.

## HYPOTHESIS AND RELEVANT VARIABLES

To estimate equation [6], we are to identify plausible variables that might explain incremental capital output-ratio (IOCR), propensity of savings channeled to investment (θ) and the private savings rate (s). We have to consider the behavioral nature of such variables which underpin the mechanisms in equation [6].

- **Variables Influencing IOCR:** The incremental output – capital ratio is supposed to depend on the following variables:
  - **Financial Intermediation Variables*:*** Financial intermediation variables are supposed to influence the IOCR to a great extent. According to King & Levine (1993), the liquid liabilities of financial intermediaries, expressed as percentage of GDP, indicate the relative size of the financial system and is supposed to correlate positively with the volume of financial services provided by the system. In practice, we consider the ratio of wide money stock $M_3$ to GDP or the **$M_3$/GDP** ratio. We further analyze this into the ratio of narrow money stock $M_1$ to GDP or the **$M_1$/GDP** ratio and the ratio of quasi money stock ($M_3$– $M_1$) to GDP or the **($M_3$-$M_1$)/GDP** ratio. In this manner, we wish to see whether there is any difference in the effects of the two components on efficiency. This is informed by the fact that while $M_1$ is basically for facilitating transactions and exchange, quasi-money is primarily supposed to fulfill the role of store of value or the wealth motive, suggesting that the efficiency effect of the former should be greater than that of the latter on *a priori* grounds. To further test for any difference in their effects, one may employ the ratio of the former to the latter, i.e. **$M_1$/($M_2$-$M_1$).** However, due



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to multicolinearity problems, all the four variables could not be taken together. Moreover, as has been stated by Kuznets (1971) that broad money aggregates, unlike the narrow money, better explain real growth, as they covert more sophisticated financial assets. We therefore consider only **$M_3$/GDP** ratio in our estimation equation.

- **Government Borrowing:** Government Borrowing from private financial institutions, mainly in form of compulsory holding of govt. debt instruments and reserve requirements, does not only reduce financial development but also hampers the efficiency of the financial system. This has been stated by Fry(1988). Thus, we test for the effects of the ratio **GB/TB** of government borrowing from domestic deposit money banks – denoted by GB – to the outstanding claims of the deposit money banking system's total stock of lending (to both private and public sectors) – denoted by TB. We would expect this to have a negative effect on economic efficiency.
- **Information:** Information plays an important role to enhance economic efficiency and hence economic growth. Resources should be allocated to efficient entrepreneurs who choose proper projects. But this requires proper information, gathering of which is a costly affair. Setting up of specialized institutions and credit rating firms do the required. Thus one may test the effect of number of credit rating firms (**CRF**) on IOCR which is expected to have a positive relationship. As banks also do this job for the customers, a similar test with no. of commercial banks (**NCB**) can also be done. Presuming that Indian investors are somewhat between risk-lovers and risk-averters, we test the transactions of mutual funds (MF) to total investment (I), i.e. the ratio **MF/I**. The mutual funds companies, by virtue of their technical expertise, are expected to share the risk with investors. This indicator not only captures the risk behavior of the investors but also throws light on the aspect relating to the effect of information on investments. Investors not much aware of alternative investment opportunities might go for mutual funds. Hence we would expect MF/I to have a positive relationship with IOCR. Again, due to problems relating to multicolinearity and degrees of freedom, we had to restrict ourselves only to **MF/I.**
- **Directed Credit:** Directed Credit Policiescan affect the efficiency of credit utilization as has been stated by the World Bank. Not much of tests have been done with this factor due to difficulty in identifying a proxy for it. However, as pointed out by the World Bank that "development finance institutions have been perhaps the most common means of directing credit", we test for the outstanding stock of lendings to the private sector by the development banking system DEV in relation to GDP, i.e. **DEV/GDP** ratio. This has also been done by Odedokun(1992).

## Variables Influencing θ

Second, we hypothesize that the following variables might explain the behavior of the proportion of savings channeled to investment, i.e. θ:

- **Banks Assets:** The Asset Side of the banking system provides the ratio of outstanding claim on the private sector (CR) from the banking system to GDP, (or **CR/GDP** ratio) as an indicator of how savings are channeled to investment. The ratio of growth rate of real credit ΔCR with respect to GDP, i.e. ΔCR/GDP ratio, or with real domestic investment expenditure, i.e. **ΔCR/I** ratio, can



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also be used. It will roughly indicate the fraction of investment expenditure financed through credit flows from formal financial institutions.

- **Banks Loans:** Relative amount of loan granted to the private CRG and the public CRC sectors is taken as an indicator to learn about how the structure of the financial sector influences growth. Thus, we take the ratio **CRG/CRC** as an explanatory variable.
- **Term of Deposits:** As some productive investments very illiquid and any premature sales of these assets lead to a heavy cutback in their yield, such investment technologies require considerable amount of time to be operational. Hence,'long-term-high-yield-illiquid-investments' might expose the investor to liquidity risks, but is expected to enhance economic growth. To capture how the nature and behavior of savings determine investment, we take the ratio of amount involved in Demand Deposits to that of Time Deposits, i.e. **DD/TD** as an explanatory variable for θ. As this variable increases, savings cannot be used in long-term investments. Hence, rise in DD/TD would generally mean fall in θ.
- **Business Environment:** More savings are channeled to investment during favorable business environment. Sensex, denoted by **'SENSEX'** can be considered as indicator relating to nature of business performance. We would expect this to have a positive relationship with the dependent variable.

### Variables Influencing 's'

Third, we hypothesize that the following variables may explain the behavior of rate of savings '**s**':

- **Money Market:** Money Market returns are expected to explain the behavior of savings rate because savers aim to invest funds if they get good returns. It is however assumed that savers, in Indian context, are not ultra risk-averse. Hence, we consider various money market deposit rates as indicators of money market returns. 1 to 3 years deposit rate**MR1**, 3 to 5 years deposit rate **MR2** and above 5 years deposit rate **MR3** are considered as explanatory variables for **s**. We also consider call/notice money market return **RM** to analyze its impact, if any.
- **Bond Market:** Bond Marketreturn is also expected to explain the behavior of savings rate because savers aim to invest in bonds if they get good returns. It is however assumed that savers, in Indian context, have invested mostly in govt. bonds for most of the period we have considered. Hence, we consider weighted interest on govt. bonds, denoted by **BR** as an indicator of bond market return. We presume this to have a positive impact with the dependent variable **s**.

## ECONOMETRIC INVESTIGATION

### Nature of Data and Estimation Technique

All the data has been collected from 'Hand Book of Statistics' and various bulletins of The Reserve Bank of India, which can be now obtained from the website www.rbi.org.The required data, ratios and indicators calculated from the data have not been shown due to space considerations.



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Having known that the variables might contain unit roots, a simple Ordinary Least Square technique might not be a meaningful solution. Hence, we first test for unit roots in each of the variables making use of the Augmented Dickey Fuller (ADF) test and the Phillips-Perron (PP) test statistics. We then test for co-integration in the data, and if any, incorporate such co-integrating equations into a Vector Error Correction (VEC) model. Presuming that the analysis might have problems relating to multicolinearity and degrees of freedom, we first regress ln(IOCR), ln (θ) and ln(S/Y) on the variables that are supposed to explain them. Having identified significant indicators from such regressions, we use them to explain growth rate '**g**' by adding them in the regression equation in relevant groups.

## Testing for Unit Roots

Two widely used tests – the Augmented Dickey-Fuller (ADF) test and the Phillips-Perron (PP) test are adopted to test for unit roots. Results of the ADF and PP tests are tabulated in Table 1 and Table 2 respectively.

Both the tables show the various dependent and independent variables in column 1. The second column shows the state (whether at levels or in differenced form) a particular variable is taken for testing. The third and forth column show whether there is drift and trend in the data. Column 5 reveals the value of the estimated test statistic - ADF in case of Table 3 and PP in case of Table 2 along with the respective critical values at 5% level of significance in column 6. The seventh column of Table 1 shows the number of lags required to test the required equation suggested by Dickey & Fuller, whereas in case of Table 2, it is the truncation lag for PP statistic. On judging the null-hypothesis of unit roots, the next column states whether there is unit roots in levels, 1$^{st}$ differences and 2$^{nd}$ differences. The inference of the tests is portrayed in the last column by stating the order of integration required to make the series stationary.

As obtained from the tests, the variables ln(IOCR), M1/GDP, (M3-M1)/GDP, GB/TB, MF/I, DEV/GDP, ln(θ), CR/GDP, ΔCR/I, CRG/CRC, ln(S/Y), MR1, MR2, MR3, and BR are I(1) implying that they are stationary at 1$^{st}$ difference. SENSEX is I(2) implying that they need to be differenced twice in order to make it stationary. However, DD/TD and RM are stationary in levels. These results are confirmed by both the ADF and the PP tests for unit roots.

As most of the series contain unit roots by a formal testing procedure, we can conclude that our presumption that 'a simple OLS regression relating these variables is supposed to yield vague results' was correct. Having obtained unit roots in most of the variables we now propose to test for cointegration so as to obtain long-term relationships, if any, amongst the variables.

## FINANCIAL VARIABLES AND ECONOMIC EFFICIENCY

As stated earlier in equation [6] that economic efficiency can be captured by the variable IOCR. It has also been discussed that ln (IOCR) is supposed to depend on M3/GDP, GB/TB, MF/I and DEV/GDP. In the previous section we have seen that all of these variables contain unit roots and are integrated of order one. We now attempt a cointegration analysis amongst these variables.



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*Table 1. Results of Augmented Dickey-Fuller Test*

| Variable | at | drift | trend | ADF Test statistic | Critical value | lag | Unit Root? | Process |
|---|---|---|---|---|---|---|---|---|
| ln(IOCR) | level | Yes | Yes | -2.899899 | -3.5514 | 2 | **YES** | **I (1)** |
| | 1st difference | No | No | -6.958964 | -1.9514 | 1 | **NO** | |
| M3 / GDP | level | No | No | 2.672516 | -1.9507 | 5 | **YES** | **I (1)** |
| | 1st difference | No | Yes | -2.370054 | -1.9504 | 0 | **NO** | |
| GB / TB | level | No | No | -1.185446 | -1.9507 | 1 | **YES** | **I (1)** |
| | 1st difference | No | No | -2.932529 | -1.9507 | 0 | **NO** | |
| MF / I | level | Yes | No | -2.803275 | -2.9472 | 0 | **YES** | **I (1)** |
| | 1st difference | No | No | -8.711334 | -1.951 | 0 | **NO** | |
| DEV / GDP | level | No | No | -0.69462 | -1.9507 | 1 | **YES** | **I (1)** |
| | 1st difference | No | No | -4.335711 | -1.9507 | 0 | **NO** | |
| ln(θ) | level | Yes | Yes | -2.520134 | -3.5426 | 1 | **YES** | **I (1)** |
| | 1st difference | No | No | -4.393537 | -1.951 | 1 | **NO** | |
| CR/GDP | level | Yes | No | 2.555245 | -2.9472 | 1 | **YES** | **I (1)** |
| | 1st difference | No | No | -2.130079 | -2.6321 | 1 | **YES** | |
| Δ CR/I | level | Yes | No | 0.016737 | -2.9499 | 1 | **YES** | **I (1)** |
| | 1st difference | No | No | -5.109184 | -1.9514 | 1 | **NO** | |
| CRG/CRC | level | No | No | -0.982469 | -1.9507 | 1 | **YES** | **I (1)** |
| | 1st difference | No | No | -3.424316 | -1.9507 | 0 | **NO** | |
| SENSEX | level | Yes | No | 2.141093 | -1.9535 | 1 | **YES** | **I (2)** |
| | 1st difference | No | No | 3.306483 | -1.954 | 1 | **YES** | |
| | 2nd difference | No | Yes | -5.02416 | -3.5867 | 0 | **NO** | |
| DD/TD | level | No | No | -2.601192 | -1.9507 | 1 | **NO** | **I (0)** |
| ln(S/Y) | level | Yes | Yes | -2.14569 | -3.5426 | 1 | **YES** | **I (1)** |
| | 1st difference | Yes | No | -3.939383 | -2.9499 | 1 | **NO** | |
| MR1 | level | No | No | -0.123669 | -1.9507 | 1 | **YES** | **I (1)** |
| | 1st difference | No | No | -4.261039 | -1.951 | 1 | **NO** | |
| MR2 | level | No | No | -0.12551 | -1.9507 | 1 | **YES** | **I (1)** |
| | 1st difference | No | No | -4.145315 | -1.951 | 1 | **NO** | |
| MR3 | level | No | No | -0.178198 | -1.9507 | 1 | **YES** | **I (1)** |
| | 1st difference | No | No | -4.795829 | -1.951 | 1 | **NO** | |
| BR | level | No | No | -0.177082 | -1.9507 | 1 | **YES** | **I (1)** |
| | 1st difference | No | No | -3.481985 | -1.951 | 1 | **NO** | |
| RM | level | Yes | No | -3.229478 | -2.9472 | 1 | **NO** | **I (0)** |



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*Table 2. Results of Phillips-Perron Test*

| Variable | at | drift | trend | PP Test statistic | Critical value | lag | Unit Root? | Process |
|---|---|---|---|---|---|---|---|---|
| ln(IOCR) | level | Yes | Yes | -4.073667 | -4.2412 | 3 | **YES** | **I (1)** |
| | 1st difference | No | No | -7.661103 | -1.951 | 3 | **NO** | |
| M3 / GDP | level | No | No | 4.799341 | -1.9504 | 3 | **YES** | **I (1)** |
| | 1st difference | No | Yes | -2.309892 | -1.9507 | 3 | **NO** | |
| GB / TB | level | No | No | -1.061913 | -1.9504 | 3 | **YES** | **I (1)** |
| | 1st difference | No | No | -3.062449 | -1.9507 | 3 | **NO** | |
| MF / I | level | Yes | No | -2.825476 | -2.9472 | 3 | **YES** | **I (1)** |
| | 1st difference | No | No | -8.55771 | -1.951 | 3 | **NO** | |
| DEV / GDP | level | No | No | -0.672495 | -1.9504 | 3 | **YES** | **I (1)** |
| | 1st difference | No | No | -4.391843 | -1.9507 | 3 | **NO** | |
| ln(θ) | level | Yes | Yes | -3.180868 | -3.5386 | 3 | **YES** | **I (1)** |
| | 1st difference | No | No | -6.751745 | -1.9507 | 3 | **NO** | |
| CR/GDP | level | Yes | No | 3.182495 | -2.9446 | 3 | **YES** | **I (1)** |
| | 1st difference | No | No | -3.587768 | -3.5426 | 3 | **NO** | |
| Δ CR/I | level | Yes | No | -1.908016 | -2.9472 | 3 | **YES** | **I (1)** |
| | 1st difference | No | No | -9.36216 | -1.951 | 3 | **NO** | |
| CRG/CRC | level | No | No | -0.955453 | -1.9504 | 3 | **YES** | **I (1)** |
| | 1st difference | No | No | -3.523866 | -1.9507 | 3 | **NO** | |
| SENSEX | level | Yes | No | 3.56114 | -3.5731 | 3 | **YES** | **I (2)** |
| | 1st difference | No | No | 3.877057 | -1.953 | 3 | **YES** | |
| | 2nd difference | No | Yes | -4.403746 | -1.954 | 3 | **NO** | |
| DD/TD | level | No | No | -2.801052 | -1.9504 | 3 | **NO** | **I (0)** |
| ln(S/Y) | level | Yes | Yes | -2.427979 | -3.5386 | 3 | **YES** | **I (1)** |
| | 1st difference | Yes | No | -6.291896 | -2.9472 | 3 | **NO** | |
| MR1 | level | No | No | -0.098891 | -1.9504 | 3 | **YES** | **I (1)** |
| | 1st difference | No | No | -4.097509 | -1.9507 | 3 | **NO** | |
| MR2 | level | No | No | -0.102855 | -1.9504 | 3 | **YES** | **I (1)** |
| | 1st difference | No | No | -4.200519 | -1.9507 | 3 | **NO** | |
| MR3 | level | No | No | -0.176996 | -1.9504 | 3 | **YES** | **I (1)** |
| | 1st difference | No | No | -3.718747 | -1.9507 | 3 | **NO** | |
| BR | level | No | No | -0.14604 | -1.9504 | 3 | **YES** | **I (1)** |
| | 1st difference | No | No | -3.380595 | -1.9507 | 3 | **NO** | |
| RM | level | Yes | No | -2.999329 | -2.9446 | 3 | **NO** | **I (0)** |



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## Cointegration Analysis

Given a group of non-stationary series, we are interested in determining whether the series are cointegrated, and if they are, in identifying the cointegrating (long-run equilibrium) relationships. We implement Vector Autoregression (VAR) - based cointegration tests using the methodology developed by Johansen (1991)to test the restrictions imposed by cointegration on the unrestricted VAR involving the series.

We have applied the Johansen test on the variables ln(IOCR), M3/GDP, GB/TB, MF/I and DEV/GDP all of which are I(1). Considering sufficient lags, the Johansen's approach for rank determination comprising of the summary of all 'deterministic trend assumptions' is run in EViews (option 6 – summarize all 5 sets of assumptions). It was obtained that the Rank was lowest when the test assumes for no deterministic trend in data, no intercept or trend in cointegrating equation (CE) or test vector autoregression (VAR). Hence, we run the Johansen test again with option 1 in EViews regarding assumption of deterministic trend. This results in 2cointegrating equations as indicated by the LR test at 5% level of significance. The results of the test with normalized cointegrating coefficients have been shown below. The numbers in parenthesis are the asymptotic standard errors (rounded off to three decimal places).

Cointegrating Equations (1 to 2)

$$CE(1): \quad \ln(IOCR)_t - \underset{(12.339)}{0.2503966}\frac{GB_t}{TB_t} + \underset{(147.1)}{38.26274}\frac{MF_t}{I_t} - \underset{(335.4)}{78.67115}\frac{DEV_t}{GDP_t}$$

$$CE(2): \quad \frac{M3_t}{GDP_t} + \underset{(8.872)}{1.671394}\frac{GB_t}{TB_t} - \underset{(105.8)}{27.92802}\frac{MF_t}{I_t} + \underset{(241.2)}{56.25306}\frac{DEV_t}{GDP_t}$$

## Vector Error Correction

When it is obtained that the variables are cointegrated, and three such cointegrating equations are reported by the Johansen's test, a simple 1st difference or 2nd difference of the series that are I(0) are not sufficient for obtaining a long run relationship. Instead, we have to modify the difference equation with the error correction terms. One of the common and simple ways to test cointegration is by making use of the Engle-Granger two step estimating procedure. We thus make use of a vector error correction (VEC) model which is a restricted VAR having cointegration restrictions (obtained from Johansen's test) built into its specification, so that it is designed for use with non-stationary series that are known to be cointegrated. In this model, we can write the VEC as follows:

$$\begin{aligned}\Delta \ln(IOCR)_t = {} & \alpha_1 \Delta \ln(IOCR)_{t-1} + \alpha_2 \Delta \ln(IOCR)_{t-2} + \alpha_3 \Delta \ln(IOCR)_{t-3} + \alpha_4 \Delta\left(\frac{M3}{GDP}\right)_{t-1} + \alpha_5 \Delta\left(\frac{M3}{GDP}\right)_{t-2} \\ & + \alpha_6 \Delta\left(\frac{M3}{GDP}\right)_{t-3} + \alpha_7 \Delta\left(\frac{GB}{TB}\right)_{t-1} + \alpha_8 \Delta\left(\frac{GB}{TB}\right)_{t-2} + \alpha_9 \Delta\left(\frac{GB}{TB}\right)_{t-3} + \alpha_{10} \Delta\left(\frac{MF}{I}\right)_{t-1} + \alpha_{11} \Delta\left(\frac{MF}{I}\right)_{t-2} \\ & + \alpha_{12} \Delta\left(\frac{MF}{I}\right)_{t-3} + \alpha_{13} \Delta\left(\frac{DEV}{GDP}\right)_{t-1} + \alpha_{14} \Delta\left(\frac{DEV}{GDP}\right)_{t-2} + \alpha_{15} \Delta\left(\frac{DEV}{GDP}\right)_{t-3} + \sum_{i=1}^{2} \lambda_i CE_{t-1}(i)\end{aligned}$$



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The results of the estimation of this VEC model have been tabulated in Table 3 shown below. It portrays the estimated coefficients of the respective variables along with their standard errors and t-statistics. The probability of the rejection of the null hypothesis for t-test is also shown in the last column. For a two-tail t-test, a probability value less than or equal to 0.05 is taken as evidence to reject the null hypothesis of a zero coefficient at 5% level of significance. To conduct a one-sided test, the appropriate probability is one-half of the critical value of the two-tail test. However, we consider only two-tail tests in our analysis.

The terms CE(1) and CE(2) at the beginning indicate the two cointegrating equations obtained from the Johansen's test shown above.

*Table 3. Estimation Results of VEC Model (FINANCIAL VARIABLES AND ECONOMIC EFFICIENCY)*

| Variable | Coefficients | Standard Errors | t - Statistic | Significant? |
|---|---|---|---|---|
| CE(1) | -2.806821 | -0.52792 | -5.3186 | Yes |
| CE(2) | -4.000043 | -0.71917 | -5.56199 | Yes |
| $\Delta \ln\left(IOCR\right)_{t-1}$ | 1.192363 | -0.35462 | -3.36233 | Yes |
| $\Delta \ln\left(IOCR\right)_{t-2}$ | 0.288522 | -0.21782 | -1.32459 | |
| $\Delta \ln\left(IOCR\right)_{t-3}$ | -0.093767 | -0.11513 | -0.81445 | |
| $\Delta\left(M3/GDP\right)_{t-1}$ | -0.698437 | -4.13377 | -0.16896 | |
| $\Delta\left(M3/GDP\right)_{t-2}$ | -8.103011 | -4.92913 | -1.6439 | |
| $\Delta\left(M3/GDP\right)_{t-3}$ | -6.261951 | -3.85331 | -1.62509 | |
| $\Delta\left(GB/TB\right)_{t-1}$ | 8.561941 | -2.70487 | -3.16538 | Yes |
| $\Delta\left(GB/TB\right)_{t-2}$ | 14.06905 | -2.86398 | -4.91241 | Yes |
| $\Delta\left(GB/TB\right)_{t-3}$ | 10.73012 | -2.76824 | -3.87615 | Yes |
| $\Delta\left(MF/I\right)_{t-1}$ | -10.04408 | -2.21992 | -4.52453 | Yes |
| $\Delta\left(MF/I\right)_{t-2}$ | -5.327933 | -2.82577 | -1.88548 | Yes |
| $\Delta\left(MF/I\right)_{t-3}$ | -3.405092 | -2.82001 | -1.20747 | |

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*Table 3. Continued*

| Variable | Coefficients | Standard Errors | t - Statistic | Significant? |
|---|---|---|---|---|
| $\Delta\left(DEV/GDP\right)_{t-1}$ | 18.57399 | -10.7211 | -1.73247 | |
| $\Delta\left(DEV/GDP\right)_{t-2}$ | -24.5838 | -19.7806 | -1.24283 | |
| $\Delta\left(DEV/GDP\right)_{t-3}$ | -11.73087 | -13.0435 | -0.89937 | |
| R-squared | 0.909084 | Mean dependent var | | -0.032868 |
| Adjusted R-squared | 0.812107 | S.D. dependent var | | 0.293874 |
| S.E. of regression | 0.127385 | Akaike info criterion | | 33.71686 |
| Sum squared resid | 0.243402 | Schwarz criterion | | 34.49554 |
| Log likelihood | 32.65436 | F-statistic | | 9.374224 |
| Durbin-Watson stat | 2.146056 | Prob(F-statistic) | | 0.000041 |

## Interpretation of Results

The Durbin-Watson statistic measuring the serial correlation in the residuals has been obtained to be **2.14** which is not at all far from 2. This suggests that there is no serial correlation. However, we also test for unit roots in the residuals and obtain that the ADF Test Statistic **-6.088** is less than its critical value **-1.952** at 5% level of significance. This confirms that there is no unit root or serial correlation in the residuals and the model can be used for predictive purposes. This also confirms the success of Vector Error Correction.

The probability of t-test, shown in the last column, indicates that only the variables Δ(GB/TB)and Δ(MF/I) along with their lags are significant. The probability values for all other variables are greater than 0.05 and hence it can be inferred that all other variables are insignificant because their null hypothesis of zero coefficients cannot be rejected.

Out of the significant variables mentioned, $\Delta(GB/TB)_{t-1}$, and $\Delta(GB/TB)_{t-2}$ and $\Delta(GB/TB)_{t-3}$have positive estimated coefficients. Unlike what has been stated by Fry(1988), an increase in the lagged ratios of Government Borrowing to Total Borrowing in Indiaenhances economic efficiency (proxied by IOCR). There might be various reasons for this type of behavior. Important among those are: (a) sometimes a deliberate financially repressed regime might enhance efficiency as has been found by Roubini&Sala-i-Martin (1992b), Benchivenga and Smith (1992), Stiglitz (1994) and Hellman (1994), and (b) the socialistic view of the govt. leads to heavy investment in infrastructure and core sectors which by virtue of linkage effects, enhances economic efficiency.

However, the variable $\Delta(MF/I)_{t-1}$and $\Delta(MF/I)_{t-1}$has significantly negative estimated coefficient. This means that rise in share of Mutual Fund investmentin total Investment retards economic efficiency. This is an interesting result because mutual fund houses are efficient enough in fund management but the present results might be due to the following reasons: (a) mutual fund investments are subject to market risks, (b) being an investor in the mutual fund market requires proper knowledge about investment options and adequate ability to decide between them, which in the Indian context is still not up to the mark, (c)



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the nature of investments – whether equity or debt – matters a lot as far as efficiency is concerned, and (d) most mutual fund companies are joint venture of foreign investment firms.

We also arrive at the result that the intermediation variablesM3/GDP and DEV/GDPcannot account for economic efficiency. This indicates inefficiency of the banking sector and the development financial institutions.

It should however be kept in mind that the significance of the variables we have discussed so far are basically about the short-run dynamics. The long-run relationships are given by the cointegrating equations stated earlier, both of which are statistically significant.

The R-squared ($R^2$) statistic, reported at the bottom of Table 3, was obtained to be **0.91**(approx). As $R^2$ is the fraction of the variance of the dependent variable explained by the independent variables and measures the success of the regression in predicting the values of the dependent variable within the sample, it can be stated that the explanatory variables considered in our analysis explains near about **91%** of the movement of the dependent variable. Though found that few variables significantly explain the dependent variable, all variables taken together jointly explain a major portion. The adjusted $R^2$, commonly denoted as $\bar{R}^2$, was estimated to be **0.81**(approx) indicating penalization(as $< R^2$) of the $R^2$ for the addition of regressors which do not contribute to the explanatory power of the model. Taking into consideration all the regressors, a handsome proportion of about **81%** is the goodness of fit.

The F-statistic and its probability are estimated to be **9.374** and **0.000041** respectively. As F-statistic tests the hypothesis that all of the slope coefficients (excluding the constant, or intercept) in a regression are zero, its probability value is the marginal significance level of the F-test. As in our analysis, the p-value is less than 0.05 (significance level 5%), and less than 0.01 (significance level 1%), we reject the null hypothesis that all slope coefficients are equal to zero implying that not all of our regressors are insignificant.

## FINANCIAL VARIABLES AND SAVING PROPENSITY CHANNELED TO INVESTMENT

Amount of Savings channeled to Investment can be captured by the variable ln(θ) as has been shown earlier in equation [6]. It has also been discussed that ln(θ) is supposed to depend on CR/GDP, (ΔCR/I), CRG/CRC and SENSEX. We have also obtained that SENSEX is integrated of order two and all other variables are integrated of order one. We now attempt a cointegration analysis amongst these variables. However, we exclude the variable SENSEX as differently integrated variables cannot be a part of cointegration analysis and differencing this variable to I(1) would fade its economic meaning.

### Cointegration Analysis

We have applied the Johansen test, exactly in the same fashion as done above on the variables ln(θ), CR/GDP, (ΔCR/I), and CRG/CRCall of which are I(1). Considering sufficient lags, the Johansen's approach for rank determination comprising of the summary of all 'deterministic trend assumptions' is run in EViews (option 6 – summarize all 5 sets of assumptions). It was obtained that the Rank was lowest when the test assumes for no deterministic trend in data, no intercept or trend in cointegrating equation (CE) or test vector autoregression (VAR). Hence, we run the Johansen test again with option 1 in EViews



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regarding assumption of deterministic trend. This results in **1**cointegrating equation as indicated by the LR test at 5% level of significance. The results of the test with normalized cointegrating coefficients have been shown below. The numbers in parenthesis are the asymptotic standard errors (rounded off to three decimal places).

$$\text{Cointegrating Equation}$$

$$CE(1): \quad \ln(\theta)_t \underset{(6.578)}{-23.00775}\left(\frac{CR}{GDP}\right)_t \underset{(4.356)}{-6.463007}\left(\frac{\Delta CR}{I}\right)_t \underset{(1.463)}{+9.320606}\left(\frac{CRG}{CRC}\right)_t$$

## Vector Error Correction

When it is obtained that the variables are cointegrated, and two such cointegrating equations are reported by the Johansen's test, a simple 1st difference or 2nd difference of the series that are I(0) are not sufficient. Instead, we have to modify the difference equation with the error collection terms, i.e. we have to consider a VEC. One of the common and simple ways to test cointegration is by making use of the Engle-Granger two step estimating procedure. We thus make use of a vector error correction (VEC) model in the same procedure as done in earlier section which is a restricted VAR having cointegration restrictions (obtained from Johansen's test) built into its specification, so that it is designed for use with non-stationary series that are known to be cointegrated. The VEC specification used in this case is as under:

$$\begin{aligned}\Delta\ln(\theta)_t = {} & \alpha_1\Delta\ln(\theta)_{t-1} + \alpha_2\Delta\ln(\theta)_{t-2} + \alpha_3\Delta\ln(\theta)_{t-3} + \alpha_4\Delta\left(\frac{CR}{GDP}\right)_{t\text{-}1} + \alpha_5\Delta\left(\frac{CR}{GDP}\right)_{t\text{-}2} \\ & + \alpha_6\Delta\left(\frac{CR}{GDP}\right)_{t\text{-}2} + \alpha_7\Delta\left(\frac{\Delta CR}{I}\right)_{t\text{-}1} + \alpha_8\Delta\left(\frac{\Delta CR}{I}\right)_{t\text{-}2} + \alpha_9\Delta\left(\frac{\Delta CR}{I}\right)_{t\text{-}3} + \alpha_{10}\Delta\left(\frac{CRG}{CRC}\right)_{t\text{-}1} \\ & + \alpha_{11}\Delta\left(\frac{CRG}{CRC}\right)_{t\text{-}2} + \alpha_{12}\Delta\left(\frac{CRG}{CRC}\right)_{t\text{-}2} \lambda_1 CE_{t-1}\end{aligned}$$

The results of the estimation of this VEC model have been tabulated in Table 4 shown below. It portrays the estimated coefficients of the respective variables along with their standard errors and t-statistics. The probability of the rejection of the null hypothesis for t-test is obtained and the result of the test, i.e. whether the corresponding variable is significant or not is stated in the last column. For a two-tail t-test, a probability value less than or equal to 0.05 is taken as evidence to reject the null hypothesis of a zero coefficient at 5% level of significance. To conduct a one-sided test, the appropriate probability is one-half of the critical value of the two-tail test. However, we consider only two-tail tests in our analysis.

## Interpretation of Results

This Vector Error Correction model can be used for predictive purposes as PP Test Statistic **-5.523**of the residuals is less than its critical value **-1.952** at 5% level of significance. The significance of t-test, shown in the last column, indicates that only the variable $\Delta(\text{CR/GDP})_{t\text{-}2}$is significant. All other variables, except for the error correction terms, are insignificant because their null hypothesis of zero coefficients cannot be rejected.



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*Table 4. Estimation Results of VEC Model (FINANCIAL VARIABLES AND SAVING PROPENSITY)*

| Variable | Coefficients | Standard Errors | t - Statistic | Significant? |
|---|---|---|---|---|
| CE(1) | 0.240854 | -0.08807 | -2.73482 | Yes |
| $\Delta \ln(\theta)_{t-1}$ | -0.404563 | -0.28967 | -1.39665 | |
| $\Delta \ln(\theta)_{t-2}$ | -0.390829 | -0.24096 | -1.62199 | |
| $\Delta \ln(\theta)_{t-3}$ | -0.456722 | -0.25985 | -1.75762 | Yes |
| $\Delta\left(CR/GDP\right)_{t-1}$ | 9.102136 | -13.1891 | -0.69013 | |
| $\Delta\left(CR/GDP\right)_{t-2}$ | 33.10002 | -14.2786 | -2.31815 | Yes |
| $\Delta\left(CR/GDP\right)_{t-3}$ | 12.72196 | -11.785 | -1.07951 | |
| $\Delta\left(\Delta CR/I\right)_{t-1}$ | 1.702432 | -3.52612 | -0.48281 | |
| $\Delta\left(\Delta CR/I\right)_{t-2}$ | -5.019508 | -3.68857 | -1.32083 | |
| $\Delta\left(\Delta CR/I\right)_{t-3}$ | -2.529012 | -2.65716 | -0.95177 | |
| $\Delta\left(CRG/CRC\right)_{t-1}$ | 1.342104 | -1.91497 | -0.70085 | |
| $\Delta\left(CRG/CRC\right)_{t-2}$ | -0.339486 | -1.65389 | -0.20527 | |
| $\Delta\left(CRG/CRC\right)_{t-3}$ | 0.638226 | -1.55379 | -0.41076 | |
| R-squared | 0.413650 | Mean dependent var | | 0.011354 |
| Adjusted R-squared | 0.061841 | S.D. dependent var | | 0.268309 |
| S.E. of regression | 0.259880 | Akaike info criterion | | 0.429911 |
| Sum squared resid | 1.350753 | Schwarz criterion | | 1.019444 |
| Log likelihood | 5.906476 | F-statistic | | 1.175779 |
| Durbin-Watson stat | 2.069439 | Prob(F-statistic) | | 0.361698 |

However, the variable $\Delta(CR/GDP)_{t-2}$ has significantly positive estimated coefficient. This means that rise in ratio of real credittoGDPraises the amount of savings channeled to investment. However, it should be noted that though real credit when considered with respect to GDP raises saving-investment ratio, it actually has adverse effect when taken with respect to total investments. It implies that increase in credit



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from formal institutions is good but increase in dominance of such institutions is bad. It follows that a change in financial structure, regime or nature of financial liberalization might have a positive effect.

Apart from the short-run dynamics, the long-run relationship stated by the significant cointegrating equation states that the proportion of GDP given as credit to the private sector CR/GDP and the proportion of investment financed through credit flows from formal financial institutions$\Delta$CR/I enhance the proportion of savings channeled to investment. However, unlike the short-run where it is insignificant;the ratio of credit given to the govt. and to the commercial sector CRG/CRC has a long run negative impact.

The R-squared ($R^2$) statistic, reported at the bottom of Table 4, was obtained to be **0.41**(approx) and the adjusted $R^2$was estimated to be **0.06**(approx) indicating penalization (as $< R^2$) of the $R^2$ for the addition of regressors which do not contribute to the explanatory power of the model.

## FINANCIAL VARIABLES AND SAVINGS RATE

The rate of savings or average savings propensity is captured by the variable'**s**' as has been shown earlier in equation [6]. It has also been discussed that '**s'** is supposed to depend on money market variables MR1, MR2, MR3 & RM and bond market return BR. We have also obtained by the Augmented Dickey-Fuller test and the Philips-Peron test that RM is integrated of order zero and all other variables are integrated of order one. We now attempt a cointegration analysis amongst the I(1) variables. RM is excluded because it is a I(0) process and cointegration analysis cannot be performed when variables are integrated of different order. Moreover, differencing of certain variables done to match the order of integration, sometimes erode their economic meaning.

### Cointegration Analysis

We have applied the Johansen test on the aforementioned variables exactly in the same fashion as discussed earlier. Considering sufficient lags, the Johansen's approach for rank determination comprising of the summary of all 'deterministic trend assumptions' is run in EViews (option 6 – summarize all 5 sets of assumptions). It was obtained that the Rank was lowest when the test assumes for no deterministic trend in data, no intercept or trend in cointegrating equation (CE) or test vector autoregression (VAR). Hence, we run the Johansen test again with option 1 in EViews regarding assumption of deterministic trend. This results in **2**cointegrating equation as indicated by the LR test at 5% level of significance. The results of the test with normalized cointegrating coefficients have been shown below. The numbers in parenthesis are the asymptotic standard errors (rounded off to three decimal places).

Cointegrating Equations (1 and 2)

$$CE(1): \quad \underset{}{\ln(s)_t} + \underset{(0.261)}{1.041523}\left(MR2\right)_t - \underset{(0.115)}{1.100612}\left(MR3\right)_t - \underset{(0.091)}{0.130488}\left(BR\right)_t$$

$$CE(2): \quad \underset{}{(MR1)_t} - \underset{(0.001)}{0.009590}\left(MR2\right)_t - \underset{(6.921)}{9.240015}\left(MR3\right)_t - \underset{(4.105)}{0.000279}\left(BR\right)_t$$



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## Vector Error Correction

We employ the Engle-Granger two step estimating procedure in a vector error correction (VEC) model which is a restricted VAR having cointegration restrictions (obtained from Johansen's test) built into its specification, so that it is designed for use with non-stationary series that are known to be cointegrated. The VEC specification used in this case is as under:

$$\begin{aligned}\Delta \ln(s)_t = {} & \alpha_1 \Delta \ln(s)_{t-1} + \alpha_2 \Delta \ln(s)_{t-2} + \alpha_3 \Delta \ln(s)_{t-3} + \alpha_4 \Delta \left(MR1\right)_{t\text{-}1} + \alpha_5 \Delta \left(MR1\right)_{t\text{-}2} + \alpha_6 \Delta \left(MR1\right)_{t\text{-}3} \\ & + \alpha_7 \Delta \left(MR2\right)_{t\text{-}1} + \alpha_8 \Delta \left(MR2\right)_{t\text{-}2} + \alpha_9 \Delta \left(MR2\right)_{t\text{-}3} + \alpha_{10} \Delta \left(MR3\right)_{t\text{-}1} + \alpha_{11} \Delta \left(MR3\right)_{t\text{-}2} + \alpha_{12} \Delta \left(MR3\right)_{t\text{-}3} \\ & + \alpha_{13} \Delta \left(BR\right)_{t\text{-}1} + \alpha_{14} \Delta \left(BR\right)_{t\text{-}2} + \alpha_{15} \Delta \left(BR\right)_{t\text{-}3} + \sum_{i=1}^{2} \lambda_i CE_{t-1}(i)\end{aligned}$$

The results of the estimation of this VEC model have been tabulated in Table 5 shown below. It portrays the estimated coefficients of the respective variables along with their standard errors and t-statistics. The probability of the rejection of the null hypothesis for t-test is obtained and the result of the test, i.e. whether the corresponding variable is significant or not is stated in the last column. We have considered a two-tail test in our analysis. However, to conduct a one-sided test, the appropriate probability one-half of the critical value of the two-tail test can be taken.

## Interpretation of Results

When tested for unit roots in the residuals, PP Test Statistic **-6.131** is less than its critical value **-1.952** at 5% level of significance. This confirms that there is no unit root or serial correlation in the residuals and the model can be used for predictive purposes. Moreover, the Durbin Watson statistic is very close to 2 which also confirm the success of Vector Error Correction.

The significance of t-test, shown in the last column, indicates that only the variables $\Delta(\text{MR2})_{\text{t-1}}$and $\Delta(\text{MR3})_{\text{t-1}}$ are significant. All other variables, except for the error correction terms, are insignificant because their null hypothesis of zero coefficients cannot be rejected.

The significantly negative estimated coefficient of $\Delta(\text{MR2})_{\text{t-1}}$implies that a rise in the money market short period deposit rate leads to a decrease in the savings rate. Whereas, the long term deposit rate $\Delta(\text{MR3})_{\text{t-1}}$does increases the savings rate of Indian investors. This behavior of the Indian savers' might be due to the fact that long-term investments provide various kinds of tax rebates.

The bond market returns do not have any significant impact on the savings rate. This shows that changes in the returns on govt. bond do not affect the savings rate. This might be due to various causes. Two among those are: (a) the Indian savers prefer govt. bonds not because of its return but because of the trustworthiness of the govt., (b) there are very few alternative than to invest in govt. bonds despite low returns for most of the period considered in this analysis.

The long-run relationships shown by the cointegrating equations state that mid-term and long-term interest rates behave similar to that of their short-run behavior. However, we can observe that the bond market return raises the savings rate in the long-run.



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*Table 5. Estimation Results of VEC Model (FINANCIAL VARIABLES AND SAVING RATE)*

| Variable | Coefficients | Standard Errors | t - Statistic | Significant? |
|---|---|---|---|---|
| CE(1) | 0.115873 | 0.037057 | 3.126917 | Yes |
| CE(2) | -72.68635 | 57.0376 | -1.274358 | |
| $\Delta \ln(s)_{t-1}$ | -0.646406 | 0.317602 | -2.035275 | Yes |
| $\Delta \ln(s)_{t-2}$ | -0.211421 | 0.287475 | -0.735441 | |
| $\Delta \ln(s)_{t-3}$ | -0.030327 | 0.202218 | -0.14997 | |
| $\Delta(MR1)_{t-1}$ | 83.65237 | 51.95579 | 1.610068 | |
| $\Delta(MR1)_{t-2}$ | 65.64314 | 43.4974 | 1.509128 | |
| $\Delta(MR1)_{t-3}$ | 20.14594 | 29.03276 | 0.693904 | |
| $\Delta(MR2)_{t-1}$ | -0.917007 | 0.502986 | -1.823127 | Yes |
| $\Delta(MR2)_{t-2}$ | -0.731113 | 0.437598 | -1.67074 | |
| $\Delta(MR2)_{t-3}$ | -0.239905 | 0.300226 | -0.799082 | |
| $\Delta(MR3)_{t-1}$ | 0.100216 | 0.036195 | 2.768743 | Yes |
| $\Delta(MR3)_{t-2}$ | 0.049737 | 0.036528 | 1.361605 | |
| $\Delta(MR3)_{t-3}$ | 0.028666 | 0.034994 | 0.819165 | |
| $\Delta(BR)_{t-1}$ | 0.027174 | 0.021316 | 1.274841 | |
| $\Delta(BR)_{t-2}$ | 0.012321 | 0.021606 | 0.570278 | |
| $\Delta(BR)_{t-3}$ | 0.026938 | 0.019679 | 1.368895 | |
| R-squared | 0.616837 | Mean dependent var | | 0.024785 |
| Adjusted R-squared | 0.233674 | S.D. dependent var | | 0.064678 |
| S.E. of regression | 0.056619 | Akaike info criterion | | -2.598544 |
| Sum squared resid | 0.051292 | Schwarz criterion | | -1.827616 |
| Log likelihood | 59.87598 | F-statistic | | 1.609855 |
| Durbin-Watson stat | 2.142348 | Prob(F-statistic) | | 0.175350 |



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The R-squared ($R^2$) statistic, reported at the bottom of Table 5, was obtained to be **0.61**(approx)and the adjusted $R^2$was estimated to be **0.23**(approx) indicating that about 61% of the variation in the dependent variable could be explained by the independent variables.

## FINANCIAL SECTOR AND ECONOMIC GROWTH

Economic Growth [**g**] has been argued to depend on economic efficiency [**ln(IOCR)**], savings channeled to investment [**ln(θ)**] and savings rate [**ln(s)**] as has been shown earlier in equation [6]. It has been obtained that ln(IOCR) significantly depends on **GB/TB**and**MF/I**, ln(θ) significantly dependsonly on **CR/GDP** and ln(s) significantly depends on **MR1** and**MR2**. We now attempt a cointegration analysis amalgamating the all the types of significant variables into the growth equation.

### Cointegration Analysis

We have applied a similar Johansen's test discussed earlier and EViewsreported that there is no deterministic linear trend in data, and no intercept or trend in cointegrating equation (CE) or test vector autoregression (VAR). Hence, we run the Johansen test again with option 1 in EViews regarding assumption of deterministic trend which results in **4**cointegrating equations shown below. The numbers in parenthesis are the asymptotic standard errors (rounded off to three decimal places).

Cointegrating Equations (1 and 4)

$$CE(1): \quad g_t + \underset{(0.056)}{0.221826}\left(MR3\right)_t - \underset{(3.872)}{45.69109}\left(\frac{CR}{GDP}\right)_t$$

$$CE(2): \quad \left(\frac{GB}{TB}\right)_t - \underset{(0.008)}{0.055072}\left(MR3\right)_t + \underset{(0.537)}{0.884274}\left(\frac{CR}{GDP}\right)_t$$

$$CE(3): \quad \left(\frac{MF}{I}\right)_t + \underset{(0.002)}{0.006539}\left(MR3\right)_t - \underset{(0.134)}{0.521436}\left(\frac{CR}{GDP}\right)_t$$

$$CE(4): \quad \left(MR2\right)_t - \underset{(0.041)}{0.701538}\left(MR3\right)_t - \underset{(2.747)}{12.51573}\left(\frac{CR}{GDP}\right)_t$$

These cointegrating equations portray long-run relationship amongst the variables which we tabulate as under to depict the type and significance of the relation of explanatory variables with the dependent variable '**g**'. The order of the explanatory variables in the Johansen's cointegrating test has been changed each time so that we obtain cointegrating equations of the dependent variable **g** with each of the independent variables. The following Table 6 portrays the results of such estimation. It portrays the estimated coefficients of the respective variables along with their standard errors. The t-statistics has been calculated and a null hypothesis of zero coefficients has been compared with the critical values and stated in the last column. We have considered a two-tail test in our analysis. However, to conduct a one-sided test, the appropriate probability one-half of the critical value of the two-tail test can be taken.



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*Table 6. Results of Cointegration Analysis*

| Variable | Coefficients | Standard Errors | t - Statistic | Significant? |
|---|---|---|---|---|
| $(^{GB}/_{TB})_t$ | 7.98466 | -1.13077 | 7.0612591 | Yes |
| $(^{MF}/_{I})_t$ | 101.1663 | -33.9758 | 2.9775988 | Yes |
| $(MRi2)_t$ | -2.782925 | -0.73406 | -3.7911411 | Yes |
| $(MR3)_t$ | 3.650692 | -0.83371 | 4.3788512 | Yes |
| $(^{CR}/_{GDP})_t$ | 45.69109 | 3.872 | -11.800385 | Yes |

## Vector Error Correction

The specification obtained on incorporating the cointegrating equations reported by the Johansen's test into a vector error correction (VEC) model in the same procedure as done earlier is as follows:

$$\Delta g_t = \sum_{i=1}^{4} \lambda_i CE_{t-1}(i) + \alpha_1 \Delta g_{t-1} + \alpha_2 \Delta g_{t-2} + \alpha_3 \Delta g_{t-3} + \alpha_3 \Delta \left(\frac{GB}{TB}\right)_{t-1} + \alpha_3 \Delta \left(\frac{GB}{TB}\right)_{t-2} + \alpha_3 \Delta \left(\frac{GB}{TB}\right)_{t-3}$$
$$+\Delta\alpha_4 \left(\frac{MF}{I}\right)_{t-1} + \Delta\alpha_4 \left(\frac{MF}{I}\right)_{t-2} + \Delta\alpha_4 \left(\frac{MF}{I}\right)_{t-3} + \Delta\alpha_4 \left(MR2\right)_{t-1} + \Delta\alpha_4 \left(MR2\right)_{t-2} + \Delta\alpha_4 \left(MR2\right)_{t-3}$$
$$+\Delta\alpha_4 \left(MR3\right)_{t-1} + \Delta\alpha_4 \left(MR3\right)_{t-2} + \Delta\alpha_4 \left(MR3\right)_{t-3} + \Delta\alpha_4 \left(\frac{CR}{GDP}\right)_{t-1} + \Delta\alpha_4 \left(\frac{CR}{GDP}\right)_{t-2} + \Delta\alpha_4 \left(\frac{CR}{GDP}\right)_{t-3}$$
$$+\alpha_9 \left(DUMMY\right)_t$$

The results of the estimation of this VEC model have been tabulated in Table 7 shown below. It portrays the estimated coefficients of the respective variables along with their standard errors and t-statistics. The probability of the rejection of the null hypothesis for t-test is obtained and the result of the test, i.e. whether the corresponding variable is significant or not is stated in the last column.

## Interpretation of Results

When tested for unit roots in the residuals, PP Test Statistic **-5.821** was found to be less than its critical value **-1.952** at 5% level of significance confirming that there is no unit root or serial correlation in the residuals and the model can be used for predictive purposes. The Durbin-Watson statistic which is very close to **2.0** also confirms the success of Vector Error Correction. The significance of t-test, shown in the last column, indicates that all the variables in some of its lag are significant.

Though we had obtained that the ratio of government borrowing to total borrowing enhances economic efficiency, it fails to have a positive short-run impact on the growth rate as a financially repressed regime might enhance efficiency and provide immediate relief to the government, but actually hampers growth as has been stated by Roubini & Sala-i-Martin (1992a). However, govt. borrowing in the long-run has a positive (see table 3.6) impact on the rate of economic growth as govt. projects are believed to have long gestation lags and due to the fact that govt. borrows mainly for infrastructure and heavy industries which takes long time to fruit. This also validates the propositions of Fry (1988) and McKinnon (1973) but adds that such propositions are true only in the short-run as far as India is concerned.



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*Table 7. Estimation Results of VEC Model (FINANCIAL SECTOR AND ECONOMIC GROWTH)*

| Variable | Coefficients | Standard Errors | t - Statistic | Significant? |
|---|---|---|---|---|
| CE(1) | -4.96717 | 0.802374 | -6.190595 | Yes |
| CE(2) | -41.56242 | 10.27675 | -4.044315 | Yes |
| CE(3) | -90.52327 | 30.10717 | -3.006701 | Yes |
| CE(4) | 7.660484 | 2.161218 | 3.544521 | Yes |
| $\Delta g_{t-1}$ | 2.823104 | 0.640272 | 4.409225 | Yes |
| $\Delta g_{t-2}$ | 1.443535 | 0.389372 | 3.707345 | Yes |
| $\Delta g_{t-3}$ | 0.690225 | 0.18173 | 3.798085 | Yes |
| ” $\left(GB/TB\right)_{t-1}$ | -149.4048 | 45.99248 | -3.248461 | Yes |
| ” $\left(GB/TB\right)_{t-2}$ | -33.11214 | 50.3911 | -0.657103 | |
| ” $\left(GB/TB\right)_{t-3}$ | 8.676346 | 49.18913 | 0.176387 | |
| $\left(MF/I\right)_{t-1}$ | 83.21659 | 29.15648 | 2.854137 | Yes |
| $\left(MF/I\right)_{t-2}$ | 87.92428 | 32.07948 | 2.740826 | Yes |
| $\left(MF/I\right)_{t-3}$ | 59.27874 | 37.42452 | 1.583955 | |
| $\left(MR2\right)_{t-1}$ | -7.804311 | 2.194537 | -3.556244 | Yes |
| $\left(MR2\right)_{t-2}$ | -5.064221 | 2.251952 | -2.248814 | Yes |
| $\left(MR2\right)_{t-3}$ | -1.212416 | 1.370991 | -0.884336 | |
| $\left(MR3\right)_{t-1}$ | 6.101747 | 1.748834 | 3.489037 | Yes |
| $\left(MR3\right)_{t-2}$ | 3.170584 | 1.82554 | 1.736792 | |
| $\left(MR3\right)_{t-3}$ | 1.254976 | 1.547681 | 0.810875 | |
| $\left(CR/GDP\right)_{t-1}$ | -195.6152 | 106.5491 | -1.835916 | Yes |
| $\left(CR/GDP\right)_{t-2}$ | -109.5036 | 126.0813 | -0.868516 | |

*continues on following page*



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*Table 3. Continued*

| Variable | Coefficients | Standard Errors | t - Statistic | Significant? |
|---|---|---|---|---|
| $\left(CR/GDP\right)_{t-3}$ | 54.93091 | 104.6928 | 0.524687 | |
| $(DUMMY)_t$ | -5.245961 | 1.105146 | -4.746848 | Yes |
| R-squared | 0.963172 | Mean dependent var | | 0.145455 |
| Adjusted R-squared | 0.882151 | S.D. dependent var | | 4.491874 |
| S.E. of regression | 1.542019 | Akaike info criterion | | 3.904080 |
| Sum squared resid | 23.77824 | Schwarz criterion | | 4.947100 |
| Log likelihood | -41.41731 | F-statistic | | 11.88794 |
| Durbin-Watson stat | 1.926925 | Prob(F-statistic) | | 0.000149 |

It was obtained that the proportion of mutual fund investments to total investment has a positive significant impact on the growth rate both in the short-run and in the long-run because mutual fund companies have greater technical expertise and better handle asymmetric information which is very much persistent in India.

The significantly negative estimated coefficients of $\Delta(MR2)_{t-1}$ and $\Delta(MR2)_{t-1}$ imply that a rise in the money market short period deposit rate leads to a decrease in the growth rate and a rise in the long term deposit rate $\Delta(MR3)_{t-1}$ increases the growth rate. This behavior of the Indian savers' might be due to the fact that short-term investments are highly liquid and any premature sale of these assets imply heavy cutback in their yield. The consumers' choice is between 'low-yield-liquid-investment' and 'high-yield-illiquid-investment'. When short-period deposit rate rises, people prefer short-term investments for which the yields are low and hence growth hampers. However, when the long-period interest rate rises, people prefer long-term investment which raises the rate of growth being of high-yield variety. This result is in accordance with what was stated by Levine (1991).

The variable CR/GDP has significantly negative estimated coefficient. This means that rise in the proportion of real credit to the private sector as a proportion of GDP reduces the rate of growth though it was found earlier that it significantly enhanced the amount of savings channeled to investment. This shows that the private sector can effectively channel savings to investment but such investments cannot effectively raise the short-run economic growth rate. However, it is also found that CR/GDP has a significantly positive relationship with the economic growth rate in the long-run.

We also arrive at the result that the DUMMY variable, formulated to test for a structural break in 1991-92, has a significant coefficient. It proves the success of the financial reforms taken during 1991-92.

The R-squared ($R^2$) statistic, reported at the bottom of Table 7, was obtained to be **0.96** (approx) implying that the explanatory variables considered in our analysis explains near about **96%** of the movement of the dependent variable. The adjusted $R^2$ was estimated to be **0.88** (approx) indicating penalization (as $< R^2$) of the $R^2$ for the addition of regressors which do not contribute to the explanatory power of the model but still explains a huge proportion.



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## CONCLUSION

In this chapter we have explored whether the real sector is affected by the financial sector in India.We posit that financial variables may influence growth either by changing the quantity of investible resources of by affecting the efficiency of utilization of a given quantity of resources or both, of which the former can either be through change in the amount of savings channeled to investment or change in the rate of savings. Hence, we have considered 3 sets of financial variables according to the nature of influence stated above. We have then attempted a time-series econometric analysis amongst the various sets of explanatory variables and each of the aforementioned indicators (components) of growth. We have then regressed growth on the significant of the explanatory variables.

The ratio of government borrowing to total borrowing enhances economic efficiency and long-run growth rate but fails to have a positive short-run impact. This result totally walks away from the propositions of Fry (1988) and McKinnon (1973) and shows that such relationships are not true at least in the context of India.

It was obtained that the proportion of mutual fund investments to total investment has a positive significant impact on the growth rate both in the short-run and in the long-run.

The short period deposit rate has a negative impact on the growth rate and the long term deposit rate has a positive impact. This result is in accordance with what was stated by Levine (1991). It follows that promoting long-term investment and its interest rate certainly can boost real growth.

The proportion of real credit to the private sector as a proportion of GDP needs some time to enhance real growth as it was found to enhance growth only in the long-run. That is, the private sector might look for own profits in the short-run but certainly helps the nation grow by its linkage effects.

The DUMMY variable, formulated to test for a structural break in 1991-92, has a significant coefficient and proves the success of the financial reforms taken during 1991-92.

However, financial intermediation variables, generally supposed to enhance economic efficiency and growth, were found to impart no impact on both efficiency and growth.

Finally, we have obtained that the financial sector variables, which account for financial infrastructure, can explain near about 96% of the changes in real economic growth in India, which is an excellent goodness of fit. To conclude we can say that the development of the financial sector helps the Indian real sector grow both in the short-run and in the long-run but unlike contemporary literature that prescribes diminished role, our study suggests a greater role of the govt. to ensure long-run economic growth.

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## KEY TERMS AND DEFINITIONS

**Causality:** *Causality* (also referred to as causation, or cause and effect) is the agency or efficacy that connects one process (the cause) with another process or state (the effect), where the first is understood to be partly responsible for the second, and the second is dependent on the first.

**Cointegration:** Cointegration is a statistical property possessed by some time series data that is defined by the concepts of stationarity and the order of integration of the series. A stationary series is one with a mean value which will not vary with the sampling period.

**Econometric Investigation:** Investigating causal relations by econometric models.



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**Economic Efficiency:** A broad term that implies an *economic* state in which every resource is optimally allocated to serve each person in the best way while minimizing waste and inefficiency. When an *economy* is economically *efficient*, any changes made to assist one person would harm another.

**Economic Growth:** Increase in the inflation-adjusted market value of the goods and services produced by an *economy* over time. It is conventionally measured as the percent rate of increase in real gross domestic product, or real GDP, usually in per capita terms.

**Financial Infrastructure:** The underlying foundation for the *financial* system including the institutions, information, technologies and rules and standards which enable *financial* activities including financial intermediation.

**Incremental Output-Capital Ratio:** The *incremental capital output ratio* (ICOR) is a metric that assesses the marginal amount of investment *capital* necessary for an entity to generate the next unit of *production*. Overall, a higher ICOR value is not preferred because it *indicates* that the entity's *production* is inefficient.

**Unit Roots:** A *unit root* test is a statistical test for the proposition that in a autoregressive statistical model of a time series, the autoregressive parameter is one.

**Vector Error Correction:** A vector error correction (VEC) model is a restricted VAR that has cointegration restrictions built into the specification, so that it is designed for use with nonstationary series that are known to be cointegrated.

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# Chapter 14
# Tourism-Led Growth Hypothesis and Foreign Direct Investment in ASEAN

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## ABSTRACT

*This study tests the relationships of visitor spending, foreign direct investment in the tourism sector, and the gross domestic product (GDP) per capita among members of the Association of Southeast Asian Nations (ASEAN) during the period of 1988 to 2011 to prove the tourism-led growth hypothesis. The results of panel regression show that tourism-led growth hypothesis is valid for the ASEAN countries. Factors determining the GDP per capita in these countries are visitor spending, foreign investment and government consumption in tourism sector, human capital and trade openness. The results from this study suggest that the governments of the ASEAN countries are able to have effective growth policies by encouraging foreign direct investment in the tourism sector and improving their human capital. Therefore, ASEAN Economic Community (AEC) which will strengthen and facilitate investment cooperation and human capital developments in the tourism sector among ASEAN countries will have a significant benefit to economic growth in the region.*

## INTRODUCTION

Tourism is one of the world's fastest growing industries. It is an agglomeration of many activities: transportation, accommodation, the restaurant industry, the entertainment industry, sports and recreation, and other activities that support the demand derived from tourists. Tourism requires strong support from financial facilities, telecommunication services, and other environmental factors to determine visitor demand. Players in the industry range from small-scale businesses to transnational corporations (TNCs).

In developing countries, the tourism industry has become a major source of foreign exchange revenues. It generates jobs and promotes economic diversification. It can generate spillover effects: further investments, jobs, and growth in other sectors of the economy. However, since the tourism sector

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depends largely on the demand of foreign visitors, it is sensitive to external shocks, whether economic, environmental, or political. Wages in the tourism sector are considered relatively low, and jobs in this sector are considered labor intensive. The tourism sector is sometimes called a pro-poor industry. It can be associated with criminal activities such as sex tourism. With all the positive and negative effects, a country has to carefully consider the net benefits before making a decision to support the expansion of tourism. A fine balance needs to be maintained in order for developing countries to capture the benefits of this growing economic activity at minimum or sustainable costs (UNCTAD, 2007).

By 2015, Association of Southeast Asian Nations (ASEAN) aim to establish the ASEAN Economic Community (AEC), a security, economic and socio-cultural community of over 600 million people which will account for nearly 5% of world GDP (World Economic Forum, 2012). The Southeast Asian region endowment for tourism includes a wealth of cultural heritage and nature. It possesses a long tradition of tourism and locates in the heart of Asia. They have been joining forces to address travel and tourism–related issues, which greatly benefit from regional cooperation, such as promotion and marketing, connectivity, environment protection, visa policies and mobility, and sector liberalization. The ASEAN member have reached agreements on several aspects. If the AEC makes ASEAN members a stronger connection through market liberalization and factor of production flows, there are a significant opportunity for travel and tourism sector to grow from both inside and outside the region.

Because most countries in Southeast Asia are in the developing country group, there are some gap of investment and saving represented by problems of infrastructure and financial resources. Domestic capital is not sufficient to facilitate a growing sector such as tourism. Also there is little recent literature on FDI and tourism in developing countries, particularly from the empirical perspective (UNCTAD, 2007) and little evidence of either mapping of FDI in the tourism industry or the economic impact of FDI in the tourism industry. The impact of FDI varies according to the specific country and the historical context. UNCTAD (2007) finds that the impact depends upon the host country's level of economic and human development, including the extent to which it can leverage the presence of TNCs to foster domestic enterprise. This ability is related to host countries' absorptive and productive capacities. Another factor influencing the impact of FDI is the motivation and corporate strategy. The main questions in this study are whether FDI in the tourism sector strongly contributes to economic growth in the country, what are directions of causality among FDI in tourism sector, tourist spending, human capital index, exchange rate, trade openness, government consumption in tourism sector and economic growth in the country and is the tourism-led growth hypothesis valid in Southeast Asia.

This paper evaluates the causality and long-run relationship of international tourist spending, FDI in tourism industry, and economic growth in ASEAN countries using the panel co-integration approach and causality test then proves the tourism-led growth hypothesis using FDI as one of the main variables. The study estimates the relationship among expansion in the tourism sector (visitor spending), FDI in tourism industry, and the GDP per capita in the case of members of the Association of Southeast Asian Nations (ASEAN) during 1988-2011. The method used in the study is ordinary least square analysis. The results show that the FDI in the tourism industry has a significant role in the GDP per capita in the Southeast Asian region. Other factors determining the GDP per capita in these countries are human capital, trade openness, and government consumption per output. The results from this study confirm the tourism-led growth hypothesis and indicate that the governments of ASEAN countries are able to have an effective growth policy through the tourism sector using the promotion of tourism FDI.



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## DEFINITION OF TOURISM AND ITS ECONOMIC IMPACTS

The World Tourism Organization defines travel and tourism as follows:

*Traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes. (World Tourism Organization, 1995, p.10).*

The first tier of the tourism industry definition includes enterprises that are directly involved in the production and consumption of tourism services. The second tier is called "tourism economy." It involves people and firms that indirectly participate. Tourism industry does not appear as a formal industry in the national account systems. Therefore, it has been a difficult task to collect the data and quantify the size of the industry since some tourism-related activities fall into categories of other formal industries. For example, hotels and restaurants are counted in the construction industry. WTO-OECD-Eurostat Inter-secretariat Working Group has developed tourism satellite account (TSA). TSA was endorsed by the Statistical Commission of the United Nations in 2000 (UNCTAD, 2007). TSA adopts the basic system of concepts, classifications, definitions, tables, and aggregate systems of national accounts 2008 (NSA, 2008), the international standard for a systematic summary of national economic activity, from a functional perspective. There are 12 national account industries, all of which are in the service sector, with half related to transportation.

According to the World Travel & Tourism Council, this study categorizes the impact of the tourism sector on the economy as direct or indirect impacts. Direct impacts are from the industries that deal directly with tourists, including hotels, travel agents, airlines and other passenger transportation services, as well as the activities of restaurant and leisure industries that deal directly with tourists. Direct impact is equivalent to total internal travel and tourism spending within a country less the purchases made by those industries (including imports). Indirect and induced impacts include three factors: capital investment by all industries directly involved in travel and tourism, government collective spending in support of tourism activity, and supply-chain effects, which include purchases of domestic goods and services directly by different industries within travel and tourism as input to their final tourism output. The induced contribution to GDP is the boarder contribution to GDP and employment of spending by those who are directly or indirectly employed by the travel and tourism industry.

The World Travel & Tourism Council and World Tourism Organization emphasized three roles of tourism. Firstly, tourism benefits through the creation of sustainable enterprises and decent jobs, provides the necessary security for millions of people worldwide. Secondly, it is a major source of foreign exchange which is needed for developing countries' development. Finally, tourism is increasingly interconnected with environmental sustainability (Chheang, 2013). Environmentally responsible tourism is one of the new growth poles of the 'green economy', providing sustainable infrastructure, business opportunities and jobs and income (World Tourism Organization, 2012).

## FACTS AND FIGURES OF TOURISM AND FDI IN SOUTHEAST ASIA

Tourism is a part of the service sector, which has an increasing share in the GDP component of the ASEAN countries. In 2012, the service sector accounted for the highest share of GDP in eight ASEAN member states, whereas in 2008, it was the main source of national income in only six ASEAN coun-



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tries (ASEAN Secretariat, 2013). Therefore, the service sector has become the main driver of growth. Strong support of the tourism-led growth hypothesis can lead to effective growth policy implications. The ASEAN tourism industry has played a significant role in the economic growth of the region. Tourists are attracted to ASEAN countries because of the culture and history, the good weather, and the natural beauty of the region. It is interesting to speculate how much the tourism industry affects overall economic growth in this region. The Asia Pacific is one of the most dynamic regions which attract both domestic and international tourists from all over the world (Chheang, 2013). It is estimated by the World Tourism Organization that the Asia Pacific region will be the world's second-most important tourist destination after Europe in 2020.

Up until early 1980s, ASEAN relied largely on agriculture and the export of primary products as a foreign exchange receipts. The global economic recession after the oil crisis in 1970s forced the government in ASEAN to find a new source of foreign exchange. Tourism had become a key industry in the exports to earn foreign exchanges.

The World Economic Forum (2012) had measured the travel and tourism competitiveness index (TTCI) in collaboration with expert from the sector. Their framework aims to measure the factors and policies that make it attractive to develop the travel and tourism sector in different countries (World Economic Forum, 2012, pp.vii). They used three subindexes to measure including regulatory framework, business environment and infrastructure, and the human cultural and natural resources. Singapore has the highest rank, followed by Malaysia, Thailand, Brunei, Indonesia, Vietnam, the Philippines, and Cambodia. The government prioritization of travel and tourism is a significant strength shared by the most ASEAN countries. Also, the region's affordability is also considered a major reason why a lot of visitors decide to travel to ASEAN countries. On the other hand, the World Economic Forum's study revealed that major challenges for ASEAN countries for travel and tourism are inadequate infrastructure, poor public health situation and environmental stewardship. The governments experience the challenge of balancing the socio-economic interest of different stakeholders.

## Economic Contribution of Tourism in Southeast Asia

With respect to tourism statistics in ASEAN, tourist per capita or tourist spending in ASEAN is presented in Table 1, calculated using total tourism receipts (Current $US) per number of tourist arrivals. In 2012, three countries with the highest tourist spending per capita among ASEAN countries were Singapore, Thailand, and Brunei. The countries with lowest tourist spending per capita were Laos, Cambodia, and Myanmar. The overall trend of tourist spending per capita fluctuated from 1995 to 2012. In Lao, Malaysia, Myanmar, Thailand, and Singapore, tourist spending per capita dropped in 2005 compared to 1995 figures and picked up again in 2012. In Brunei, the Philippines, and Vietnam, tourist spending per capita increased in the 17-year period. In Cambodia, the trend increased in 2005 and then slightly dropped in 2012.

For the number of international arrivals, ASEAN is expected to receive approximately 107 million international tourists in 2015. ASEAN tourism is strongly linked with Northeast Asian countries like China, Japan and South Korea which are very important market for Southeast Asia. Malaysia, Thailand, and Singapore had the highest number of visitors in 2012. The highest growth in number of international arrivals was in Lao in 2012 at 21.8.45% compared to the number in 2005. Cambodia's visitors in 2005 compared to 1995 increased by 546.36%. In 2012, the number of international arrivals in Cambodia increased 152.04% compared to the number in 1995. Vietnam is another country with high growth in the number of visitors. In 2005, there was a 157.36% increase compared with 1995 and a 96.95% in-



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*Table 1. Tourist per capita in ASEAN for 1995, 2005, and 2012 (Current US Dollars)*

| | 1995 | 2005 | 2012 |
|---|---|---|---|
| Brunei | N/A | 1515.87 | 1617.83 |
| Cambodia | 322.73 | 653.31 | 558.04 |
| Indonesia | 1209.30 | 1018.39 | 1176.40 |
| Laos | 866.67 | 212.80 | 215.42 |
| Malaysia | 675.3247 | 632.28 | 808.97 |
| Myanmar | 1444.44 | 357.76 | 749.36 |
| The Philippines | 648.30 | 1050.32 | 1146.74 |
| Thailand | 1331.56 | 1046.25 | 1688.29 |
| Singapore | 1253.87 | 877.10 | 1735.54 |
| Vietnam | N/A | 661.49 | 997.37 |

*Brunei data in the 2012 column are the tourists per capita in 2009 from the data availability limit.

**Myanmar data in the 2012 column are the tourists per capita in 2011 from the data availability limit.

Source: World Travel and Tourism Council (2015)

*Table 2. Number of international tourist arrivals (Person)*

| | 1995 | 2005 | 2012 |
|---|---|---|---|
| Brunei | N/A | 126,000 | 209,000 |
| Cambodia | 220,000 | 1,422,000 | 3,584,000 |
| Indonesia | 4,324,000 | 5,002,000 | 8,044,000 |
| Laos | 60,000 | 672,000 | 2,140,000 |
| Malaysia | 7,469,000 | 16,431,000 | 25,033,000 |
| Myanmar | 117,000 | 232,000 | 593,000 |
| The Philippines | 1,760,000 | 2,623,000 | 4,273,000 |
| Thailand | 6,952,000 | 11,567,000 | 22,354,000 |
| Singapore | 6,070,000 | 7,079,000 | 11,098,000 |
| Vietnam | 1,351,000 | 3,477,000 | 6,848,000 |

Source: World Travel and Tourism Council (2015)

crease in 2012 compared with 2005. Myanmar in 2012, compared with 2005, had a significant increase of 155.60%. Among other countries in ASEAN, the number of international visitors also has increased substantially during the 17 years.

From the outstanding performance of the tourism industry in ASEAN, we can see that it has been expanding for almost two decades. Since the tourism sector is becoming a great player in the GDP of ASEAN countries, research on the relationship between the performance of the tourism sector and GDP can provide crucial information for policy formulation and strategic planning by ASEAN governments, as well as tourism businesses. This study estimates the relationship between GDP per capita in nine countries that were members of ASEAN from 1995 to 2011 using dynamic panel data analysis. The results confirm that the better performance of the tourism industry led to higher GDP per capita in these countries. Other significant factors determining GDP per capita in this model are human capital, government consumption share, and trade openness.

Visitors generate important service exports revenues for Southeast Asian countries. In 2014, visitor exports generated $112.0 billion or 7.1% of total exports. This is forecast to grow by 4.2% in 2015 and by 5.7% from 2015 to 2025.

The total GDP contribution of travel and tourism to GDP in Southeast Asian countries was $291 billion or 12% of GDP in 2014, which includes both direct and indirect contributions. The direct contribution of travel and tourism to GDP in Southeast Asian countries was 4.8% of GDP in 2014, and is forecast to rise by 5.0% in 2015 and by 5.4% from 2015 to 2025, to $209.4 billion in 2025 (WTTC, 2015). Of 12 regions in the world, Southeast Asia has the second fastest growth rate. The total contribution of travel and tourism to employment, including jobs indirectly supported by the industry, was 9.7% of total employment (29,358,000 jobs). This contribution is expected to rise by 2.9% in 2015 to 30,196,000 jobs and by 2.7% to 39,227,000 jobs in 2025 (11% of total).



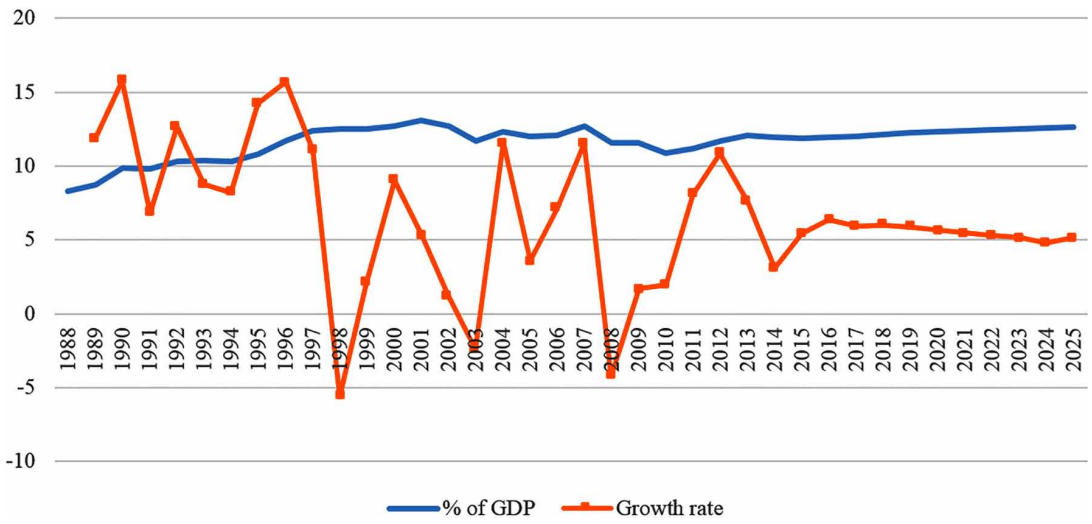
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*Table 3. Role of travel and tourism in Southeast Asian economies*

| | Southeast Asia | | World Average | |
|---|---|---|---|---|
| | **2014** | **2015 (% Growth)** | **2014** | **2015 (% Growth)** |
| Direct Contribution to GDP (USD Billion) | 117.9 | 5.0 | 2,364 | 3.7 |
| Total Contribution to GDP (USD Billion) | 291.8 | 5.4 | 7,580.9 | 3.7 |
| Visitor Exports (USD Billion) | 112.0 | 4.2 | 1,383.8 | 2.8 |
| Capital Investment (USD Billion) | 49.0 | 5.8 | 814.4 | 4.8 |
| Direct Contribution to Employment (1,000 jobs) | 11,262 | 2.8 | 105,408 | 2.0 |
| Total Contribution to Employment (1,000 jobs) | 29,358 | 2.9 | 276,845 | 2.6 |

Source: Compiled from WTTC Travel & Tourism Economic Impact 2015, World Travel & Tourism Council (WTTC)

*Figure 1. Total contribution of tourism industry to GDP*
*Source: WTCC (2015)*




## Tourism FDI in Southeast Asia

Strong macroeconomic fundamentals, improved policy environment and greater regional market prospects in ASEAN have increased foreign investors' confidence. In 2013, ASEAN attracted $122 billion, accounting for 8% of the global FDI (ASEAN and UNCTAD, 2014). ASEAN member states also increase their investment inside the region (17% of total FDI inflows).

According to Table 4 total net inflows of ASEAN in 2014 was $136,181.4 million. Singapore had the highest total net inflow share of 53% of all ASEAN countries, followed by Indonesia, Thailand and Malaysia. Most of net inflow to Singapore was from outside of ASEAN while Indonesia had the highest share of Intra-ASEAN inflows. Since Southeast Asian countries have diverse levels of development, the effects from FDI are different by country. Singapore is the only developed country in the region. Malaysia is in the upper-middle income group. Thailand, the Philippines, and Indonesia share middle-income status, but other countries in this region are in the lower-income group.



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*Figure 2. Total contribution to employment in tourism industry*
*Source: WTCC (2015)*

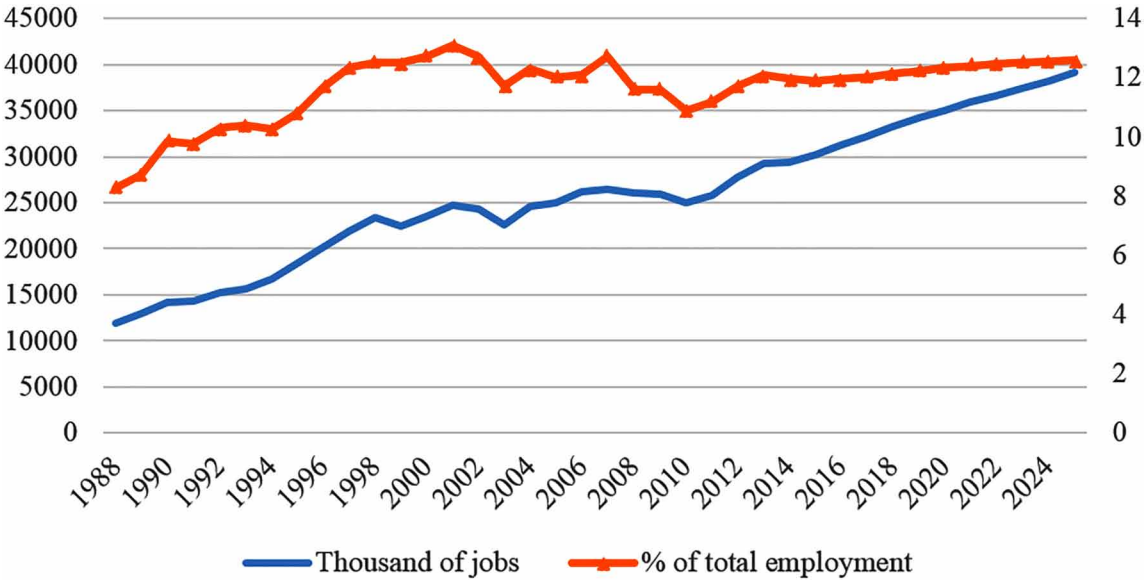



*Table 4. Foreign direct investment net inflows, intra- and extra-ASEAN ($ million)*

| Country | 2013[2/] | | | 2014 p/ | | | Share to total, 2014 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Intra-ASEAN | Extra-ASEAN | Total net inflow | Intra-ASEAN | Extra-ASEAN | Total net inflow | Intra-ASEAN | Extra-ASEAN | Total net inflow |
| **Brunei Darussalam** | -58.0 | 783.5 | 725.5 | 141.2 | 427.0 | 568.2 | 0.6 | 0.4 | 0.4 |
| **Cambodia** | 298.8 | 976.1 | 1,274.9 | 372.5 | 1,354.0 | 1,726.5 | 1.5 | 1.2 | 1.3 |
| **Indonesia** | 8,721.1 | 9,722.7 | 18,443.8 | 13,458.8 | 8,817.5 | 22,276.3 | 55.2 | 7.9 | 16.4 |
| **Lao PDR** | 104.6 | 322.1 | 426.7 | 137.9 | 775.3 | 913.2 | 0.6 | 0.7 | 0.7 |
| **Malaysia** | 2,187.5 | 10,109.9 | 12,297.4 | 2,771.1 | 7,943.0 | 10,714.0 | 11.4 | 7.1 | 7.9 |
| **Myanmar** | 1,186.8 | 1,434.1 | 2,620.9 | 683.6 | 262.6 | 946.2 | 2.8 | 0.2 | 0.7 |
| **Philippines** | (41.7) | 3,901.5 | 3,859.8 | 78.6 | 6,121.9 | 6,200.5 | 0.3 | 5.5 | 4.6 |
| **Singapore** | 3,665.0 | 52,473.3 | 56,138.3 | 4,532.7 | 67,565.6 | 72,098.3 | 18.6 | 60.4 | 52.9 |
| **Thailand** | 1,256.8 | 11,743.0 | 12,999.8 | 653.9 | 10,884.0 | 11,537.9 | 2.7 | 9.7 | 8.5 |
| **Viet Nam** | 2,078.6 | 6,821.4 | 8,900.0 | 1,547.1 | 7,653.0 | 9,200.1 | 6.3 | 6.8 | 6.8 |
| **Total** | **19,399.6** | **98,287.5** | **117,687.0** | **24,377.4** | **111,803.9** | **136,181.4** | **100.0** | **100.0** | **100.0** |
| **ASEAN 6[1/]** | 15,730.7 | 88,733.8 | 104,464.5 | 21,636.3 | 101,759.0 | 123,395.3 | 88.8 | 91.0 | 90.6 |
| **CLMV[1/]** | **3,668.9** | **9,553.6** | **13,222.5** | **2,741.1** | **10,045.0** | **12,786.1** | 11.2 | 9.0 | 9.4 |

Note: p/ is preliminary figures. 1/ is ranked according to FDI inflows in 2014; covers countries on which data is available.

Source: ASEAN Foreign Direct Investment Statistics Database as of 26 May 2015 (Data is compiled from submission of ASEAN Central Banks and National Statistical Offices through the ASEAN Working Group on International Investment Statistics (WGIIS).



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According to UNCTAD's World Investment Report (UNCTAD, 2012), FDI in service sector and primary sector rebounded in 2011 after falling sharply in 2009 and 2010, at the expense of manufacturing sector. Developing Asia remains the world's largest recipient region of FDI inflows (UNCTAD, 2014). Service has the largest share of announced green field project and mergers and acquisition (M&A) deals. However, FDI growth in ASEAN has been slowing down due to some economic situations. Indonesia got affected from financial turmoil in mid-2013. Malaysia's inflows has increased in 2014 by 22% as a result in rising FDI in services (UNCTAD, 2014). Thailand's political instability has discouraged a lot of FDI inflows especially from Japanese investors. ASEAN's low income economies inflows varied. Myanmar's inflows increased in 2014 by 17% (UNCTAD, 2014) while Cambodia, Vietnam and Lao's inflows are fairly constant.

The perception of the expanding tourism industry leads to misconceptions about the trend in tourism FDI. UNCTAD (2007) finds that FDI in tourism is still rather low in both developed and developing countries compared to FDI in other sectors. UNCTAD (2007) noted that this is partly because tourism-related FDI is concentrated in just a few of many related activities covered by the definition of tourism, mostly hotels and restaurants and car rentals. On the basis of the UNCTAD research, FDI and TNC presence is concentrated in a handful of 12 classified activities, including hotels, restaurants, second homes, travel agencies, cultural services, sports and recreational services, and all modes of passenger transportation services. Although the absolute value of FDI is low, it can be very important to the host economies.

Asia is a growing destination for tourism industry investors. Greenfield investments are the most common form of investment. Global data on green field investments in foreign hotels show that South, East, and Southeast Asia were the top regions in which the hotel TNCs planned to expand their investment during the period of 2006-2011 (UNCTAD, 2007). Travel and tourism investment in Southeast Asian countries in 2014 was $49.0 billion or 7.4% of total investment. It should rise by 5.8% in 2015 and by 6.4% over the next 10 years to $96.4 billion in 2025 or 8.1% of total investment.

FDI in Tourism of Southeast Asia is relatively low compared to other sectors. Numbers of foreign affiliates in hotels and restaurants compared to total number of foreign affiliates in 2012 of Southeast Asia are relatively low compare to electrical and electronic equipment sector as shown in Table 5.

The significant recipient industries in ASEAN were electronics and automotive and automotive parts (ASEAN and UNCTAD, 2014). According to ASEAN Secretariat and UNCTAD (2014), service and the manufacturing sector continued to dominate FDI flows in the region. Two sectors accounted for about 90% of FDI flows in ASEAN in 2012 and 2103. According to Table 6, there was an increasing trend of foreign value added in ASEAN exports. Service sector had 21.9% share of total foreign value added in exports in 2011. However, when the author consider the categories of the service sector, hotels and restaurants shared only 17.9% of total service sector.

Shares of number of foreign affiliates in hotels and restaurant which are the main subsector in tourism industry are around 1% to 4% in 2012 in ASEAN countries except Lao which had higher share of foreign hotels and restaurants than electric and electronic equipment sector. According to UNCTAD (2007), hotels and restaurants are the subsector inside tourism sector which has the highest FDI flow. We can see that even it is the subsector with the highest FDI in tourism, it is still very low compared with other important sector in the Southeast Asian economies. According to the statistics of UNCTAD based on Bloomberg and companies' website (2014), among 50 largest ASEAN companies with regional presence only two companies on the list are in the tourism sector (Genting of Malaysia is in hotel and



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*Table 5. Share of foreign affiliates in ASEAN's hotels and restaurants and electric and electronic equipment in 2012*

| | Hotels and Restaurants | | Electric and Electronic Equipment | |
|---|---|---|---|---|
| **Country** | **Number of Foreign Affiliates** | **% of Total Foreign Affiliates** | **Number of Foreign Affiliates** | **% of Total Foreign Affiliates** |
| **Singapore** | 53 | 1.46 | 199 | 5.49 |
| **Malaysia** | 39 | 1.09 | 527 | 14.67 |
| **Thailand** | 38 | 3.07 | 373 | 30.15 |
| **Indonesia** | 65 | 1.89 | 382 | 11.10 |
| **Philippines** | 43 | 2.80 | 222 | 14.47 |
| **Brunei** | 1 | 1.45 | 1 | 1.45 |
| **Vietnam** | 11 | 0.89 | 185 | 14.98 |
| **Cambodia** | 2 | 2.70 | 2 | 2.70 |
| **Lao** | 3 | 12.50 | N/A | 5.49 |
| **Myanmar** | 2 | 4.65 | N/A | 14.67 |

Sources: Calculated from International Trade Center and World Development Indicators (2012)

*Table 6. Share of foreign value added in ASEAN export, 1990 and 2011*

| Sector/Industry | 1990 | 2011 |
|---|---|---|
| **All Industries** | **34.1** | **37.0** |
| **Primary total** | 7.5 | 37.0 |
| **Manufacturing total** | 44.4 | 45.8 |
| **Service total** | 18.6 | 21.9 |
| Electricity, gas and water | 10.9 | 21.8 |
| Construction | 24.9 | 31.3 |
| Trade | 14.9 | 14.9 |
| Hotels and restaurants | 12.4 | 17.9 |
| Transport, storage and communications | 27.7 | 30.8 |
| Finance | 10.6 | 14.3 |
| Business activities | 19.2 | 23.1 |
| Health and social services | 18.3 | 22.6 |

Note: Based on two-to three-digit level of ISIC
Source: UNCTAD-Eora GVC Database, ASEAN and UNCTAD (2014)

leisure and Singapore Airline is in airlines). Therefore, ASEAN countries have a lot of room for the investment from both developed countries and intra-ASEAN in tourism sector. The potential benefit that ASEAN countries can get from FDI are technological transfers in terms of physical capital and human capital, management skills for sustainable tourism, and sufficient tourism infrastructure that can support the expanding tourism sector. FDI in the tourism sector of the Southeast Asia hence becomes an important issue to study.



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*Figure 3. Capital Investment in Travel and Tourism Industry of ASEAN*
*Source: WTCC (2015)*

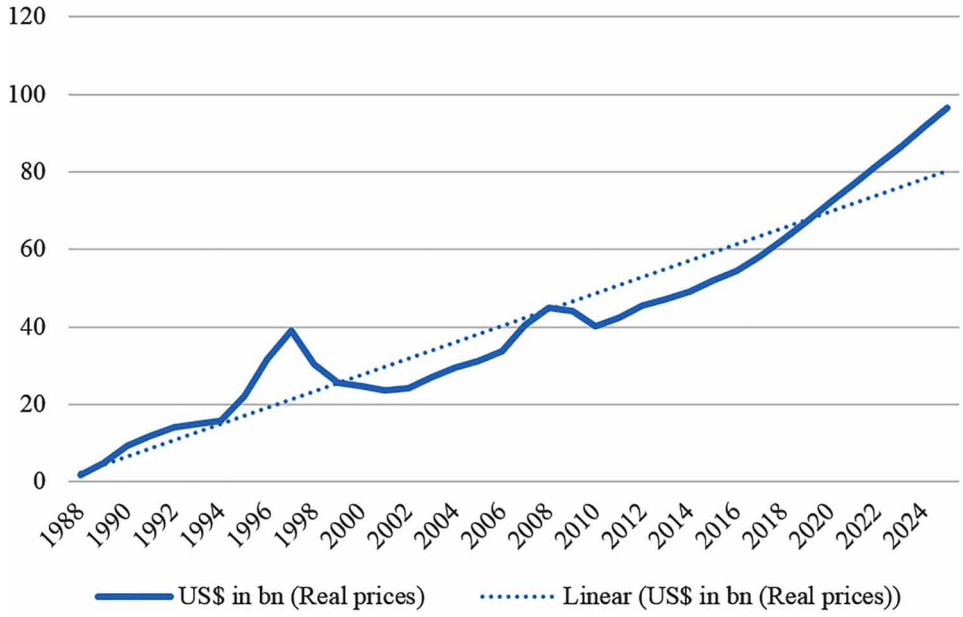



*Table 7. Regional Ranking of Travel and Tourism Investment*

| Rank | Travel & Tourism Investment | 2015% Growth |
|---|---|---|
| **1** | South Asia | 9.2 |
| **2** | Middle East | 6.6 |
| **3** | North East Asia | 6.4 |
| **4** | South East Asia | 5.7 |
| **5** | Latin America | 5.1 |
| **6** | North Africa | 5.1 |
| **7** | Sub Saharan Africa | 4.8 |
| **8** | North America | 4.7 |
| **9** | Caribbean | 4.2 |
| **10** | European Union | 3.4 |
| **11** | Oceania | 1.1 |
| **12** | Other Europe | -2.3 |

Source: WTCC (2015)

Despite of the increasing FDI in tourism, its share is relatively low compared to manufacturing sectors. Total contribution of travel and tourism in Southeast Asia is 12% of GDP in 2014 (WTCC, 2015). However, the investment was only 7.4% of total investment. UNCTAD's report on FDI in tourism (2007) noted that even though tourism is the largest industry in many countries, it appeared to be one of the least globalized. Moreover, tourism FDI is concentrated primary in developed countries. It appears that



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85-90% of TNC hotels are located in developed countries with only small proportion in developing countries. For the investment trend, travel and tourism investment growth in Southeast Asia is 5.7%, slower than South Asia, Middle East and Northeast Asia (WTCC, 2015).

## STUDIES OF TOURISM-LED GROWTH HYPOTHESIS

The field of research on the relationship between tourism and economic growth is still in development. Many studies have been conducted examining the impact of expansion of tourism sector. There are both positive and negative economic impacts from tourism expansion. It leads to economic development in terms of job creation and poverty reduction. However, many side effects from tourism expansion without cautions can lead to environmental or cultural degradations such as sex tourism.

There are two generally accepted methodologies that can be applied to estimate the impact of tourism on GDP: the Tourism Satellite Account (TSA) and the Computable General Equilibrium (CGE) models (Cortes-Jimemez, Pulina, Prunera, & Artis, 2009). The Tourism Satellite Account (TSA) approach uses the contribution of tourism and traveling to different sectors of the economy. This method is commonly employed by international organizations and governments. There are two mainstream schools of thought stemming from the export-led growth hypothesis since tourism is one component of the service sector that can be exported. Nowak et al. (2007) argue that the growth is derived from the volume of production inputs, so-called Tourism Capital Imports to Growth (TKIG). Economic development in this proposition is achieved through imports of capital goods, which are mainly financed by tourism receipts (Sinclair & Bote Gomez, 1996). Another school of thought is the tourism-led growth hypothesis, which states that output growth can be generated by expanding international tourism as a non-traditional export. In contrast to the extensive literature on exports and growth, empirical studies that focus on the tourism-led growth hypothesis are still scarce.

The tourism-led growth hypothesis was first proposed by Ghali (1976) for the case of Hawaii. Ghali (1976) followed the method of Caves and Holton (1959), who studied the impact of exports on the Canadian economy. Ghali (1976) used the construction of an econometric model that captures as best as possible the essential features of the economy. Ghali's model became the starting point for the tourism-led growth hypothesis. In this study, the author uses the same basic model as Ghali (1976). Oh (2002) studied the contribution of tourism development to economic growth in the Korean economy using Engle and Granger's two-stage approach and a bivariate vector autoregression (VAR) model. He found that there is no long-run equilibrium relation between tourism growth and economic growth. Oh's test implies the one-way causal relationship of economy-driven tourism growth. He concluded that the tourism-led growth hypothesis does not hold for the Korean economy. However, Chen and Chiou-Wei's (2009) study of the causal relationship between tourism and economic growth in Korea and Taiwan found that the tourism-led growth hypothesis is supported for both countries. Chen and Chiou-Wei (2009) used a method different from that proposed by Oh. They used the EGARCH-M model with an uncertainty factor to capture the uncertainty in the economies. Balaguer and Cantavella-Jorda (2004) found indirect causality for tourism and economic growth. Later, Eugenio-Martin et al. (2004) studied the relationship between tourism and economic growth for Latin American countries from 1985 to 1998 using the panel data approach and the Arellana-Bond estimator for dynamic panels. They found that the tourism sector is adequate for the economic growth of medium- or low-income countries, though not necessarily for developed countries. They also estimated inverted causality to explain the tourism arrivals conditional



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on GDP and other covariates. Eugenio-Martin et al. (2004) used the generalized least square AR(1) panel data model to conduct the estimates and found that low-income countries seem to need adequate levels of infrastructures, education, and development to attract tourists. Medium-income countries need a high level of social development, such as health services, and high GDP per capita levels to attract tourists. They also found that the price of the destination is irrelevant for tourism growth.

Sequeira and Compos (2005) studied international tourism and economic growth using the panel data approach. They reported that tourism-specialized countries grow more than others, which is inconsistent with the endogenous growth theory since tourism is not high intensity in R&D or the large-scale sector. Sequeira and Compos (2005) added variables linked to the proportion of tourism in exports and GDP rather than using only arrivals of tourists per capita as a proxy for tourism intensity. They used the panel data method and concluded that tourism on its own cannot explain the higher growth rates. Lee and Chang (2007) applied the new heterogeneous panel cointegration technique to reinvestigate the long-run comovements and casual relationship between tourism development and economic growth for OECD and non-OECD countries for the 1990-2002 period. On a global scale, Lee and Chang (2007) found a substantial relationship between GDP and tourism development. Tourism development has a greater impact on GDP in non-OECD than in OECD countries. The greatest impact is in Africa. In the long run, Lee and Chang (2007) found that there is a unidirectional causality relationship for tourism development and economic growth in OECD and bidirectional relationships in non-OECD countries, but only weak relationships in Asia.

Cortes-Jinenez et al. (2009) studied tourism and exports as a means of growth by considering both exports and tourism as potential influencing factors for economic growth. They used data from Italy from 1954 to 2000 and Spain from 1964 to 2000. They used standard cointegration and Granger causality techniques to prove the hypothesis and found that both exports and tourism have a significant effect on long-term growth in both countries. Kartircioglu (2009) used the bound test for cointegration and Granger causality tests to investigate level relationships and the direction of causality between international tourism and economic growth in the case of Malta. His results revealed that a long-run equilibrium relationship exists between international tourism and economic growth in Malta. On the other hand, Granger causality test results suggest that both the tourism-led growth hypothesis and the output-driven tourism hypothesis can be confirmed. In Pakistan's case, Khalil et al. (2007) attempted to determine whether there is a unidirectional or bidirectional causal relationship between tourism and economic growth using the cointegration test. They found that tourism growth influences increases in the economy in the short run, that the combination of results points to two-way causality for economic growth and tourism growth, and that economic expansion is necessary for the development of tourism in Pakistan. They found a significant impact of tourism on Pakistan's economy, which justifies the necessity of public intervention aimed at promoting the demand for tourism and providing the development of the supply side of tourism industry. Lean and Tang (2010) extended the Gunduz and Hatemi-JA (2005) study on the tourism-led growth hypothesis with Malaysian data and found that the causality is valid and stable over the sample period, January 1989 to February 2009.

Brida et al (2014) conducted a literature review on the tourism-led growth hypothesis. They provided an in-depth analysis of the tourism-led growth hypothesis based on a revision of approximately 100 published empirical papers together with the theoretical papers. Brida et al (2014) found that the tourism-led growth hypothesis is confirmed for the studied countries with few exceptions. The validity of tourism-led growth hypothesis is consistent with the fact that the government can promote economic



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growth through tourism industry. However, they found that the results should not be generalized to all countries since the number of studied countries is still limited and unbalanced.

Tourism needs support from global market access, capital, and infrastructure. The availability of financial resources is critical for achieving further tourism development and economic growth (Samimi, A.J., Sadeghi, S. and Sadeghi, S., 2013). Capital inflow can facilitate the financial resource factor for the tourism industry. Hence, foreign direct investment (FDI) is important for steady and sustainable growth in the tourism sector. Transnational corporations (TNCs) are key players in the flow of international capital. Green field investment generates technological transfer and a spillover effect. FDI is seen as an important element in the solution to the problem of scarce local capital and overall low productivity in many developing economies (De Mello, 1999; Eller et al., 2005).

The literature reviews on the tourism-led growth hypothesis demonstrates the different methods were used to conduct the study. The most frequently used method is Granger causality tests to consider the direction of the relationship between tourism growth and output growth. Another important method is dynamic panel analysis to estimate the relationship between growth and tourism development. However, panel data analysis using ordinary least square is chosen to conduct the estimation in this study because of the limit of time-series data to conduct dynamic model. The use of panel data not only allows an increase in degree of freedom and better estimation of large sample properties but also reduces the endogeneity problem from a specific country effect that can be correlated with the repressor (fixed effects) or random effects (Sequeira & Compos, 2005). In this study, the author also adds FDI in the tourism sector as an important factor to stimulate the economic growth and benefits other variables in the model specification.

## DATA AND METHODOLOGY

This study tests tourism-led growth hypothesis using econometric technique. Before running the regression, the author conducts nonstationary test using the Im, Pesaran, and Shin (2003) method which allow the heterogeneity of autoregressive root under the alternative hypothesis. Being unable to reject the null hypothesis of this test implies that the variables have a unit root.

After nonstationary test, the paper presents tests for the long-run relationship among variables using the method based on Engle and Granger (1987) co-integration test. To test the co-integration, if the variables are co-integrated or have a long-run relationship, the residuals of the regression will be the integration of order zero, I(0), or stationary. Co-integration implies that there are relationships between the variables but does not tell the direction of the causal relationship. To adapt the co-integration test using panel data, Pedroni (1999, 2004) extended the Engle and Granger's test (1987) to allow heterogeneous intercepts and trend coefficients across cross-sections.. Kao's (1999) Augmented Dickey-Fuller (ADF) test and Pedroni's (1999) test are employed in this study to test the long-run equilibrium relation between the dependent variables and all independent variables as a group. Kao's (1999) test is based on the ADF test with a null hypothesis of no co-integration with a *t*-distribution. Kao's test provides an alternative hypothesis of four statistics: *v*-statistics, *rho*-statistics, PP-statistics, and ADF-statistics. For Pedroni's (1999) test, the null hypothesis is also no co-integration in panel against two alternatives. Pedroni's test allows for an individual-specific fixed effect and time trend. The second alternative hypothesis is tested using group *rho*-statistics, group PP-statistics, and group ADF-statistics. Pedroni (1999, 2004) showed that the panel ADF-statistics and group ADF-statistics have better sample properties than other co-integration tests.



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After the long-run relationship test, the study uses the pairwise Granger causality test to test the causality between variables. Each of the null hypotheses states that one variable does not cause another variable using F-statistics. To test for Granger causality in the time domain, the minimum mean square prediction error is used as the criterion to evaluate incremental predictive power. In the bivariate case, the presence of Granger causality is tested by evaluating the predictive power of one time series for another. The linear-reduced form vector autoregression (VAR) follows:

$$X_t = A\left(L\right)X_t + B\left(L\right)Y_t + U_{x,t} \tag{1}$$

$$Y_t = C\left(L\right)X_t + D\left(L\right)Y_t + U_{Y,t} \tag{2}$$

where A(L), B(L), C(L), and D(L) are one-sided lag polynomials of orders a, b, c, and d in the lag operator L with roots outside the unit circle and no roots in common. The regression errors, $\{U_{X,t}\}$ and $\{U_{Y,t}\}$, are assumed to be mutually independent and individually i.i.d. with zero mean and constant variance. To test for strict Granger causality from Y to X in this linear framework, a standard joint test (F or chi-square test) of exclusion restrictions is used to determine whether the lagged Y has significant linear predictive power for current X. Bidirectional causality exists if Granger causality runs in both directions, in which case, the coefficients on the elements in both B(L) and C(L) are jointly different from zero.

The last step in the methodology in this study is to conduct the ordinary least square estimation of the relationship between real GDP and variables determining the income. The hypothesis of this study is that real GDP is determined by foreign direct investment in tourism industry, visitor spending, human capital, degree of trade openness, government spending, and exchange rates (local currency to $US). The study adopts the ordinary least square technique to eliminate the biased estimator from the presence of outlying observation.

## Theoretical Framework

In the Neoclassical growth model developed by Solow-Cass-Koopman, GDP growth depends on the initial level of income. Barrow and Sala-i-Martin (1992) and Mankiw, Romer, and Weil (1992) proposed the concept of conditional convergence, allowing the differences among countries in the model. Letting $y_{it}$ denote log per capita of income or output, the growth rate can be written as:

$$y_{it} - y_{it-1} = a + \beta y_{it-1} + u_{it} \tag{3}$$

where $a$ is the steady state, $-1<\beta<0$, if there is convergence between countries, and $u_{it}$ is the error term.

If the steady state among countries is different, the structural model can be extended to:

$$y_{it} - y_{it-1} = a + \beta y_{it-1} + \varphi X_{it-1} + u_{it} \tag{4}$$



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where $X_i$ is the vector of determinants of the steady state per capita income. The determinants can be in terms of population growth, government policies, political stability, physical and human capital, openness, and other growth-related variables.

## Model and Variables

The augmented Solow-Swan model from (4) can be taken as the baseline empirical growth model. There are four important determinations of growth: initial income, rate of physical accumulation, human capital accumulation, and population growth. This study constructs the augmented Solow-Swan model as the core and then adds more specific variables including visitor spending and foreign direct investment in the tourism sector, as well as trade openness, human capital, government consumption, and exchange rate into the model specification. The model specification used in this study's estimation is:

$$\log\left(PERCAPITA_{it}\right) = c + \varphi_1 \log\left(\frac{VS}{POP}\right)_{it} + \varphi_2 \log(HC)_{it} + \varphi_3 \log(EXR_{it}) + \varphi_4 \log\left(OP_{it}\right) + \varphi_5 log\left(\frac{FDIT}{POP}\right)_{it} + \varphi_6 \log(GOVC / POP)_{it} + \alpha_i + n_t + u_{it} \quad (5)$$

with $t$=1,…,24(1988 – 2011); $i$=1,…,9 and $u_{it} \sim N\left(0, \sigma_i^2\right)$

To test the relationship between tourism and economic growth, this study uses the flows variables, which are standard in the endogenous growth literature (Barro, 1991; Barro & Sala-i-Martin, 1995). The variables in the equation (5) are defined:

- Visitor spending per capita (*VS/POP*) is used to represent tourism activity in the country. Visitor spending data is obtained from WTCC (2015) measured by money spent from foreign visitors to a country. This variable is a key component of direct contribution of tourism and travels to the economy. Positive sign is expected;
- Index of Human Capital (*HC*) is used as a proxy for human capital. The data is obtained through the Penn World Table 8 (Feenstra et al., 2-15) and a positive sign is expected;
- EXR is the exchange rate in local currency to $US;
- Openness is measured by exports plus imports to output ratio (*OP*). It represents the impact of trade openness on economic growth. Data is obtained from World Economic Indicator (World Bank, 2015). A positive sign is expected;
- Government spending per capita (*GOVC/POP*) is amount of government spending on tourism industry per number of population. It is used to measure long-run crowding-out and the overall negative effect of government spending in long-run growth or the effect of government purchase in tourism sector to GDP per capita. There is no expectation on the sign since it depends on which side's magnitude is bigger;
- Foreign direct investment in tourism industry per capita (*FDIT/POP*) represents the capital investment spending by all industries directly involved in the travel and tourism industry. *FDI/POP* also constitutes investment spending by other industries on specific tourism assets such as new visitor



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accommodations and passenger transport equipment, as well as restaurants and leisure facilities for specific tourism use, which is consistent with total tourism gross fixed capital formation in Table 8 of the TSA: RMF 2008. Positive sign is expected.

The study uses E-views 8.0 software to obtain the result of all test and estimations. The dataset used in this study are obtained from the Penn World Table 8 (Feenstra et al., 2-15), the World Development Indicators (World Bank, 2015) and United Nations Conference on Trade and Development (UNCTAD, 2007), and the World Travel & Tourism Council (WTTC, 2015). The panel data consist of a 24-year period from 1988 to 2011 in nine countries in ASEAN: Brunei, Cambodia, Indonesia, Lao, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

## RESULTS

### Unit Root Test

Table 8 gives the Im, Pesaran and Shin W-test on a unit root for the variables under consideration. The null hypothesis is that there is a unit root (assumes individual unit root process). The results show that every variable except population (pop) is integrated order 1 or I(1).

After testing the unit root, although the variables are not stationary at their levels, they are stationary at their first-differenced series. Therefore, the panel data of these variables can be used in the study at least for long-run relationship.

### Panel Co-integration Test

The next step is testing the long-run relationships between these variables. This study uses Kao's and Pedroni's panel co-integration test.

From the Kao test, the ADF-statistics show that the null hypothesis of no co-integration can be rejected at the 10% level of significance. This is supported by the Pedroni test in which v-statistics, PP-statistics, and ADF-statistics show the rejection of the null hypothesis. For the group test, PP-statistics and ADF-statistics also demonstrate co-integration among the variables.

*Table 8. Im, Pesaran and Shin W-tests for a Unit Root*

| Variables | Level (with intercept) | 1st differenced | P-value |
|---|---|---|---|
| *realgdp* | Unit root | Stationary | 0.0050 |
| *VS* | Unit root | Stationary | 0.0000 |
| *HC.* | Unit root | Stationary | 0.0103 |
| *OP* | Unit root | Stationary | 0.0000 |
| *FDIT* | Unit root | Stationary | 0.0000 |
| *POP* | Stationary | | 0.0255 |
| *EXR* | Unit root | Stationary | 0.0001 |
| *GOVC* | Unit root | Stationary | 0.0000 |



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*Table 9. Kao and Pedroni Panel Co-integration Test*

| Kao test ADF-stat | Pedroni test | | | | | | |
|---|---|---|---|---|---|---|---|
| | Panel | | | | Group | | |
| | *v*-stat | *rho*-stat | PP-stat | ADF-stat | *rho*-stat | PP-stat | ADF-stat |
| -1.5559* | 13.0027** | 2.1854 | -4.6170** | -6.7989** | 3.5921 | -8.3765** | -4.9477** |

**Indicates statistical significance at 5% level. *Indicates statistical significance at 10%. Individual fixed effect and individual trend are allowed in the Pedroni test.

## Causality Test

The co-integration test is able to show long-run relationships between variables. However, it does not show the direction of the relationships or the causality. The technique to show the directions of relationships is the pairwise Dumitrescu Hurlin panel causality test, which allows an individual coefficient for each country. The results are shown in Table 10.

From the results of Pairwise Dumitrescu Hurlin panel causality test, this study found the following:

- GDP Per capita in Southeast Asia is determined by government consumption in tourism per capita (GOVCPOP) and human capital (HC)
- Foreign Direct investment inflows in the tourism industry per capita (FDITPOP) are caused by trade openness (OP) and visitor spending per capita (VSPOP).
- The human capital index (HC) is caused by GDP Per capita (PERCAPITA), trade openness (OP) and visitor spending per capita (VSPOP)
- Government consumption in tourism per capita (GOVCPOP) is caused by human capital (HC).
- Trade openness (OP) is caused by GDP Per capita (PERCAPITA), government consumption in tourism industry per capita (GOVCPOP), and human capital (HC),
- Visitor spending per capita (VSPOP) is caused by GDP per capita (PERCAPITA) and human capital (HC).
- The exchange rate (EXR), in term of local currency to US dollar, is caused by GDP per capita (PERCAPITA), foreign direct investment in tourism industry per capita (FDITPOP), human capital (HC), trade openness (OP), and government spending in tourism sector per capita (GOVCPOP)

The focus of this study is the relationships among FDI in the tourism industry, GDP Per capita, and visitor spending. From the causality test, the author found that FDI in the tourism industry and visitor spending does not have direct effects to GDP per capita. However, the effects from the visitor spending and FDI in tourism sector can possibly have indirect effect through other variables. The effect of each variables will be estimated using ordinary least square estimation.

## Tourism-Led Growth Hypothesis Estimation Results

The focus of this study is to test tourism-led growth hypothesis using visitor spending and FDI in tourism sector as representatives of tourism sector. The contribution of hypothesized variables to real GDP per capita in Southeast Asia is presented in Table 11.



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*Table 10. Pairwise Dumitrescu Hurlin Panel Causality Tests (Lag 2)*

| Null Hypothesis: | Prob. |
|---|---|
| GOVCPOP does not homogeneously cause FDITPOP | 0.0146 |
| FDITPOP does not homogeneously cause GOVCPOP | 0.4113 |
| HC does not homogeneously cause FDITPOP | 0.0937 |
| FDITPOP does not homogeneously cause HC | 0.2169 |
| PERCAPITA does not homogeneously cause FDITPOP | 4.E-05 |
| FDITPOP does not homogeneously cause PERCAPITA | 0.1336 |
| OP does not homogeneously cause FDITPOP | 0.0947 |
| FDITPOP does not homogeneously cause OP | 0.8275 |
| EXR does not homogeneously cause FDITPOP | 0.1976 |
| FDITPOP does not homogeneously cause EXR | 0.0044 |
| VSPOP does not homogeneously cause FDITPOP | 4.E-09 |
| FDITPOP does not homogeneously cause VSPOP | 0.9364 |
| HC does not homogeneously cause GOVCPOP | 0.0003 |
| GOVCPOP does not homogeneously cause HC | 0.2107 |
| PERCAPITA does not homogeneously cause GOVCPOP | 0.8806 |
| GOVCPOP does not homogeneously cause PERCAPITA | 0.0001 |
| OP does not homogeneously cause GOVCPOP | 0.6240 |
| GOVCPOP does not homogeneously cause OP | 0.0001 |
| EXR does not homogeneously cause GOVCPOP | 0.1181 |
| GOVCPOP does not homogeneously cause EXR | 2.E-07 |
| VSPOP does not homogeneously cause GOVCPOP | 0.2485 |
| GOVCPOP does not homogeneously cause VSPOP | 0.3283 |
| PERCAPITA does not homogeneously cause HC | 0.0786 |
| HC does not homogeneously cause PERCAPITA | 0.0003 |
| OP does not homogeneously cause HC | 4.E-16 |
| HC does not homogeneously cause OP | 1.E-06 |
| EXR does not homogeneously cause HC | 0.4878 |
| HC does not homogeneously cause EXR | 2.E-09 |
| VSPOP does not homogeneously cause HC | 0.0018 |
| HC does not homogeneously cause VSPOP | 1.E-08 |
| OP does not homogeneously cause PERCAPITA | 0.1243 |
| PERCAPITA does not homogeneously cause OP | 0.0022 |
| EXR does not homogeneously cause PERCAPITA | 0.1937 |
| PERCAPITA does not homogeneously cause EXR | 0.0679 |
| VSPOP does not homogeneously cause PERCAPITA | 0.1688 |
| PERCAPITA does not homogeneously cause VSPOP | 0.0512 |
| EXR does not homogeneously cause OP | 0.8214 |
| OP does not homogeneously cause EXR | 0.0026 |

*continues on following page*



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*Table 10. Continued*

| Null Hypothesis: | Prob. |
|---|---|
| VSPOP does not homogeneously cause OP | 0.0001 |
| OP does not homogeneously cause VSPOP | 0.2390 |
| VSPOP does not homogeneously cause EXR | 0.7126 |
| EXR does not homogeneously cause VSPOP | 0.1724 |

**Indicates statistical significance at 5% level. *Indicates statistical significance at 10%.

Table 11 gives the estimation result for the panel least square estimation. The results show that visitor spending per capita (VS/POP), FDI in the tourism industry per capita (FDIT/POP), human capital (HC), trade openness (OP) and government consumption in tourism sector per capita (GOVC/POP) have statistically significant effects to determine real GDP per capita. Trade openness has negative coefficients. Exchange rate does not have statistically significant in GDP per capita change.

From the result, we can confirm that the tourism-led growth hypothesis is valid for ASEAN countries from the positive significant coefficient of visitor spending per capita (VS/POP). When the visitor spending per capita increases by 1%, the GDP per capita will increase by 0.08%. In addition of foreign investment in the tourism sector per capita into the model, the result shows that it significantly has a positive effect to the GDP per capita. When the foreign investment in the tourism sector increases by 1%, GDP per capita will increase by 0.01%.

*Table 11. Tourism-Led Growth Hypothesis Estimation Dependent variable: log(PERCAPITA)*

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 3.394200 | 0.199679 | 16.99827 | 0.0000 |
| LOG(VS/POP) | 0.075579 | 0.013229 | 5.713275 | 0.0000 |
| LOG(FDIT/POP) | 0.094711 | 0.009832 | 9.633192 | 0.0000 |
| LOG(HC) | 2.770748 | 0.130604 | 21.21484 | 0.0000 |
| LOG(OP) | -0.141603 | 0.040719 | -3.477535 | 0.0006 |
| LOG(EXR) | 0.023516 | 0.014573 | 1.613606 | 0.1083 |
| LOG(GOVC/POP) | 0.093318 | 0.031700 | 2.943772 | 0.0036 |
| | Effects Specification | | | |
| Cross-section fixed (dummy variables) | | | | |
| R-squared | 0.997985 | Mean dependent var | | 7.689407 |
| Adjusted R-squared | 0.997837 | S.D. dependent var | | 1.547638 |
| S.E. of regression | 0.071976 | Akaike info criterion | | -2.354935 |
| Sum squared resid | 0.989489 | Schwarz criterion | | -2.112614 |
| Log likelihood | 257.5583 | Hannan-Quinn criter. | | -2.256932 |
| F-statistic | 6756.327 | Durbin-Watson stat | | 0.454124 |
| Prob(F-statistic) | 0.000000 | | | |



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In terms of relationship between human capital and GDP per capita, if human capital index increases by 1%, GDP per capita will increase by 2.77%. If the trade openness increase by 1%, GDP per capita tend to decrease by 0.14%. The trade openness coefficient has unexpected sign which will be needed to study further. The government consumption in the tourism industry also has a statistically significant effect to the GDP per capita. If the government consumption in the tourism sector increases by 1%, GDP per capita increases by 0.09%.

From the causality analysis, the result showed that FDI and visitor spending do not homogeneously cause GDP per capita to change while the panel least square estimation result shows that there are some significant effects. The author's hypothesis is that there are some indirect effect of FDI of tourism industry and visitor spending through other variables that can pass the contribution to economic growth or the relationship is not in the linear form.

Panel least square estimation also allow the cross-sectional effects to identify the differences among ASEAN countries. The magnitude of cross-sectional effects is shown in table 12. Singapore and Brunei have highest intercepts since they are in high-income country group. Malaysia, Thailand, Indonesia are in the middle income country group therefore the intercept is positive. The lowest intercept is in Lao, Cambodia, Vietnam

## CONCLUSION AND DISCUSSION

With the best tourism assets in terms of culture, heritage, natural sites and wildlife, Southeast Asian countries attract a steady flows of international visitors. The tourism industry has a growing share in the GDP of this region. This study tests the relationships between real GDP per capita and tourism sector in terms of visitor spending and FDI in this sector and other related variables. The study empirically estimates the contribution of the tourism FDI and visitor spending to GDP per capita in nine ASEAN countries-- Brunei, Cambodia, Lao, Malaysia, the Philippines, Singapore, Thailand, and Vietnam--from 1988 to 2011. The result of panel least square from this study is consistent with the tourism-led growth hypothesis, which states that the tourism industry can bring sustainable economic growth in the long run.

*Table 12. Cross-sectional effects*

| Country | Cross-Sectional Effects |
|---|---|
| Brunei | 1.283616 |
| Cambodia | -0.901738 |
| Indonesia | 0.006223 |
| Lao | -1.114873 |
| Malaysia | 0.185871 |
| Philippines | -0.791436 |
| Singapore | 1.649491 |
| Thailand | 0.144499 |
| Vietnam | -0.767364 |



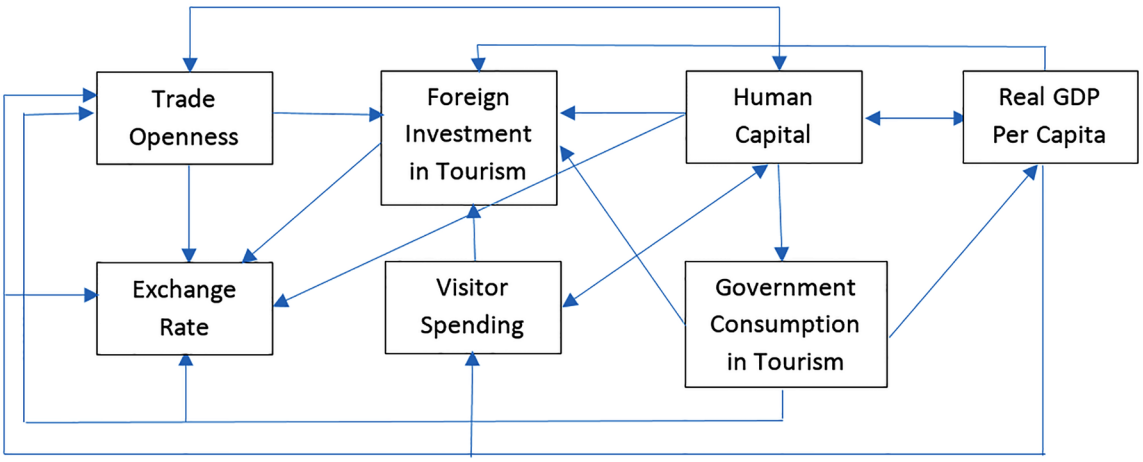
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The methods used in this study are panel co-integration using Kao's and Pedroni's tests, causality test and panel data analysis using Ordinary Least Square (OLS).The variables hypothesized to influence the GDP per capita are visitor spending per capita, FDI in tourism industry per capita, government consumption in tourism per capita, trade openness, human capital, and exchange rate. The study tests the presence of a unit root and panel co-integration before conducting the causality test and regression. The results of panel cointegration test show that there are long-run relationships among variables. For the direction of causality, the study uses pairwise Dumitrescu Hurlin panel causality test which allows an individual coefficient for each country and found that human capital and the government consumption in the tourism industry per capita can cause the real GDP to change. For other causalities, it can be summarized by figure 4.

The empirical findings have implications in providing policy makers directions for achieving a path of growth through tourism industry. The evaluation of tourism-led growth hypothesis in ASEAN countries benefit the governments that are willing to stimulate the economy using travel and tourism sector. The increasing number of international arrivals stimulates the demand for other goods and services. The extended linkages of the tourism sector to other downstream sectors are key to success if governments use tourism as a focused sector of their growth policy. The tourism sector is closely related to the food and restaurant industries, hotel and accommodation services, healthcare industries, the transportation industry, and other related goods industries. In addition, tourism provides greater foreign exchange, which leads to appreciation of the local currency and alleviates a gap in foreign exchange and finance imports of capital goods.

However, governments should also aware of the disadvantages of tourism development, the potentially negative influences on communities and their residents. Moreover, when the domestic demand is stimulated, the possible result can be rising domestic prices or inflation. The expenditures by foreign tourists may also alter domestic consumption patterns via the so-called demonstration effect, and this can, in fact, be inflationary (Lee & Chang, 2008). According to Sinclair (1998), another possible cost of the expansion of tourism industry is the expenditure for the provision and maintenance of infrastructure in the form of water, roads, airports, sanitation, and energy. Gursoy and Rutherford (2004) studied the

*Figure 4. Causality of Real GDP, FDI in Tourism sectors, Visitor Spending and Other Relating Variables*






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host attitudes toward tourism and concluded that tourism imposes other costs on the host country such as increased pollution, congestion, or despoliation of fragile environments. In short, countries should be aware of the adverse economic, socio-cultural, and environmental impacts that result from the expansion of tourism.

The estimation results also reveal that trade openness and human capital are effective channels to promote growth in ASEAN. Trade openness can spur expansion in exports, which will lead to higher productivity and more efficient resource allocation in ASEAN countries. Human capital contributes to economic growth through the supply side. Human capital allows the production function of the aggregate economy to shift upward without experiencing the diminishing return on capital. This finding is satisfactory and also consistent with Keynesian economic theory and the literature on trade and human capital.

## POLICY RECOMMENDATIONS

Tourism-related policies should be consistent with the wider economic policy framework. In order to obtain the maximum benefits and minimize the cost of expanding travel and tourism sector, the host country has to be prepared to absorb the negative impacts. Since tourism industry involves in many economic sectors and activities, the number and range of policies that need attention are large and diverse. They include town planning, environmental regulations, labor standards, tourism educational policies, transportation safety standards, a wide range of financial regulations and telecommunication laws and regulations.

1. From the result of the study, human capital can be increased by FDI in the tourism sector and has a large role in promoting GDP per capita. Spillover effects can be a major source of human capital increase. The government can encourage more FDI in term of green field investment which there are on-the-job trainings. In other direction, the government can allocate the budget to promote the tourism educations to provide some skills in the tourism industry in order to prepare local communities for the foreign investment in their areas.
2. Degree of openness is another important factor to attract the FDI in the tourism industry in ASEAN. Government can provide some incentives to attract FDI such as grants or loans at discount interest rates, tax holidays, or facilitate the TNC by providing some infrastructure.
3. ASEAN has an advantage of regional integration which has been accelerated in recent years. At the ASEAN Economic Ministers Meeting in August 2011, member states agreed to accelerate the implementation of programs towards the ASEAN Economic Community (AEC) in 2015, focusing on initiatives that would enhance investment promotion. This can be an opportunity to enhance competitiveness in attracting FDI in tourism sector and TNC activities.
4. The development of infrastructure alongside the tourism can assist the process of industrialization and modernization (Hitchcock et al., 1993). When the infrastructure is ready, FDI in tourism will increase and that will stimulate the GDP per capita according to the result of this study.



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## KEY TERMS AND DEFINITIONS

**ASEAN:** Association of Southeast Asian Nations.
**AEC:** ASEAN Economic Community.
**FDI:** Foreign Direct Investment.
**TNCS:** Transnational Corporations.
**GVCs:** Global Value Chains.
**ISIC:** International Standard Industrial Classification.
**UNCTAD:** United Nation Committee on Trade and Development.
**WGIIS:** Working Group on International Investment Statistics.

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# Chapter 15
# Foreign Aid to Africa: Conceptualising Socio-Economic and Political Development Applying Complexity Theory

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## ABSTRACT

*The main objective of this chapter is to provide evidence that foreign Aid to African countries is a barricade to their sustainable development. Both modernisation and Dependency theorists' suggestions have failed to spawn socio-economic and political development in African countries. Complexity theory may provide a better understanding of the linkage between foreign aid and the socio-economic and political underdevelopment. The current foreign aid given to African sovereign states by donor or developed countries seems to perpetuate underdevelopment. In fact, Foreign Aid to most of African countries has not adequately addressed its problems; rather it has succeeded in keeping most of African countries dependent on foreign aid and in the state of underdevelopment. Using both quantitative and qualitative document analysis of records on foreign Aid to Africa reveals that foreign Aid in and out of itself is not a bad thing, it is among those many important resource inputs, which operate in many African countries which if paved with good intention could bring about sustainable socio-economic and political development in Africa.*

## INTRODUCTION

Unlike in Europe, where many countries reaped profitably from the Official Development Aid (ODA) through the Marshal Plan, which contained assistance programmes for the economic reconstruction of countries that had suffered the consequences of World War II. For instance, Foreign Aid provided to countries like Japan principally helped to improve up on its socio-economic and political development. Since then developed countries have adopted it as a tool to promote economic and political development

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to underdeveloped world such as Africa. In other words, Foreign Aid is considered as an important tool that can help to overcome underdevelopment in Africa, which is viewed by developed world as a dark continent. Extending foreign aid to Africa is therefore expected to transform it to a modern world.

However, massive Foreign Aid disbursed to Africa has been of questionable benefit. Africa is seriously grappling with socio-economic and political problems. Perhaps it is correct to say that foreign Aid has exposed Africa to both intended and unintended consequences which curtail its socio-economic and political development. To say the least, there has been little impact of Foreign Aid on economic and political development in Africa despite its huge transfer to the continent. In fact, there are questionable political practices as well as significant economic instabilities in many African countries which are fueled by foreign assistance. The nature of political injustices and poverty in Africa is unacceptable, though developed or donor community continue to transfer massive Aid to the continent.

The objective of this paper is to explore the relationship between Foreign Aid on one hand and economic and political development on the other. In other words, the interest is to establish how foreign Aid shapes or affects economic and political development in Africa. In-depth understanding of this, is very important to guide political leaders, policy makers on whether to continue relying on foreign Aid or give it a break. This is because it is surprising that the mission of Foreign Aid is to help close the gap of socio-economic and political up-hills faced by developing nations is hardly reflected on the African continent. The continent remains with exception of a few countries like South Africa and Botswana, majority countries in Africa experience economic and political underdevelopment. It should be mentioned that even those countries like South Africa pockets of destruction are seen in the foreign Aid extended to it.

Political development is seen in the perspective of having a self-reliant, rule of law, free and fair periodic elections and respect for human rights among other tenets. In that regard, citizens are given full opportunities to participate in the political affairs of the country. Economic development on the other hand is often looked in the lens of a sustaining economy, where there is economic growth in terms of Gross Domestic Product (GDP) as well as increase in international trade. In this paper Foreign Aid should be understood as international transfer of any resources or assistance intended to contribute towards economic and political development. It is pertinent to note that to achieve this status is a hard rock to crack, which requires adequate resources and credible policies.

The western developed world emphasise that to get to this level of development, democracy has to take centre stage. In this regard, both viable economic and democratic institutions have to be established to promote economic and political development. This was born out of decolonisation, which was a striking feature, which brought high hopes to Africa. Along those lines, they have been quick to suggest policies to many third world countries like those in Africa for their socio-economic and political development. Calhoum (2011) points out that "after independence, a variety of the world's richer countries mounted substantial efforts to help postcolonial countries grow" economically and politically.

In the light of this, Foreign Aid has remained a major source that supplements domestic economic and political development initiatives in many African countries. Therefore, it is pertinent to understand its contribution in this perspective. The paper limits itself to a period 1986-2011. This period will provide a better understanding the impact of foreign aid over a long period of time. This paper attempts to address this important question: to what extent has Foreign Aid had impact on economic and political development in Africa? In view of this impact, what is the importance of Foreign Aid to Africa? Does it constitute any important episode in the economic and political development in Africa? The answer to this question will clear clouds about theory and reality through critical assessment of Foreign Aid potential as regards economic and political development. It will also add to the existing literature about



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the effects of Foreign Aid on economic and political development of developing countries in Africa. To answer the stated question, literature is reviewed hereunder and from there a framework for analysis is developed to link Foreign Aid to economic and political development.

## FOREIGN AID

The concept Foreign Aid has a long history in the socio-economic and political transformation philosophy. Its identification is rooted in the gigantic dynamic marshal Plan, which was designed to help in the reconstruction of Europe after it had suffered substantial impact of World War II. According to Encyclopaedia Britannica Foreign Aid "involve a transfer of capital, goods, or services or commodities such as food aid or military equipment or technical assistance and training (www.britannica.com/EBchecked/topic/213344/foreign-aid)." The concept of foreign Aid therefore, is characteristically a multidimensional. It manifests in many forms such as financial aid, suggestive policies, goods and services, training etc. Thus, it lacks a single acceptable definition and focus. But "the most common type of Foreign Aid is the Official Development Assistance (ODA)," which is usually given in form of assistance to promote development and arrest poverty (Ibid).

## LITERATURE REVIEW

Probably nothing is as controversial subject as the impact of Foreign Aid on Africa. Promoters and supporters of Foreign Aid argue that it has a multi-dimensional potential to socio-economic and political development (www.google.com.my/search?hl=en&output=search&sclient=psy-ab&q). Burnside & Dollar (2000) carried out an empirical study on the relevance of Foreign Aid and found that it can only be effective if it is dressed with good policies. This suggests that recipients of Foreign Aid need to have sound policies that can put the assistance received to good use. In the same vein, McGillivray et al. (2006) in their study discovered that Foreign Aid can be useful based on certain conditions such as political conditions and quality of institutions among others.

Harford & Klein (2005) examined how resourceful Foreign Aid can be a source to economic and political development and in this study they found that foreign aid a major source of income that facilitates leaders to build "bad institutions." For instance, in elections these leaders use it to bribe citizens; an act which reduces democratic accountability.

It is very clear from the literature reviewed that there are many studies that have established that there a positive relationship between Foreign Aid and economic growth and political development, while others were not able to reach such conclusion. For them they have concluded that the beneficial effect of Foreign Aid in Africa is virtually like a person urinating in the sea with the hope of increasing its water sea level. However, it is important to know that Foreign Aid in a away is an engine to economic and political development because it can strengthen major players in politics such as financing political parties, civil society organisations and supporting electoral commissions bodies. This paper explores the link or role of Foreign Aid in influencing economic and political change on African continent. In other words it assesses and analyses its impact on the economic and political development.



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## THEORETICAL FRAMEWORK FOR ANALYSIS

This part provides a theoretical framework as a foundation for answering the question set. Theory is important in providing guidance to define the central concept for discussion. It exposes the hypothesis or assumptions that help and provide a good understanding and explanations of the variables. The framework of analysis relies on two opposing discourses i.e. the modernization and dependency approaches. The tenet of the latter duels much on the positive effects of Foreign Aid, while that of the former looks at its negative effect to explain the nature of economic and political development of Africa. The concept of modernisation is perceived differently by different writers. According to Berger (1996) "modernization is the internal achievement of a society; the particular processes of modernization support each other in combination; the leading nations do not impede the followers; the processes of modernization are converging in a common goal." Thus, modernization theory in the 1950s and 1960s, one must remember that this theory was designed as a program explicitly directed to the non-Western world, that is, it was devoted to the "export" of Western institutions and values. This was to help them to transit from traditional states to modern from states on that account the modernization theorists and writers refute the assumption that equates Foreign Aid with exploitation and underdevelopment like that exist in Africa. To modernisation theorists, this means that development cannot be explained by exploitation but strongly believe that economic and political development of Africa could be accomplished by simply copying western institutions. This perpetuated a permanent process of interdependence between the metropolitan centre and the periphery, the trends and forces of globalization are decisive.

But such concepts have been bitterly disputed as credible tools in the modernization discourse in Africa today. According to Jeffrey (1994) modernization theories were suitable for the reconstruction of western development and, in its liberal belief of grant progress and the universalization of values, projected them worldwide, especially in the developing countries. Berger (1996) puts it that this is one popular model which combines western scholars and development theorists who agitate for actualisation of economic and political development or international transformation.

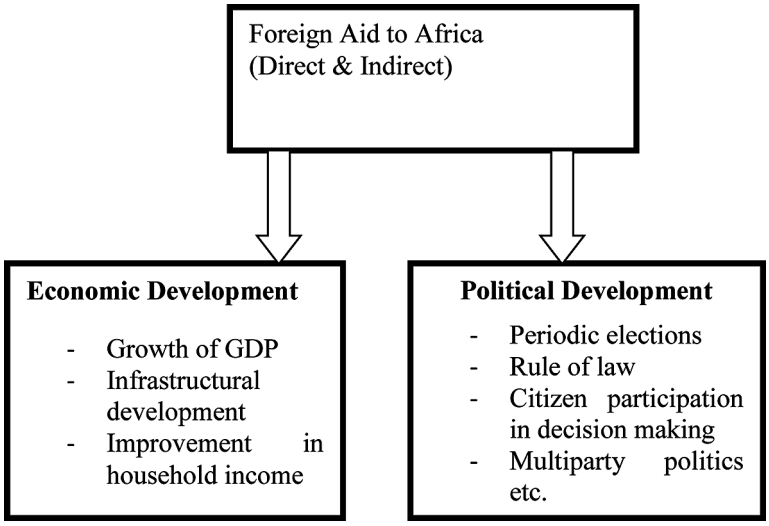
Against this doctrine, Afro-centric theorists, particularly the development and underdevelopment theorists heaped criticisms on capitalism, particularly the advances made by modernisation theorists. In that regard, they advocated for the alternative world-systems theory that should de-link African from its former colonial masters. They condemn that relationship, which explains under-development and exploitation of the periphery by the capitalist centre. The dependency school believes that dependency is an external condition, that the centre nations get all the benefits from unequal exchange, and that the peripheral countries should serve their ties with the core countries. As argued by Alvin (1990) The World System School adds the concept of semi-peripheries with an economic emphasis on import-substitution; this school shifts its focus from the nation-state to the whole world; long-term historical trends are its units of analysis. They concluded that there is little if not nothing beneficial from Foreign Aid to African. Both theories predicted the transition, already underway, of late capitalism into socialism. However, when this transition failed to occur and when some developing countries, particularly in Africa, progress was geared towards constructing liberal modernization.

The hypothesis derived from Figure 1 is that Foreign Aid affects economic and political development. It is important to note that theoretically, the chosen indicators as shown in the figure above are the elements of a Gross Domestic Product, infrastructural development, improvement in household income, while political development indicators are existence of periodic elections, rule of law, citizen participation in politics and existence of multiparty politics. These are elementary building blocks of any economic



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*Figure 1. Foreign aid*
*Source: Developed by the author*




and political development, respectively. Thus, these theories are important to this study because they provide an understanding of development dynamics in Africa. They also give better message on the role foreign Aid play in the development process in Africa.

## METHODOLOGY

This chapter uses secondary research method of data collection and analysis. It relies on collection and extensive review of relevant documents on foreign aid in Africa. The data explored includes: Published foreign aid reports on Africa, books, journals and other related published and unpublished materials on the topic. Thus, the analysis of the effect of Foreign Aid on the economic and political development uses the state of political and civil rights gathered by freedom house index for analysis.

### Foreign Aid and Economic Development in Africa

When most of the African states attained their independence from their colonial masters, political leaders and citizens had high hopes to transform the continent of Africa into a modern one with self-sustaining economies. Although the ambition was high, most leaders failed to significantly contribute and perpetuate economic development in the continent. In this regard, the continent found itself permanently dependent to its former colonial master and other developed countries in pursuing its economic development. And for one reason or the other, developed nations for a long time have been committed on extending economic and political development assistance. But interesting to know is that when such assistance is given, particularly financial aid to facilitate development initiatives such as infrastructural development, health, education and agriculture, it is embezzled by government officials. At this point, it is the ordinary citizens who are most affected. It is also interesting to know that investing in education is one of the sure ways to reduce poverty in Africa but the kind of support to education sector, is still



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*Table 1. Foreign aid assistance to Sub-Saharan Africa ($US millions)*

| Name | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Australia** | 218 | 185 | 193 | 182 | 171 | 195 | 302 | 235 | 202 | 265 | 368 |
| **Canada** | 599 | 510 | 703 | 946 | 1042 | 1211 | 1422 | 1264 | 1970 | 1569 | 1884 |
| **France** | 2627 | 2524 | 2999 | 2436 | 3103 | 3008 | 3632 | 3855 | 3720 | 4405 | 4205 |
| **German** | 2260 | 2148 | 2113 | 2324 | 2748 | 2198 | 2872 | 3055 | 3428 | 3351 | 3432 |
| **Italy** | 709 | 1098 | 1022 | 810 | 884 | 1699 | 829 | 1342 | 1459 | 1079 | 1200 |
| **Japan** | 2165 | 1738 | 1813 | 1769 | 1745 | 1865 | 3595 | 1834 | 2717 | 2549 | 3346 |
| **South Korea** | 63 | 52 | 32 | 74 | 64 | 113 | 58 | 112 | 147 | 163 | 220 |
| **New Zealand** | 25 | 23 | 24 | 32 | 31 | 34 | 30 | 30 | 34 | 34 | 40 |
| **Norway** | 908 | 900 | 1185 | 1269 | 1236 | 1277 | 1300 | 1301 | 1285 | 1278 | 1202 |
| **Sweden** | 865 | 801 | 1040 | 908 | 964 | 1347 | 1375 | 1484 | 1565 | 1533 | 1480 |
| **U. K** | 2123 | 1993 | 1718 | 2699 | 2485 | 2562 | 3688 | 3405 | 3735 | 4084 | 5059 |
| **USA** | 2567 | 3100 | 3832 | 4438 | 5585 | 5454 | 5742 | 6135 | 7938 | 8879 | 9550 |
| **G7** | 13051 | 13111 | 14200 | 15422 | 17592 | 17998 | 21778 | 20892 | 24968 | 25915 | 28676 |
| **EU15** | 13007 | 13529 | 13736 | 14075 | 15687 | 16574 | 18555 | 19758 | 21294 | 21675 | 22546 |
| **All DAC** | 20050 | 20483 | 21926 | 23319 | 26064 | 27234 | 31596 | 31184 | 36078 | 36941 | 39677 |

inadequate many institutions in Africa produce more of theory based skilled labour force which cannot urgently provide answers the development problems facing Africa.

Most areas in Africa are rural with many striving to become urban. People living in these rural areas depend on agriculture not industry for a living; majority of the population have limited skills because the spread of education is limited to theory based and diffusion of modern technology is still scanty and; agrarian norms habits and practices dominates social consciousness of Africa. Interesting to know also is that most people in urban areas live deplorable life in slums with no safe water and other basic public facilities. To buttress this point, poverty bites so deep in Africa. The suggested policies by International Monetary Fund (IMF) accompanying its Aid to Africa to facilitate its economic growth, has failed to improve the condition of socio-economic life of the people in Africa. For instance, there has been continued support to education sector to improve social life through education and employment. But the reality is that the hope of many is much more far from imagination.

Though many African countries are considered rich in natural resources and one could expect the huge Foreign Aid extended to Africa to supplement on its development initiatives.

Ajulu (2005) argues that globalization has become a key tool through which has conditioned national economies of African countries to be integrated into a world economic system through international "free market trade regimes. African countries have designed neoliberal economic policies, to bind their national economies together in a capitalist market system. Economies of different countries are integrated into this system through the creation of common finance mechanisms, regimes and transactions. This is packaged by different international organizations such as the World Trade Organization (WTO), International Monetary Fund (IMF) and the World Bank (WB). In that regard, international political economy does not only lack bureaucratic, technological and judicial processes, to ensure stable transactions within the international economic systems, but it is also constrained by a political ideology such



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as "neo-liberalism" to provide the raison d'être, which can legitimize the existing world order. Instead, Neo-liberalism promotes the values of capitalism, liberal democratic systems and the forces of free market economy (Ibid).

The principle effect of these practices is that economic systems of different countries have become increasingly interconnected to the extent that they are no longer under strict control of the states' interest. In a similar way, International Organizations, Multi-National Corporations and flows of Foreign Development Investment have gained more prominence. In that regard, Economic globalization poses both opportunities and threats to Africa, since the national economies of African states are dependent on the international economic system to achieve economic growth and wealth, and at the same time suffers losses of economic and political sovereignty to bargain equitably in the international trade because they are not in control of the Multinational Corporations, International Organizations and investors who facilitate the global flows of capital, Foreign Development Investment and trade. The increased flow of transactions between various actors world-wide is engineered by technological advancement in communication and transport, which enables transcontinental travelling and more importantly instant communication among people and organizations globally.

Despite these merits, economic Foreign Aid, which has been paved to Africa with good intention through a number of ways, but it has not been an undivided blessing for Africa. It is arguably that some African states in the world rankings have made some impressive improvements in their economic and political fields. But this does not reflect the life of ordinary African. This can pre-empt one to argue that Foreign Aid remain within the road to development that has proved inadequate in combating underdevelopment African economies face. There is need to change the road to development of economies of African states.

This is because, the vast parts of Africa suffer the negative consequences of Foreign Aid in terms of strings attached to it. The political response to high global competition, as a result of encouragement from Foreign Aid, has made Africa to experience economic instability and political insecurity generated by shelters of foreign influence. Hence, Foreign Aid has brought about widespread pain and suffering in terms of socio-economic dislocations to most African states. Therefore, Africa needs development initiatives that put its available resources at the center of development plan.

Besides that, a lot of Foreign Aid has been sunk into the education sector in Africa, but this education mainly favors small portion of elites particularly those in top government positions in Africa. This has promoted corruption and rent-seeking by elites and more importantly this foreign aid has made African leaders to pay little attention to the rich available resources in African as they are made to believe that Africa is poor. But the reality is that most African countries are not poor but they face poor management of the available resources. Worth noting is that Africa losses substantial amount of money (US $ 148) annually through corruption. This has suffocated African skill of creativity and established a permanent dependency culture. In addition, with the exception of South Africa, sub-Saharan Africa spent a total of US $11 billion on arms alone in 1998 and annually, Africa spends about US $ 14.5 billion on repaying debts it acquired as loan.

## Foreign Aid and Political Development in Africa

The political development on the African continent can be traced back to pre-colonial times when it was still out of the colonial control. But the interest here is to focus mainly on the period after independence. Presently, Leaders of African states are influential actors in the management of Foreign Aid extended



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to their countries. Therefore, it is pertinent to gain insight into a theoretical understanding of the nature of African states. These states are not natural geographical entities, but they are an outcome of colonial processes, which swept across the African continent and other colonized areas. Jackson (1997) clearly states that: "Far from being natural entities, modern sovereign states are entirely historical artifacts the oldest of which have been in existence in their present shape and alignment only for the past three or four centuries."

Pre-colonial societies in Africa varied significantly. There were kingdoms, which were ruled via patronage networks. Writers such as Médard & Doyle (2007) observe that African societies were characterized by osmotic ethnic communities with a core area of organized governance with a king or supreme chief and peripheries that were scantly controlled and frequently changed alliances between different ethnic groups. The reach and capacity of pre-colonial African communities was an outcome of wars, alliances and negotiations between the different ethnic communities and were thus in a state of constant flux, lacking territorial demarcations. Berman (1998) argues that "Pre-colonial socio-cultural and political boundaries were marked by fuzziness and flexibility, and Africans existed within a reality of multiple, overlapping and alternative identities." At the time, the British colonialists developed political system based on their policies, which were intended to serve its interest.

It is interesting to note that political leaders have used foreign aid extended to the country to cure their ironical appetite to promote, the polarisation based on personal interests. The situation has been built to favour those in government positions and their kinsmen. It should be acknowledged that most political parties in Africa are backed by foreign assistance, but those especially in powers, their performance has been miserable. It is arguably these political organisations created hatred among the populace. The map (Figure 2) shows the state of political freedom in sub-Saharan Africa.

Freedoms such as freedom of expression, freedom of association, freedom of movement, freedom from discrimination etc. are clearly written in the Constitutions of African countries receiving foreign Aid. But it is evident from the above map that a total of only nine countries in Africa are considered to be politically free. The remaining are either partly free or not free as shown in the map. Pudding (2012) observed that in the period 2007-2011 many African countries declined in freedom which is a fundamental right.

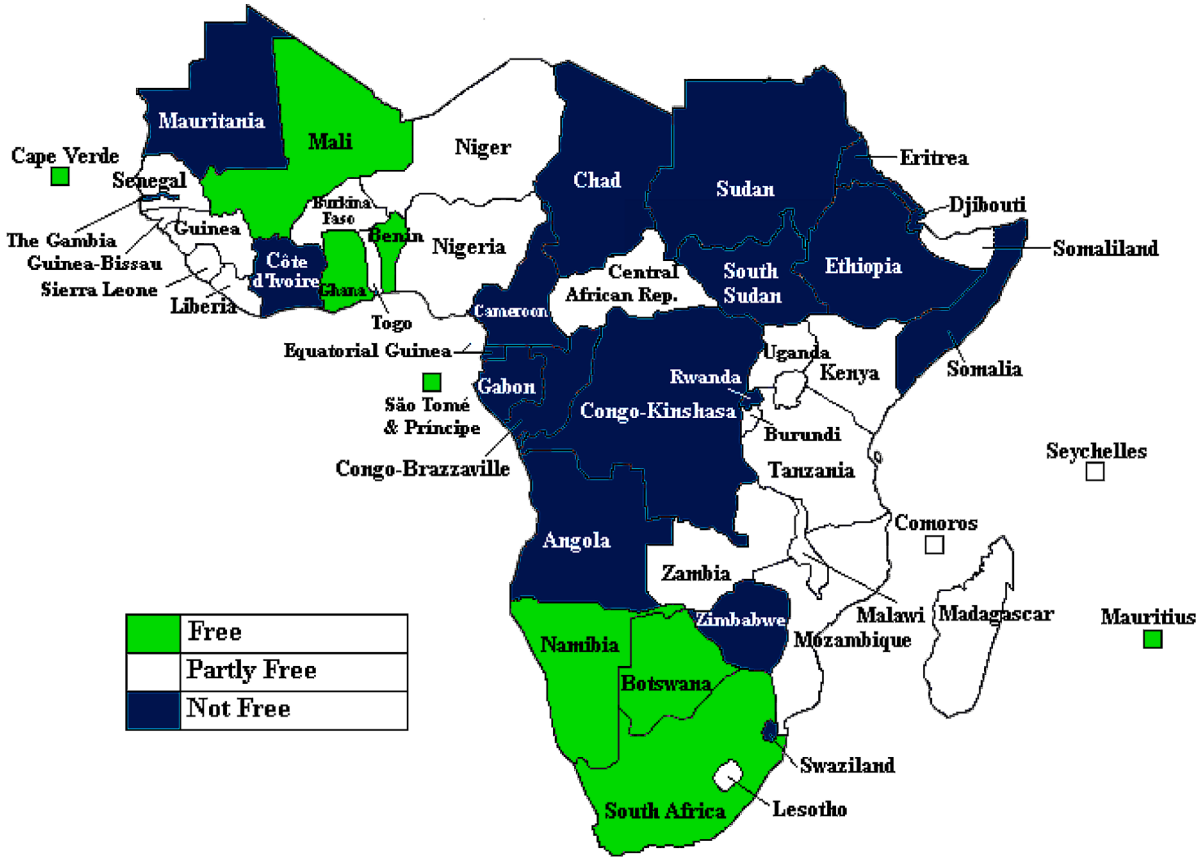
## CONCLUSION

From the foregoing there are multiple types of foreign aid which are given to different countries in Africa by donor communities for multiple reasons. These could be paved with good intentions by the donor to help the recipient improve on its socio-economic and political needs. But as discussed above it can be concluded that the idea of extending foreign aid to third world countries such as those in Africa with the hope that it will lead to its economic and political development stands on a shaky ground. It is noticeable that Foreign Aid does not adequately deliver appropriate results as a catalyst for economic and political development in Africa. Huge foreign Aid in form of finance has been turned into political football in government circles in most of the African states. Whoever plays his/her cards well gets personal benefit. In that regard, it remains a puzzle to profitably aggregate the impact of Foreign Aid. This is because despite huge constant transfer of Foreign Aid to facilitate the "take off," it has always resulted into double economic and political burden. It is perhaps also not to distort and denounce how important is Foreign Aid is, it is true that instead of foreign aid creating an economic environment with



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*Figure 2. Freedom in the world 2012*
*Source: africanelections.tripod.com/fh2012.html*




high-income people, many remain poor living a miserable life, while a few particularly those in government positions enjoy the dividends of Foreign Aid. In that lens it can be said with an increasing amount of confidence that Foreign Aid has a mixed effect on economic and political development.

Therefore, it is perhaps important for Africa to change strategies of mobilising resources for its development purpose from foreign sources which have salient strings that curtail development. This will prevent foreign investment and continuous capital transfers used as a tool to pursue the objectives of donor country. Hence, the focus should be on domestic resources and market built on African economic and political needs and structure. This should be out of the rich natural resources endowed to Africa because Foreign Aid is a curse to economic and political development. The intent of developed countries to make developing nations like Africa dependent on them adequately explains the underdeveloped nature of Africa. It is arguably therefore that Africa can equitably economically and politically develop through maximum exploitation of its rich resources. This should be accompanied by strengthening institutional structures and ensuring that strong and competent committed political leadership and efficient technical capacity to enforce development strategies in Africa are properly managed. In addition, Donor agencies and states to Africa should set more Africa-based approach rather than providing foreign aid to facilitate African economies take-off into self-sustained growth and development. This is because donor countries



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and Aid agencies have transferred a lot of funds to aid to socio-economic and political development but little success is observed in Africa.

## FUTURE TRENDS

Based on the arguments raised in this paper, it is necessary to conduct a more extensive study that will be aimed at revealing the effect of Foreign Aid to democratic and Authoritarian Regimes in Africa. Other possible investigation should be on the interest of Developed World to continue providing Aid to African countries despite the fact that little impact is realised.

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## KEY TERMS AND DEFINITIONS

**Complexity Theory:** Attempts to reconcile the unpredictability of dynamic systems with a sense of underlying order and structure.

**Foreign Aid:** The international transfer of capital, goods, or services from a country or international organisation for the benefit of the recipient country or its population. Aid can be economic, military, or emergency humanitarian.

**Political Development:** Means "the increased differentiation and specialization of political structures and the increased secularization of political culture."

**Socio-Economic Development:** The process of social and economic development in a society which is measured by indicators, such as GDP, life expectancy, literacy and levels of employment, personal dignity, personal safety and freedom from fear of physical harm, and the extent of participation in civil society.

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# Chapter 16
# Operational Structure of Multinational Enterprises in Africa

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## ABSTRACT

*The operational structures of Multinational Enterprises (MNEs) in Africa, a developing and emerging economy do not necessarily differ from those of the developed or even Less Developed Economies (LDEs) except in few areas such as size and capital outlay. Meanwhile, both MNEs of African origin and those which originate from outside Africa do have salient attributes: they have many foreign affiliates or subsidiaries in foreign countries; they operate in a wide variety of countries around the globe; the proportion of assets, revenues, or profits is high; their employees, stockholders, owners, and managers are from many different countries; and they are involved in much more than merely establishing sales office, but incorporate a full range of manufacturing, research and development activities. This chapter examined operational structures of MNEs with focus on meaning, attributes, financing, exchange rate risk and international financial investment, strategies for improved financing and outlay of MNEs in selected African countries.*

## INTRODUCTION

African countries continue to experience growth in multinational enterprises which has equally been observed to play a major role in the development of Africa's economy. Multinational Enterprises in Africa dates back to the nineteenth century during the European domination of African territories, where the author is of the opinion that the colonial powers were out for their business exploit mainly to secure materials for their manufacturing industries. This prompted the establishment of foreign branches of MNEs, the headquarters, which already exist in their home countries in Europe or elsewhere in the world. Other factors played as 'raison d'etre' for establishing MNEs in Africa. These include market

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expansion and technological advancement. Currently, many MNEs indigenous to Africa have sprang-up as a result of globalization with its competitiveness in businesses that are internationally-oriented. The existence of MNEs in Africa, be it of African origin or foreign-based and the spate at which MNEs is expanding in this region largely contribute to the development of Africa's economy; which, at best in global ranking is described as developing.

In order to give more attention to the growth and development of African economy, African countries have come together to form African Multinational Enterprises (AMNEs) at the level of public, private or mixed sectors. AMNEs refer basically to enterprises owned and controlled by more than one African country. The motive behind the formation of AMNEs is for analysis of economic development in Africa with an assessment of regional cooperation and industrial organization. Thus, the pattern of growth – macro and structural – of the African economy; present sub-regional arrangements; potential sources of financing are deciphered in addition to an overview of MNEs and Africa's economy; operational meaning and importance of MNEs and expansion of African economy are the major focus of this chapter.

## BACKGROUND

The world of business is changing and we are now witnessing the beginning of the end of old economic order which has for decades been dominated by the triad economies (US, Europe and Japan). The new economic order is a multi-polar world characterized by multiple centres of economic power and activity (Accenture, 2007). What is most important change about this new order is the remarkable rise of emerging market multinationals (EMMs) while the share and influence of multinational companies from developed countries is declining. Fan (2008) asserts that the market intelligence has become more globalized than ever and this is a major challenge to most multinational organizations around the world. It is also important to note that market development can be viewed from the perspective of multinationals from developed countries and those from emerging markets. Fan (2008) argues that emerging markets multinational firms are more aggressive and ambitious in their operations and are likely to take western multinationals by storm just as Japanese companies did in the late 1970s. These emerging market multinationals are largely from Latin America, Asia Pacific and South Africa.

Mthombeni (2006) described a Multinational enterprises (MNEs), also known as Multinational corporation/company (MNC), Transnational corporation, and by many other names as a "firm that owns or controls income-generating assets in more than one country." The author further posited that a transnational corporation would probably be achieved by linking the firm or company to the form of trade it engages in. Hence, MNE is a company that has established an international presence by engaging in foreign direct investment (FDI). This differs from general trade because FDI represents the physical extension of operations and the investment of equity funds and stock in several countries.

The degree of multi-nationality of firms, Spero and Hart (2003) highlighted as:

1. They have many foreign affiliates or subsidiaries in foreign countries;
2. They operate in a wide variety of countries around the globe;
3. The proportion of assets, revenues, or profits is high;
4. Their employees, stockholders, owners, and managers are from many different countries; and
5. They are involved in much more than merely establishing sales office, but incorporate a full range of manufacturing, research and development activities.



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Grunberg (2001) described MNEs as economic firm that have their head offices in their country of origin (their home country) and produce or distribute products or services in foreign countries (the host country) where they establish a branch or affiliate. According to Nickels, McHUGH and McHUGH (2002), a multinational corporation (either multinational enterprise) is an organization that manufactures and markets products in many different countries and has multinational stock ownership and multinational management. Akpan (2003) defined a multinational company (MNC), also known as multinational enterprise (MNE) as a company that does business and has assets in two or more countries. In the words of Rugman and Hodgetts (2003), a multinational enterprise (MNE) is a company that is headquartered in one country but has operations in one or more other countries. The author noted that multinationals often downplay the fact that they are foreign-held as their names may not necessarily indicate where they originate. This also portrays that many large MNEs have world holdings far beyond that which is known to the casual observer, yet these companies have dramatic impact on the quality of the goods and services being produced around the world.

The motivation to invest capital in a foreign country is to provide a return in excess of that obtained domestically. Expansion into foreign markets is the reason for most investment abroad. Other reasons include securing the necessary raw materials, generating foreign exchange, lowering operating costs. Pugel (2007) viewed MNE as a firm that owns and controls operations in more than one country. The parent firm in the MNE is the headquarters or base firm, located in the home country of MNE. The parent firm has one or more affiliates (subsidiaries or branches) located in one or more host countries. Pinelo (1973) described a multinational corporation as one that does most of its business across national boundaries.

Multinational Enterprises have economic power, especially when comparing the annual sales of multinational companies with the Gross Domestic Products (GDP) of some nations. In most cases, the annual sales of MNEs can be larger than the GDP of some nations. This is clear evidence that MNEs offer careers for global businesses. In other words, MNEs are typically extremely large corporations; but not all large firms involved in global businesses are multinationals. For instance, a business could literally be exporting everything it produces, thus delivering 100 per cent of its sales and profits globally, and still not be a multinational corporation. Only firms that have manufacturing capacity or some other physical presence in different nations can truly be called multinational. Needham and Drainsfield (2000) noted that MNEs are mainly Public Limited Companies (PLCs). A multinational is a company with its headquarters in one country but with operations in other countries. Needham and Drainsfield reported that there are over 12,000 MNEs, the largest 500 which account for over 80 per cent of the world's foreign direct investment. Again, some 434 of the world's top 500 MNEs are from what is referred to as the triad blocs of the European Union, Japan and the USA as illustrated in Figure 1.

Similarly, Rugman and Hodgetts (2003) reported that over 60,000 MNEs with largest 500 account for 80 per cent of all worlds' foreign direct investment. Unfortunately, of this number Africa has only one, represented by South Africa. Although the number may change between the year 2000 and 2015, it is observed that there is still an imbalance in the spread of MNEs across the world, with Africa still at the bottom line. A breakdown of these 500 largest multinationals is given on Table 1.

A multinational enterprise has two major areas of concern, namely the home country of its headquarters and host countries which it operates. A multinational enterprise is able to draw on a common pool of resources, including assets, patents, trademarks, information and people. Salient features of MNEs include the fact that the affiliates must be responsive to important environmental factors. These include competitors, customers, suppliers, financial institutions and government. Environmental factors can affect both the home and host country environments. MNEs can use the same suppliers overseas



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*Figure 1. The triad 'bloc' of MNEs*
*Source: Modified from Needham, D. & Drainsfield, R (2000)*

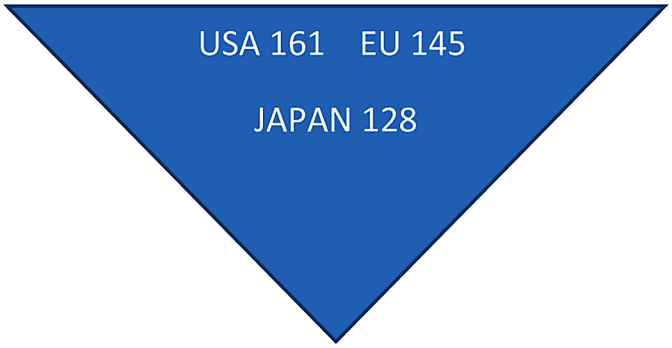



*Table 1. The world's largest 500 multinational enterprises, 2000*

| Country | No. of MNEs |
|---|---|
| United States | 185 |
| European Union | 141 |
| Japan | 104 |
| Canada | 15 |
| China | 12 |
| Switzerland | 11 |
| South Korea | 11 |
| Autralia | 7 |
| Brazil | 3 |
| Rusia | 2 |
| Norway | 2 |
| Mexico | 2 |
| Venezuela | 1 |
| South Africa | 1 |
| Singapore | 1 |
| Malaysia | 1 |
| India | 1 |
| TOTAL | 500 |

Source: Rugman and Hodgetts (2003), adapted from Fortune, the Future Global 500, 2001.

that they employ domestically and it is common to find home country-based suppliers following their MNE customers to other geographic locals in order to provide the same types of services worldwide.

MNEs can draw on a common pool of resources, including assets, patents, trademarks, information, and human resources. The affiliates are parts of the same company, hence, will have access to assets that are often not available to outsiders. In this case, different companies can compete vigorously in the same environment. For instance, both Ford and General Motors compete vigorously in Europe and many of the design and styling changes developed for their European cars have now been introduced in US models.



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MNEs can link together the affiliates and business partners with a common strategic vision. In this case, the firms with whom the MNE works fit into the company's overall plan of what it wants to do and how it intends to go about implementing the strategy. Companies, therefore, strife to become MNEs for a number of reasons: one of the reasons being to diversify themselves against the risks and uncertainties of the domestic business cycle. By setting up operations in another country, MNEs can often diminish the negative effects of economic swings in the home country. This is a form of diversification. Companies also strive to become MNEs in order to tap the growing world market for goods and services. This is part of the process of growth in an integrated world market, sometimes called "globalization" (the rapid growth of similar goods and services produced and distributed by MNEs on a worldwide scale).

Further, firms can strive to become MNEs in response to increased foreign competition and a desire to protect their home market share. Most MNEs establish operations in the home countries of their major competitors. This strategy serves a dual purpose – it takes away business from their competitors by offering customers other choices, and it lets the competitors know that if they attack the MNEs' home market, they will face a similar response.

Companies also become MNEs in order to reduce costs. Such costs include transportation; overheads that would have warranted through the middlemen, among others. The operation of businesses as MNEs help to tap local resources, make rapid and adequate response to customers' needs and take advantage of local resources through a process known as "internationalization" of control within the MNE, thus, there is cost reduction.

Multinational enterprises also have the ability to overcome tariff and non-tariff barriers by serving a foreign market from within. This is most likely to be when MNE operate within the same region. Within Africa for instance, MNEs of the continent's origin and operating within the region can promote free movement of factors of production without paying tariff.

## MNE IN SELECTED COUNTRIES IN AFRICA

### South African MNCs

According to Taal (2014), South African companies continue to be expanding into the African continent and are experiencing better growth prospects. South Africa's economy is seen as slow to stagnant in comparison to some countries to the north and much like MNCs from abroad, South African MNCs have noticed a growing urbanized population looking for convenience and accessibility. Those companies that are succeeding are those that recognize not just the new wealth of Africa, but the workers, lower income earners who also consider themselves urban consumers. A report in respect of the retail industry showed that in 2010, 25.7 percent of South Africa's overall merchandise export basket was destined for other African markets. By the first half of 2014, this ratio had increased to 30 percent. Therefore, for many South African retailers the future looks to be firmly to the north. In some cases the companies are only hosted in one country outside of South Africa on the African continent. In most cases the bulk of those companies foreign affiliates are offshore – such as is the case with Sappi with a strong presence in North America and Europe, and Network Healthcare Holdings, that has many operations in the United Kingdom. These off-continent operations are not yet tracked. Perhaps, in coming years it would be prudent to do so. Standard Bank Group is present in its various forms in the most countries, nineteen with Shoprite, the pioneer in African expansion, still in sixteen countries. Evidently Mauritius is no longer a favored



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destination for investment having dropped from three to one company operation. Kenya has also disappeared from the list of South African Multinational destinations, the local companies, it seems proving dominant in their own markets are Swaziland, Zambia Botswana, Lesotho, Ghana, Mozambique, Namibia, Tanzania, Malawi, Nigeria, Uganda, Zimbabwe, Mauritius, Angola, DRC, Guinea, Mali. Host to two companies include: Congo, Kenya, Madagascar, and South Sudan. Host to one company include: Benin, Cameroon, Côte d'Ivoire, Guinea-Bissau, Ivory Coast, Liberia, Mauritania, Rwanda, Sénégal, Sierra Leone, and Sudan. Although the assets will remain, they will be wholly foreign-owned and controlled.

## Transnational Corporations in Egypt

Transnational corporations (TNC), which originate in Egypt, are listed below (see Table 2).

## Nigeria

Nigeria has been a focus for international business investment because of its potential for market expansion as the most populated nation on the African continent. As a result, many advanced nations and other African countries aim to establish their investment in Nigeria. On the other hand, the nation's staggering progress for development, at least, to be at par with her contemporaries decades ago; but which have assumed development status far beyond the line of Nigeria is course for concern. Consequently, government policies in recent times are formulated to attract foreign investment. This has opened the avenue for new comers into the Nigerian Markets to compete with the old entrants. Among the new entrants are China, Japan, South Korea, South Africa, Egypt, among others. Until recently, Nigeria's major investors basically, have been America and Europe. According to Companies and Allied Matters Act (CAMA) 2004 and Investment and Securities Act 2004 (2011 ed.), foreign companies intending to carry on business in Nigeria would have to satisfy the following legal requirements (Table 3):

*Table 2. Egyptian TNCs*

| Company | Sector |
|---|---|
| Abu Qir Fertilizers and Chemical Industries | Chemical and chemical products |
| Al Chark Insurance C0. | Insurance |
| Alexandria Minerals Oils Co. | Food products, beverages, and tobacco |
| Alexandria National Iron and Steel co. | Iron and steel |
| Aluminum Co. Of Egypt | Iron and steel |
| American Group for Food | Diversified group |
| ASEC Cement Co. | Building materials |
| Delta Industrial Company | Engineering |
| Eastern Co. | Diversified group |
| Egypt Air | Air transport |
| Egyptian Aluminum Products Co. | Aluminum |
| Egyptian cement Co. | Building materials |

(Afribiz, 2010)



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1. Subject to sections 56 to 59 of the Companies and Allied Matters Act (CAMA), every foreign company which before or after the commencement of this Act was incorporated outside Nigeria, and having the intention of carrying on business in Nigeria shall take all steps necessary to obtain incorporation as a separate entity in Nigeria for that purpose, but until so incorporated, the foreign company shall not carry on business in Nigeria or exercise any of the powers of a registered company and shall not have a place of business or an address for service of documents or processes in Nigeria for any purpose other than the receipt of notices and other documents, as matters preliminary to incorporation under the CAMA.
2. Any act of the company in contravention of subsection (1) of this section shall be void.
3. Nothing in this section shall affect the status of:
    a. Any foreign company which before the commencement of this Act was granted exemption from compliance with part x of the companies Act 1968.
    b. Any foreign companies exempted under any treaty to which Nigeria is a party.

## FINANCING OF MULTINATIONAL ENTERPRISES

Grunberg (2001) explained that MNEs finance some portion of their overseas operations by transferring funds from the parent firm in the home country to the branch or affiliate in the home country. This transfer of funds is what is called foreign direct investment (FDI) because it involves engagement in directly

*Table 3. MNEs in Nigeria*

| Name | Industry |
|---|---|
| Shell Petroleum Development Company (SPDC) | Oil & Gas |
| Chevron | Oil & Gas |
| Mobil | Oil & Gas |
| NNPC | Oil & Gas |
| MTN | Telecommunication |
| Nestlé Nigeria | FMCG |
| Total | Oil & Gas |
| Dangote | FMCG |
| Nigeria Breweries | FMCG |
| Glo | Telecommunication |
| NLNG | Oil & Gas |
| Unilever | FMCG |
| Guinness | FMCG |
| Etisalat | Telecommunication |
| First Bank of Nigeria | Banking |
| Julius Berger | Construction |
| Cadbury | FMCG |
| Eni (Saipem) formerly AGIP | Oil & Gas |



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productive activities overseas with the purpose of owning or controlling overseas assets. In essence, FDI is a vital ingredient and key feature of MNEs. It involves the establishment of foreign production facilities or the purchase of an existing foreign business and of acquiring ownership control of such a domestic firm. The control over operations immediately suggests that more than mere flows of financial capital is often accompanied by, inter alia, technological knowledge and increased leverage and management of foreign markets. This further implies that FDI serves as the "backbone of the MNE." The transferring of capital, technology and know-how, mobilizing untapped and under-utilized resources, MNEs can increase productivity, foster growth through its financing power.

Multinational enterprises use flow of foreign direct investment to establish or finance its foreign affiliates. Pugel (2007) pointed out that in two different ways; a multinational enterprise is more than just the flow of foreign direct investment. First, foreign affiliates usually receive only part, and often a rather small part, of their total financing from the direct investment flows. Second, the multinational enterprise transfers many other things to its foreign affiliates in addition to the direct investment financing. The MNE typically provides its affiliates with a variety of intangible assets for the affiliates to use. These intangible assets can include proprietary technology, brand names, marketing capabilities, trade secrets, and managerial practices.

Pugel maintained that a foreign affiliate can obtain financing either from its parent (or other parts of the MNE) or from outside lenders and investors (for instance banks or the buyers of bonds that the affiliate issues). The former is foreign direct investment, whereas, the latter is not. For instance, Pugel reported that in year 2000, for all MNEs in the world, foreign affiliates had $21 trillion of financing in place, in $6 trillion of that financing was provided by foreign direct investment by the multinational enterprises. According to evidence from US – based multinationals borrowing in the host countries provides more than half of the outside financing. The reason for foreign direct investment (FDI) providing so little of the affiliates' total funding as highlighted by Pugel include the need by parent firm to reduce the risks to which its foreign activities are exposed. One of these risks is unexpected changes in exchange rates, which can alter the value of its direct investments. Risk – reducing strategy can be applied whereby a parent company that has foreign – currency assets in its affiliates can take on foreign – currency liabilities as well, by borrowing in foreign currencies that are used to finance the affiliate. This process involves exchange rate risk which includes hedging.

Akpan (2003) opined that for most companies wishing to establish a foreign subsidiary, there are three methods of financing. These are highlighted as follows:

1. Exporting funds (capital). When looking at MNEs of African origin, then export of capital from Africa uses foreign currency, which needs to be bought with African currencies in operation.
2. Raising the funds in the country in which the subsidiary is to be located.
3. Raising funds in one of the international finance markets where interest rates are lowest.

In comparing the alternative sources, Akpan (2003: 98) said, "It should be remembered that the objectives are twofold. Firstly, the company will want to pay the lowest interest possible but secondly, it will wish to minimize exchange rate risk. When assets and liabilities used to finance them are dominated in different currencies, a change in the relative values of the currencies will result in the company incurring exchange rate losses or making exchange rate profits. However, in making international financing decisions, it is desirable to minimize the possibility of such gains or losses. Exporting funds directly from Africa will have the advantage of being relatively simple. There is the further advantage that the



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company is presumably known to investors in its domestic economy. A company of African origin with a good track record can easily raise loan within the continent than as would be obtained outside the continent. The loan being raised in home currency can be used to buy the relevant foreign currency for investment abroad. The problem with this approach to financing is that the company is completely exposed to exchange rate risk. Furthermore, as many countries have fairly stringent exchange control regulations, there may be problems in repatriating funds.

Raising the required finance in the country in which the subsidiary is to be located, is obviously attractive. Having the assets and liabilities denominated in the same currency eliminates exchange rate risk. However, it will rarely be possible to raise all the required finance in a country where the company is not known. Firstly, the parent company will inevitably be required to put up some equity in the new venture. Secondly, capital markets in some countries are not highly developed and it is unlikely that sufficient funds could be raised.

In some cases, direct foreign investment in a subsidiary is initially financed by foreign currency, borrowing from Eurobank or the issue of Eurobond. Eurobank is a bank that participates in Eurocurrency market by accepting deposits and providing loans in foreign currencies. Eurocurrency market is the international money market in currencies of nations outside the locality. Eurocurrency (Eurofunds, Euromoney) is a currency that is circulating outside the nation where it was issued, example, Eurodollars. Eurodollar is a U.S dollar deposited in a foreign bank and used in European money market. Eurobond is an international bond issued in a country other than the one in whose currency the bond is denominated. Eurobond can be issued in any currency but the requirements for ease of conversion and stability have made the U.S. dollar, the Deutschemark, etc the most popular. Euro is the official currency of 11 countries in the European Union. On January 1, 1999, the euro became the single currency of the 11 participating countries – Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, and Spain. The major disadvantage of overseas borrowing is that the loan has to be repaid in the currency of issue. The borrower thus runs the risk of an exchange loss (or the possibility of gain) should either of the currencies be revalued between the time of borrowing and the time of repayment.

## Exchange Rate Risk and International Financial Investment

Activities of multinational enterprises involve exchange of money. Again, payments or receipt of money are done at future dates with antecedent of uncertainty in knowing the exchange rate that will be practicable as at the future date to translate a country's currency into another. This means that exchange rate changes over time. Pugel (2007) explained that in a floating rate system, spot exchange rates change from minute to minute because supply and demand is constantly at influx. Floating rate sometimes change quickly by large amounts as a result of large shifts in supply and demand. In a fixed – rate system, spot exchange rates can equally change from minute to minute, but the range of the rate is typically limited to a small band around the par value as long as the fixed rate is defended successfully by the government authorities. This does not mean that in a fixed rate system large change cannot occur; but this is often so when the currency is devalued or revalued by the authorities. Of course, some portion of the change in spot exchange rates in either system can be predicted by participants in the foreign exchange market, another part – often a large part – of exchange rate change cannot be predicted.

Therefore, a person or an enterprise such as MNE is exposed to exchange rate risk if the value of income or net worth changes when exchange rates change unpredictably in the future. The fact that exchange rates can change over time calls for two types of responses. Enterprises may try to avoid



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gambling on what exchange rates would be in the future, can acquire exposures to exchange rate risk in the course of their regular activities but seek to reduce (or eliminate) their risk exposure by 'hedging'. Hedging, a position exposed to rate risk, is the act of reducing or eliminating a net asset or net liability position in the foreign market. On the other hand, enterprises having a fair knowledge of exchange rate may anticipate a rise or fall in exchange rate with expectation to gamble when this occurs in future. In this case, such enterprise is willing to take on hold positions that are exposed to exchange rate risk, and likes to bet that exchange rate will move in their favor so that they make a profit. This process is known as speculation. Put shortly therefore, speculating is the act of taking a net asset position ("long") or a net liability position ("short") in some asset class in a foreign currency.

## SPECIFIC WAYS FOR IMPROVING FINANCIAL BASE FOR THE DEVELOPMENT OF MNEs IN AFRICA

Africa can develop and expand her MNEs through a number of regimes including strengthening her economic institutions such as export – import bank, known as African Export – Import Bank (AFREXIM); African Development Bank (ADB), among others. These institutions can issue bonds, partner with foreign global partners and give loans. African Export-Import Bank, also referred to as Afreximbank, is an International financial institution, headquartered in Cairo, Egypt, whose primary objective is to promote and finance trade within the African continent and trade between Africa and other continents. The headquarters of Afreximbank are located at 72 (B) El Maahad El Eshteraky Street, in the Heliopolis neighbourhood in the city of Cairo, the capital and largest city in Egypt. The bank maintains a second branch at 2 Gnassingbe Eyadema Street, Asokoro, Abuja, the capital city of Nigeria. The bank's third branch is located at Eastgate Building, Third Floor, North Wing, Gold Bridge, in Harare, the capital and largest city in Zimbabwe.

African Export-Import Bank ("Afreximbank or the "Bank") is an international partnership of African States, international organizations, public and private institutions and investors which was set up in 1993 to facilitate additional flow of resources in support of African Foreign Trade. We exist to finance, promote, and expand intra-Africa and extra-African trade. To serve our members we employ three principal delivery channels; extend direct credit to eligible African exporters providing pre- and post-shipment finance; extend direct and indirect credit to the African business community through local African intermediaries comprised by Banks and other African Institutions; promote and finance intra- African trade and support the development of trade finance in all African member states (www.afreximbank.com, accessed 2015).

### Structures of the Bank

The Bank has full juridical personality under the laws of the State Parties to the Bank Establishment Agreement and is endowed with immunities, privileges and concessions pursuant to it. The constitution of the Board and Management reflects its broad constituency, ownership and mandate. The Bank's Board of Directors is comprised by four Directors elected by Class 'A' Shareholders, including one member appointed by the African Development Bank; four Directors elected by Class `B' Shareholders; and two elected by Class C' Shareholders. Members of the Board of Directors are elected for a term of three years and may be re-elected. The Board meets once every three months or as often as the business of



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the Bank may require. The President is an ex-officio member and Chairman of the Board of Directors. News Letter We facilitates the flow of resources in support of African Foreign Trade.

Increased confidence is being shown in the Bank through increased investments by existing shareholders. Issues of Joining the Bank and Accessing Afrexim Bank Facilities: The Bank welcomes partnerships and, applications for membership and applications for credit facilities from eligible entities and individuals who are engaged in the promotion, development and business of trade Finance in Africa as well as those individuals and institutions that either trade with Africa or are interesting in developing trade Finance in Africa. The overarching goal is to harness synergies to finance and develop intra-Africa trade and enhance the region's access to critical imports and exports for sustainable economic development for our region that have a genuine interest in developing trade finance in Africa or ascribe to similar objectives. Therefore, all Independent African States and Institutions; all African Public and private sector Institutions; International Financial Institutions and Economic Organizations that can be able to subscribe for a minimum for each class.

## Strategic Partnerships

Export-Import Bank of China Grants US$100 million Line of Credit to Afreximbank as part of its drive to promote access to essential capital equipment and export, generating imports, the Bank, has intensified efforts to diversify its sources of funding by aggressively mobilizing funds under its ECA Loans Facilitation Program. Under this program, the Bank selectively works with other ECAs to promote the acquisition of essential goods, especially capital goods and/or services by African counterparties. On May 13, 2009 the Bank signed a US$ 100 million Trade and Project Financing Facility with Exim Bank of China. Under the Facility, US$20 million will be used by Afreximbank to fund short-term trade finance activities and US$80 million will be channeled into medium term project finance on-lending to its clients in support of acquisition of a variety of Chinese goods and services from a broad range of sectors including, industry and agro-industry, telecommunications, energy and environmental protection, transportation, water supply and sanitation.

The African Export – Import Bank (AFREXIM) continues to partner with trading giants globally to expand its horizon in investments. Bloomberg (2015) reported that AFREXIM is to generate over $1 Billion in bonds and loans in Renminbi, the Chinese currency, as trade with China rises. Bloomberg, who quoted Jean-Louisa Ekra, President of the Cairo-based lender, as saying a Eurobond of between $400 Million and $600 Million might in turn be sold in the Month (June 2015), spoke in Abidjan, Ivory Coast where the bank opened its third regional office after Harere in Zimbabwe and Abuja. According to Bloomberg, the firm will seek the loan from 35 banks later in the year.

Meanwhile, the reason to raise fund in Chinese currency may not be unconnected with the increasing volume of trade between Africa and China in recent years. This assertion is confirmed by Bloomberg who posited thus: "AFREXIM is considering borrowing in Chinese renminbi to take advantage of rising trade in Africa with China, which is the top trading partner of Africa's five-largest economies, including South Africa, Nigeria and Angola", P.26.

## AFREXIM Bank Responds to the Economic Crisis

The negative consequences of the global economic crisis on African trade and trade finance are currently being seriously felt on the African continent. Afreximbank understands the ramifications of the



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current global financial crisis on African trade and trade finance, given its history and raison d'etre. The Bank was established in 1993 to deal with a similar credit crunch that Africa was facing. To assist its member countries satisfy essential import needs given the drastic cut in credit lines, the Bank is actively: deepening existing business relationships with core OECD partner banks to ensure that credit lines from those banks are maintained; and intensifying its program of expanding partnership arrangements with Pan-African entities, including African Development Bank (AfDB), Africa Finance Corporation (AFC), ECOWAS Bank for investment and Development (EBID), African Trade Insurance Agency (ATI), Shelter Afrique and the Eastern and Southern African Trade and Development Bank (PTA Bank), for the purpose of pooling technical and financial resources as well as sharing risks in the funding of viable trade and project ventures. Discussions are also ongoing with major multilateral institutions to ensure that the Bank can support the increased demand for its services. Afreximbank understands the current global financial crisis. Hence, the Bank is also championing the creation of an Alliance of African International Financial Institutions (AAIFI), made up of African multilateral financial institutions and multinational banks. The move will assist Bank members to share business risks, financial resources, and expertise in such a way as to allow member institutions achieve their mandate efficiently in the collective interest of the Continent.

## African Development Bank

African Development Bank Group (AfDB) is a multilateral development finance institution established to contribute to the economic development and social progress of African countries. The AfDB was founded in 1964 and comprises three entities: The African Development Bank, the African Development Fund and the Nigeria Trust Fund. The AfDB's mission is to fight poverty and improve living conditions on the continent through promoting the investment of public and private capital in projects and programs that are likely to contribute to the economic and social development of the region. The AfDB is a financial provider to African governments and private companies investing in the regional member countries (RMC). While it was originally headquartered in Abidjan, Côte d'Ivoire, the bank's headquarters moved to Tunis, Tunisia in 2003, due to the Ivorian civil war; before returning in September 2014.

The historical birth of the bank could be traced to the end of the colonial period in Africa, where there was a growing desire for more unity within the continent which led to the establishment of two draft charters, one for the establishment of the Organization of African Unity (established in 1963, later replaced by the African Union), and for a regional development bank. A draft accord was therefore submitted to top African officials, then to African Ministers, before being cosigned by twenty-three African governments on August 4, 1963, in the form of an agreement establishing the African Development Bank. The agreement came into force on 10 September 1964. Although established officially under the auspices of the Economic Commission for Africa, the AfDB began operation in 1966. Originally, only African countries were able to join the bank. However, since 1982 it has allowed the entry of non-African countries as well. During its forty years of operations, AfDB has financed 2,885 operations, for a total of $47.5 billion. In 2003, it received an AAA rating from the major financial rating agencies and had a capital of $32.043 billion. The African Development Bank Group has two other entities: the African Development Fund (ADF) and the Nigeria Trust Fund (NTF).



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## African Development Fund

This was established in 1972. The African Development Fund started operations in 1974. It provides development finance on concessional terms to low-income RMCs which are unable to borrow on the non-concessional terms of the AfDB.

In harmony with its lending strategy, poverty reduction is the main aim of ADF activities. Twenty-four non-African countries along with the AfDB constitute its current membership. The largest ADF shareholder is the United Kingdom, with approximately 14% of the total working shares followed by United States with approximately 6.5 percent of the total voting shares, followed by Japan with approximately 5.4 percent. The Federal Reserve Bank of New York was designated as the depositor bank for the fund according to telegraphs sent from the U.S. Embassy in Abidjan in 1976. The ADF's general operations are decided by a Board of Directors, six of which are appointed by the non-African member states and six designated by the AfDB from among the bank's regional Executive Directors. The ADF's sources are mainly contributions and periodic replacements by non-African member states. The fund is usually replenished every three years, unless member states decide otherwise. The total donations, at the end of 1996, amounted to $12.58 billion. The ADF lends at no interest rate, with an annual service charge of 0.75%, a commitment fee of 0.5%, and a 50-year repayment period including a 10-year grace period. The tenth United Kingdom replenishment of the ADF was in 2006.

## Nigeria Trust Fund

The Nigeria Trust Fund (NTF) was established in 1976 by the Nigerian government with an initial capital of $80 million. The NTF is aimed at assisting in the development efforts of the poorest AfDB members. The NTF uses its resources to provide financing for projects of national or regional importance which further the economic and social development of the low-income RMCs whose economic and social conditions require financing on non-conventional terms. In 1996, the NTF had a total resource base of $432 million. It lends at a 4% interest rate with a 25-year repayment period, including a five-year grace period.

## Management and Control

In terms of management and control, the AfDB is controlled by a Board of Executive Directors, made up of representatives of its member countries. The voting power on the Board is split according to the size of each member's share, currently 60%-40% between African (and "regional") countries and "non-regional" member countries ("donors"). The largest African Development Bank shareholder is Nigeria with nearly 9 percent of the vote. All member countries of the AfDB are represented on the AfDB Board of Executive Directors. Mr. Donald Kaberuka is the 7th elected President of the African Development Bank Group, having taken the oath of office on September 1, 2005. However, the baton will be changed in August 2015, following the election on May 2015 which saw the emergence of Nigeria's outgoing Minister of Agriculture and Rural Development, Akinwumi Adesina. Adesina on assumption of office on August 2015 will be 8th President of the African Development Bank (AfDB). Mr. Adesina, 55, will succeed incumbent president, Donald Kaberuka, at the end of his second term as President of the Bank in August 2015. He chairs the Boards of both the African Development Bank and the African Development Fund. Mr. Kaberuka is a former finance minister of Rwanda.



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Member governments are officially represented at the AfDB by their Minister of Finance, Planning or Cooperation who sits on the AfDB Board of Governors. The AfDB Governors meet once a year (at the Annual Meetings of the AfDB each May) to take major decisions about the institution's leadership, strategic directions and governing bodies. The Governors typically appoint a representative from their country to serve in the offices of the AfDB's Board of Executive Directors. Day-to-day decisions about which loans and grants should be approved and what policies should guide the AfDB's work are taken by the Board of Executive Directors. Each member country is represented on the Board, but their voting power and influence differs depending on the amount of money they contribute to the AfDB. The African Development Bank is using a Unit of Account which is registered as XUA as ISO 4217 standard currency code. It is not exchanged directly by individuals; it is used for accounting between state members.

The primary function of AfDB is making loans and equity investments for the socio-economic advancement of the RMC. Second, the bank provides technical assistance for development projects and programs. Third, it promotes investment of public and private capital for development. Fourth, the bank assists in organizing the development policies of RMCs. The AfDB is also required to give special attention to national and multinational projects which are needed to promote regional integration.

The AfDB promotes economic development and social progress of its RMCs in Africa and the bank commits approximately 3 billion dollars annually to African countries. It's relatively small lending and tendency to follow in the footsteps of more prominent public institutions like the World Bank, implies that the African Development Bank has been receiving little interest from civil society organizations as well as academia. AfDB emphasizes the role of women along with education reforms, and lent its support to key initiatives such as debt alleviation for Heavily Indebted Poor Countries and the New Partnership for Africa's Development (NEPAD). The Bank is currently based in Tunis, Tunisia after relocating from its headquarters in Abidjan, Côte d'Ivoire because of instability there. It employs approximately 1,020 employees as of 2007, and has 78 members: 53 countries in Africa and 25 American, European, and Asian countries.

One of emerging views, repeatedly cited by the AfDB's Board of Directors and management, is that the AfDB should be more "selective" and "country-focused" in its operations. Though this policy has still to be clearly defined, it appears to be driving certain lending priorities. The infrastructure sector, including power supply, water and sanitation, transport and communications, has traditionally received the largest share of AfDB lending. This focus was re-affirmed in the AFDB's 2003-2007 Strategic Plan, which identified infrastructure as a priority area for AfDB lending. In 2005, the AfDB approved 23 infrastructure projects for approximately $982 million, which totaled 40 percent of AfDB approvals that year. Given the increased attention to infrastructure development in Africa from donors and borrowers, it is likely that AfDB's infrastructure lending will increase significantly in the coming years. In 2007, infrastructure operations accounted for approximately 60 percent of the bank's portfolio. Regional integration infrastructure projects will be a key part of the AfDB's future business. According to the AfDB's *2005 Annual Report*, regional economic blocs will make Africa "more competitive in the global market", while transport and power interconnections between smaller African economies will help create larger markets in the continent. The AfDB's member countries claim that AFDB, as a multilateral institution, is particularly suited to support regional integration projects.

The AfDB has been designated the lead agency to facilitate "NEPAD infrastructure initiatives", which are regional integration projects led by African Regional Economic Communities (RECs). Additionally, the AfDB hosts the Infrastructure Consortium for Africa (ICA). The ICA was established by G8 countries to coordinate and encourage infrastructure development in Africa, focusing on regional infrastructure



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development in particular. The AfDB helps to prepare projects so they may obtain financing from others sources through an initiative called the Infrastructure Project Preparation Facility (IPPF). So even if the AfDB is not directly involved in financing a particular infrastructure project, it may have helped to make it possible.

Energy projects are likely to become a more important area of the AFDB's infrastructure work, given the lack of access to energy services across Africa and continued high oil prices affecting oil-importing countries. It is not clear if the AFDB's role in the energy sector will prioritize energy projects for domestic consumption or for export, although the AfDB has supported both in the past. The AFDB is currently drafting an energy policy and developing its contribution to the G8-mandated Clean Energy Investment Framework. Although there is no official statement or consensus to this effect, AFDB lending for agriculture, (non-infrastructure) rural development and social sectors, such as health and education, is reportedly likely to decrease over the coming years.

The AfDB's financial standing has been restored from the near collapse of 1995, but its operational credibility remains a work-in-progress. A working group convened by the Center for Global Development, an independent Washington think tank, released a report in September 2006 that offered six recommendations for Bank's president and board of directors on broad principles to guide the Bank's renewal. The report contains six recommendations for management and shareholders as they address the urgent task of reforming Africa's development bank. Prominent among the recommendations is a strong focus on infrastructure. AfDB is still a relatively small source of development finance for Africa. According to the most recent figures, the AfDB provides only 6 percent of total development assistance to the continent. Through its International Development Association (IDA), the World Bank annually approves about four times more in low-interest loans and grants to Africa than the AfDB does. The AfDB lacks the financial resources, the staff capacity and the range of staff skills and experience of the World Bank. For example, at the World Bank there is more than four times the number of staff working on any given project than at the AfDB. A number of the AfDB's projects, especially its policy loans, are financed jointly with the World Bank and other donors. The AfDB also relies extensively on World Bank research and analysis. As a larger institution and often the lead financier on joint projects, the World Bank attracts more attention than the AFDB.

While the AfDB's lending had not expanded significantly in recent years, 2006 figures indicate that things may be changing. Between 2005 and 2006, the AfDB's lending activities increased by more than 30 percent to $3.4 billion. Over the same period, private sector operations doubled in value. The AfDB has specific mandates from the New Partnership for Africa's Development (NEPAD) and other international organizations to take the lead amongst financial and development institutions in areas such as infrastructure, regional integration, and banking and financial standards in Africa. These mandates have also increased the AfDB's profile in the media. The increased international emphasis on Africa's development needs in recent years (for example, surrounding the 2005 Gleneagles G8 Summit), and on the importance of infrastructure investment in Africa, has highlighted the role of the AfDB.

Some research have indicated that a high percentage of respondents in African countries have marked preference for additional aid from the African Development Bank, despite its relatively low rating against most of the aid effectiveness criteria found to be important by donor recipients. This suggests that donor recipients in Africa views on the 'multilateral donor of choice' are informed by additional aid effectiveness criteria that are not commonly identified or reported against, though exactly what those criteria have not been discussed.



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In general, whereas there have been progress at all levels with regard to democracy, growth and restoring the macro-economic balances in Africa over the past fifteen years, half of sub-Saharan Africa lives on under one dollar a day, and AIDS is threatening the social fabric of the continent. The studies conducted by various organizations (including the African Development Bank and the World Bank) show that, with the exception of northern and southern Africa, the United Nations Millennium Development Goals (reducing by half the number of persons living in poverty and without access to potable water by 2015) will in most cases not be attained. Nevertheless, these same studies indicate that the majority of the African countries can make notable progress to these ends.

## CHALLENGES FACING MNEs IN AFRICA

According to Khan (2014), globalization may be a fact of life, but it remains highly fragile. Embedding global market forces in shared values and institutionalized practices, and bridging the gaps in global governance structures are among the most important challenges faced by policymakers and corporate leaders alike. According to Khan, MNEs face other equally important challenges such as ability to adapt to the cultural differences, standards and practices. Again, the author stated that the challenge of political instability is traditionally associated with developing or emerging countries for MNEs coming from developed nations where MNEs from developing countries consider economic risk such as exchange rate risk as a greater challenge. Also, appropriate market segmentation, relating to the low spending power of the major part of the market and developing effective marketing strategies to apply in different sections of the transforming society are other major issues facing MNEs in emerging markets, the author further stressed. Other challenges highlighted by Khan include: balancing the price and quality; understanding the influence of institutions such as judicial system, political system, education system and mixes of traditional local culture and modern global culture; industrial infrastructure is inefficient, lack of intellectual property right protection, high tariffs, expensive bureaucracy, ambiguous rules and regulations, monopolistic practices, control of distribution systems, unreliable and low quality suppliers; high price sensitivity, local needs and limited purchasing power are the characteristics of emerging markets; absence of specialized intermediaries, regulatory system and contract-enforcing mechanisms are other critical issues in the emerging markets. Other risks for MNES are: transactional risks, income risks from operation, income risks from financing, and accounting risks due to fluctuations in the rate of exchange of the local currency; political risks, inflation risks, bank instability, and legal risks (Khan, 2014). Further, the author noted that corporate social responsibility is growing challenge for the MNEs operating in emerging countries. MNEs are expected to balance their role in economic development with social responsibilities toward the country in which they operate.

It is a fact that MNE has global outlook, hence, is prone to competitive abilities. It is therefore important for multinationals from developing countries such as those in Africa, among others to carefully assess the impact of MNEs in the advanced nations if they have to succeed in their market development strategies. Failure to do this will immensely harm their market development initiatives (Fan, 2008). Another market development challenge for multinationals in Africa is how to create new competitive advantages in the market. The establishment of MNE in Africa should therefore characterize with pre and post establishment learning about organizational behavior. This is crucial for them to fulfill a successful catch up strategy, and this learning process is likely to be long and expensive, especially where the technology continues to advance rapidly and competition from the incumbent firms remains fierce. African Multi-



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nationals must be serious in acquiring and accumulating business skills, new knowledge and expertise to be able to operate with cost-based competencies and location-based advantages and have ownership or firm specific advantages. Multinational Companies in Africa is equally challenged by cultural distance in their efforts to develop new markets. Each African country has her cultural milieu and Multinational firms have a country of origin that has got a culture different from other countries. Since cultures differ across national boundaries, it may be difficult to agree in business terms where such agreement is in conflict due to cultural barriers of the countries involved. In view of the forgoing, the management team of a multinational who intend to develop a new market need to understand the culture of the host country of their new market if sound and acceptable decisions must be taken for market development. In other cases, the challenge of skill gap in managerial ability among African countries and between Africa and the outside world is posing threat to market development and expansion. The managerial competences and practices found in African countries tend to differ from those of the advanced economies, making African MNEs to continue in hiring the services of foreign experts. African multinational firms entering new markets are facing stiff competition globally. This can result in MNEs in African quitting the market. This may be compounded when considering the cost implication. When the costs involved is so high, it may affect returns, especially where there is external financing resulting in very high liability ratio. Other challenges affecting African MNEs include low level of business technology, poor market information and limited research output; product and packaging modifications; logistics; ineffective distribution networks due to inadequate transportation infrastructure and trade restrictions.

## THE ORGANIZATIONAL STRUCTURE OF A MULTINATIONAL COMPANY

According to Bert Markgraf, Demand Media, Multinational companies, especially smaller ones, face more organizational challenges than companies operating in only one national market. They have to maintain functional organizational units, but they have to fulfill these functions in different ways, depending on where the business in operating. The essential challenge is to create differentiated organizational units responsible for the foreign markets while coordinating operations across the whole company.

### Functional

A functionally organized multinational company uses corporate functions as the basis for its organizational structure. Production, human resources, design and customer service are typical functional units. If a functionally organized company has a centralized structure, all operations are based in the home country and individual employees have responsibilities for different national markets. This type of organization is efficient and effective for companies that are too small to have overseas subsidiaries. Larger companies can have this type of organization, but in a decentralized form, where foreign employees carry out some of the work in their own countries. In this case, companies have to pay special attention to coordinating activities.

### Geographic

A common form of organizational structure for larger companies and businesses that require a presence in the foreign markets is one that is based in geography. In addition to the home office or headquarters,



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semi-independent operations are established in the countries where the company is active. For larger corporations, these can take the form of subsidiaries, while smaller companies can have something as simple as an agent or a small office. This structure affords flexibility; the head office can transfer responsibilities abroad if required by local conditions and if the foreign operation is competent, but it can also take over local operations if needed.

### International Division

One way multinational companies can accommodate foreign operations without disrupting the organization in their home market is to create an international division. This structure is suited to larger corporations, but it is also effective for smaller companies that have an established home market and a rapidly growing international business. It leaves the company free to maintain the focus on its home market in its main organization while leaving the international division free to adapt to the foreign markets in which it is active.

### Matrix

A matrix organizational structure combines the efficiency of the functionally organized company with the flexibility of extensive local operations. Foreign workers report to local managers for questions about their work, while they report to the head office for all other functions. The home organization retains control of disciplinary matters, pay and promotions, while the employees carry out the work according to local requirements. This is a suitable organizational form for smaller companies active in only one or two foreign markets, but it is mainly used by larger corporations who have extensive foreign operations.

Nigerian National Petroleum Corporation (NNPC) is the state oil corporation through which the federal government of Nigeria regulates and participates in the country's petroleum industry. NNPC was established on April 1, 1977 as a merger of the Nigerian National Oil Corporation and the Federal Ministry of Mines and Steel. NNPC by law manages the joint venture between the Nigerian federal government and a number of foreign multinational corporations, which include Royal Dutch Shell, Agip, ExxonMobil, Chevron, and Texaco (now merged with Chevron). Through collaboration with these companies, the Nigerian government conducts petroleum exploration and production. In 2007, the head of the Nigerian wing of Transparency International said salaries for NNPC workers were too low to prevent graft. The NNPC Towers in Abuja is the headquarters of NNPC. Consisting of four identical towers, the complex is located on Herbert Macaulay Way, Central Business District Abuja. NNPC also has zonal offices in Lagos, Kaduna, Port Harcourt and Warri. It has an international office located in London, United Kingdom.

## FINAL THOUGHTS

African countries are increasing committed to the development of Multinational Enterprises (MNEs) in this 21st Century. In view of this, these countries are strengthening their integration ability to overcome the consequences of financial risks, limited market and low competitiveness ability. Among African countries, therefore, indigenous Multinational Enterprises are springing up with potentials for global competitiveness. For instance MTN group, a MNE with origin in South Africa is cutting across conti-



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nents with very large market. On the other hand, Multinational Enterprises originating from advanced countries of Europe and America with affiliates in Africa are providing strong competition to Africa's MNEs. Institutions such as African Development Bank (AfDB), New Partnership for African Development (NEPAD) are strategic enough to provide the financial and specialized know-how for the sustenance of existing African-based MNEs and provide platforms for establishing more.

## Promoting MNEs through Africa's (Regional) Economic Integration

One of the most recent and vibrant economic grouping that has dynamics to create an atmosphere for expanding business horizon that can in turn promotes the development of MNEs with origin in Africa is the New Partnership on African Development (NEPAD). According to Akanbi (2006), the NEPAD was established as a child of necessity in 2003. It was conceived by African leaders, midwifed through consultations with global partners, and delivered within the continent in order to address the myriads of contemporary socio-economic and political challenges facing Africa at the dawn of the 21st Century. These challenges, the author highlighted to include extreme poverty. Akanbi noted that NEPAD is set against clearly identified objectives to:

1. Make Africa attractive to both domestic and foreign investors;
2. Tap the vast economic potentials of the continent;
3. Achieve and sustain an average GDP growth rate of over 7 per cent per annum by 2015;
4. Ensure that the continent achieves the agreed International Development Goals (MDGs);
5. Increase investment in human resources development
6. Promote sub-regional and continental economic growth, among others.

In a view to implementing the objectives of NEPAD, certain strategies have been put in place by NEPAD. These strategies include:

1. Capital Flows Initiative (CFI), including debt relief, private capital flows and Foreign Direct Investment (FDI);
2. Market Access Initiative (MAI), including export diversification, barrier removal and value addition, Manufacturing, Mining, Services and Tourism;
3. Bridging the Infrastructure Gap, in energy, transport, education, health, water and sanitation;
4. Bridging the Digital divide through investment in Information and communications Technology (ICT);
5. Human Resource Development Initiative, including reversing the Brain Drain Syndrome; among others.

The objectives of NEPAD and strategies mapped out for implementing these objectives highlighted above point to the endearing nature of Africa's environment for MNEs to thrive.



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## CONCLUSION

Based on the facts enunciated in this chapter, it is concluded; among others that Multinational Enterprises in Africa have functional, geographical, international division and matrix organizational structures. Africa's multinational enterprises use corporate functions as the basis for its organizational structure. These include production, human resources, and design and customer service units. Consequently, all operations are not based in the home country. Also, Africa's MNEs in addition to the home office or headquarters have semi-independent operations established in the countries where the company is active with few countries outside Africa. Multinational companies in Africa also create international division by leaving the company free to maintain the focus on its home market in its main organization while leaving the international division free to adapt to the foreign markets in which it is active. It is also concluded that MNEs in Africa combines the efficiency of the functionally organized company with the flexibility of extensive local operations. Foreign workers report to local managers for questions about their work, while they report to the head office for all other functions. The home organization retains control of disciplinary matters, pay and promotions, while the employees carry out the work according to local requirements.

Given the spate at which MNEs are flourishing in Africa as an alternative market in the emerging economy's context, the operational structures of these MNEs are becoming more fascinating and dynamic. This holds more productive ability in the near future.

### Recommendations

In view of the conclusions drawn the following recommendations are made:

1. The relatively bigger countries in Africa should invest in the relatively smaller countries through the establishment of MNEs in those countries.
2. Multinational Enterprises in Africa should pay attention to products which Africa has absolute advantage.
3. MNEs operation in Africa should focus on production of finished goods to add value to products.
4. Africa should encourage the development of indigenous MNEs through tax rebate and low tariff.
5. There should be a concerted effort by African countries to encourage the use of e-business to eliminate geographical divide in business operations within and outside Africa.

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## KEY TERMS AND DEFINITIONS

**Economy:** Describes the productive and consumption ability of a country, region, continent and even the entire globe and the monetary inflow and outflow resulting in these economic activities.

**Exchange Rate:** Ratio in which a country's currency translate with the currency of other countries in the international (exchange) market.

**Exchange Rate Risk:** Loss associated with currency exchange due to disparity in value.

**Multinational Enterprises in Africa:** These are those MNEs which have either parent or subsidiaries for business operation within African continent.



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**Operational Structures:** Are issues and components, which facilitate the performance of an organization. In this context, they are issues and components which facilitate the performance of MNEs in Africa.

**Parent Company:** The operational headquarter of a Multinational Enterprise.

**Strategic Partnership:** Union of corporate bodies or countries for the integration of ideologies and economic prospects where they have diverse advantage for improvement in the economy.

**Subsidiary:** An affiliate or branch office of a Multinational Enterprise usually located across countries globally.

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# Chapter 17
# Supportive Government Policy as a Mechanism for Business Incubation Performance in Nigeria

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## ABSTRACT

*Business incubation programme has been adopted by numerous countries globally. Its adoption has been related to its performance and actual contribution to entrepreneurship development. Studies have acknowledged the role of incubation programme to different spheres of national economy. In spite of the positive side of incubator model, there is still a contradiction concerning incubation performance in the developing countries, especially, Nigeria. This study aims to examine the contribution of government policy on the relationship between the critical success factors (CSFs) and incubator performance in Nigeria. Questionnaires were distributed to a sample size of 153 respondents from a population of 253 incubatees. The Partial Least Squares (PLS) software was used to analyze the data. Government policy as a moderator did not show a significant moderation relationship between the CSFs and incubator performance. The study recommends that future studies should integrate this quantitative approach of data collection with the qualitative method. Also, as the value of the coefficient of determination is 46%, future research should look at other factors which may likely increase the variation in performance explained by (or accounted for by) the variation in the CSFs.*

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## INTRODUCTION

Business incubation has variously been described as a support programme that assist the early-stage entrepreneurs to develop and stay on their own. Chandra and Fealey (2009), defined incubator as an environment that encourages the creation and development of new businesses, especially those with innovative and intensive intellectual content. Furthermore, business incubation programme has been acknowledged as an economic development tool most countries globally adopted (Al-Mubaraki, Muhammad, Busler, Ahmed, & Ahmed, 2015; Salem, 2014). The fundamental idea behind the business incubator is to offer fledgling businesses with series of resources and services associated with establishing the businesses (Al-Mubaraki & Busler, 2013). In determining the performance of incubation programme, especially in the developing countries, governments' attitudes towards incubation contribute a very significant function for the reason that incubators in developing countries are typically financed by government. Studies have shown that business incubation programme has grown progressively significant within both developed and emerging nations. Furthermore, in the industrialized nations, incubators are primarily driven in the direction of high technological innovation businesses. Another highlight is the existence of a robust linkage among invention, academes as well as business incubators.

Despite the positive affirmation of business incubation, there is lack of studies related to its performance such that it is argued whether the programme is effective or not. As a result, there is a questionable evidence on incubation performance in the developing countries, especially, Nigeria. Furthermore, ever since the business incubation initiative was established in 1993, the programme seemed to have failed to live up to anticipations. For this reasons, this study looks into the salient role of government policy towards incubation performance in Nigeria. This will be done by employing a quantitative research approach whereby surveying stakeholders (incubatees) who are directly involved in the day-to-day incubation activities will be surveyed. This study provides a conceptualisation of business support, infrastructure, financial resources, networking, incubator governance as well as government policy, and joins those constructs using the resource based view (RBV) and institutional theory as supporting theories as depicted in Figure 1. Despite many studies that have investigated various factors that influence Incubator performance, most of them were conducted mainly in Asia, United States of America (USA), Australia and Europe while paying less attention to the African continent, particularly in Nigeria. Hence, Incubator Performance deserves further investigation in Nigeria because the findings of the previous studies may not be generalisable to the Nigerian context due to cultural and contextual differences.

## LITERATURE REVIEW

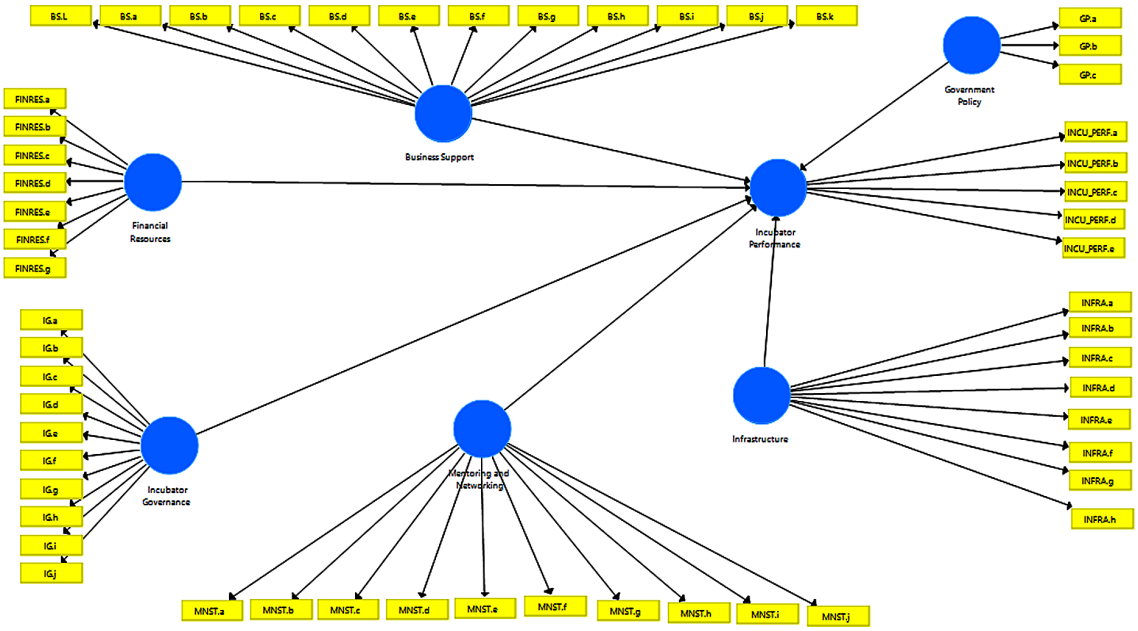
### Resource Based View

With respect to the RBV theory, is the development of competitive advantage that bridges government support programmes to superior financial performance. This assumption is grounded in the RBV of the firm (Amit & Schoemaker, 1993; Barney, 1991). Before the advent of the resource-based theory (Barney, 1991), the main strategic management thinking concentrated on external factors such as (industry position) that determined company profitability (Allen & Wright, 2006). However, with the advent of the resource-based view (Barney, 1991; Wernerfelt, 1984), strategic management research has moved to a more internal focus in accounting for firm performance (Allen & Wright, 2006; Barney, 1991). The



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*Figure 1. Conceptual Framework*




resource-based view (RBV) of the firm has become one of the most widely used theoretical frameworks in the management literature. The emphases of RBV are competitive advantages generated by the firm, from its unique set of resources (Barney, 1991; Barney, 1986; Peteraf, 1993; Wernerfelt, 1984).

In accordance with the RBV, although resources (such as financial resources) are important, companies need to develop unique, inimitable assets and capabilities that will set the foundation for sustainable competitive advantage. In a competitive environs, businesses deploy their physical, human, and organizational assets to gain an advantage in the marketplace (Day & Wensley, 1988)). If these resources and capabilities are valuable to businesses, rare, and difficult to imitate, then these assets give rise to sustainable competitive advantage(s), enhancing the performance of firms (Barney, 1991; Barney, Wright, & Ketchen, 2001; Wiklund & Shepherd, 2003). Among various intangible assets that a firm possesses, business support, government policy is considered some of the most important because these skills sets are deep-rooted into the daily practices of an organization and, as such, are problematic for competitors to copy (Zhou, Li, Zhou, & Su, 2008).

The RBV suggests that firms ought to consider internally to their resources, both physical and intellectual, for sources of competitive advantage. The key assumptions of RBV as recommended by scholars (Newbert, 2008; Takeuchi, Lepak, Wang, & Takeuchi, 2007; Wright, Dunford, & Snell, 2001) are that resources that are valuable, rare, inimitable, and non-substitutable will produce competitive advantage. Value in this perspective is defined as resources either utilizing opportunities or neutralizing threats to the organization and rarity is defined as a resource that is not currently available to a large number of the organization's current or future competitors (Barney, 1991). Inimitability refers to the difficulty other firms have in copying or reproducing the resources for their own use. Finally, non-substitutability means that other resources cannot be used by competitors to reproduce the benefit (Barney, 1991). When all of these are met, it is said that the firm or organization possesses resources which can potentially result in sustained competitive advantage over time (Allen & Wright, 2006; Barney, 1991).



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The theory has been critiqued for its lack of managerial implications (Priem & Butler, 2001). Researchers (Connor, 2002; Miller, 2003) have critiqued the theory based on the fact that it only tells managers to obtain VRIN resources instead of how to do it. The theory has not paid attention to where firms obtain their resources (Barney & Clark, 2007).

The RBV is applied in the study for the reason that the theory focuses on an enterprise level of analysis as suggested by Peteraf and Barney (2003). Furthermore, the theory focuses on the resources and capabilities controlled by an organisation that underlie performance differences across organisations. Barney (1991); Peteraf (1993) viewed performance differences as earnings differentials attributable to resources having different levels of efficiency.

## Institutional Theory

Institutions have been defined as regulative, normative and cognitive structures and activities that provide stability and meaning for social behaviour (Scott, 1995 p.33). Laws, regulations, customs, social and professional norms, culture, and ethics are some of the examples associated with institutions.

Furthermore, from institutional theory (North, 2006), we take the arguments of how government financial support can influence the initial resource flows for new businesses either through direct financial resources (e.g. seed capital) or through legitimacy-enhancing mechanisms (e.g. policy mandating banks to set aside certain amount from their profit to support start-ups on low interest repayment basis) that ease access to recourses such as bank financing. Thus, we offer a theoretically model depicting the importance of competitive advantage as a measure of the outcome of incubator performance using government support policies. In addition, institutional theory which is consistent with incubator development is largely affected by legal policies and local authority, government as well as university support (Eisenhardt, 1988; Scott, 2005). As numerous incubators are not-for-profit; in line with this incubator programme is a social service which depends wholly on government funding. Therefore, government policy related to funding for social service such as Technology Business Incubator (TBI) will operationally affect the programme. Furthermore, incubators and other business support programme facilitator such as science parks, technology parks in many cases arise from public-private partnerships.

## Hypotheses Development

### Business Support

Typically, business incubators offer incubatees the much needed business support services as one of the resources needed by the tenants to be sustained and eventually become fully matured, therefore business support is seen as a very important aspect of incubation process.

To better understand the relationship between business support and incubator performance, the current study borrows from resource based view (Barney, 1992; Penrose, 1959; Somsuk & Laosirihongthong, 2014) which view firms as an assemblage of unique resources and capabilities that are valuable, rare, inimitable and non-substitutable (VRIN) and which offer the firms with sustainable competitive advantage.

In relation to the resource based view of the firm, Amit and Schoemaker (1993) reported that although firm's tangible resources are important, the key focus is placed on the intangible skills and resources of the firm as they are viewed to be non-tradable, more difficult to imitate and take time to build internally.



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Other authors both prior and contemporary who found business support to be an important element for incubator attainment include (Allen, 1985; Barrow, 2001; Campbell, Kendrick, & Samuelson, 1985; Knopp, 2007; McAdam & McAdam, 2008; Smilor & Gill, 1986; Xu, 2010). The lack of business assistance usually affects the programme performance because those business assistance are more often than not the basis for attracting entrepreneurs to the incubator. Therefore, lack of business assistance or support affect the programme for the fact that the essence of coming to the incubator is to get business support such as coaching, training, business development and book-keeping. Once there are absence of all these, incubator performance will be affected negatively.

It is hypothesised that:

**H1:** Business support will be positively related to incubator performance.

## Financial Resources

In any business setting, funding is usually a critical factor for attaining the objective of the entity. Business incubator is not an exception to this fact. For the attainment of business incubation initiative financial support from the sponsor should be defined and regular especially in the developing countries. Accessibility of monetary services is one of the significant factors for the continued existence of majority of the newly formed firms as well as an essential element in business incubation, and a theorized precursor to the continued existence of incubator success (Alan, 2012).

Resource based view theory (J. Barney, 1991; Wernerfelt, 1984) postulates that incubator performance is significantly influenced by financial resources. In line with the principle of RBV, Pergelova and Angulo-Ruiz (2014) found that financial resources was an important factor in incubator performance. In another study, Somsuk and Laosirihongthong (2014) found a significant and positive relationship between financial resources and incubator performance. These contributions, lead to the following hypothesis:

**H2:** Financial resources will be positively related to incubator performance.

## Government Policy

Government policy is defined as any course of action which aims at regulating a specific condition. Based on this definition, government policy as it relates to business incubation practice is targetted at encouraging entrepreneurship by making a favourable environment for the entrepreneurs. This, it does through enactment of guidelines that will regulate entrepreneurial activity generally for the reason that entrepreneurship is the bedrock of a nation's path to industrialisaton. Several studies have been conducted with regards to the role of government policies in the development of entrepreneurship generally (Friedman, 2011; Ihugba, Odii, & Njoku, 2014; Mason & Brown, 2011; Minniti, 2008). Their various contributions have been contradictory as well as supporting. For example, while Mason and Brown (2011) and Minniti (2008) are in support of government policies in encouraging entrepreneurship; Ihugba et al. (2014) and Friedman (2011) are on the contrary. A case in point is Friedman's study finding which shows that perceived government effectiveness was significantly negatively related to entrepreneurship on a national level. On the other hand, Minniti (2008) observed that government policy adds vigorously to the development of an institutional setting that encourages productive entrepreneurship. He however added that the relationship between policy and entrepreneurial activity varies across countries.



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Government related policies are the fulcrum with which other resources revolve. This can be further expounded by viewing the government as the provider of other resources. Therefore, government pronouncement may affect the provision of the other resources (such as funding, infrastructure and other government commitment) negatively or positively. A well implemented positive policy by government will typically boost the performance of the incubators towards the incubatees. Government policy is a well-established factor that exerts a significant influence on a variety of activities including foreign direct investment (FDI) Asiedu (2006), technological change Ashford (1993), financial crisis Ha and Kang (2015), university technology transfer Guan, Xie, and Zhou (2015), regional innovation system Yang (2014) as well as incubator performance among others. It is hypothesised that: Government Policy will be positively related to incubator performance (H3)

Also, H7, H8, H9, H10, and H11: Government policy moderates the relationship between CSFs and incubator performance.

## Incubator Governance

Several researchers have included incubator governance as incubator attainment factors, for instance Smilor (1987) – An experienced incubator manager; (Allen, 1985; Barrow, 2001; Bøllingtoft, 2012; InfoDev, 2010; Mbewana, 2007; Roper, 1999; Smilor, 1987; Suresh, 2012) - a key board of directors; (Allen, 1985; Smilor, 1987) – a willing advisory board; (Smilor, 1987) – clear incubation policies and programmes. Kumar and Ravindran (2012) indicate that for successful incubation, the programme should have a clear policies and programmes as well as an effective business incubation manager and a dynamic governing board of the incubator. Furthermore, this linkage between incubator governance and performance is in line with RBV, with concise programme milestones as well as clear policies and procedures (Somsuk & Laosirihongthong, 2014). In a study, Suresh (2012), revealed that for effective incubation outcome, incubator should have a sound governance system in place that includes a governing board with members representing the entrepreneurial ecosystem, clear incubation policy and programmes and should also maintain a tie with the university. Therefore, the following hypothesis is formulated:

**H4:** Incubator governance will be positively related to incubator performance

## Infrastructure

Researchers have noted that for incubation programme to be successful there must be adequate facilities and infrastructural development (Campbell & Allen, 1987; Verma, 2004). Infrastructure is one of the elements that need to be in place for the success of a business incubator. According to Wang, Lin, Yin, Lu, and Cheng (2008) empirical evidence carried out in St. John's innovation centre of Cambridge district of UK reveal that of all services provided to the incubatees, three elements were obviously established as vital. This was also the submission of Chan and Lau (2005) who indicated that infrastructure is virtually the advantageous aspect to incubatees.

Kumar and Ravindran (2012) study awarded high importance to infrastructure as a factor for successful incubation. Likewise, Chan and Lau (2005) specified that infrastructure is essentially a very important element to incubatees. Furthermore, many other researchers (Bergek & Norrman, 2008; Lee & Osteryoung, 2004; McAdam & McAdam, 2008) established that offering of space by incubator is very essential to business incubation performance.



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**H5:** Infrastructure will be positively related to incubator performance

## Mentoring and Networking

The incubation process involves not only the activities of the incubator in question but also several stakeholders and practitioners alike. Therefore, for incubation programme to be successful there is need for close interaction among these practitioners such as (financial institution, universities, R&D institutes, venture capitalists, angel investors, industrial contacts, lawyers, marketing experts) and for the networking to be effective, the business incubator should be in the lead for the interaction and coming together. Incubators offer incubator tenants an opportunity to a group of colleagues in the incubator business. This helps them to get information and other source of help that ordinarily would have been hard to approach (Hallam & DeVora, 2009). Many researchers, both earlier and contemporary have acknowledged the importance of networking in the incubation programme of most countries. Therefore, several of them (Hallam & DeVora, 2009; InfoDev, 2010; Kumar & Ravindran, 2012; Mbewana, 2007; Roper, 1999; Smilor, 1987; Verma, 2004) included mentoring as a success factor. Bøllingtoft's (2012) study highlights networking as a significant factor for the existence and development of business enterprise is also consistent with those of earlier studies. From a resource-based perspective, the impact of incubator facilities on the small-firm result in access to new knowledge, expertise, networks and cost effective access to leading edge research (Barrow, 2001). In line with this, the incubators networking capability plays a key role in attracting resources from the eco-system (Suresh, 2012).

Prior research supports a positive relationship between mentoring and networking and incubator performance (McAdam & McAdam, 2008). For example, Roper (1999) reported a significant and positive relationship between networking and incubator performance.

Suresh (2012) concluded that mentoring and networking play an important role in predicting incubator performance among the members of the Infodev network. Therefore, the following hypothesis is advanced:

**H6:** Mentoring and Networking will be positively related to incubator performance.

## Incubator Performance

The performance concept has been described as an ability to assess the level of success of a business organisation irrespective of its size (Olusola, 2011). In view of this description, performance examines how well a business entity fared using some industry criteria or benchmark. Evidence abound regarding empirical studies that showed how performance measurement can be typically productive as well as assist in improving organisational performance (Davis & Albright, 2004; Ittner, Larcker, & Randall, 2003; Poister, 2008). Incubator performance is usually measured based on the goal of the promoters. Majority of incubators in the developing countries are mostly public sponsored and therefore the main objective is usually for economic development such as job creation, SME development and commercialization of new products. Several indicators have been used to measure incubator performance such as occupancy rate of incubator (Kumar & Ravindran, 2012), tenant firm's survival and growth (Mian, 1997), job created by tenants/ graduate firms, financial performance of incubator itself, turnover of tenants/graduate firms, and number of companies graduating from incubator.



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## METHODOLOGY

The study involves a data collection process of surveying stakeholders in Nigeria with direct involvement in the national programme. A sample size of 153 is drawn from a population of 253 entrepreneurs within the Nigeria business incubation programme using Dillman (2007) formula. 113 usable questionnaires were returned. In order to ensure an equal distribution of entrepreneurs in the 29 incubation centres located in the 6 geopolitical zone of Nigeria, a quota sampling technique was used to select 153 determined sample size.

According to Cooper and Schindler (2014) "Quota sampling can be described as a purposive sampling in which relevant characteristics are used to stratify the sample. Sekaran and Bougie (2010) considered it as a form of balanced stratified sampling, in which a predetermined proportion of people are sampled from different groups, but on a convenience basis". The justification for using Quota sampling technique in this study was three-fold. To start with, for the reason that sampling frame could not be accessed, quota sampling (i.e., a non-probability sampling technique) is considered appropriate for the present study despite the fact that findings cannot be generalized (Cooper & Schindler, 2014; Saunders, Saunders, Lewis, & Thornhill, 2011). However, this study is more concerned about theory rather than on population. The structural equation model (SEM-PLS) will be highly employed in the study.

## RESULTS

In furtherance to examining the goodness of measure, reliability and validity criteria were applied. Reliability tests the consistency of a measuring instrument whereby in different conditions will yield the same results (Everitt, 2006). Validity looks at how well an instrument that is developed measures the exact concept it is intended to measure.

### Construct Validity

Construct validity shows how well the results arrived at from the use of the measure fit the theories around which the test is designed (Sekaran & Bougie, 2010). This can be estimated through convergent and discriminant validity. In the first place, the respective loadings and cross loadings are assessed if there are problems with any individual items. A cut-off value for loadings at 0.5 are deemed as significant Hair, Black, Babin, and Anderson (2010). Therefore, if any items which has a loading higher than 0.5 on two or more factors then they will be considered as having significant cross loadings. Table 2 shows that all the items measuring a particular construct loaded highly on that construct and loaded lower on the other constructs thus confirming construct validity.

### Convergent Validity

The next in line is the convergent validity which is the degree to which multiple items to measure the same concept are in agreement. With regards to Hair et al. (2010) suggestion, we used the factor loadings, composite reliability and average variance extracted (AVE) to assess convergent validity. The loadings for all items exceeded the recommended value of 0.5 (Hair et al., 2010). Composite reliability values (see Table 4), which show the degree to which the construct indicators specify the latent, con-



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*Table 1. Latent Variable Correlations and Square Roots of Average Variance Extracted*

| | BS | FR | GP | IG | INFRA | IP | MNST |
|---|---|---|---|---|---|---|---|
| BS | **0.725** | | | | | | |
| FR | 0.458 | **0.799** | | | | | |
| GP | 0.124 | 0.323 | **0.831** | | | | |
| IG | 0.397 | 0.446 | 0.282 | **0.725** | | | |
| INFRA | 0.514 | 0.429 | 0.044 | 0.547 | **0.721** | | |
| IP | 0.569 | 0.359 | 0.182 | 0.547 | 0.431 | **0.723** | |
| MNST | 0.295 | 0.410 | 0.409 | 0.422 | 0.343 | 0.382 | **0.714** |

Note: Entries shown in bold face represent the square root of the average variance extracted.

*Table 2. Structural Model Assessment with Moderator (Full Model)*

| Hypotheses | Relation | Beta | SE | T-value | P-value | Findings |
|---|---|---|---|---|---|---|
| H1 | BS -> IP | 0.405 | 0.088 | 4.658 | 0.000 | Supported*** |
| H2 | FR -> IP | -0.031 | 0.079 | 0.427 | 0.335 | Not Supported |
| H3 | GP -> IP | 0.013 | 0.092 | 0.099 | 0.461 | Not Supported |
| H4 | IG -> IP | 0.338 | 0.093 | 3.729 | 0.000 | Supported*** |
| H5 | INFRA -> IP | 0.014 | 0.093 | 0.012 | 0.495 | Not Supported |
| H6 | MNST -> IP | 0.139 | 0.088 | 1.507 | 0.066 | Supported* |
| H7 | Interaction Effect: GP (Product Indicator) -> BS -> IP | -0.024 | 0.674 | 0.527 | 0.299 | Not Supported |
| H8 | Interaction Effect: GP (Product Indicator) -> FR -> IP | 0.194 | 0.432 | 0.834 | 0.202 | Not Supported |
| H9 | Interaction Effect: GP (Product Indicator) -> IG -> IP | 0.298 | 0.849 | 0.523 | 0.300 | Not Supported |
| H10 | Interaction Effect: GP (Product Indicator) -> INFRA -> IP | -0.291 | 0.486 | 0.955 | 0.170 | Not Supported |
| H11 | Interaction Effect: GP (Product Indicator) -> MNST -> IP | 0.125 | 0.390 | 0.093 | 0.463 | Not Supported |

Note: ***Significant at 0.01 (1-tailed), **significant at 0.05 (1-tailed), *significant at 0.1 (1-tailed)

*Table 3. Variance Explained in the Endogenous Latent Variables*

| Latent Variable | Variance Explained ($R^2$) |
|---|---|
| Incubator Performance | 46% |



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struct ranged from 0.81 to 0.91 which exceeded the recommended value of 0.7 (Hair et al., 2010). The AVE measures the variance captured by the indicators relative to measurement error, and it ought to be greater than 0.50 to justify using a construct (Barclay, Higgins, & Thompson, 1995). The AVEs, were in the range of 0.51 and 0.69.

Table 4 summarizes the results of the measurement model. The results show that all the five constructs business support, financial resources, infrastructure, government policy and incubator performance are all valid measures of their respective constructs based on their parameter estimates and statistical significance (Chow & Chan, 2008).

## Discriminant Validity

Next we proceeded to test the discriminant validity. The discriminant validity of the measures which testifies the degree with which each construct is genuinely and clearly defined from other constructs in the model. Discriminant validity was assessed by assessing the correlations between the measures of potentially overlapping constructs. The criterion for assessing discriminant validity is that the AVE of each latent construct ought to be greater than the construct's highest squared correlation with any other latent construct in the model (Chin, 2010; Hair, Ringle, & Sarstedt, 2011). As shown in Table 1, the AVE is higher for all constructs than the squared correlations for each construct, thus the model's latent constructs show adequate discriminant validity. In sum, the measurement model demonstrated adequate convergent validity and discriminant validity.

## DISCUSSION OF RESULTS

The key goal of this research is to examine the moderating effect of government policy on the relationship between the critical success factors and incubator performance. To this end, the following question was asked: Does government policy moderate the relationship between the (various individual) critical success factors and incubator performance in Nigeria? The results of this study showed that a positive and supportive relationships exist between business support and incubator performance; incubator governance and incubator performance as hypothesised. However, the results also confirmed that government policy did not act as a moderator in the relationship between the critical success factors and incubator performance as shown in Table 2. TBI programme in Nigeria is a social service and depends wholly on Government funding. So government policy regarding funding for social service such as TBI will nevertheless affect the programme operationally. Furthermore, government policy towards entrepreneurship development and youth employment will positively affect the TBI programme.so the performance of TBI programme revolves around Government Policies.

## CONCLUSION

Ideally good sustainable government policies are the required panacea needed to move the Technology Business Incubation programme in Nigeria from the level the programme has been at inception to where it is at the moment and to meet the global best practices in the nearest future. However, Government policy did not support any of the relationship related to moderator. One of the key reasons may perhaps



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*Table 4. Measurement Model Evaluation Results*

| Constructs | Indicators | Loadings | Composite Reliability | AVE |
|---|---|---|---|---|
| Business support | BS01 | 0.537 | | |
| | BS02 | 0.697 | | |
| | BS03 | 0.752 | | |
| | BS04 | 0.765 | | |
| | BS05 | 0.814 | 0.87 | 0.53 |
| Financial Resources | FR01 | 0.740 | | |
| | FR02 | 0.789 | | |
| | FR03 | 0.861 | | |
| | FR04 | 0.866 | | |
| | FR05 | 0.782 | | |
| | FR06 | 0.744 | 0.91 | 0.64 |
| Government policy | GP01 | 0.868 | | |
| | GP02 | 0.779 | | |
| | GP03 | 0.843 | 0.87 | 0.69 |
| Incubator Governance | IG03 | 0.739 | | |
| | IG04 | 0.742 | | |
| | IG06 | 0.687 | | |
| | IG010 | 0.730 | 0.82 | 0.53 |
| Mentoring and Networking | MNST03 | 0.690 | | |
| | MNST04 | 0.737 | | |
| | MNST05 | 0.791 | | |
| | MNST06 | 0.672 | | |
| | MNST10 | 0.670 | 0.84 | 0.51 |
| Infrastructure | INFRA01 | 0.684 | | |
| | INFRA02 | 0.861 | | |
| | INFRA03 | 0.779 | | |
| | INFRA05 | 0.716 | | |
| | INFRA06 | 0.721 | | |
| | INFRA07 | 0.663 | | |
| | INFRA08 | 0.592 | 0.88 | 0.52 |
| Incubator performance | IP01 | 0.791 | | |
| | IP02 | 0.856 | | |
| | IP04 | 0.591 | | |
| | IP05 | 0.619 | 0.81 | 0.52 |



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*Table 5. Level of education*

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Diploma<br>B.Sc<br>M.Sc | 72<br>31<br>6 | 63.7<br>27.4<br>5.3 | 63.7<br>27.4<br>5.3 | 63.7<br>91.2<br>96.5 |
| | Other | 4 | 3.5 | 3.5 | 100.0 |
| | Total | 113 | 100.0 | 100.0 | |

rests on the characteristics of the respondents; for example, majority of the respondents are not well educated as can be seen from the descriptive analysis related to level of education as shown in Table 5; wherein most of them are diploma graduate and other vocational trainings. As such they may not be able to decipher how important the policies of government influence entrepreneurship generally and business incubation programme to be specific. Furthermore, the non-supportiveness of government policy may also be caused by the subjective nature of answering the questionnaire by the respondents whereby objectivity was not followed in answering the questions. Another likely reason may perhaps be as a result of low sample size. Therefore, future studies should increase the sample size as well as making sure that other direct incubation stakeholders including incubator managers are surveyed. Finally, other qualitative approach of data collection should be integrated to the quantitative method, which entail a mixed method approach.

Finally, the result in Table 3, the coefficient of determination which is also known as the $R^2$ showed a value of 46%. This represents the proportion of variation in the dependent variable that can be explained by one or more predictor variable. This means that, at least one of the six predictor variables can be used to model incubator performance.

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# Section 3
# Tools and Technologies

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# Chapter 18
# IFRS Harmonization and Foreign Direct Investment

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## ABSTRACT

*IFRS refers to International Financial Reporting Standards, which are the guidelines that provide the framework for accounting works. The principles are also known as the International Accounting Standards (IAS). This global financial concept was first introduced in 2001 to equip investors with analyzed accounting statements. In this Chapter we review the relation between IFRS and Foreign Direct Investments (FDIs). We review the relevant literature that analyses the effects on IFRS on FDIs and cross-border acquisitions. The economic literature states that the introduction of IFRS has presented an important increase in FDIs. The evidence shows that IFRS adopting countries attract investments from countries that implemented IFRS and non-IFRS implementing countries.*

## INTRODUCTION

IFRS refers to International Financial Reporting Standards, which are the guidelines that provide the framework for accounting works. The principles are also known as the International Accounting Standards (IAS). This global financial concept was first introduced in 2001 to equip investors with analyzed accounting statements. In this Chapter we review the relation between IFRS and Foreign Direct Investments (FDIs). We review the relevant literature that analyses the effects on IFRS on FDIs and cross-border acquisitions. The economic literature states that the introduction of IFRS has presented an important increase in FDIs. The evidence shows that IFRS adopting countries attract investments from countries that implemented IFRS and non-IFRS implementing countries.

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## BACKGROUND AND LITERATURE REVIEW

The notion of unifying accounting principles dates back to the early 19th century. It is at this time that the concept of international financial standards originated, specifically during the first Global Congress of Accountants held at St. Louis in 1904 (Fritz & Lammle, 2003, p. 3). At the conference, the need for harmonization and cooperation in the accounting field was emphasized. Despite the initiative, differences in the accounting principles still abound, mainly because the dissimilarities in legal systems, the manner in which providers of capital operate, taxation systems, national cultures, and general accounting practices. The differences hindered investors from obtaining clear financial information, which is vital for strategic planning. Thus, international trade was constrained; countries experienced unequal opportunities as a result of the dissimilarities. In this regard, the inequalities and unclear financial statements were the main reasons behind the call for financial standardization.

### 1. The Accounting Harmonization Process

In harmonizing the accounting standards, different approaches were and still are being employed (Fritz & Lammle, 2003, p. 3). To enable accurate depiction of the process, harmonization can be viewed from different angles. First the process can be shown as a timeline and then depicted as a series of trait junctions. The timeline follows the steps and achievements made by the International Accounting Standards Committee (IASC) since the early 1960s.

#### 1.1 Pre-Stage of the Harmonization Process

Jacob Kraanyehorf was the pioneer of financial unification. He released his first concept paper on the subject in 1959; through the document, Kraanyehorf campaigned for the international acceptance of economic unification (Fritz and Lammle, 2003, p. 21). To strengthen his proposal, he noted the advantages of a unified financial front such as elevated global loaning and easy trading that come with identification and appreciation of differences among countries. As a result of Kraanyehorf efforts, the International Accounts Study Group (IASG) was formulated in 1966 to help analyze and eliminate the differences in financial documentation between Canada and the United Kingdom. The Americans were not as enthusiastic about harmonization in the early 1960s, but changed their viewpoint in 1972 after one of their professional accounting bodies held discussions with six other nations, including Germany, Japan, China, the United Kingdom, and Canada (Fritz and Lammle, 2003, p. 21).

#### 1.2 Harmonization between 1973 and1987

The International Accounting Standards Committee (IASC) was slowly developed between 1973 and 1987. This body was responsible for a considerable number of the standards set during the 14-year period. Particularly, the institution dealt with the problem of inventory recording. In this case, the main objective of the IASC was to ascertain compatibility between the new set guidelines and those established by the IASG (Fritz & Lammle, 2003, p. 23). Besides that, during the period, the unpopular global measurement methods, such as the austerity metrics, were eliminated. All standards were incorporated through



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a democratic process; if the set quorum was not achieved, the member states had the right to use any other desired algorithm to enact changes to the accounting principles. Unfortunately, the IASC actually ended up endorsing only mainstream financial procedures, instead of performing actual harmonization.

## 1.3 Harmonization between 1987 and 1993

This period marked the second generation of the IASC's developments. In 1987, the harmonizing group initiated membership with the International Organization of Security Commissions (IOSCO). A year later, the Financial Accounting Standards Board (FASB) joined the membership committee. The more other regulatory organizations acceded to the principles promoted, the further procedural standardization advanced. The member bodies dealt with financial matters in the same manner and thus the second harmonization process was characterized by further reduction of the set IASC options. That said, the IASC financial recording principles of 1989 were employed on a trial basis, hence the union of guidelines was rarely implemented. In this respect, the existence of comparability and a right to choose constrained the unification process; member organizations basically operated independently (Fritz & Lammle 24).

## 1.4 Harmonization between 1993 and 1998

The third IASC harmonization process began in 1993 after the agency and IOSCO agreed on a specific catalog of core guidelines for integration of financial statements (Fritz & Lammle, 2003, p. 25). By the end of 1994, the IOSCO had initiated and completed an analysis on all standards set by the IASC. By doing that, the body identified several niches and standards that required modifications to increase the openness, truthfulness, and accuracy of reporting. In 1995, both agencies jointly went through the reviews to create a joint list of unified principles. It is also at this time that the European Union (EU) decided to support the unification process. In addition, the EU decided not to segregate itself and thus eliminated its independent accounting standards. Finally, the harmonization process came to an end in 1998.

## 1.5 Harmonization 1998 Onwards

The current harmonization process began mainly in the new millennium. In May 2000, the IOSCO instructed its member states to permit the IASC to prepare for them international listings and offerings. The body also created a 26-question questionnaire that examined the acceptability of the financial documentation process under harmonization. The creation of the Euro – the EU's currency – in 1999 also increased the push for global accounting standards and thus more reviews and changes were made. Examples of the changes include the formulation of an inclusive body of accounting, emphasis on high levels of transparency and comparability as well as rigorous interpretations of financial statements (Fritz and Lammle, 2003, p. 27). The changes facilitated complete statement analysis in different languages and through multiple algorithms. The standard enforcement is now structured as shown below (see Figure 1).

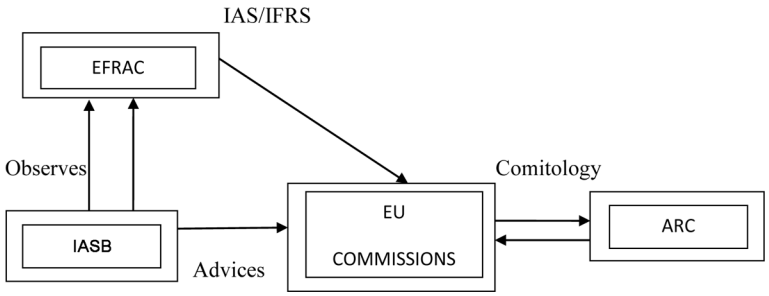
## 1.6 Harmonization through Socio-Economic Aspects

In relation to trait junctions, the harmonization process has to be analyzed through socio-economic aspects. In this respect, the harmonization process can be broken down into material and formal harmonization, mutual recognition, reconciliation, and standardization. Material harmonization refers to the



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*Figure 1. Standard enforcement of accounting principles*




use of standard materials, such as tick marks and opinion letters, to ensure financial research follows a common theoretical and practical angle (Fritz & Lammle, 2003, p. 31). Formal harmonization refers to the broad acceptance and analysis of domestic or independent rules and regulations used by different states (Fritz & Lammle, 2003, p. 31). In the process of conducting formal harmonization, divergence and similarities were considered in the interpretation process, hence allowing statistical data to have similar conclusions irrespective of the rules and regulations applied.

Mutual recognition is the acceptability of statements across borders despite the fact that preparation of the documents may not have been done in accordance with accounting guidelines of the destination state. For instance, Canada and the United States employ different accounting principles domestically, but a document prepared by either country would be accepted by the stockbrokers of both nations. In this respect, mutual recognition curtails the harmonization process to some extent because it negates the need for similar core principles.

The reconciliation guidelines state that an expanding or foreign enterprise has the right to prepare documents in accordance with its local accounting standards so long as it additionally prepares records for use in the accounting of critical principles in the destination state (Fritz & Lammle, 2003, p. 33). As states reconcile critical principles, the harmonization process is able to identify the major dissimilarities in the accounting procedures. To elaborate further, an enterprise using IFRS guidelines can only venture into the United States if it prepares secondary Generally Accepted Accounting Principles (GAAP) documents.

Through standardization, all members participating in an accounting interaction set a number of principles that each party must comply with (Fritz & Lammle, 2003, p. 33). Thus, every act is binding, homogenous, and regular. In other words, standardization does not leave room for variation, misinterpretations, or unevenness. Given that the transactions in consideration affect international players, then one accounting principle of the participant states is applied universally. The summary of the concepts and processes involved in the harmonization through socio-economic aspects is shown below (see Figure 2).

## MAIN FOCUS OF THE CHAPTER: ISSUES, CONTROVERSIES, PROBLEMS

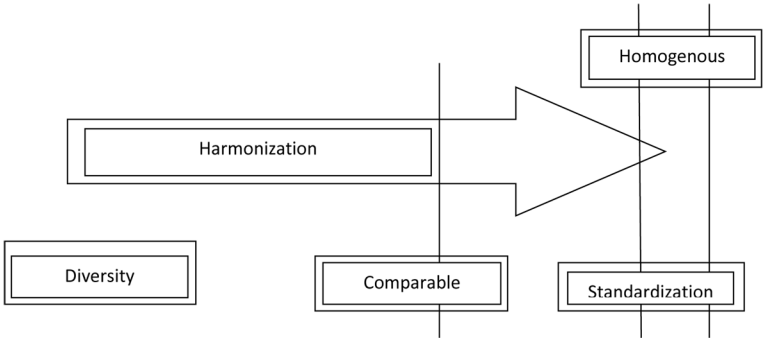
### 2. Economic Value of the IFRS

The push for common international financial reporting standards is based on the fact that successful implementation of the policy will result in economic benefits including creation of value relevance for fair value and minimization of reporting costs. The integration of the IFRS guidelines in financial report-



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*Figure 2.*




ing has elevated the quality of fair worth with respect to financial assets and liabilities. Value relevance is an important analytical aspect used in the testing of book data, mainly within the balance sheet. The financial concept is vital because it has a direct implication on equity and market values. Assets and liabilities are the basic variables of interest, thus harmonization of the elements allows open share pricing (Okpala, 2012). In this respect, value relevance is examined using the valuation model through which market and equity worth in balance sheets are regressed (Okpala, 2012). The US banking industry is an example of a market in which value relevance is constantly applied to examine the robustness of the IFRS in contrast to the US GAAP. Through the IFRS' fair value principle macro hedging in the United States was raised, thus facilitating more funding on asset demand that in turn enhances revenue generation.

Adoption of the IFRS minimizes the reporting costs of financial documentation given that enterprises within a trade pact do not operate as the sole entities (Okpala, 2012). Compliance with the standardized regulations enables the streamlining and cohesion between foreign companies, hence enabling comparisons, benchmarking, and company status-derivation on a simplistic level that does not necessitate the hiring of external consultants or auditors, which comes with extra costs. The harmonization process also puts a company in an advantageous position over its competitors through open financial reporting. The standards also help to identify new innovative production and marketing procedures that give better results.

The adoption of the IFRS has other economic benefits. It facilitates the transcending of international boundaries, hence making mergers and acquisitions of enterprises easier. The standardized guidelines aid in identification of organized and suitable partners, thus increasing opportunities of accessing foreign capital. In other words, companies can trade, move, and secure their capital and shares in different stock exchanges (Okpala, 2012). In relation to that, a majority of stock exchanges requires statements to be prepared under the IFRS process. By late 2010, more than 127 non-European states had accepted to use the IFRS guidelines as the standard reporting principles.

The IFRS is applied to take advantage of the progressive nature of companies and in the process it has been shown that only big audit firms can provide the expertise required for international cohesion. The standards have curtailed the developments of small establishments because such entities are often inexperienced or lack familiarity with cross border rules and regulations (Okpala, 2012). Consequently, the harmonization encourages the establishment of second tier firms, particularly because of the complexities involved in reconciliation. Fortunately, the application of macro-hedging and fair value estimates on financial assets and liabilities give more structured and defined information on the status and capacities of institutions, thus removing the need for external audits. This reduces the burden for smaller enterprises.



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To some extent, the IFRS facilitates fraud deterrence. Fraudulent accounting is a menace that has eaten into the profits of international organizations. Several companies, for instance, AIG, have suffered considerable losses from fraudulent practices such as offshore trading. The harmonization of financial reporting, done through the IFRS' principles, has facilitated the reduction of fraud cases. Particularly, the push for high levels of document transparency and openness has made it easy to identify malpractices (Okpala, 2012). Therefore, companies cannot falsify their financial capacities to lure investors. Similarly, an organization cannot defraud its employees and vice versa, because of the specified relationship guidelines that state that functionality is mutually exclusive and firms have direct liability over protection of labor rights.

## 3. Political Value of the IFRS

In addition, the IFRS guidelines play a major role in politics. Politics or policy-making is a socio-economic function undertaken by state leaders to ensure that the best interests of citizens are protected. The incorporation of the IFRS accounting standards is a political strategy. The Gunadarma University conducted research on the subject in 70 countries and discovered that the IFRS guidelines ensure political stability through economic progression (Alexander, Fajri & Kurniawan, 2009, p. 168). This is because the standards determine the political approach that a country's administrators will employ. Though political stability was identified as a null factor in the integration of IFRS, the standards were noted as determinants of the level political constancy (Alexander, Fajri & Kurniawan, 2009, p. 168). This suggests that the better the economic capacity of a country, the more stable its governance is. Hence, the harmonization of reporting principles enhances the economic capacity of a state.

In relation to that, since the onset of the new millennium, countries have had different perspectives on the global standards and, therefore, comply to varying extents to the guidelines, particularly because of the dissimilarities in culture, technology, governance, and endowment with natural resources (Alexander, Fajri and Kurniawan, 2009, p. 168). Jurisdictional differences in the IFRS implementation result in immediate political response. For instance, if a certain domestic market performs better in terms of revenue generation than the international market, the political rhetoric would be against using the IFRS. Such a measure would be taken to discourage foreign penetration and at the same time safeguard local resources. Conversely, if the domestic economy performs poorly in comparison to the international market, the politicians would support the integration of the IFRS standards to lure investors.

## 4. The Global Acceptance of the IAS/IFRS Accounting Standards

Given the political and economic benefits of accounting harmonization, there is widespread or universal acceptance of the IAS reporting standards. The guidelines equip investors with the required flexibilities that enable expansion into foreign markets. For instance, through the IFRS, companies have enhanced their levels of capital security and have access to proficient audit consultancies. To highlight the degree of the global acceptance, the IAS guidelines have to be analyzed chronologically and in terms of the functions of the accounting standards.

The global acceptance of the IFRS guidelines can best be depicted in a chronological manner, from the introduction of the principles to present day enforcement. As earlier shown, the adoption of unified reporting standards was a gradual process that began in the late 50's and still continues to date. In 2002 all the member states of the EU voted unanimously to adopt the IFRS standards (Carmona & Trombetta,



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2008). Hence, all the companies trading in the European Security Market were required to abide by IAS guidelines, while foreign or non-European investors had to adhere to the US GAAP. In 2005, the Australian Accounting Standards Board (AASB) followed suit; the agency recommended that all standards and reporting interpretation methods in the country be tailored to comply with IFRS guidelines (Carmona & Trombetta, 2008).

Some regions continue to lag behind in terms of implementation of the IFRS guidelines. Particularly, countries in South West Asia and Middle East and North Africa (MENA) regions have been slow in adopting the standards. For instance, Tunisia, Korea, Mongolia, and Morocco are still in the process of integrating the IFRS principles. The main impediment in the MENA region is Sharia Law, which compels Muslims to apply different accounting principles. Other nations are just beginning the transformation process. At the present, all banking institutions and enterprises within Russia are required to prepare financial statements using the IFRS regulations. Since 2005, New Zealand has adopted 36 novel accounting rules as well as 12 interpretation algorithms, all of which were derived from the IFRS guidelines (Carmona & Trombetta, 2008). The other accounting standards in use in the country are all past guidelines that were equivalent to the IAS principles.

Other significant markets also adopted the policies recently. The eighth largest market in terms of capitalization, Hong Kong, has been aligning its standards with the IFRS guidelines since 1990. In 2008, the Canadian Accounting Standard Board adopted the IFRS principles on a trial basis for a five-year period (Carmona & Trombetta, 2008). As a result, the United States is the only G4 country that does not comply with the harmonized practices. By the time Canada acceded to the standards, Japan and China had already begun gradually adopting the principles a decade earlier.

The distinctive element of the IFRS/IAS guidelines is its principle-based approach; domestic standards employ a rule-based approach. A principle-based approach overrides secondary rules that increase data complexities (Carmona & Trombetta, 2008). In addition, its associated restrictions, precedents, and exceptions are clear and precise unlike the criteria thresholds of rule-based systems. Hence, the principle-based approach offers generic practices that address controversial issues, while simultaneously ascertaining ambiguity (Carmona & Trombetta, 2008). The approach also allows the diverse and broad nature of harmonization to be viewed from a narrow and simplistic perspective, thus enhancing report comprehension. For example, according to principle 19 of the IAS that addresses employee benefits, integration of the corridor approach eases documentation of losses and gains that in turn reflects on the net income for any portion that surpasses the corridor.

## 5. Effects of Mandatory IFRS Adoption in the EU Commerce

The European Union officially adopted the IFRS standards in 2005 and, as a result, all European companies listed on the unified stock exchange were forced to abandon their domestic national accounting standards in favor of the new reporting principles. The adoption of the new accounting practices had implications on loans and advances, particularly due to changes on fair value estimation. The fair worth of loans and advances became vital and relevant derivatives for the determination of a bank's performance (Dimos, 2011, p. 100). In addition, the fair values gave a clear picture of a firm's economic position by highlighting its financial capacities. In other words, the values on loans, advances, and debts showed that fair value was a functional indicator of an institution's financial health as well as its revenue generation variability. Hence, the nations with strong financial institutions found it easy to adopt the IFRS, while the reverse is true.



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Besides that, (Dimos, 2011, p. 102) conducted an analysis of several European banks over a five-year period and discovered that the adoption of the IFRS resulted in lower equity-capital costs. Even the European states that fared poorly in IFRS enforcement recorded the reduction in equity-capital costs; possibly the benefits resulted from the complete implementation of the IFRS principles by neighboring nations. The capital costs may have also reduced because of the changes in measurement and presentation methods along with the asset holding to maturity function prior to the commencement of a financial transaction (Dimos, 2011, p. 102). The measurement and presentation of all assets and liabilities incorporated a mixture of fair value and remunerated expenses that in turn increased the accuracy of status depiction. Hence, the investors and entrepreneurs could effectively and efficiently carry out share pricing. This in turn elevated trading within the region. The act of holding stock to maturity ensures that trading is done in instances when the shares fetch the optimal market values, thus maximizing revenue generation (Dimos, 2011, p. 102). In addition, the practice encourages provision of bank advances and loans, hence also increasing revenue generation in the long term.

Adoption of the IFRS by the EU also improved the hedge accounting process. The purpose of hedge accounting is to pair up gains and losses to reduce risk. According to the IAS, hedging accounting can be classified into cash flow, fair value, and net venture on alien operation hedging (Dimos, 2011, p. 104). Fair value hedges mitigate an institution's exposure to fair value risks, cash flow hedges protect a firm from poor cash flows, and the net investment hedges on foreign soil ensures that a company's interest or total assets are free from exposure in the novel territory. The effectiveness of the risk management functions of the IFRS facilitated by the modified hedge accounting process improved the financial performance of European institutions. The banking sector benefited by receiving expansion guarantees, thus encouraging ventures into South West Asia and the MENA regions that lagged behind financially because of adopting religion-based accounting principles. In this respect, macro hedging has extensively been promoted by the EU's banks.

A report from ICAEW (2015) examines the findings of about 200 research papers on the effects of mandatory IFRS adoption in the EU. The report aims to add to the debate on the future of IFRS in the EU. The report shows that there is evidence of benefits following IFRS adoption in relation to financial reporting transparency and comparability, the cost of capital, market liquidity, corporate investment efficiency and cross-border capital flows. The report points out that the benefits found are uneven, varying with the institutions and incentives that apply for different companies in different countries.

## 6. Multinational Companies and Accounting Convergence

The movement towards a global economy has increased the need for global accounting standards. The growth of multinational companies has enhanced the need of such standards. The Securities and Exchange Commission (SEC) has influenced the topic of converging US GAAP and international accounting standards. The commission has allowed foreign companies to use IFRS in financial reporting without having to reconcile US GAAP and international standards. In addition, it has sought to unite world regulators on the convergence of global accounting standards. The convergence and harmonization of IFRS and American GAAP into a single set of accounting standards would benefit multinationals significantly.

According to the United Nations Conference on Trade and Development (2008), the decision to adopt IFRS is determined by a cost-benefit trade-off between some factors. Firstly, it recognizes the benefits of the investors. Secondly, it recognizes the recurring cost savings on the multinationals. The third trade-off involves the one time transition cost that multinationals and the national economy have to incur. The



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cost involves the adjustments to the institutions of a specified country. Multinational companies have enhanced the spread of IFRS. They provide a significant channel for foreign direct investment into most economies. They were involved in the formulation of the standards. In addition, their support has been essential to the success of the standards. Due to the important role that they play in the national economy, it is impossible to imagine if the standards would have been so successful had they opposed them.

Furthermore, governments should let multinational companies to decide whether and when to adapt the IFRS. The companies incur the heaviest burden of the process. In addition, they hold the key to determining the success of implementing the standards.

Countries should embrace the model that Russia has adopted. Their financial reporting standards should be implemented in a dual manner. Firstly, the national GAAP should be upheld as alternatives to the IFRS. Secondly, countries should adopt the IFRS. Having the two options will enable the country to comply with the needs of the international financial community without undermining its local practices. In addition, it would save domestic organizations from incurring the expense of adopting international standards that would have no real impact on their operations.

The accounting scandals that have occurred in major multinationals such as Enron and World Com have highlighted the need for high quality international accounting standards. The need for the standards has been increased by the expansion of the internalization of the securities market.

The Securities and Exchange Commission (SEC) has joined forces with the European Commission and the Japan Commission to increase the globalization of international accounting standards. However, the threat of increased global power for the SEC is a contentious issue. The formation of the International Accounting Standards Committee Foundation (IASCF) is expected to solve the problem of a super powerful SEC.

The process of globalization has combined with the increased awareness of capital markets to increase the need for the convergence of accounting standards (Fortin, Barros, & Cutler, 2010). In addition, the size of investors has increased significantly. For example, foreign institutional investors are investing in significant global volumes. Furthermore, the television and online media have enabled the public to track the movements of share prices in the global market. The convergence of accounting standards would enable investors to make quick investment decisions.

Multinational organizations have adopted institutional entrepreneurship. The institutional entrepreneurs are organizations that use their resources to advocate for change. They have been change agents on the subject because they perceive the value in the implementation of international accounting standards.

## 7. IFRS Adoption, FDI and Institutions

An evaluation of the data on international trade and financial reporting standards demonstrates that the development of institutions in a country has a greater impact than the mere adoption of the standards. Although adopting the standards has a positive immediate impact, it does not have a long-term influence. According to the United Nations Conference on Trade and Development (2008), investors consider multiple factors when making an investment decision. As a result, the presence of one positive factor is not enough. The observation can be used to explain why the implementation of the standards in developing countries has a limited impact. Governments should instead match the adoption of the standards with a number of key factors. Firstly, they should work on strengthening the institutions in the country. Most developing countries have weak institutions controlled by the government. They should ensure



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that there is a strict separation of powers between the arms of government. They should also promote the rule of law. Countries with low corruption rates will benefit from increased FDI. There should be a strong focus on the implementation of property law and the enforcement of contracts.

The World Bank has made more countries to adopt the standards. Most countries are forced to adopt the standards in order to receive funding from the institution. As a result, the standards have been driven by international forces as opposed to a deliberate desire among the countries to increase the integrity of their standards.

Another key thing to note is that the developing countries as opposed to their developed counterparts drive the overall increase in FDI. The observation is because foreign direct investment is skewed in favor of emerging markets. In addition, most developed countries already have similar financial reporting standards.

The success of the international financial reporting standards is dependent on government institutions. Governments adopt the standards and commit themselves to enforce them in their jurisdictions. However, the implementation of the standards requires the participation of all the stakeholders. In most instances, the government would have to give the organizations within its jurisdiction sufficient time to implement the new standards. The relevant government institutions will have to police the organizations.

Financial standards setters, regulators and policy-makers have a significant interest on the impact of financial reporting standards on the economy (Tsamenyi & Uddin, 2008). The interest can be attributed to the economic consequences associated with the financial information. The financial information influences the behavior of investors by determining their portfolio selection. Firms have a significant interest in the information because it determines the pricing of securities that in turn affect their ability to get additional funding. The regulation of financial reporting mechanisms is a significant mechanism that determines the operation of securities markets. The markets are a significant channel of foreign direct investment.

Adoption of IFRS has been influenced by the desire to among transitional economies to adopt corporate governance practices that would give them global intimacy (Tsamenyi & Uddin, 2008). The move acknowledges the modernization of developing economies. The practice is bound to result in greater financial transparency. Achieving a high level of transparency will encourage international trade and FDI. The adoption of the practices has been both mandatory and voluntary. However, a country's adoption of the standards was not affected.

The increased push for more countries to adopt International Financial Reporting Standards requires a determination of their impact on international trade. The practice results in increased foreign direct investment and international trade because it fosters transparency and comparability. International investors are keen on investing in countries whose financial practices are understandable. Furthermore, they desire to work in countries that have high levels of transparency. The countries with transparent institutions have the ability to attract investors from diverse countries (Fortin, Barros, and Cutler, 2010). For example, the United States has a code of standards that investors and companies working abroad should follow. If they engage in questionable financial practices, then there is the possibility that they could be sued for their actions. As a result, they are keen on entering into countries with clear financial practices.

In addition, the practice enhances the ease of doing business. The standards will enhance the process of doing business because agents will understand each other more. Furthermore, the adoption of such standards will reduce information cost. International trade and foreign direct investments are often hampered by the high cost of acquiring the right information. In cases where there are different accounting standards involved, the investors are forced to invest in consultants. The price of hiring consultants increases the investment cost significantly.



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In 2010, 120 countries decided to adopt the International Financial Reporting Standards and made a commitment to enforce them in their jurisdictions (Lasmin, 2011). In the same year, foreign direct investment in foreign countries increased significantly. As a result, an increase in people who support the adoption of uniform accounting standards has been noted. However, there is no sufficient data to prove that developing countries benefit from adopting the standards. According to the United Nations Conference on Trade and Development (2008), developing countries are not likely to receive more FDI inflows and increased international trade by adopting the standards. This is because international trade is determined by many different factors. In contrast, the European countries benefited the most from the adoption of those standards.

The process is characterized by several challenges. For example, the United Nations Conference on Trade and Development (2008) notes the high cost involved in adopting the standards for the organizations involved due to the overhauling of systems and training costs involved. Furthermore, the organizations would be forced to implement many changes in their financial practices. However, the benefits of benchmarking with their peers from any part of the world are enough to offset the high cost. In addition, adopting the standards would allow a multinational company to have consistent reporting standards with its subsidiaries. The move would improve international communications. Moreover, it would result in a better quality of reporting. The decision-making process within the organization will also be improved in a significant manner.

However, it is clear that there should be further research on accounting standards harmonization process in Europe and other countries. Furthermore, a deliberate effort to address the unwanted effects of adopting IFRS standards is crucial. The process will lead to a better understanding of IFRS standards on national and international economies.

## 8. When do the Adoption and Use of IFRS increase Foreign Investment?

A significant challenge that firms face when attracting foreign investment is the asymmetry of information between foreign and direct investors. IFRS gives firms the opportunity to reduce the asymmetry. The move will increase their attractiveness among foreign firms. However, significant differences are noted in the manner that firms implement the IFRS standards. The observation is because firms have different reporting practices. Firms with strong reporting standards tend to attract many foreign investors. In contrast, those with weak reporting standards only attract little foreign investment (Bowe, Miletkov & Wintoki, 2013, p. 3). The countries that have weak investor protection systems would not benefit significantly from the adoption of the standards if the practice were not matched with a deliberate process to reform the institutions of the organization.

Foreign investors consider many factors before investing in a country. For example, the country must demonstrate its respect for the rule of law. Strong property laws and a commitment to enforce contract characterize countries that respect the rule of law. Since corruption increases the cost of doing business significantly, most investors are keen on investing in countries with low levels of corruption. Consequently, an enabling environment is necessary for the IFRS to increase foreign investment. As a result, countries looking to benefit from the adoption of the standards should ensure that a deliberate process to create an enabling environment that protects investors accompanies them.



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In addition, IFRS are effective in countries with high quality auditing standards. Auditors play noteworthy role in ensuring that organizations comply with the financial practices of their countries. Foreign investors rely on auditor reports to enable them make appropriate investment decisions. In the event that a country with high quality auditors adopts IFRS, then it can attract many foreign investors.

A critical evaluation of IFRS standards shows that they were designed for developing and mature capital markets. Although it is clear that financial statements assist investors to make critical investment decisions, countries with no stock markets should not adopt IFRS. Financial statements help users to estimate the value of securities when they are buying or selling. Financial reporting should not exist in developing markets. The accounting systems in a particular country are determined by its socio-economic and political history. The fact that some economies differ significantly from others shows that the adoption of the standards is only effective in some countries.

In order for IFRS to be effective, it is important to modify some aspects in order to make it suitable to the accounting needs of the country. The European Union and other countries have adopted modifications that ensure that the standards address their needs. If the standards are suited to a given country, then they are likely to succeed in attracting foreign investment.

Many countries have adopted the European Union-based IFRS standards. Understanding the reasons that motivate their actions provides a strong indication of the future of the standards. An evaluation of the countries that have adopted the standards shows that more powerful countries are less likely to adopt them. The countries have a strong economy that has good corporate governance systems. As a result, they fail to perceive any value in adopting additional standards. The approach explains why the developing countries represent a significant portion of the states that have adopted the standards.

The indifference that powerful countries have towards the standards is due to their unwillingness to surrender standard setting authority to an outside entity. In most instances, countries try to avoid surrendering any authority to independent entities. For instance, the United States has been reluctant with the adoption of the IFRS (MAFK International, 2013). However, with hundreds of countries adopting the standard, the United States is likely to replace its US GAAP standards with the new accounting practices (MAFK International, 2013).

The network effect that is associated with the adoption of the standards provides a powerful motivation for other countries to join them. A country is more likely to adopt the IFRS standards if other countries within their geographic region did the same. In addition, if trade partners adopt the standards, then a country would be under intense pressure to act similarly. Consequently, the practice has been driven by strategic considerations as opposed to a willful desire to demonstrate financial prudence.

Furthermore, the increasing number of countries adopting the standards has led to higher network effects. The argument postulates that some countries are forced to adopt the studies so that they can benefit from the effects of a global economy that focuses on the creation of a unified financial code.

However, there is no evidence to show that changes in the trade and foreign direct investment have any direct impact on the decision of a country on the subject. In contrast, the adoption is due to the economic theory of networks. The theory postulates that the value of something such as a product or service increases when it is adopted by a wide group of people. The adoption of the standards has occurred in a gradual manner. Countries did not adopt the standards at once. Instead, the adoption process has been gradual. As more countries embrace the standards, their counterparts have to adopt them in order to avoid missing a new global reality.



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The strength of the governance and corporate structures in a country determine whether they are likely to adopt the IFRS standards. Countries, whose governments have the ability to make timely-decision making, are more likely to adopt the standards. In addition, they are more likely to embrace the standards if the cost of switching to the new standards is expensive.

The implementation of the standards does not result in a significant reduction in information costs for advanced economies. The observation demonstrates that the developing economies would benefit the most from adopting the standards. As a result, it is evident that adopting the standards is driven by strategic considerations.

Countries understand that widespread adoption of the standards is integral towards creating a global accounting standard that benefits everyone. The standards will result in a significant reduction in the investment decision. In addition, it would lead to a reduction in the cost of accessing the information (MAFK International, 2013). Many countries realize the importance of being part of the global economy. They hope that by adopting the standards they are likely to create an environment that matches the emerging trends in the international arena.

## 9. IFRS, Foreign Direct Investment, and Corporate Social Responsibility

Although there is not a standard definition of corporate social responsibility, the term is widely known as contributing to a better society through company actions in the benefit of the workforce and local community. This means the adoption of voluntary codes of conduct and rules of behavior by companies which go beyond public legislations. There is a strong relationship between corporate social responsibility and foreign direct investment as the increase of foreign direct investment has fostered the growth of corporate social responsibility. Corporate social responsibility is an important determinant for multinational companies to start operations. FDI increases the working conditions due to established CSR initiatives (see Frost & Ho, 2005; Goyal, 2006; Kolk & van Tulder, 2010).

Some authors claim that FDI and CSR have played an important role for poverty reduction, as well as having an impact on salaries and working conditions in developing countries (see Brown *et al*, 2004). On the other hand, other authors explain that corporate social responsibility is the reaction to the social dissatisfaction from globalization (see Jenkins, 2005; Gonzalez-Perez & McDonough, 2007). CSR policies have increased as a result of globalization creating a sense of responsibility creating a sense of responsibility engaging companies in an improvement of the societies where they operate. There is also a relationship between CSR and economic performance of companies (see McWilliams & Siegel, 2000, 2001; Carter, 2005). Although it is not clear if companies are successful as a result of the CSR implementation or if companies implemented CSR policies due to their economic success.

It is often suggested that there is a mutual relationship between society and economic actors. In this sense, Edwards (2004) explains society needs to access the surplus of market economies in order to have sustainable social objectives, he points out that society needs markets and these markets need a strong civil society to develop. Goyal (2006) points out that corporate social responsibility can create a sense of responsibility for companies entering new countries to cooperate in poverty reduction and social welfare. Thus, an increase in FDI will promote growth of CSR practices, and a higher degree of responsible business initiatives will attract new FDI.

Emerging economies are still perceived as risky places to invest, although multinationals countries are actively investing in many developing countries. Countries which are rich in resources are a strong motivation for investment. Most developing countries depend on FDI inflow to transform their fast growing



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economy. These countries hope that a higher inflow of FDI will improve their economy and increase the standard of living of their population with more employment opportunities. The implementation of the appropriate macroeconomic policies together with the liberalization of the economy, and privatization are the key factor to attract FDI to emerging economies (See Ajayi (2008)). Unemployment and poverty are the major challenges faced by developing economies, being the high unemployment the main determinant of low standard of living in these countries. Thus, developing countries have a strong incentive to attract foreign companies to invest and to use trade in favor of their country´s interest.

Most developing countries have implemented policy reforms with the intention to create great business atmosphere for foreign investors. The leaders of developing countries work to attract more FDI to alleviate poverty. Creating job opportunities in a country would contribute to alleviate poverty. The higher economic growth would increase employment, improving the standard of living and reducing poverty. Furthermore, FDI can contribute to the improvement of infrastructure by host countries. Another factor which contributes to poverty alleviation is the taxation of foreign subsidiaries. Taxes from foreign companies would increase the revenues of the host country. This tax revenue can be used to finance poverty reduction initiatives or creating a safety net for the poor. In this sense, Prahalad (2002, p. 42) stated that "By stimulating commerce and development at the bottom of the economic pyramid, MNCs could radically improve the lives of billions of people and help bring into being a more stable, less dangerous world".

## INVESTMENTS THROUGH EMPLOYMENT OPPORTUNITIES: SOLUTIONS AND RECOMMENDATIONS

### 10. The Effect of IFRS on Cross-Border Acquisitions

One of the biggest arguments advanced by proponents of the IFRS is its ability to create an efficient capital allocation process through greater cross-border investment. An evaluation of investment data shows a significant increase in the level of investment due to the adoption of the IFRS standards. The observation is consistent with the fact that investors benefit from a significant reduction in information symmetry due to the increase in the comparability of financial reports.

In addition, a strong implementation of the IFRS standards may result in a significant increase in mutual funds investment. The countries that have strong implementation credentials tend to attract many investments from both individual and institutional investors. In contrast, countries with weak implementation capacities realize no significant impact from the adoption of the standards. Achieving financial comparability is bound to have a net positive result of cross-border trade. Comparability refers to achieving uniformity in accounting practices between two different countries (DeFond, Hu, Hung & Li, 2010, p. 1). High comparability levels will reduce the cost of accessing information. As a result, increased investment in firms will be noted.

However, two factors should qualify any claim about the impact of achieving financial comparability. In jurisdictions where the enforcement of the standards is mandatory, the success of the new accounting standards is dependent on the management credibility of the new organizations (DeFond, Hu, Hung & Li, 2010, p. 1). Management credibility involves the ability of the management to implement the new accounting standards. Financial reporting practices vary significantly amidst countries. In addition, managers have a lot of flexibility in determining the implementation of accounting standards.



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The second qualifying factor involves the magnitude of the increase in uniformity. A large increase in uniformity will result in increased financial comparability. The magnitude varies from one country to another (DeFond, Hu, Hung & Li, 2010, p. 2). As a result, the adoption of IFRS standards is bound to result in varying implications in different countries.

(Henock & Oktay, 2015) examine the effect of IFRS on foreign direct investments (FDIs) by analyzing whether the 2005 mandatory adoption of IFRS leads to an increase in cross-border acquisitions in the adopting countries. They find that the adoption of IFRS led to a significant increase in FDIs, which is consistent with the primary objective of IFRS.

## FUTURE RESEARCH DIRECTIONS

The European Union provides an effective case study for analyzing the impact of the implementation of the IFRS standards on a large scale. In the European Union, the implementation of the IFRS standards was mandatory. As a result, they were implemented in many firms at the same time. An analysis of the information is based on mutual fund investments. In most instances, mutual fund investors are sophisticated investors who make their investment decisions based on a comprehensive analysis of financial information.

## CONCLUSION

The impact of adopting the IFRS standards is limited to domestic investors. The investors have access to alternative channels of communication. For example, they can obtain information from industry analysts or mangers. Similarly, the increase in cross-border transactions is due to the activities of foreign- owned organizations. The organizations tend to have a presence in multiple foreign markets. Consequently, they have a significant interest in benchmarking with a large number of firms.

The effects of adopting IFRS on cross-border trade are dependent on the economic institutions in the countries involved. Furthermore, the management incentives in the country determine the process. The enforcement of the IFRS standards is bound to play a significant role in determining if the implementation of the organization is bound to have a significant effect. Some countries have strong financial regulatory bodies that ensure all the organizations in the country implement the standards. Others have weak institutions that lack the resources or ability to ensure that all firms in a country implement the new standards. In the former countries, a significant increase in cross-border trade is noted while in the latter countries, the impact will be limited.

Multinational companies contribute to economic development through investments, taxation, jobs, and the transfer of technology and skills. As the level of corporate social responsibility is strongly related to FDI inflow for developing countries, there should be a higher degree of cooperation between local governments and multinational companies to improve FDI inflow and reduce poverty. Local governments should implement programs to engage foreign companies to hire and train their local employees with the view of increasing long-term employability. Initiatives followed by developing countries should include liberalization of trade, increase export-led growth, and privatization of public companies.



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## KEY TERMS AND DEFINITIONS

**Accounting Harmonization:** A process of increasing the comparability of accounting practices worldwide. Harmonized standards should improve the compatibility of financial information from different countries.

**Corporate Social Responsibility:** A company initiative to take actions to improve the environment and social wellbeing.

**Developing Country:** A country with an underdeveloped industrial environment, together with a low Human Development Index (HDI). It is also called less developed country or underdeveloped country.

**Foreign Direct Investment:** An investment made by a company located in one country, into a company based in another country.



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**International Trade:** The exchange of goods and services between countries.

**Multinational Company:** A company that has operations and assets in at least one country outside its home country. It is also referred as "transnational corporation".

**Poverty Reduction:** Promotion of several measures, economic and humanitarian, that will eliminate poverty.

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# Chapter 19
# Legal Aspects and Regulation in Crowdfunding:
## Comparisons across Countries

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## ABSTRACT

*Crowdfunding started with the donation-based and reward-based models, but soon its disruptive capacity to innovate the traditional approach to finance made it evolve into an alternative finance instrument, suitable to fund new business. Peer to peer lending and equity crowdfunding are investment instrument that can truly sustain the growth of businesses and generate profits. As any investment instrument, lending and equity crowdfunding are heavy regulated in order to protect investors and maintain a proper trust in the system. This chapter will go through the American and European main regulatory principles, offering a picture of the overall approach to this innovative and disruptive financing tool.*

## REGULATION

The crowd economy comprises a number of different forces, trends, and dynamics originating from the crowd. Many of them are connected with money; this is why a large part of the crowd economy is identified as crowdfunding. Indeed, crowdfunding is a very broad concept that includes several very different operations, each having its own logic and metrics.

## "NON-INVESTMENT" CROWDFUNDING

### Donation

Thanks to the explosion of social networks and the wide use of the web, fundraising easily moved from offline events and efforts to online crowdfunding platforms.

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Donation crowdfunding was the first crowdfunding model based on the web, and it is being used not only by charities and nonprofits to raise funds, but also by individuals to ask for help for their personal projects (business, entertainment, study, or any other purpose without limitation).

In donation crowdfunding, the crowd donates money to support a project with no expectation of financial return. In some cases, the crowd is offered some kind of rewards or incentives tied to their level of contribution, which have no significant intrinsic monetary value. In most jurisdictions, these perks do not influence the model, which remains a donation, and there is only a moral obligation to provide the promised reward.

However, in some civil law jurisdictions (originating with the "Napoleonic Code"), the eventual breach of promise might have consequences, like the obligation to give back the grant. In fact, a contractual obligation binds the donor and the project owner, simply because of the donation.

## Reward

Donation-based crowdfunding quickly evolved to a model in which the value of the reward is comparable or substantially equivalent to the value of the donation: the project owner offers to produce and deliver an object to the donor, provided that a minimum number of orders are placed and therefore break-even is reached.

This model perfectly answers the need of financial coverage for those who create innovative products outside a well-established company: they can test the market without committing the upfront marketing, production, and distribution costs required to fully commercialize a new product.

Moreover, the customer validation arising from a successful pre-sale campaign grants project owners a valuable tool when negotiating with investors. Several studies have shown that a successful reward-based crowdfunding campaign influences the proclivity of professional investors to sustain the project with an equity investment. A well-known example is Pebble, a smart watch that interacts with every kind of smartphone. Pebble's business model didn't attract investors, so its founders launched a reward-based campaign on Kickstarter. The campaign was a real success—it's still in the top 10 overall—and Pebble pre-sold enough smart watches to raise $10 million. This scenario totally changed the approach of venture capital firms, and after a few months, Charles River Venture invested $15 million in equity. One year later, a second crowdfunding round brought in $20 million more. The Pebble case demonstrates the strength of the interaction between crowd validation and venture capital analysis and strategy.

In most jurisdictions, when the perk offered has a value comparable or close to the value of the financial contribution, reward-based crowdfunding is nothing but a sale or, better, a kind of e-commerce. As a consequence, consumer protection rules are applicable to each subscription, as well as regulations concerning guarantees, delivery, and breach of contract. From a tax point of view, some governments have made it clear that this is not a donation and therefore VAT and similar local taxes are applicable to these kinds of sale, and the European Commission is considering the possibility of uniform regulation.

## Royalty

Using a different approach, a project owner might offer supporters a part of the profits that the project is going to generate. Without sharing in the ownership of the project, a funder could still share in part of the expected financial returns. This third and most complicated type of "non-investment" crowdfunding is the royalty-based model: funders are offered a return of a financial nature, calculated as a share of the



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revenues or profits generated, which will be payable under certain conditions and for a certain period of time. This profit-sharing formula can be used for a stand-alone project or for a specific business or product of a company (e.g., a software application) without involving any other business of the company. Risks are transferred to the funders, without designating an investment scheme, because the founder gets nothing as an immediate consideration—not even the promise to get the money back (otherwise, the "investment" would simply be a loan).

Funders fully take part in the losses, up to the value of their own contribution, which is non-refundable and can be completely lost.

Royalty-based crowdfunding is purely financial; campaign owners seek funds for their projects through the web. However, in some jurisdictions this practice is not totally new, and is already regulated as a specific kind of financing that might be either financial or in-kind (i.e., work for equity).

In order to offer uniform rules to all the funders, the project owner (or the crowdfunding platform) must propose a uniform agreement. Otherwise compulsory local rules might prevail and find discrimination among the funders as well as create unexpected situations for the project owner. For example, the project owner might open the business to new membership, accepting a large number of potential new supporters, without any kind of consent from the supporters already invested.

Funders do not fully take part in the earnings either: the project owner can propose a certain amount of shared revenues and the relative duration, fixed in a limited period of time (e.g., five years from the investment), regardless of the ratio of contributions to the value of the business.

Indeed, this is not an investment and funders don't buy shares in the business as if they were investors and shareholders. Moreover, the project owner can offer funders some rights: audit, access to documents, or even involvement in the conduct of the business.

In some cases, royalty-based crowdfunding has been used to circumvent prohibitions on solicitation of investment, rather than for strategic reasons. Otherwise, royalty-based crowdfunding is a viable solution for companies that do not meet the requirements to access equity crowdfunding or who do not wish to open their equity to third parties, and it allows companies to encourage their backers' participation in a useful and, possibly, an advisory role.

What is most complicated with royalty-based crowdfunding is the dissolution of the relationship (on both sides) upon the conclusion or sale of the project. In most jurisdictions, contract freedom allows the stipulation of an agreement which perfectly suits the purposes of all parties, but finding royalty-based crowdfunding that sets clear rules for these cases is not common.

Tax regulation may also be critical: some jurisdictions do not allow deducting royalties from the revenues to pay the funders, requiring the business to calculate profits, pay taxes and distribute royalties out of the net profits. This kind of tax regulation makes royalty-based crowdfunding rather expensive to the entrepreneur, because royalties paid would be lower than those resulting from a normal ratio of the share capital.

Royalty-based crowdfunding is useful for collecting money for a single project keeping the crowd out of the entire business of the proposer; e.g., the publication of a book, a movie or music. Sandawe allows the public to view a few draft pages of comic books to decide whether and what to finance. The Belgian company, which in July 2015 claims to have raised more than €1,607,000 for 56 projects, proposes an editorial plan and a budget (usually €35,000–55,000 per album), and the project starts only when the amount is collected. Funders do not become shareholders or get voting rights; they are remunerated with their share of 60% of net profits until full coverage of their initial investment, and with a share of 40% of net profits thereafter, in proportion to the funding.



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Sandawe has a large community of active members (15,500 in August 2015, with a 100% annual increase rate): all comic fans. They are highly motivated to support projects for the sake of participating in their implementation, and at the same time are a relevant market for the distribution of the same products they have helped to publish.

A similar model of profit sharing is the German website SellaBand, one of the oldest European crowdfunding platforms, through which artists can post a series of music tracks: the public can listen and choose to invest in some of them, for a share price of €10. The money raised stays in a temporary escrow account until it reaches the artist's target amount, whereupon it is used for the production of a CD (or returned if the goal isn't reached). Some artists offer supporters, termed "believers," a share of as much as 10% of the CD's revenues.

The need to find alternative solutions to the subscription of risk capital has inspired some entrepreneurs to find solutions more closely compared to the model of profit sharing, by moving different levers. In this regard, Kappel (Kappel, 2009, p. 375) classifies "ex-ante" crowdfunding, which finances a goal yet to be achieved, in two variations: the investment model, which is classic equity crowdfunding, even when it results in a partnership or profit sharing; and the betting model.

To explain the betting model, Kappel presents the example of the British company Slicethepie, which is considered a licensed bookmaker according to English gambling laws. In addition to a classic model of donation focused on music production, the company offers a trading platform of "contracts": for each music album funded through the platform, the company issues up to 15,000 contracts: that can be purchased for £1 each. The contracts can be traded for two years; afterwards they are called up and cleared at a price calculated on the basis of sales of the album at a rate of £1 for every 10,000 digital copies sold. For example, if a purchase was made at £1.8, the break-even for the supporter is 18,000 album sold. Artists are free to sell their rights to a record company, provided that it awards the holder of any contract a 50% premium on the specific purchase price of each. The model is completed with a royalty of £2.50 to Slicethepie for each album sold, over two years.

One important side effect of this model is that the owners of "contracts" are encouraged to advertise the album and increase sales, if they want to get a higher terminal value.

This is an interesting solution, especially for its strategic approach: Slicethepie wanted to involve a segment of the public attracted to trading and betting, offering a chance to play, with modest amounts of money, in a particularly stimulating business. What probably draws the crowdfunder to Slicethepie is the thrill of playing the particular game that the company invented, more than the desire to invest in a company or the prospect of a margin business.

Risks arising from contract-holders' relying solely on their hearts might be huge, and governments can't help but consider them. Indeed, while some commentators in the past have referred to the U.K. Gambling Act 2005 as a possible legislative solution for certain types of crowdfunding, the betting model in the U.S. has been prohibited since 2006, under the Unlawful Internet Gambling Enforcement Act (UIGEA), which prohibits the transfer of funds to online betting.

## A Community Business

In any kind of reward-based crowdfunding (donation, reward, or royalty), the community is absolutely crucial to the success of the initiative and helps determine the form taken by the request for funding, which otherwise would become entirely similar to what one might expect at a bank.



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In an interesting essay, based on preorder or profit-sharing paradigms, Belleflamme, Lambert and Schwienbacher (Belleflamme, Lambert, & Schwienbacher, 2012) developed a mathematical proof that explains that entrepreneurs prefer preorders for projects that require little capital, but profit sharing for projects that require a major investment.

In fact, by virtue of preorders, the ability of the entrepreneur to manage price discrimination between lenders and customers is influenced by the amount of capital needed to cover fixed costs. Beyond a certain threshold, the distortion of the price becomes excessive and profitability is reduced. Instead, if the capital requirement is high, following the profit-sharing mechanism, the entrepreneur is able to expand participation without compromising too much on profitability.

The same authors, however, point out that the mathematical analysis of profitability cannot take into account the objective side of crowdfunding that nevertheless is critical to the success of the project: namely the creation of a community, a chance to test the market, and opportunities for strategic marketing.

## INVESTMENT CROWDFUNDING

When crowd-funders are offered securities (shares, bonds, or debt instruments) as a consideration for their financial contribution, the crowdfunding model becomes substantially different, mostly in terms of legal consequences. This model involves the sale of a securities instrument (stock) in a company through a regulated, online platform.

Rather than simply providing financial support for the project, funders will expect some kind of financial gain from the transaction, so their solicitation must be balanced by a number of assurances required by the law, as for any kind of investment.

In principle, possible sources of funding for a company are two: capital (equity) and debt.

While equity grants some rights to control the business (first of all, the right to vote), it is the riskiest form of financing from the investor's perspective. On the other hand, loans don't bear the same risks, are liquid (i.e., repayable after a term) and are usually negotiated against guarantees.

### Equity

The categories of potential investors in equity are as follows:

1. **The Entrepreneur:** Who generally invests his assets or gets personal loans to fund his company;
2. **Family and Friends:** People close to the entrepreneur who invest in the business, generally in small amounts;
3. **Business "Angels":** Individuals (or funds, or companies) who want to invest money in small projects, often to diversify their portfolios;
4. **Venture Capitalists:** Professional investors who collect money from sophisticated but non-specialized investors, and invest in innovative projects and for a set time, with the aim of realizing a significant capital gain on liquidation of the investment;
5. **Strategic Investors:** Other companies that may have a tied interest in industrial, commercial or strategic initiative to be undertaken (e.g., suppliers);
6. **Crowd or Retail Investors:** Undifferentiated public that invests in companies and buys securities.



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In the mainstream of business funding, it is the entrepreneur who initially funds the business, eventually with the help of family and friends. Very early-stage businesses usually have their "bootstrapping" period: the term is hyperbole derived from the fanciful "pulling yourself up by your bootstraps," adopted in the 19th-century U.S.; it refers to tactics of self-financing—using the cash flow or other stratagems—rather than capital or loans.

The second stage has typically been that of angel investors and venture capitalists. But most recently the investment time for such professional investors has shifted forward, and is being replaced by crowdfunding; reward-based first, and equity crowdfunding as soon as a certain maturity is reached.

Venture capital is provided by investment funds managed by advisors, specialized in specific areas (information technology, health, biotechnology, etc.). They have a very professional approach to risk and usually follow specific preset guidelines for the time of entry in the investment; the available amounts are generally enough to advance the target company, after several rounds, to maturity, or until a stock exchange or trade sale exit, and their structure is tailored to follow the investment.

Projects of even greater size are often backed by private equity funds, which generally prefer to concentrate on a few deals involving larger amounts, invest in advanced stages of a business, or facilitate acquisitions or mergers, adding a significant value to the target company. They only invest in validated businesses that have demonstrated the ability to generate significant revenues through a concrete history.

Anyway, the access to finance in the last ten years has become increasingly difficult. Startups prefer the use of venture capital, angels or strategic investors since subjects specializing in this form of investment are generally able to contribute more than just financial support, in terms of management, network, media production and distribution. Indeed, professional investment is usually referred to as clever money, compared to the "stupid money" coming from the bank system, which typically has no nonfinancial support. The effectiveness of this strategic choice is demonstrated by Keushnigg (Keushnigg, 2004, p. 239), who explains how innovative companies supported by venture capital funds have the highest growth rates.

The European Commission communication of 7 December 2011 entitled "An action plan to improve access to finance for SMEs" states that "the difficulties of access to finance is one of the major obstacles to growth for SMEs," as also evidenced by the ratio of the ECB, "Survey on the Access to Finance of SMEs," in February 2010. In fact, the EU funding with venture capital has great potential, but so far has hardly been tapped for the development of SMEs (small and medium enterprises). Despite the huge size of the asset management industry in the EU, there is no existing legislation specifically designed to channel investment in equity capital to SMEs.

The EU Regulation no. 345/2013 of 17 April 2013, about European funds for venture capital, states that "... providing finance and advice to these undertakings, venture capital funds stimulate economic growth, contribute to the creation of jobs and the mobilization of capital, encourage the creation and development of innovative businesses, increase their investment in research and development and foster entrepreneurship, innovation and competitiveness."

As explained by Bhidé (Bhidé, 1992, p. 109) in 1992 in *Harvard Business Review,* the institutional investor thinks in terms of default amounts to invest. Since 2002, venture capital funds have gradually increased these levels, since many small investments are more expensive in terms of monitoring, compared to fewer larger investments. Being listed on a regulated market is only possible in connection with significant investment thresholds, also keeping in mind the complexity and cost of the IPO (Initial Public Offering).



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This distinction involves a practical consequence extremely important for startups: the equity market is effectively closed to projects that are too small, with a cash need insufficiently attractive to institutional investors.

Not least, it is necessary to consider the influence of macroeconomic conditions (market trends, trends in interest rates, etc.) on investment decisions, often more effective for small and medium-sized enterprises; in 1990 the credit crunch in the U.S. had reduced loan disbursements by 38%, from 144 billion to 88 billion dollars, as noted by Berger and Udell (Berger & Udell, 1998, p. 613).

## Debt

As an alternative, other organizations prefer to take out loans rather than dilute ownership by taking on investors. The players on the loan side of investment are:

1. **Banks:** Usually they don't lend money to startups without revenues, and in any case, they ask for guarantees;
2. **Leasing Companies:** They finance tangible assets (computers, technical equipment, etc.) and the business premises;
3. **Government Agencies:** In some countries they offer loans, usually at reduced rates, for particular classes of projects;
4. **Customers or Suppliers:** Entrepreneurs might succeed in getting financed through delayed payments accepted by suppliers or advance payments from customers.

Debt might seem more expensive than equity because of the interests to be paid, but indeed the problem is not the cost of finance, rather how to access it. The choice to get a loan seldom depends on the interest rate or the consideration required by the lender; it is more often determined by lack of alternatives or by a strategic choice of the entrepreneur. In some cases, indeed, he is not yet able to justify a significant business evaluation in order to get a fair value against equity shares of his business; therefore, he prefers to take on debt until a significant value may be demonstrated and capital is open to third parties.

Regardless credit crunch, borrowing money is increasingly difficult for start-ups, because while SMEs at least have a history and a turnover, a startup's history is usually not compatible with the requirements of financial institutions, being too short and limited to the building of a business yet to be demonstrated as successful; moreover, it is usually unable to offer assets as collateral.

This difficulty to access the loan market has led to the growth of a new kind of crowdfunding: in debt-based crowdfunding, individuals lend money to either other individuals (P2P) or to businesses (P2B). Debt platforms screen the applicants, underwrite the loans, assign interest rates (sometimes based on an auction of interest rates among willing lenders), and then create a market where investors are able to screen available loans, and supply parts of the total loan amount to the projects or businesses. P2P platforms might fund everything from debt consolidation to home improvement, to leases, to real estate, and even college tuition. Indeed, in some countries their business is limited to private borrowers; in some others, businesses are allowed to borrow; in others there are restrictions on the lending side. In still other countries, debt-based crowdfunding is heavily regulated through bank licenses, which substantially inhibits the expansion of the market.



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Lending-based crowdfunding platforms are growing rapidly across the world and have amassed billions of dollars in transactions. For example, in 2013, Lending Club originated over $1 billion (USD) in unsecured loans from consumers, and now Prosper is following the same growth curve. Normally, unsecured loans come at a higher default rate, but experience has shown that the default rates on these loans are not greater than traditional loans, and they have a higher yield. The successful IPOs of LendingClub and OnDeck further demonstrate the acceptance of these financing platforms.

According to recent research, this could become a $1 trillion global market within 10 years—an enormous figure that would still represent only one percent of the $100 trillion global debt market.

The screening and underwriting process is faster than traditional loan underwriting, and the web-based technology is a great facilitator. This may be particularly beneficial to companies that otherwise would have to turn to expensive receivables discounting for the fastest approval when seeking capital. In many countries, where SMEs need to finance their working capital on credit in order to remain in business, and a late payment is too often a reason for bankruptcy, this could be the difference between life and death.

Lending platforms are leveraging all available information on potential borrowers in order to assess their creditworthiness, and are investing in new algorithms in order to gain the ability to select relevant information from big data. An Indian platform is focusing on credit scoring, analyzing candidate borrowers' behavior on the social networks, while African micro-credit platforms are starting to rely on a candidate borrower's online micro-payments history to assess credibility. Indeed, evaluation and risk assessment are of prime importance when providing unsecured loans.

Most recently, large corporations also started investing in lending platforms, by purchasing loan portfolios or by taking portions of a large number of loans, given that the growing success of the score system that these platforms are developing is often more successful than that of banks. This is why the availability of investors now exceeds the current demand for loans. Such an opportunity should lead even the most restrictive governments to be open to lending-based crowdfunding, and accepting investors from abroad.

A variety of lending-based crowdfunding is microcredit: started in Bangladesh by Grameen Bank, it is a way to kick-start microbusinesses in underdeveloped countries, through very small loans, that nevertheless make the difference between opening a business or starving—between life and death (United Nations Development Program, Evaluation Office, Essentials Microfinance, 1999). Thousands of women and men in Asia and Africa have successfully started businesses and changed their lives with as little as $700–800, and also contributed to the development of their own countries. It is a very risky business, given the lack of guarantees and the frequent absence of promising conditions; therefore, interest rates must be high enough to remunerate the risk. Nevertheless, the success of microcredit demonstrates that borrowers easily succeed in paying back loan and interest, and are quite eager to do that, provided that the overall amount is not huge.

One problem preventing the wide development of microcredit is that some governments ban its average interest rates (20–30%) as usurious, thereby prohibiting microcredit by definition. Such bans stand regardless of context, or terms and conditions of a deal, so that no discrimination is possible and no access to this precious instrument is allowed.



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## The Regulatory Framework

Given the public solicitation operating through the web and its investment nature, equity crowdfunding is regulated within the framework of financial regulation and securities; on the other hand, lending-based crowdfunding is either subject to the same regulation as bank and credit institutions or non regulated at all.

The main topics for lending crowdfunding in those countries where it is regulated are:

- License to operate a platform;
- Who can lend;
- Who can borrow.

For equity crowdfunding, instead, there are more critical topics, including:

- License to operate a platform;
- Who can invest in equity;
- Who can receive an investment;
- Maximum limits per investor;
- Maximum limits per deal;
- Solicitation rules.

Hereinafter we will go through some different approaches to equity crowdfunding deals in order to have a broad view of different approaches and regulations.

## Equity Crowdfunding: The U.S. Legal Framework

Despite the title of the debate born from the pages of *The Wall Street Journal* ("Should Equity-Based Crowd Funding Be Legal?" by Lavinsky and Torrens) which offered opposing viewpoints of this form of investment, equity crowdfunding has never been illegal in the U.S., although it has been rather inaccessible in terms of cost and bureaucracy.

The dichotomy that has animated the American debate reflects opposing economic theories, interventionist and liberal, based on the "invisible hand" thesis of Adam Smith. One theory argues that it is a viable form of financing for companies that do not qualify for access to venture capital, mostly because of their limited size; the other states that if the target companies are not good investments for venture capitalists and angels, there are probably good reasons not to invest, and these reasons may be too subtle for retail investors to detect.

In the American system we must start from the concept of "securities" and their strict regulation. ("The term 'security' means any note, stock, treasury stock, security future, bond, debenture, evidence of indebtedness, certificate of interest or participation in any profit-sharing agreement, collateral-trust certificate, preorganization certificate or subscription, transferable share, investment contract, voting-trust certificate…" –Securities Act, 1933). Considering financial instruments stocks, bonds, investment contracts and other forms of participation, an investment contract means any collection of money that might explicitly or implicitly provide investors with a potential gain.



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An investment contract is subject to the securities regulation depending on the Howey test; i.e., the verification of the conditions set by the Supreme Court in the Howey case: considering as an investment contract for the purposes of the Securities Act an agreement by which a person invests money in a company with other people or is solicited to expect profits because of a promoter's or a third party's advice. This definition covers investments involving real estate. The declared purpose of the Securities Act was to promote transparency in order to gain strong consumer protection: Justice Louis D. Brandeis is often quoted as saying: "sunlight is the best disinfectant; electric light is the most efficient policeman."

The U.S. law is divided into two regulations: the 1933 Disclosure Requirements and Registration Act and the 1934 Periodic Reporting Requirements Act. The result is a complex system based on three fundamental requirements:

1. Registration of the securities whose sale is induced;
2. Full documentary disclosure for the investor through a prospectus that contains detailed information about the entrepreneurial activity and verified accounts;
3. The obligation to produce periodic update reports.

A third act in 1934, the Broker-Dealer Registration Requirements, extended the registration requirements to intermediaries.

One of the main rules in the American system (both state and federal) is the difference between accredited and non-accredited investors. Accredited investors are defined in reference to the size of their assets, which must be larger than $1 million (excluding the value of their house) and current revenues exceeding $200,000 ($300,000 where cumulated with a spouse). In total, accredited investors account for about 3% of the American population, and their investments in non-listed private companies is about $30 billion a year, distributed among approximately 600,000 accredited investors.

In the U.S., as in many jurisdictions, what is most problematic and expensive is the prospectus requirement; i.e., the information to be provided to the public when soliciting an investment. Nevertheless, a number of exemptions occur, provided by U.S. legislation and the SEC to exclude or limit the rules for very small companies, or financial instruments having a small value or dedicated exclusively to sophisticated investors. Such exemption schemes, mainly built around the Regulation A and Regulation D, never exclude information and reporting duties.

When a U.S. website (BuyABeerCompany.com) tried to propose $300 million online funding for the purchase of Pabst Brewing Company, without registering the operation nor complying with the Securities Act, the SEC stopped the offer. The promoters immediately answered that they would collect investment intentions before actually getting investments. Since the money had not yet been collected, the case ended with an agreement based on the spontaneous withdrawal of the promoters from the initiative (SEC, Adm. Proc. File No. 3-14415). The promoters, whose communication of the offer was amplified via Facebook and Twitter, have reported investment intentions for over $200 million, from more than five million individuals.

The primary legislation regarding equity crowdfunding is the Jumpstart Our Business Startups Act (JOBS Act, April 2012), but it is not sufficient by itself to regulate equity crowdfunding: the SEC had been delegated to issue a special implementing regulation which will govern the process in detail and will be complemented by an appropriate regulation of the FINRA. Unfortunately, the deadline set by the JOBS Act had long expired by the time the SEC finally released a 500-page draft regulation and later, on October 30th, 2015, the implementation of the bill.



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In the wide debate about the SEC delay, many questions were posed and no answers were provided. There was apparently some concern about an eventual mass diversion of investments from the regulated stock exchanges to the "real" economy of restaurants, shops and small businesses.

Meanwhile, while waiting for the SEC regulation, several states (15 at the moment) have issued their own regulation and exemptions for offering limited crowdfunding to their residents. This is certainly a great opportunity, given the large investment capacity of some states; nevertheless, the scalability offered by the web would better be exploited through a national unified framework, and even better at an international level.

While non-accredited investors individually may make only small investments, collectively they may create a huge boost to the capital markets.

Besides that, other instruments are provided by specific regulations and allow restricted forms of crowdfunding, limited to accredited investors. This might not be considered "true" crowdfunding, but the dimension of U.S. accredited investors' available funds is so huge that it is a very good first step (reportedly 40% of the $55 billion annually invested in venture capital worldwide).

## The JOBS Act

The legislative initiative at the federal level was taken by President Obama in April 2012 with the JOBS Act, with the stated aim of reviving the economy then in a worldwide downturn. Not surprisingly, Obama's policy and the support granted to the economy are generating important results in terms of growth and employment, in contrast to other industrialized countries (except Japan).

The JOBS Act contains three different pieces of legislation, tailored for accredited, non-accredited or both kinds of investors.

Title II of the JOBS Act, concerning accredited investors, has been implemented by the SEC, and dramatically contributed to the $1.1 billion equity raised worldwide in 2014 on-line. It allows accredited investors unfettered access to operate on online platforms.

Title III, in contrast, allows retail investors to participate in equity crowdfunding. Given that the U.S. has the broadest national economy, analysts are eager to check out how retail investors will react to this huge democratization of their access to finance.

Title IV, which became effective on 19 June 2015, permits investments by both accredited and non-accredited investors, albeit with some rather expensive strings attached for small businesses (hereinafter referred to also as Reg. A+).

The main principles of Title III of the JOBS Act are the following:

1. Crowdfunding platforms are subject to a registration requirement;
2. The amount retail investors can invest in a company is capped at $2,000 or a specified percentage of the company's annual net income or net wealth (5% for incomes up to $100,000, and 10% for higher incomes), whichever is greater;
3. Any company proposing an investment must provide information to potential investors and the SEC; such information includes:
    a. The objectives of the company;
    b. The capital that is being collected;
    c. The maximum term of validity of the offer;
    d. The price of the securities offered;



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   e. News about the company and management (board of directors and managers);
   f. News related to major shareholders and the capital structure;
   g. Business plans and financial situation;
4. Special attention is to be paid to the risks, to be duly highlighted both to the potential investors and to the SEC;
5. The SEC may require written additional information;
6. If the offer of securities exceeds $500,000, audited financial statements are required; between $100,000 and $500,000, accounts might be verified by an independent expert in accordance with rules established by the SEC; up to $100,000 it is sufficient to publish tax returns and financial statements of the previous year certified by the CEO.

After a successful funding, information on the business and operations ought to be updated annually, together with the financial statements.

The JOBS Act has chosen to limit the collection of equity through crowdfunding, to a million-dollar maximum for each twelve-month period.

It's true that this amount is high when compared to the current values of crowdfunding, but the most common crowdfunding models in 2012 (donation and reward) are very different from equity. For example, the average successful project on Kickstarter is $8,390. In contrast, the world average for equity-based crowdfunding, according to data from Massolution report CF2013 in 2012/2013 was $190,000, which almost doubled in 2014.

The ability to raise equity online under federal guidelines is limited to companies that qualify as Emerging Growth Companies (EGC): this type of company is not identified in relation to its business activity, but the volume of its annual sales, which must not exceed the astronomical sum of $1 billion in the previous fiscal year.

ECG status is retained for five years after the public offering, unless the company issues non-convertible debt securities exceeding $1 billion in three years or does not become a "large accelerated filer" (Rule12b-2). These values are frankly very far from the best ambitions of a startup and appear to contradict a roof of $1 million a year, and were established solely to avoid limitations to a truly effective use of crowdfunding. The logic of the U.S. crowdfunding legislation, intended primarily for small businesses with deep local development, is intended to encourage a strong link between investors and communities. Indeed, the small and very small companies have a greater capacity to create jobs, and help achieve the main objective of the JOBS Act.

In this regard, it is interesting that Amy Cortese coined the word "Locavesting" just to explain the phenomenon of the investment located in a community and the benefit it brings to the development of the community's social components. According to this analysis, while a dollar invested in Apple will contribute to the development of a better iPad, the same dollar invested in an agricultural activity can stimulate the local economy, helping induced activities that remain in the territory.

From the perspective of small business, the million-dollar roof is sufficient (at least for a year), but most importantly, it enables the proponent to focus on concrete and effective financial needs, avoiding the distraction of projects that are too complex or ambitious. The repeatability of annual crowdfunding allows the business to postpone raising further capital in the immediate aftermath of the first year's successes. Also in the American logic, for companies with greater financial needs, given that the U.S. venture capital and angel investing are extremely popular and mature, other means of financing might be preferable. Not to be overlooked, finally, a generalist small business is less likely to fail than a high-tech startup.



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This means that from the point of view of the American legislator, in order to create more jobs, and to limit risks for retail investors, it is useful to allow investments in "old economy" pure commercial companies, like a restaurant or a shoe manufacturer. It may not be the new Google, but it will most likely distribute dividends to investors and develop the local economy, advancing the goals of the U.S. government.

Each investor has a right to withdraw during the first 21 days after the initial crowdfunding offering to the public, regardless of the moment when the investor first learned of the possible deal. The reason for this rule lies in the great trust the American legislator puts into the network and in the ability of the people to expose fraud attempts: the thinking is that in a period of three weeks, the people will be able to discover and disclose any attempts at fraud. So, until the 21st day everyone can withdraw (even those who accepted the offer on the first day), but once the twenty-first day after the start of the campaign is over, no withdrawal right is allowed.

While equity crowdfunding access limits are modest, in order to allow the maximum access to capitalization, the JOBS Act sets significant requirements for the life of the company after the capitalization, and the sale of subscribed shares is restricted for one year. While it is true that the effectiveness of an emerging company may only be measured over time, this restriction seems to have no other logic than preventing these securities from being fuel for speculation and immediately traded.

A significant barrier to entry is the nationality of the target company, which must be exclusively American. This is a protectionist measure clearly designed to grow only American companies, as well as increase the gross domestic product and employment in the United States, in the spirit of the JOBS Act. The American system, subject to federal laws, is not therefore a candidate as an international marketplace for small and medium-sized enterprises, but is only a facilitator for its domestic market.

## Intermediaries in the JOBS Act

The typical crowd investment designed by the JOBS Act, both for accredited and non accredited investors, is through an authorized intermediary (broker-dealer) or through a crowdfunding platform registered with the SEC and at FINRA (Financial Industry Regulatory Authority). This excludes what happened spontaneously in different parts of the world at the dawn of crowdfunding, i.e., self-made websites to raise equity. The broker-dealer is responsible for the screening of the proposals, the subscription process and the delivery of the equity to the proposer once the financing goal is reached, according to the "all or nothing" formula. (The "take it all" formula, widely adopted in reward-based crowdfunding, is not allowed by the JOBS Act.)

The main charge the intermediary is entrusted with is the step-by-step compliance verification and the proper and deep disclosure of the offer and its supporting documents.

The broker-dealer is subject to a series of requirements set by the SEC at the regulatory level, and then:

1. Must inform investors of the risks;
2. Provides investors with educational tools;
3. Checks that investors examine the information provided by the offering party;
4. Checks that investors answer some questions and confirm that they properly understand the risks.



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The only type of advertising allowed for crowdfunding is that directing the potential investor to the web platform (or the registered intermediary), and SEC/FINRA specifically regulate the kinds of possible advertising.

In addition, the remuneration of the intermediary (and thus of the platform) must be transparent for the investor.

## Crowdfunding Platforms

Equity crowdfunding platforms operating pursuant to Title II of the JOBS Act are not reserved only for broker-dealers or their subsidiaries.

The U.S. legislation directed the SEC to amend its rules to allow general solicitation and advertising for securities offerings being sold to accredited investors, stating that a platform offering securities under Rule 506, and permitting general solicitation and advertising by the issuers of such securities on its platform, does not need to register as a broker-dealer.

Such exemption is subject to the following requirements:

1. That the platform does not receive compensation in connection with the purchase or sale of any security;
2. That it does not hold customer funds or securities in connection with the purchase or sale of such security;
3. That it is not subject to statutory disqualification.

Otherwise, the intermediary must be registered as a broker-dealer and the FINRA regulatory system applies, along with all consequences in terms of expensive and time-consuming reviews, analyses, due diligence, and compliance.

Funders Club and Angel List are well-known and very effective equity crowdfunding platforms operating under Title II, though not registered as broker-dealers: in 2013, they received "no action" letters from the SEC, where the SEC Division of Trading & Markets staff agreed not to recommend enforcement actions. Since exempt platforms did not need to register as broker-dealers, under specific circumstances, these no action letters established a precedent.

Of course, Funders Club and Angel List offered securities to accredited investors only, did not earn transaction-based compensation (but rather "carried interest," as they were operating as investment advisors), did not handle customer securities or funds, and were not subject to statutory disqualification. If instead, for example, they were receiving commissions on securities transactions, compensation calculated on the success or size of the offering, or holding customer funds or securities, then they would have needed to register as broker-dealers.

Nevertheless, these platforms remain subject to the anti-fraud provisions of the federal securities laws, identification and anti-money-laundering regulations. Identification is particularly important in order to properly check the accredited investor profile.

The current legislation implicitly defines a primary difference between funding portals and funding platforms.



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Funding portals are heavily regulated by the JOBS Act as miniature broker-dealers, and the October 2013 FINRA Regulatory Notice 13-34 set forth the rules for their FINRA membership, supervision, AML and reporting rules. But until the SEC approves crowdfunding federally, there are no funding portals to be supervised by FINRA.

Instead, the American equity crowdfunding market is currently managed by funding platforms, websites where investments are advertised to accredited investors only. Such platforms are mentioned just once in the Title II exemption from broker-dealer registration and the SEC itself confirmed that they don't need to register as broker-dealers, by the aforesaid no action letters to Funders Club and Angel List.

Equity crowdfunding, therefore, is currently managed through three different business models:

1. Broker-dealers, who recommend investments and earn commissions;
2. Investment advisors;
3. Listing platforms, that simply list offerings without any recommendation, earn listing fees, and charge further fees for services or tools.

## JOBS Act, Title IV, and Regulation A+

Under the Securities Act of 1933, when a company offers or sells securities to potential investors, it must either register the offer and sale or rely on an exemption from registration. A longstanding exemption from registration is Regulation A: it allows unregistered public offerings of up to $5 million of securities in any 12-month period. In recent years, Regulation A offerings have been relatively rare (it is generally considered expensive and complicated) and the new regulation, that Title IV of the JOBS Act required the SEC to modify, adds a new set of rules commonly referred to as Regulation A+.

The SEC finally issued Regulation A+ on 26 March 2015, to take effect on 19 June 2015, providing for two tiers of offerings, plus some limits on secondary sales by affiliates:

**Tier 1:** Securities offerings of up to $20 million in a 12-month period, with not more than $6 million in offers by selling security-holders that are affiliates of the issuer.
**Tier 2:** Securities offerings of up to $50 million in a 12-month period, with not more than $15 million in offers by selling security-holders that are affiliates of the issuer.

For offerings of up to $20 million, the issuer could elect whether to proceed under Tier 1 or Tier 2. Both tiers would be subject to basic requirements as to issuer eligibility, disclosure, and other matters, drawn from the current provisions of Regulation A. Both tiers would also permit companies to submit draft offering statements for non-public review by Commission staff before filing, permit the continued use of solicitation materials after filing the offering statement, require the electronic filing of offering materials and otherwise align Regulation A with current practice for registered offerings.

In addition to these basic requirements, companies conducting Tier 2 offerings would be subject to other requirements, including:

- To provide audited financial statements.
- To file annual, semiannual and current event reports.



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Moreover, a limitation has been set on the amount of securities non-accredited investors can purchase in a Tier 2 offering: no more than 10% of the greater of the investor's annual income or net worth.

The exemption is limited to companies organized in and with their principal place of business in the United States or Canada. The exemption would not be available to companies that:

- Are already SEC reporting companies and certain investment companies;
- Have no specific business plan or purpose or have indicated their business plan is to engage in a merger or acquisition with an unidentified company;
- Are seeking to offer and sell asset-backed securities or fractional undivided interests in oil, gas or other mineral rights;
- Have been subject to any order of the Commission under Exchange Act Section 12(j) entered within the past five years;
- Have not filed ongoing reports required by the rules during the preceding two years;
- Are disqualified under the "bad actor" disqualification rules.

Regulation A+ is essentially a good way to launch a mini-IPO to both accredited and non-accredited investors; it is considered expensive (commentators quote about $100,000), it takes a long time (about 6–10 months to get the paperwork ready), and it gives significant exposure to the target company, even if it fails (although a "testing the water" period is allowed). But the large amount that can be raised is a good prize for the attempt.

Years ago, fast-growing companies went public much earlier in their growth cycle (compare Apple's IPO in 1980, which raised about $100 million, to Alibaba's recent record-breaking IPO of $25 billion). In this new scenario, a first step before the stock exchange might be useful.

It might be also useful to compare the benefits of Regulation A+ to those of Regulation D (specifically Rule 506 of Regulation D), which is to date the most prevalent approach private companies use to raise capital: Rule 506 allows private companies to raise an unlimited amount of capital from accredited investors only (this is the main difference); it does not require federal and state review and approval of offering materials; moreover, it allows companies to generally advertise their offering and solicit investors.

The primary advantage of Regulation A+, then, is the ability to solicit the retail investor, rather than relying, as the argument goes, on the more limited universe of accredited investors. The consideration required for gaining access to the general public is mostly time and money.

Filing an offering circular to the SEC for a Regulation A+ offering is nearly as complex as filing a prospectus for an initial public offering. The SEC estimates about 10 months to approve the average Regulation A filing, with only a 23% acceptance rate for the filings it receives.

## Equity Crowdfunding: The European Framework

The European Commission is currently studying equity crowdfunding with great interest, given the continued strong commitment to the development of the internal market.

Back in 2008, the Commission issued a "Think Small First" communication (Communication no. 394/2008, 25.6.2008) which called for the establishment of a regulatory framework for small business, called the "Small Business Act," based on 10 guiding principles; the sixth principle highlighted the



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difficulties of SMEs in raising capital and in obtaining financing through normal banking channels, and supported the opportunity to evaluate possible private placement regimes to facilitate cross-border investment and reinforce the European market for risk capital.

More recently, with the "Entrepreneurship Action Plan 2020" communication (Communication no. 795/2012 of 01/09/2013), the European Commission signaled the importance of supporting SMEs, stating that each year they create more than four million new jobs in Europe. The Commission focused on the crucial nature of the initial stages of their life cycle, showing that about 50% of SMEs fail during the initial five years; a major cause of failure being the absence of an appropriate financial ecosystem that was favorable to growth. Consequently, the Commission highlighted its initiatives in the Programme for the Competitiveness of Enterprises and SMEs (COSME) and Horizon 2020 to provide financial support to startups and strengthen venture capital, angel investment and incubators.

This context also fits Regulation no. 345/2013/EU of 17.4.2013 relating to European funds for venture capital.

Finally, with the "State of the Innovation Union 2012 – accelerating change" communication (Communication no. 149/2013 of 03/21/2013), the European Commission noted that in Europe there is no shortage of innovative ideas to be converted in successful business models, but the main obstacle is access to finance, further aggravated by the current economic downturn: the collection of venture capital funds fell by 45% and the investment activities of business angels is currently about one-fifth that of the United States.

In this regard, the European Commission had some recommendations drawn up by the Expert Group on cross-border matching of innovative firms with suitable investors; among the recommendations is to "promote joint financing (crowdfunding)." The Commission also took some important steps, including one in 2014 when it created the European Crowdfunding Stakeholders Forum, a group of experts coming from both the private market and national financial authorities, meant to help the European Commission in understanding and regulating this instrument.

Before issuing uniform provisions for the internal market, however, one must first establish whether there are crowdfunding profiles already regulated at the EU level.

More recently the European Commission published the communication "Realizing the potential of the crowdfunding" (COM 2014/172, 27 March 2014), which was followed by the establishment of study groups among operators and experts in the field and the publication of a "Guide for SMEs. Crowdfunding. What is it?"

On 18 December 2014, ESMA (European Securities and Markets Authority) published an opinion to the competent National Authorities and Advice addressed to the European institutions in the field of investment-based crowdfunding, with the aim of achieving greater convergence in the EU regulatory and supervisory arena.

Finally, the Green Paper on the Capital Market Union focuses on crowdfunding as a tool that should make a decisive contribution to the financing of the European economy, even beyond national borders, asking whether there are obstacles to the development of adequately regulated platforms, even across borders. ESMA, in its response to the consultation, identified crowdfunding among the possible areas of regulation in the field of financial markets in the coming years.

In principle, there are no regulations prohibiting the models based on rewards or donation, and e-commerce rules apply to preorders. Lending-based crowdfunding is usually part of banking legislation, albeit with the necessary adjustments.



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Instead, equity crowdfunding regulation is far more complex. At the community level, the Prospectus Directive (Directive 2003/71/EC as amended by Directive 2010/73/EC) regulates public offerings of risk capital larger than €5 million. Offers below €100,000 are exempted, but there is no agreement at the community level between these ranges, and each member state retains its own rules (and the right to change them).

An eventual directive on crowdfunding could harmonize operations up to €5 million, contain a specific exemption from the prospectus requirement, and delineate proper forms of consumers protection.

In terms of communication, ESMA issued a "Notice to Investors" which invites the public to:

- Be aware of the risks inherent in investing online;
- Check whether the proposing company is unauthorized (obviously depending upon the applicable laws);
- Be wary of the promises of high returns;
- Pay attention to software that generates automated orders.

However, the document is aimed at investments online via electronic platforms, regardless of the object of the investment, and not crowdfunding specifically. In fact, numerous operators recently started offering online trading platforms involving financial products freely available on the market. These operators often provide training with "wallets" or economic promotions to attract the public.

In addition, reference should be made to Directive 2002/65 / EC of 23.9.2002 concerning long-distance marketing of consumer financial services, which plays a significant role in the harmonization of national laws, and has taken a large part in the drafting of national consumer codes.

In principle, where specific regulation doesn't yet exist, member states apply their internal finance regulations. This includes the application of Article 3 of Market in Financial Instruments Directive (MiFID) (n. 2004/39/EC) and Articles 1.2 and 1.3 of the Prospectus Directive, as also recently represented by ESMA during a workshop on crowdfunding organized in Brussels by the European Commission on 3 June 2013.

The main feature of MiFID is that it creates a system based on authorized and vigilant broker-dealers, subject to very strict regulation, and that it requires an authorized broker-dealer to carefully assess the investor's proclivity to make risky investments and the adequacy and appropriateness of the investment with respect to the investor's profile.

Article 3 of the MiFID Directive contains an exemption where the offer is run jointly with a broker-dealer, and the platform doesn't hold the investors' money. In 2016, the MiFID II Directive will become effective, and the member states will have to adapt their own legislation to the new rules. Although worded differently, Article 3 of MiFID II will continue to be the basis of equity crowdfunding exemptions in the European Union. Some European countries have already issued their own regulation based on the exemption provided by the revised Article 3.

The problem with this regulation is that nationally regulated equity crowdfunding platforms may not be "passported" throughout the Union, as have other financial institutions and intermediaries, as their operation is allowed only in the Member State where they got a license. This limitation strongly affects the scalability of equity crowdfunding, which indeed is one of the main features of this disruptive financial instrument. This is why the industry is calling for a specific European uniform equity crowdfunding exemption, enabling equity offers throughout the European Union.



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Since crowdfunding platforms are usually IT companies, they rarely meet the requirement to apply for a broker-dealer or banking license, in order to be compliant with the MiFID Directive. This is why some European Countries (such as Italy) have chosen to require a platform to operate jointly with a broker-dealer:

1. The platform selects and publishes offers;
2. The broker-dealer receives and executes the subscription order under the MiFID requirements, holding the money until the offer is completely subscribed.

The exemption might help in the sense that national governments may set a limit below which the investment may be done without the broker-dealer. Italy has set this limit at €500 per deal and €1,000 annually (per individual), but after 18 months it was discovered that this amount is very far from the average transaction, which is above €10,000. This might lead to an increase of the exempted investment, in order to facilitate greater access to equity crowdfunding.

The Italian exemption of 26 June 2013 was the first in the world to be issued, even before the SEC regulation for accredited investors under Title II of the JOBS Act, but it followed an upside-down approach that didn't properly meet the needs of the market, perhaps due to the legislators' misunderstanding of how the market might have worked. A revision is scheduled for fall 2015.

Almost a year after Italy, the English FCA (Financial Conduct Authority) became the second national authority to issue equity crowdfunding regulations (effective 1 April 2014), but the FCA used a bottom-up process which started by observing the market and approving some provisional licenses to the first players who approached.

The U.K. is a vast financial market, and in fact the volume raised in 2014 exceeded €111 million. This large equity crowdfunding was also possible thanks to a regulation that left the investment process entirely to the crowdfunding platform, without involving broker-dealers or other intermediaries. Any MiFID-related verification and information is the exclusive responsibility of the platform, as are the identification and anti-laundering verifications, and they are properly run online.

There is no size or industry limit, provided that the target company is U.K.-based. Moreover, the English system allows the collection of the expression of interest (guaranteed by credit card), that becomes a true investment only once the target investment is reached.

The French exemption came with a regulation on 1 October 2014, also through a bottom-up process: platforms operate as CIP (Conseiller en Investissements Participatifs), registered with and under the inspection of AMF (the French financial authority); they don't need the help of a broker-dealer because they are registered intermediaries themselves, subject to the online verification duties specified by the MiFID regulation. There is no exempted amount, but the MiFID procedure is easier than in Italy, as it is run completely online and with a single goal: focused and specialized solely on equity crowdfunding.

The French exemption is working very well, as the market is growing 146% per year, and in 2014, €25 million was invested, with an average deal of €376,733. Nevertheless, there are restrictions concerning the size of the deal (€1,000,000) and the nationality of the target companies.

The German market clearly appreciated their national regulatory approach, as the market gained 50% in just the first quarter of 2015, when €12.4 million was collected, versus €7.9 million for the entire 2014 year.



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The German regulation issued in April 2015 raised the limit for the prospectus from €1 million to €2.5 million, and set a personal investment limit for retail investors at €10,000, provided that they were found to be eligible for risky investments under the MiFID profiling rules. A huge effort has been made to move the entire investment process online, and to reduce the advertising limitations formerly applicable to any financial offering.

Spain was the last to adopt its national exemption and used a bottom-up approach, clearly resulting from two years' observation of equity crowdfunding in the world markets. The Spanish regulation imposed minimum capital requirements (€60,000) and professional liability insurance (€400,000) on platforms, to be increased proportionally to the investments managed.

From the American system, Spain imported the accredited investors profile: they have no investment limits, provided that certain revenue or estate criteria are met (€50,000 annual revenue for individuals). Non-accredited investors, on the other hand, have limits of €3,000 per investment and €10,000 per year.

The maximum offering is €2 million, unless the deal is reserved for accredited investors only, in which case the limit rises to €5 million.

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# Chapter 20
# Utilizing Complexity Theory and Complex Adaptive Systems in Global Business

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## ABSTRACT

*This chapter aims to utilize complexity theory and complex adaptive systems in global business, thus describing the theoretical and practical overview of complexity theory, the application of complex adaptive systems, and the significance of complexity theory and complex adaptive systems in global business. The utilization of complexity theory and complex adaptive systems is vital for modern organizations that seek to serve suppliers and customers, increase business performance, strengthen competitiveness, and acquire routine success in global business. Thus, it is essential for modern organizations to utilize complexity theory and complex adaptive systems, create a strategic plan to investigate their dynamic promotions, and instantly respond to the needs of customers. The chapter argues that utilizing complexity theory and complex adaptive systems has the potential to improve organizational performance and gain sustainable competitive advantage in global business.*

## INTRODUCTION

The organizational literature has considered complexity as an important factor influencing organizations (Hanisch & Wald, 2014). In the global markets where most organizations operate, the perspectives for competitiveness, flexibility, and dexterity has increased, and this demands for more adaptive structures (Arévalo & Espinosa, 2015). In this context, contemporary complexity theories that inspire managers with ideas about self-organization and neural network-like organizations are in demand, both in academic journals and in consultancy (Mitleton-Kelly, 2011). This is the case with social sciences researchers, which are increasingly attracted to the notions of permanent innovation, coevolution, and decentralized decision making in global business (Allen, Maguire, & McKelvey, 2011).

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Complexity theory paradigm is in the process of being taken up from the natural sciences into the social sciences and humanities (Murray, 2008). Complexity theory is an effective domain to consider organizational response (Trenholm & Ferlie, 2013). Complexity theory is applied in organizational studies (Caldwell, 2006; Richardson, 2005; Stacey, 2003), public health (Durie & Wyatt, 2007), education studies (Zellermayer & Margolin, 2005), and policy studies (Callaghan, 2008; Morçöl, 2010; Sanderson, 2009). Complexity theory offers the new ways of thinking about some of the classic dilemmas in the social sciences, in particular, engaging with the tension between the examination for general theory and the desire for contextual and specific understandings (Calhoun, 1998; Haydu, 1998; Kiser, 1996), which lies at the essence of tension between realist approaches (Bhaskar, 1997; Byrne, 1998; Somers, 1998), and postmodern approaches (Cilliers, 1998; De Landa, 2000).

Complexity theory gains popularity in the discipline of the social sciences, organization studies, and management studies (Gerrits, 2009). Advocates of complexity theory describe it as a new scientific paradigm (Mitchell, 2009). Complexity theory has applied to the study of neuroscience, ecology, epidemiology, memory coding, computer science, metabolic networks (Arenas, Diaz-Guilera, Kurths, Moreno, & Zhou, 2008), and social sciences (Teisman & Klijn, 2008). Complexity theory is used to understand international relations (Jervis, 1998), public policy, and policymaking institutions (Geyer & Rihani, 2010). Academicians and practitioners utilize complexity theory to recommend the new forms of policymaking (Sanderson, 2009).

Complex adaptive systems are recognized as a theoretical foundation for studying group development, organizational culture, inflection points, nested adaptive cycles, leadership development, and innovation advancement (Edson, 2012). Complex adaptive systems are the special kinds of self-organizing system with emergent properties and adaptive capacity in response to the changing conditions (Kim & Mackey, 2014). Complex adaptive systems are made up of a diverse range of components, including individuals, organizations, physical resources, and other complex systems (Byrne, 2011). Complex adaptive systems are the neural-like networks of interdependent agents who are bonded in a cooperative dynamic by common goal, outlook, and requirement (Uhl-Bien, Marion, & McKelvey, 2007).

Complex adaptive systems include the adaptive agents (Liang & Huang, 2013). Complex adaptive systems approach is required for evaluating infrastructure projects (Verweij & Gerrits, 2013). Complex adaptive systems thinking is a subset of complexity theory (Casti, 1979). Complex adaptive systems thinking is used to investigate leadership styles, organizational change, team dynamics, and sustainability (Brown, 2008; Glatter, 2006; Harkema, 2003). The greater the level of adaptability, the more productive the organization is likely to be (Silverthorne & Wang, 2001). Rather than learn the new methods for evaluation, individual can apply complex adaptive systems thinking to the existing methods (Cabrera, Colosi, & Lobdell, 2008). Complex adaptive systems theory helps explain the challenges that organizations face (McDaniel, Jordan, & Fleeman, 2003). Complexity theory suggests that complex adaptive systems change to adapt to their environments (Hogue & Lord, 2007). There are the important limits to a reductionistic approach to understanding organizational processes (Cilliers, 1998) because complexity arises from the nonlinear interactions of many parts of a system, with interactions being highly sensitive to the history of the components and to their current context.

The strength of this chapter is on the thorough literature consolidation of complexity theory and complex adaptive systems in global business. The extant literatures of complexity theory and complex adaptive systems provide a contribution to practitioners and researchers by describing a comprehensive



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view of the functional applications of complexity theory and complex adaptive systems to appeal to the different segments of complexity theory and complex adaptive systems in order to maximize the business impact of complexity theory and complex adaptive systems in global business.

## ORGANIZATIONAL BACKGROUND

Complexity is an established construct in organization theory (Anderson, 1999) and results from the system size and diversity, and the interdependent interactions of the system's entities (Sommer & Loch, 2004). Complexity theory has developed across a range of disciplines, both natural sciences and social sciences, from ecology to mathematics (Capra, 1997; Waldrop, 1992). Several authors have drawn parallels between educational research and some theories of natural sciences, in particular complexity theory and chaos theory (Norman, 2011). A major feature of complexity theory is its anti-reductionist analytic strategy, which is connected to a fundamental rethinking of the nature of systems, so as to better conceptualize the simultaneously systematic interrelationships between sociological phenomena (Walby, 2003). Complexity theory is associated with the development of realism in sociological thought (Archer, 1995; Bhaskar, 1997; Sayer, 1992).

Complexity theory concerns itself with the properties of systems with a large number of interdependent or interconnected parts (Carroll & Burton, 2000). Complexity theory is a transdisciplinary development (Capra, 1997), so it is important to be careful as to the translation of theories from between different disciplines, especially between those based on mathematical abstractions and those that include the complication of empirical observations. While there are attempts to develop a unified theory of complexity (Holland, 1995), the relationship of a system with its environment means that this is fraught with difficulties (Chu, Strand, & Fjelland, 2003). Many sociological investigations using modern statistics have utilized rather simple equations, assuming a direct proportionality, a linear relationship, between the changes in the scope of sociological phenomena (Abbot, 2001).

Complex adaptive systems typically emerge in social systems (Roy, 1954). Complex adaptive systems internally generate new structures in reaction to the changing conditions in the environment (Dekker, Cilliers, & Hofmeyr, 2011). Complex adaptive systems are capable of solving problems and are able to learn (Carley & Lee, 1998). Complex adaptive systems are unique in their ability to creatively adapt to environmental changes (Uhl-Bien et al., 2007). Complex adaptive systems enhance their capacity for adaptive response to environmental problems and internal demand by diversifying their strategies (Holland, 1995). Complex adaptive systems enhance their ability to prepare data (Lewin, 1999), solve problems (Levy, 1992), learn the business (Carley & Hill, 2001), and improve the business (Marion, 1999).

Complex adaptive systems are adaptive and innovative (Cilliers, 1998). Complex adaptive systems obtain the flexibility to adapt, thus attributing to the capacity to coordinate from an interdependent structure (Kauffman, 1993). In complex adaptive systems, coordination in modern business comes from two sources: from informal emergent constraints imposed by interdependent relationships themselves and from constraints imposed by actions external to the informal, dynamic, and environmental restrictions (Marion, 1999) and administrative controls (McKelvey, Marion, & Uhl-Bien, 2003). Internal controls are imposed by a perspective of common purpose that defines complex adaptive systems and from an accountability that is inherent in the interdependent systems (Schneider & Somers, 2006).



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# UTILIZING COMPLEXITY THEORY AND COMPLEX ADAPTIVE SYSTEMS IN GLOBAL BUSINESS

This section describes the theoretical and practical overview of complexity theory, the application of complex adaptive systems, and the significance of complexity theory and complex adaptive systems in global business.

## Overview of Complexity Theory

The literature on complexity theory is expansive and heads in several directions (Woodside, 2014). Over the last decade, an increasing literature has considered the implications of complexity theory perspectives in development, health and social service policy, implementation, and evaluation (Patton, 2011). Anderson (1999) provided the advances in research on complexity theory related to organizational sciences. Several useful studies expand on the perspectives of Anderson's (1999) and prior work (March & Simon, 1958) especially in the complexity theory of organizational behavior through simulation methods (Davis, Eisenhardt, & Bingham, 2007). Urry (2005) provided a far-ranging literature review of complexity theory in the natural sciences and social sciences and offers the various meaningful insights. Complexity theory gives to connectedness and hybridity (Gatrell, 2005).

Complexity theory builds on chaos theory (Gleick, 1988). Complexity theory is a merger of various sciences such as political sciences (Kingdon, 1995), management and organization sciences (McKelvey, 2001), public administration sciences (Byrne, 1998), biology (Kauffman, 1993), and physics (Prigogine & Stengers, 1984). Underlying complexity theory is cybernetics (i.e., the mathematical study of communication and control) (Ashby, 1956) and the applications of systems thinking (Luhmann, 1995). Complexity theories stem from attempts by meteorologists, biologists, chemists, physicists, and other natural scientists to build the mathematical models of systems in nature (Gleick, 1988; Lorenz, 1993; Styhre, 2002).

A number of related theories have emerged such as the chaos theory (Bechtold, 1997; Haigh, 2002; Lorenz, 1993), dissipative structures theory (Prigogine, 1997), and the theory of complex adaptive systems (Goodwin, 1994; Stacey, Griffin, & Shaw, 2002). Stacey (2003) stated that the chaos theory and the dissipative structures theories seek to construct the mathematical models of systems at the macro level (e.g., whole systems and populations), while complex adaptive systems theory effectively models the same phenomena by using an agent-based approach.

Complexity theory includes a number of concepts that describe how complex adaptive systems develop and behave over time (Walton, 2014). Two concepts of central concern are emergence states and attractor states (Byrne & Callaghan, 2014). Emergence states are generated through the operation of the system as a whole and cannot be identified through examining individual system parts. Attractor states depict a pattern of system behavior and represents stability, with a change in attractor state representing a qualitative shift in the system (Room, 2011). Kania et al. (2013) explained that opening an evaluation to emergence and adaptation challenges the role of evaluating predetermined goals. Concepts of attractor states and emergence states provide a framework to understand both stability and change within complex adaptive systems (Morell, Hilscher, Magura, & Ford, 2010). With inspiration from complexity theory, failures are viewed as an emergent property of complexity (Dekker et al., 2011).



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The concept of complexity is defined in opposition to both complicatedness and simplicity (Cilliers, 1998; Lewin, 1999; von Baeyer, 2003). The use of complexity refers to understanding the social systems within which interventions are implemented as complex (Shiell, Hawe, & Gold, 2008). Complexity theory provides the three implications in the social sciences. Firstly, complexity theory places an increasing stress on self-organization and a realistic awareness that sociological phenomena cannot be forecast. Secondly, complexity theory recognizes that all living organisms are self-steering within certain limits and their behavior can be steered from the outside to a moderate extent. Thirdly, complexity theory highlights the continuous emergence of the new levels of organized complexity within modern society. A system that is composed of many intricate parts is complicated unless the interaction of those parts is rich, dynamic, and non-linear leading to a change in their organization (Cilliers, 1998; Manson, 2001).

Complexity theory is broadly recognized in the social sciences (Davis, Phelps, & Wells, 2004). The growing interest in complexity research in social theory is described as the complexity turn (Urry, 2005). Complexity theory is predicated on a sociological phenomenon possessing five attributes: it contains independent complicated entities; multiple entities are contained within; the entities within sociological phenomenon perform interrelated functions; the sociological phenomenon seeks a common goal through a process of adaptation; and uncertainty is generated because of unpredictable interactions within itself and between itself and the environment. Complexity theory is a formal attempt to question how coherent and purposive wholes emerge from the interactions of simple and sometimes non-purposive components (Lissack, 1999). Action research can be considered as a form of social practice which acknowledges social interactions (e.g., teaching, learning, and knowledge generation) take place among people (Grundy, 1995).

Complexity theory serves as an umbrella term for a number of theories, ideas, and research programs derived from scientific disciplines such as meteorology, biology, physics, chemistry, and mathematics (Burnes, 2005; Stacey, 2003; Styhre, 2002). Complexity theory grows beyond the boundaries of the academy and into practice, particularly in the fields such as health care (Sweeney & Griffiths, 2002), social policy (Geyer, Mackintosh, & Lehmann, 2005), and organizational management (McMillan, 2004). Complexity theory identifies instability and disorder in politics and policy making, and links them to the behavior of complex systems (Cairney, 2012). Byrne (2013) provided a summary of Byrne's critical realist complexity theory and outlines implications for understanding complex causality through case-comparison methods. Callaghan (2008) argued for a theory driven approach to evaluation utilizing complexity theory and idea of negotiated order. Recognizing the role of agency in creating change in complex adaptive systems, the negotiated order is used to understand how policies are implemented at local level and their interaction with organizational structures, policies, power relations, and professional agendas (Callaghan, 2008).

Complexity theorists consider the most beneficial types of change as being those achieved through the self-organizing activities of teams and group in organizations (Brown & Eisenhardt, 1997). Complexity theory views the change as adaptation stemming from the interaction, alignment, and organization of agents into the higher levels of complexity (Lee, 1997). The inspection for general theory in more scientific thought in many disciplines has involved a process of reducing from complex phenomena to the simpler phenomena (Walby, 2003). This perspective includes either a reduction downward to the smaller units of analysis as in the movement from organisms to cells in modern biology (Rose, 1997) and in the methodological individualism of rational choice theory (Coleman, 1990; Goldthorpe, 2000; Kiser & Hechter 1991). This perspective involves a reduction upward, as in much structuralist thought in the social sciences (Althusser, 1971; Parsons, 1951).



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## Application of Complex Adaptive Systems

Complexity theory, as a theoretical perspective within social science, considers utilizing complex adaptive systems in global business (Begun, Zimmerman, & Dooley, 2003). Complex adaptive systems are the dynamic networks of agents acting in parallel, constantly reacting to what the other agents are doing, toward influencing behavior and network as a whole (Holland, 1992). Sawyer (2005) indicated that there are the four perspectives of complex adaptive systems: many components interact in the densely connected networks; global systems functioning cannot be localized to a subset of components, but rather are distributed throughout the entire system; the overall system cannot be decomposed into subsystems; and the components interact using a sophisticated language.

Self-organizing systems are considered as systems that operate autonomously, and co-evolve between themselves through transitions between disorder and order (Arévalo & Espinosa, 2015). Order emerges at the boundary between the organization's legitimate and shadow systems (Houchin & MacLean, 2005). Various authors have considered self-organizing systems as the major parts of complex adaptive systems (Nitschke, 2005). Self-organizing systems are the mechanisms for complex adaptive systems evolution (Johnson & Lam, 2010). Self-organization is a self-referential process characterized by the logical deductive reasoning, concentration, discussion, and improvement (Chiva, Grandío, & Alegre, 2010).

Self-organization leads to the coevolution of ideas between different components of the social system (Nooteboom, 2007). Evolution is the process of change or transformation (Darwin, 2010), characterized in terms of macroscopic behaviors that emerge from the interactions that occur at the microscopic level (Bedau & Packard, 1992). Self-organizing systems can be recognized as a set of dynamic mechanisms in which global structures appear from a system of interactions between components at different levels (Bonabeau, Dorigo, & Theraulaz, 1999). The rules of interaction between the constituent units of the system are developed based on local information without reference to global patterns which are an emergent property of the system rather than a property imposed on the system (Holland & Melhuish, 1999). Self-organizing systems occur only in open systems that import information from the environment and achieve the limited instability states (Kauffman, 1995).

Complex adaptive systems involve many components that adapt as they interact (Holland, 2006). Complex adaptive systems develop the order through the self-organizing behavior of agents (Coleman, 1999). Through the co-creation of all agents involved, the order will come to pass without efforts to control and direct it (Keane, 2000) through two different forms of information processing (Marion & Uhl-Bien, 2001). Micro-dynamic processing occurs when individuals interact to form the aggregates, working together in an interdependent way to fulfill their own needs and cooperating to reach a satisfactory accommodation of the needs of the rest of the group (Hogue & Lord, 2007). This leads to the retention of uniqueness among agents as well as the development of sameness within the group. Uniqueness leads to the unpredictability of emergent order, while sameness allows more dependable prediction (Marion & Uhl-Bien, 2001).

Complex adaptive systems perspective suggests that to develop resilience demands a policy approach which is sensitive to the various principles of complexity, nonlinearity, unpredictability, and the importance of feedback (Bristow & Healy, 2014). Complex adaptive systems are oriented to the study of systems in which global behaviors depend more on the interactions between the parts than the actions of each one (Gell-Mann, 1994). Consistency of complex adaptive systems depends on the multiple



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interactions among the parts, the aggregation of the various elements, and learning (Holland, 1995). A sustained intervention is required at every possible level until the phenomenon of learning excellence emerges itself (Mason, 2008).

If organizations are treated as complex adaptive systems, the issues of managerial activity changes, sense-making, learning, and improvisation become more effective strategies for performance improvement (McDaniel, 2007). Complexity theory and its component concepts (e.g., coevolution and self-organization) can offer the meaningful insights into knowledge phenomena associated with networks and clusters (Lindsay, 2005). Organizational learning, knowledge management, and knowledge-sharing behavior are positively related to organizational performance (Kasemsap, 2013a). Organizational learning, organizational innovation, and organizational performance help organizations obtain sustainable competitive advantage in modern organizations (Kasemsap, 2013b). Organizational learning, human resource management, and knowledge management capability practically lead to the improved organizational performance in the digital age (Kasemsap, 2015a). Utilizing data mining methods for business intelligence makes it easier for the users to promote its overall contribution to the knowledge management process (Kasemsap, 2015b).

Thinking about complex adaptive systems initiates a variety of new options (Holden, 2005). Many researchers have considered the value of leadership styles which use the principles of complex adaptive systems thinking in order to make positive changes by influencing context and relationships (Bujak, 1999). Understanding the principles and actions that enable change in complex adaptive systems is essential for the long-term business success (Nesse, Kutcher, Wood, & Rummans, 2010). Building on the principles of complex adaptive systems thinking can help executives and management team focus less on prediction and more on promoting relationships and creating conditions so that complex adaptive systems can produce the firms' outcomes in global business (Burns, 2001).

Action learning seems concerned with development within organizations, and within a complex frame, thus developing the skills to consider the complex adaptive systems (Burgoyne, 2010). Adam et al. (2012) indicated that there is a need for more comprehensive evaluations of a wider range of effects, with no evaluation exploring system effects that reflect complex adaptive systems. In complexity theory, the interdependent linkages among agents and aggregates are described in terms of coupling strength and coupling direction (Marion & Uhl-Bien, 2003). Coupling provides the structure for transmitting knowledge among agents, and knowledge is transmitted more reliably and more quickly in the moderately coupled interactions. Coupling direction is recursive so that information can be passed in either direction among the agents or aggregates (Hogue & Lord, 2007).

## Significance of Complexity Theory and Complex Adaptive Systems in Global Business

There is a growing body of literature applying complexity to management (Lissack, 1999; Stacey, 2001) and education (Bloom, 2001; Davis & Sumara, 1997; Iannone, 1995). Complexity theory acknowledges that the uncertainty of prediction is necessary (Eve, Horsfall, & Lee, 1997) and the processes are critically dependent on their initial conditions. Lee (1997) stated that complexity theory can offer a more consistent explanation of research-related data gathered through mixed methods and presented in methodological languages. Combining complex adaptive systems with local knowledge is required for implementation and evaluation of multilevel dynamic systems interventions (Schensul, 2009). Economic evaluation



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should draw upon complexity theory to deal with the related issues of complexity and reflexivity (Lessard, 2007). Marchal et al. (2013) stated that an evaluation of complex intervention regarding complexity theory should evaluate the program effectiveness and reveal the causal mechanisms.

Global economy is transitioning from product-oriented perspective to service-oriented perspective (Sheehan, 2006). Most developed countries have service economies in which the majority of national productivity comes from service products and activities (Chae, 2012). Within those developed countries, manufacturing firms are increasing their revenues through offering the integrated solutions or integrative services, which combine both products and services (Araujo & Spring, 2006). Firms in the business-to-business (B2B) market view the services, rather than traditional products, as the main source of their revenue and competitive advantage (Zhang, Wei, & Chau, 2012). Information technology (IT) has profoundly changed the ways that customers interact with service providers (Fitzsimmons & Fitzsimmons, 2008). IT is an integral part of services (Chae, 2014).

Since IT-enabled services include specific IT artifacts are operated on specific digital platforms, the divergent perspective on service as the intangible units of economic exchange can be less useful to explain the evolution of IT-enabled services and their interactive natures (Chen & Vargo, 2010). In modern business, IT-enabled services as complex adaptive systems can offer greater insights about IT-enabled services and innovation, since complexity theory represents advancement in the principle of complex adaptive systems (Chae, 2014). Complexity theory is considered as the modern perspective of systems theory (Nan, 2011). Key characteristics of IT-enabled services are the emergent nature of service requirements (Essen, 2009), diversity in service (Maglio, Vargo, Caswell, & Spohrer, 2009), and service elements (Voss & Hsuan, 2009). Emergence, diversity, and self-organization are the important characteristics of complex adaptive systems (Beinhocker, 2006).

Complexity theory is likely to be applicable to organizational behavior and to behavior in health services organizations (Paley & Eva, 2011). Complexity thinking and complex adaptive systems are broadly recognized in the business of health care (McDaniel & Driebe, 2001), achieving change in health service organizations (Suchman, 2001), interprofessional education (Sargeant, 2009), medical education (Rees & Richards, 2004), consultations in general practice (Innes, Campion, & Griffiths, 2005), problem-based learning in dentistry (Farmer, 2004), clinical governance (Sweeney & Mannion, 2002), evidence-based practice (Petros, 2003), shared care for patients with long-term mental illness (Byng & Jones, 2004), clinical leadership in mental health (Minas, 2005), environmental illness (Coyle, 2009), services in elderly care (Henriksen & Rosenqvist, 2003), diabetes management (Cooper & Geyer, 2009), research on maternity care (McCourt, 2005), public health nursing (MacDonald, 2004), decision making in nursing management (Clancy & Delaney, 2005), and occupational therapy (Creek, Ilott, Cook, & Munday, 2005).

Megaproject requires a closer examination as a result of the expansion of global business networks, thus increasing the collaborations among business partners and the complexity of managing projects (Kardes, Ozturk, Cavusgil, & Cavusgil, 2013). Megaprojects are characterized by complexity, uncertainty, ambiguity, dynamic interfaces, political influences, and time periods reaching a decade or more (Floricel & Miller, 2001). Megaprojects involve the international participants with a variety of cultural differences, backgrounds, political systems, and languages (Shore & Cross, 2005). Megaprojects include the coordinated applications of capital, sophisticated technology, intense planning, and political influence (Gellert & Lynch, 2003).

Complexity emerges as a major challenge for managers of megaprojects (Kardes et al., 2013). Regarding complexity theory, difficulty resulting from the lack of cooperation between stakeholders with conflicting interests and the changes occurring during the duration of the projects (e.g., the changes in



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laws and regulations) increase the complexity (Capka, 2004). The complexity of megaprojects is brought about by a number of contributing factors such as tasks, components, personnel, and funding, as well as the numerous sources of uncertainty and their interactions (Mihm, Loch, & Huchzermeier, 2003). Research evidence suggests that the principal factors leading to complexity include the large-scale and long time span, the multiplicity of technological disciplines, the number of participants, multinationality, the interests of stakeholders, sponsor interest, escalating costs over time, country risk, uncertainty, and the high levels of public attention (van Marrewijk, Clegg, Pitsis, & Veenswijk, 2008).

Complexity dynamics are the emergent processes through which complex adaptive systems effectively form and operate (Uhl-Bien & Marion, 2009). In complexity theory, top-down dynamics occur when information processing is guided by a central authority, and bottom-up dynamics are the emergent events that occur through the uncoordinated interactions of those involved (Marion & Uhl-Bien, 2001). Top-down information processing is influenced by an existing memory structure such as implicit leadership theories (Medvedeff & Lord, 2007). Although the top-down and bottom-up processes can be separately conceptualized, perception involves the interaction of these two sources of activation (Grossberg, 1999). Complex adaptive systems relate to the interaction of the components (Dekker et al., 2011). Jet airliners become complex adaptive systems when they are deployed in the nominally regulated world with the cultural diversity, the receiver-oriented versus transmitter-oriented communication expectations, the effects of procedural drift (Snook, 2000), and the cross-cultural differences in risk perceptions, attitudes, and behavior (Lund & Rundmo, 2009).

Many organizations are the complex systems which need to operate at the edge of chaos and have to continuously respond to the changes in their environments through a process of self-organizing change (Macbeth, 2002; Stacey, 2003). At the edge of chaos, specific behaviors are not easily predicted, yet the unpredictable specific behavior occurs within a predictable structure of behavior (Burnes, 2004). Complexity theory is applied to a wide range of social system, including the economy, society, and culture (Lewin, 1999; Waldrop, 1992). Complexity theory perspective has the potential to help policymakers understand the dynamic and complex nature of reforms (Toh & So, 2011). Complexity theory offers a set of conceptual tools to help explain the diversity of changes in contemporary globalization (Walby, 2003). Management concepts (e.g., industrialization, class conflict, inequality, the development of welfare state, capitalism, and the consequences of increasing bureaucratization) are connected to the development of the modern society and the consequences of the growing complexity (Sztompka, 1994).

Complexity theory captures the change occurring in social institutions (Cohen, 1999; Hunt & Ropo, 2003; Mathews, White, & Long, 1999). Instability and change are the inherent characteristics of complex adaptive systems (Speakman & Sharpley, 2012). Complexity theory is concerned with the emergence of order in nonlinear systems such as weather systems (Beeson & Davis, 2000; Haigh, 2002; Wheatley, 1992). Order in such systems manifests itself in a largely unpredictable perspective, in which the patterns of behavior emerge through a process of self-organization governed by the order-generating rules (Black, 2000; Macintosh & MacLean, 2001; Tetenbaum, 1998). In an application of complexity theory to examine public service changes, Wallace (2007) outlined the key characteristics of complex public service change. Complex change is systematic, differentially impacting, and contextually dependent (Wallace, 2007). Wallace et al. (2007) stated that health and education sectors, as the largest and most complex public services, offer the most influential insights of the complexity of change and strategies for dealing with complexity.



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Boal and Schlultz (2007) stated that the concept of complex adaptive systems is attractive to the organizational scholars because it describes that the innovative behaviors can emerge from the interaction of the agents' groups without the requirement of centralized control. Concerning complexity theory, leadership is crucial to the process of self-organization (Knowles, 2001) and leaders serve as the context setters of the learning experiences (Brown & Eisenhardt, 1997; Pascale, 1999). Leaders influence other persons and processes (Marion & Uhl-Bien, 2001). Leadership in complex adaptive systems indirectly affects the organization through the mediating variables of organizational identity and social movements (Schneider & Somers, 2006).

Developing leadership skill and reputation requires self-development that occurs over a substantial time period (Lord & Hall, 2005) and it reflects both top-down and bottom-up processes used by potential leaders to construct leadership self-schema. Complexity theory has promoted a reexamination of leadership, as much of the leadership dictionary developed under the general systems theory (Schneider & Somers, 2006). Transformational leadership, innovation support, and empowerment help organizations increase innovation in the global economy (Kasemsap, 2014). The leader-member exchange, organizational justice, and job satisfaction have mediated positive effect on organizational citizenship behavior (Kasemsap, 2013c).

## FUTURE TRENDS

The strength of this article is on the thorough literature consolidation of complexity theory and complex adaptive systems in global business. The extant literatures of complexity theory and complex adaptive systems provide a contribution to practitioners and researchers by describing a comprehensive view of the functional applications of complexity theory and complex adaptive systems to appeal to the different segments of complexity theory and complex adaptive systems in order to maximize the business impact of complexity theory and complex adaptive systems in global business. The classification of the extant literature in the domains of complexity theory and complex adaptive systems will provide the potential opportunities for future research. Future research direction should broaden the perspectives in implementation of complexity theory and complex adaptive systems to be utilized in the knowledge-based organizations.

Practitioners and researchers should acknowledge the applicability of a more multidisciplinary approach toward research activities in implementing complexity theory and complex adaptive systems in terms of knowledge management-related variables (e.g., knowledge-sharing behavior, knowledge creation, organizational learning, learning orientation, and motivation to learn). It will be useful to bring additional disciplines together (e.g., strategic management, marketing, finance, and human resources) to support a more holistic examination of complexity theory and complex adaptive systems in order to combine the existing theories and approaches to inquiry in this area.

## CONCLUSION

This chapter aimed to utilize complexity theory and complex adaptive systems in global business, thus describing the theoretical and practical overview of complexity theory, the application of complex adaptive systems, and the significance of complexity theory and complex adaptive systems in global business.



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Complexity theory enables understanding the realities of the evolutionary, dynamic, and complex nature of organizations, businesses, and economics. The understanding of complexity theory is necessary to develop an evolving organization capable of producing and sustaining a competitive advantage in global business. Complexity theory is used in business as a way to encourage innovative thinking and real-time responses to change by allowing business units to self-organize.

Complex adaptive systems are a particular category of complex system that displays the ability to adapt and evolve in response to changes in the environment. Complexity theory and complex adaptive systems have developed the powerful ways of thinking about systematic relations, including the nature of systems. Complexity theory and complex adaptive systems facilitate the development of the general social theory as well as the explanation of specific contextual occurrences. Utilizing complexity theory and complex adaptive systems promotes the revision of the concept of system to grasp the unstable and dynamic processes of change. The modern ways of thinking about complexity theory and complex adaptive systems are useful in conceptualizing the nature of the connections and linkages involved in global business.

The utilization of complexity theory and complex adaptive systems in the social sciences is vital for modern organizations that seek to serve suppliers and customers, increase business performance, strengthen competitiveness, and acquire routine success in global business. Thus, it is essential for modern organizations to utilize complexity theory and complex adaptive systems, create a strategic plan to investigate their dynamic promotions, and instantly respond to the needs of customers. Utilizing complexity theory and complex adaptive systems has the potential to improve organizational performance and gain sustainable competitive advantage in global business.

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## KEY TERMS AND DEFINITIONS

**Change:** The act of becoming different, or the result of something becoming different.

**Chaos Theory:** The mathematical framework for understanding irregular and erratic fluctuations in economic cycles, financial markets, weather, other complex phenomenon, or non-linear systems with many variables.

**Complex Adaptive System:** The entity consisting of many diverse and autonomous components which are interrelated, interdependent, linked through many dense interconnections, and behave as a unified whole in learning from experience and in adjusting to changes in the environment.

**Complexity:** The condition of having many diverse and autonomous but interrelated and interdependent components linked through many dense interconnections.

**Complexity Theory:** A set of concepts that attempts to explain complex phenomenon not explainable by traditional theories.



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**Information Technology:** A set of tools, processes, and associated equipment employed to collect, process, and present information.

**Leadership:** The activity of leading a group of people or an organization or the ability to do this.

**Self-Organization:** The ability of a system to spontaneously arrange its components in a purposeful (non-random) manner, under appropriate conditions but without the help of an external agency.

**Social Science:** The study of society and the way that people live.

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# Chapter 21
# Examining the Roles of Virtual Team and Information Technology in Global Business

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## ABSTRACT

*This chapter aims to examine the roles of virtual team and information technology (IT) in global business, thus describing the theoretical and practical overviews of virtual team and IT; the importance of virtual team in global business; and the importance of IT in global business. The applications of virtual team and IT are necessary for modern organizations that seek to serve suppliers and customers, increase business performance, strengthen competitiveness, and achieve continuous success in global business. Therefore, it is essential for modern organizations to examine their virtual team and IT applications, develop a strategic plan to regularly check their practical advancements, and immediately respond to virtual team and IT needs of customers in modern organizations. The chapter argues that applying virtual team and IT has the potential to increase organizational performance and reach strategic goals in global business.*

## INTRODUCTION

Virtual teams are becoming more and more important and continuing to grow in popularity (Olariu & Aldea, 2014). Understanding the influence of leaders in virtual team settings can help organizations in allocating resources and sorting teams' priorities (Saafein & Shaykhian, 2014). Multinational companies are beginning to adopt a virtual team strategy, due to the benefits of cost reduction and performance improvement (Ferreira, de Lima, & da Costa, 2012). Virtual teams are an organizational form in which an overlay of information and communication technologies (ICT) enables departures from traditional, face-to-face, organizational forms (Haines, 2014). Virtual team members have developed a new technique which reduces the ambiguity of virtual communications in order to influence their team members (Wadsworth & Blanchard, 2015).

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Economic growth of most of the industries depends largely on the development of operating technologies within the industries (Prabhakaran, Lathabai, & Changat, 2015). The increasing business competitiveness leads industries to differentiate themselves in terms of technology (Reis & Freitas, 2014). ICT has been a major technological innovation for developed countries and is increasingly spreading to developing countries (Kossaï & Piget, 2014). Allameh et al. (2011) stated that ICT is one of the strategic factors toward the improvement of business and human resource productivity. Organizations are relying on Internet services as well as information systems to enhance business operations, facilitate management decision-making, and deploy business strategies (Kankanhalli, Teo, Tan, & Wei, 2003).

The strength of this chapter is on the thorough literature consolidation of virtual team and IT. The extant literature of virtual team and IT provides a contribution to practitioners and researchers by describing a comprehensive view of the functional applications of virtual team and IT to appeal to different segments of virtual team and IT in order to maximize the business impact of virtual team and IT in global business.

## BACKGROUND

Virtual work settings cause organizational challenges such as maintaining remote leadership, managing cultural differences, and developing trust relationships among the teams (Saafein & Shaykhian, 2014). Virtual teams need to deal with such as communication difficulties, decreased cohesion, and high level of conflicts among teams (Staples & Zhao, 2006). Virtual team members are physically separated from one another and they rely on technological devices for communication and information exchange (Ghaffari, Sheikhahmadi, & Safakish, 2014). Virtual teams are thought to be differently experienced and to have poor outcomes because there is little or no face-to-face interaction and a tendency for virtual team members to use different communication techniques for forming relationships (Haines, 2014).

The diffusion of new technologies can have a significant impact on economic growth and development (Kossaï & Piget, 2014). Allameh et al. (2011) indicated that the application of IT has a great stance among basic industries since it plays an important role in different industries such as productivity, social services and job opportunity improvement. The continued diffusion of new ICT is an example of the dynamics of technological change and economic development (Freeman & Soete, 1997). ICT is used as a production technology to improve labor productivity and coordination within the firm (Raymond & St-Pierre, 2005). ICT is considered to be the main engine of growth in the knowledge economy (Kossaï & Piget, 2014). Firms invest in ICT in order to become more successful in highly competitive markets (Koivunen, Hätonen, & Välimäki, 2008).

## VIRTUAL TEAM AND INFORMATION TECHNOLOGY IN GLOBAL BUSINESS

This section describes the theoretical and practical overviews of virtual team and IT; the importance of virtual team in global business; and the importance of IT in global business.

### Overview of Virtual Team

Organizational teams mainly bring numerous benefits for both management and employees, including a method of pooling ideas, facilitating communication, and improving workflow (Lin, 2011). Transfor-



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mational usage of computer-mediated interactions and online collaboration technology platforms among team members collaborating in virtual teams practically contextualizes multiple settings for the terminology of virtual teams in organizations (Mansor, Mirahsani, & Saidi, 2012). Virtual teams are teams whose members are mediated by time, distance, or technology and whose members are interdependent, working together on a common task (Driskell, Radtke, & Salas, 2003). Luse et al. (2014) stated that virtual teams are characterized as a group of people with unique skills who interdependently work but are geographically separated and they need technological mediums to communicate.

The technologies of virtual teams vary as to how much they incorporate the media dimensions of co-presence, visibility, audibility, contemporality, simultaneity, sequentiality, reviewability, and revisability (Clark & Brennan, 1991). Members of virtual teams communicate through various ICT including telephone, video and audio conferencing, chat rooms and instant messaging, file and application sharing, and other virtual reality options (Hertel, Geister, & Konradt, 2005; Olson & Olson, 2000). Virtual teams are a group of geographically, organizationally and time dispersed workers brought together by IT to accomplish one or more organization tasks (Powell, Piccoli, & Ives, 2004).

Members of virtual teams often collaborate within and across institutional boundaries (Schiller, Mennecke, Nah, & Luse, 2014). Virtual teams are comprised of members who are located in more than one physical location (El-Kassrawy, 2014). Virtual teams represent interdependent groups of individuals who work across space, time, and geographical boundaries with communication links that are heavily dependent upon advanced IT (Hambley, O'Neill, & Kline, 2007). Geographically distributed team members can easily withhold information from one another (Rosen, Furst, & Blackburn, 2007).Virtual teams have become basic units in business organizations, and their activities are ubiquitous and have received considerable attention from social and organizational psychologists (Bosch-Sijtsema, 2007).

Advances in ICT have allowed organizations to facilitate virtual team member coordination in a cost effective manner (Pendharkar, 2013). Team performance and knowledge sharing remain important issues for interpersonal relationships within virtual teams (Levy, Loebbecke, & Powell, 2003). ICT, the dispersion of members around the world, and the relationships between team members of different status may affect the use and effectiveness of influence tactics in virtual teams (Wadsworth & Blanchard, 2015). Influence tactics are how people enact power over others (Lines, 2007; Yukl & Tracey, 1992).

Martins et al. (2004) defined virtual team as team whose members use technology to varying degrees in working across locational, temporal, and relational boundaries to accomplish an interdependent task. Nemiro (2001) indicated the five traits of virtual teams: geographical separation (members being separated from one another), alternative methods of communication (members using new information technologies in order to collaborate), reduced information richness (the majority of methods used to communicate having low levels of information richness), loose boundaries, and dynamic membership (membership in virtual teams being adaptable and temporary).

The interpersonal relationships within virtual teams are comprised of two elements: cooperation and competition relationship (Baruch & Lin, 2012). Regarding coopetition relationships, all teaming activities should aim for the establishment of a beneficial partnership with one another in the team, including the coworkers who may be considered as a competitor (Zineldin, 2004). Coopetition is important among intra-organizational partners and inter-team parties (or inter-organizational parties), and these interactions are key for a firm's long-term viability (Luo, Slotegraaf, & Pan, 2006). If both the elements co-exist, then the relationship between the members is considered coopetition (Bengtsson & Kock, 2000).



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Concerning advances in IT facilitating information sharing, more companies are moving toward using virtual teams (Baruch & Lin, 2012). The use of technology can allow a virtual team to recruit additional members (Lipnack & Stamps, 1997), which leads to increased communication requirements. Virtual teams work collaboratively in geographically dispersed locations but still share the same interests, goals, needs and practices that define face-to-face teams (Chiu, Hsu, & Wang, 2006). The handling of technological issues such as adaptation and regular use of communication tools as another challenge that faces virtual teams (Indiramma & Anandakumar, 2009).

Because members of virtual teams have fewer tools available for developing relationships than face-to-face teams, they must rely on categorization processes (McKnight, Cummings, & Chervany, 1998) and their experience from other settings (Jarvenpaa & Leidner, 1999). Virtual teams need to deal with such as communication difficulties, decreased cohesion, and high level of conflicts among virtual teams (Staples & Zhao, 2006). Individuals working in anonymous groups believe that their group's decision are less effective, and are often less satisfied as compared to members of teams' face-to-face meetings (Reinig & Mejias, 2004; Valacich, Dennis, & Nunamaker, 1992). In order to prevent problems arising regarding anonymous communication, individuals supervising virtual teams would prefer team members to be identifiable (Midha & Nandedkar, 2012). Knowledge of the identity of a specific source enhances the source credibility and accountability for virtual teams (Rains, 2007).

Virtual team leaders stimulate followers to be high performers through effective use of motivational and communication skills on individual and group levels (Bolman & Deal, 2003). Virtual team leaders may need different leadership characteristics from leaders of traditional teams when setting goals, offering support and guidance, and inspiring team members (Saafein & Shaykhian, 2014). Challenges to good communication between virtual team members are obtaining timely communication feedback (Jarvenpaa & Leidner, 1999), building trust between team members (Fan, Suo, Feng, & Liu, 2011), building a common sense of purpose between team members (Blackburn, Furst, & Rosen, 2003) and team members' access to rich communication media (Kayworth & Leidner, 2000).

## Overview of Information Technology

Information Technology (IT) is an integral part to support, sustain, and grow a business (Mohamed & Singh, 2012). With the rapid development of IT, the innovative IT strategy has become an important topic of research in the era of electronic business (Yeh, Lee, & Pai, 2012). IT as a new human technology is rapidly affecting business and productivity (Zafiropoulos, Vrana, & Paschaloudis, 2006). Most companies heavily invest on IT for getting better business feedbacks (Williams & Williams, 2007). ICT encompasses computer and communication technologies, shareable technical platforms and databases, networking technologies, broadcast media, and audio and video processing and transmission (Chung & Hossain, 2010; Schaper & Pervan, 2007).

The mixed empirical results concerning financial performance achieve from IT integration (Chapman & Kihn, 2009; Hunton, Lippincott, & Reck, 2003; Poston & Grabski, 2001). Successful IT integration can deliver IT resources in support of the new roles and functions of workers as a result of redesigned and tightened business processes (Rockart, Ear, & Ross, 1996). Integrated IT not only enables process automation, but also can provide the ability to disseminate timely and accurate information, resulting in improved managerial and employee decision-making (Hitt, Wu, & Zhou, 2002). Manufacturing plants will reap the greatest financial performance benefits from investments in activity-based cost control systems when combined with IT integration (Maiga, Nilsson, & Jacobs, 2014).



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Technology can improve business productivity (Yang, Lee, & Lee, 2007). IT has a considerable effect on globalization and is a revolution in information, knowledge, and organizational changes (Pavic, Koh, Simpson, & Padmore, 2007). IT applications can be used in formalizing knowledge and distributing it in modern business (Okumus, 2013). IT should be managed to assist core business in achieving organizational mission and vision (Sharma & Baoku, 2013). IT alignment has an indirect effect on operational performance through information sharing (Ye & Wang, 2013).

Brady et al. (2008) stated that obtaining high efficiency and effectiveness in organizations requires investment in IT components such as the Internet (Deeter-Schmelz & Kennedy, 2004), office automation (Geiger & Turley, 2005), and management information system (Li, 1995). The Internet is a global network of computers which independently work and offers a variety of useful tools such as e-mail and website (Obra, Camara, & Melendez, 2002). Most companies effectively use the Internet to boost national economy (Martin & Matlay, 2001) with a much more profitability than telephone and fax (Grandon & Pearson, 2004).

The use of ICT has been found to increase the productivity of research and development (R&D) in innovative industries (Hollenstein, 2004). Productivity improvement, service quality improvement, cost reduction, individuals' satisfaction, and long-term profitability are among the expectations of practitioners and researchers dealing with ICT (Law & Jogaratnam, 2005). IT helps companies to find new ways of improving their market by providing their customers with their immediate needs (Phuong, 2008).

## Importance of Virtual Team in Global Business

Virtual teams have to be viewed from dimension of human resource strategic management and approached from the perspective of human resource practitioners in order to develop theories and frameworks to measure team performance of human resources or intellectual assets of an organization who are not co-located during their team collaboration, considering performance measurement tools and theories available in face-to-face teams context such as economic value added (EVA) determinants and measures (Mansor et al., 2012).

Virtual teams create challenges to leaders such as leading remotely, building trust relationship among team members without personal face-to-face interaction, and using technologies that facilitate virtual collaboration (Neufeld, Wan, & Fang 2008). Aldea et al. (2012) stated that the tendencies of business globalization have force organizations to develop ICT facilities for the development of virtual teams. Leaders of virtual support teams face various challenges which differ from those facing leaders in traditional face-to- face environment. Leaders' inability to meet their teams face-to-face may limit their influence on team members (Piccoli, Powell, & Ives, 2004).

Due to the challenges that arise when learning and working in electronic settings, the satisfaction of team members tends to be lower compared to face-to-face teams (Furumo & Pearson, 2007). Thus, the evidences of team members' low satisfaction are acknowledged in virtual teams (Martins et al., 2004). When virtually collaborating, members' satisfaction may be moderated by the team's level of virtuality (Gurtner, Kolbe, & Boos, 2007). The effects of employed communication media is often influenced by the nature of task and the composition of team (Cicei, 2012).

A team leader is the person who defines the project objectives, selects participants to assure a broad-based team composition, conduct training regarding communications technologies, evaluate the team outputs, coordinate the team processes, clarifies confusions, solves operational problems, and eliminates conflicts (Chang, 2011). Challenges in virtual environment require leadership styles that have different



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personal skill sets, leadership strategies, and communication techniques (Neufeld et al., 2008). Leaders in virtual teams tend to be informal, convincing, and possess effective communication skills (Beranek, Broder, Reinig, Romano, & Sump, 2005). Leaders may face challenges to setup, design, manage, and operate virtual teams, which may result in less productivity and low performance (Gibson & Gibbs, 2006).

Global virtual team leaders have to lead from a distance (Zander, Zettinig, & Makela, 2013). Management, control, coordination, jobs, and operation s are distributed among different human agent teams that work virtual combination of virtual and face-to-face (Aart, Wielinga, & Schreiber, 2004; Bélanger & Watson-Manheim, 2006). The macro economic developments have led organizations to increase inter-firm cooperation (Gluckler & Schrott, 2007). The inter-firm cooperation often requires teamwork from employees in different firms, and physically collocating team members, while effective, is often expensive and impractical (Poltrock & Engelbeck, 1999).

Virtual teams offer several advantages over their traditional face-to-face counterparts (Midha & Nandedkar, 2012). In order to enhance the depth of information access and task performance effectiveness, virtual teams overcome space and time constraints which limit their collocated face-to-face counterparts (McGrath & Hollingshead, 1994). Virtual teams make managerial communication more efficient; reduce the expense and difficulty concerning distributed work (Galegher & Kraut, 1994). Virtual teams enable organizational flexibility, improve resource utilization, reduce cost, and expand organizational knowledge generation by bringing together diverse range of knowledge, skills, and competencies (McLean, 2007). Virtual teams pose challenges due to lack of trust between team members, language barriers, temporal constraints, individual goals, institutional constraints (legal and political), and choice of technology (Aart et al., 2004; Bélanger & Watson-Manheim, 2006; Fan et al., 2011).

Many organizations use teaming arrangements to push team members to both compete and cooperate with each other, leading to a major challenge for organizations that seek to manage their team workflows and performance (Tsai, 2002). An effective virtual team coordination strategy will involve supervision, standardization of work, standardization of output, standardization of skills and mutual adjustment (Aart et al., 2004). Good communication between team members lead to successful operation of a team (Anderson, McEwan, Bal, & Carletta, 2007) and poor communication leads to poor performance (Thompson & Couvert, 2003). The improved communication tends to bind virtual teams, which leads to low dissolution rates; and long-term teams are generally more productive than short-term teams (Ortiz de Guinea, Webster, & Staples, 2012).

Virtual worlds have been shown to be a powerful environment for collaboration and communication (Schultze & Orlikowski, 2010). Virtual teams can effectively function both within and across organizational boundaries (Levina & Vaast, 2008; Romano, Pick, & Roztocki, 2010). Within-boundary virtual teams are preferred over cross-boundary virtual teams if satisfaction with the collaboration process is of the highest priority (Schiller et al., 2014). The increased communication requirements need special handling to ensure improved productivity and performance of virtual team (Anderson et al., 2007). Zibetti et al. (2012) stated that IT-based virtual team meeting scheduling may increase team member motivation and coordination.

Virtual teams-related boundaries such as corporate culture (Krishna, Sahay, & Walsham, 2004), formal organizational boundaries (Espinosa, Cummings, Wilson, & Pearce, 2003), spatial and temporal boundaries (O'Leary & Cummings, 2007; Van den Bulte & Moenaert, 1998), and functional boundaries (Birnholtz & Finholt, 2007; Espinosa et al., 2003) account for a team's success as well as pose challenges to effective team outcomes. Working in virtual teams can assure a series of advantages consisting in the enhancement in creativity and innovation of products, the facilitation of learning, and the development



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of positive attitudes facing the tasks that need to be achieved (Levenson & Cohen, 2003). Virtual teams can support knowledge sharing between members and sustain the application of obtained information and skills (Johnson et al., 2002).

## Importance of Information Technology in Global Business

Yılmaz et al. (2015) stated that since the advent of computer and Internet technologies, the continuous and rapid developments occurred in technology-based applications have become an important part of the reality of the life for many people in the world. ICT has substantial impact on economic growth and productivity (Choi & Hoon Yi, 2009; Litan & Rivlin, 2001; Roller & Waverman, 2001). Access to ICT through cell phones, the Internet, and electronic media has exponentially increased around the world (Graham & Nikolova, 2013).

There has been considerable research about the impact of ICT on organizational performance and importance of ICT as an essential enabler of business growth and economic development has been widely confirmed using both a growth accounting and at the firm-level approach (Jorgenson & Vu, 2007; Oliner & Sichel, 2003). IT is fundamental to a firm's growth and represents a primary tool for enhancing business-to-business (B2B) sales force performance (Limbu, Jayachandran, & Babin, 2014). ICT enhances the sales force activities, thus employing market intelligence, managing their customer contacts, submitting sales call reports, and developing sales forecasts (Gohmann, Guan, Barker, & Faulds, 2005). IT plays an important role in modern business regarding the accounting function (Efendi, Mulig, & Smith, 2006). IT has transformed the nature of business and accounting practice (Hunton, 2002).

The link between IT and organizational performance is important for the information systems researchers and practitioners (Stoel & Muhanna, 2009). IT is universal because modern IT crosses organizational activities, and has become aligned with business activities (Ko & Fink, 2010). Xue et al. (2012) identified the positive effect of IT on organizational innovation. The use of technology has caused critical dependency on IT, thus involving a complex mix of organizational and technical perspectives (Sethibe, Campbell, & McDonald, 2007).

IT has a mixed record regarding organizational performance and user satisfaction, thus playing an important role in modern organizations (Peslak, 2012). Kudyba and Vitaliano (2003) stated that the enhanced flow of information brought about by IT integration and cost control systems throughout the company practically empowers decision makers to consolidate operations by reducing unnecessary waste and increasing profitability. There is a positive impact of ICT, human resource practices, and organizational reorganization on productivity (Black & Lynch, 2001). Business strategy and IT strategy remain as critical determinants of an organizational success in the foreseeable future (Brown, 2006).

Investing in ICT has an impact on productivity and contributes to reducing prices and improving services (Brynjolfsson & Hitt, 2004). Kleis et al. (2012) found the positive relationship between IT and intangible output, and stated that the use of IT in both organizational innovation and knowledge creation processes is the most critical factor in an organization's long-term success. IT can provide organizational members with quick and effective access to the right amounts of information (Hope & Hope, 1997). If connectivity is enhanced through IT, organizational members can more easily share individual interpretations of the cost information, thus making consensus development more efficient (Maiga et al., 2014).



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## FUTURE RESEARCH DIRECTIONS

The strength of this chapter is on the thorough literature consolidation of virtual team and IT. The extant literature of virtual team and IT provides a contribution to practitioners and researchers by describing a comprehensive view of the functional applications of virtual team and IT to appeal to different segments of virtual team and IT in order to maximize the business impact of virtual team and IT in global business. The classification of the extant literature in the domains of virtual team and IT will provide the potential opportunities for future research. Future research direction should broaden the perspectives in the implementation of virtual team and IT to be utilized in the knowledge-based organizations.

Practitioners and researchers should accept the usefulness of a more multidisciplinary approach toward research activities in implementing virtual team and IT in terms of knowledge management-related variables (i.e., knowledge-sharing behavior, knowledge creation, organizational learning, learning orientation, and motivation to learn). It will be useful to bring additional disciplines together (i.e., strategic management, marketing, finance, and human resources) to support a more holistic examination of virtual team and IT in order to combine or transfer existing theories and approaches to inquiry in this area.

## CONCLUSION

This chapter aimed to examine the roles of virtual team and IT in global business, thus describing the theoretical and practical overviews of virtual team and IT; the importance of virtual team in global business; and the importance of IT in global business. The applications of virtual team and IT are necessary for modern organizations that seek to serve suppliers and customers, increase business performance, strengthen competitiveness, and achieve continuous success in global business. Leadership has an influence on the performance of virtual teams.

One of the main concerns of virtual team is the reliability of communication, perceived as the most important factor concerning performance of virtual support teams. Leaders of virtual teams carry the responsibilities to satisfy their bosses, subordinates, and external customers in a complex distributed environment that is highly dependent on IT perspectives. Leaders of virtual support teams may need to assume a coordinating role to ensure effective collaboration and communication among virtual team members. It is essential for modern organizations to examine their virtual team and IT applications, develop a strategic plan to regularly check their practical advancements, and immediately respond to virtual team and IT needs of customers in modern organizations. The chapter argues that applying virtual team and IT has the potential to improve organizational performance and gain sustainable competitive advantage in global business.

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## KEY TERMS AND DEFINITIONS

**Business:** An organization or economic system where goods and services are exchanged for one another or for money.

**Communication:** The imparting or interchange of thoughts, opinions, or information by speech, writing, or signs.

**Competitive Advantage:** A superiority gained by an organization when it can provide the same value as its competitors but at a lower price, or can charge higher prices by providing greater value through differentiation.

**Information and Communication Technology:** The study of the technology used to handle information and aid communication.

**Information Technology:** The development, implementation, and maintenance of computer hardware and software systems to organize and communicate information electronically.

**Innovation:** The newly introduced something such as a new method and device.

**Internet:** The single worldwide computer network that interconnects other computer networks.

**Technology:** The branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society, and the environment.

**Virtual Team:** A group of individuals spread across different time zones, cultures, languages or, ethnicities which are united by a common goal.

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# Chapter 22
# Local Economic Development in Transition Economies: A Tool for Sustainable Development of Rural Areas

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## ABSTRACT

*There are significant inequalities in development both within and over the borders of countries, in addition, urban and rural areas show significant differences in the level of development. The reason for the occurrence of spatial discrepancies is that the economic and social processes are always restructured in space and time and such processes are even accelerated by the globalization. In order to get precise and realistic picture about territorial processes, it is worth to learn the spatial processes that have already happened as well as their impacts on the spatial structure, since these may enable the regions to break out from the disadvantaged situation. In such a multivariable system, the development strategies need to be built on the endogenous potentials and own strengths of the regions. The aim of this chapter is to highlight the importance of local values and local conditions in the sustainable rural development, thus emphasizing the importance of localization in long-term progress. The chapter puts emphasis on the characteristics and features of transition countries.*

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## INTRODUCTION

Spatial processes are interpreted in the European Union as series of long-lasting social, economic, cultural and demographic phenomena, which have area-specific imprint (Enyedi, 2004). According to the duration of their emergence, they can be long and short ones. They are created by the series of decisions made by the determining players of the phenomena: individuals, businesses, institutions, local governments, national governments, international organizations, etc. (Faragó, 2007). Due to the continuous spatial changes, the spatial inequalities are inevitable and long-lasting. It is important to note that there have been various social responses to the appearance of territories with unfavorable conditions, including the prevention of migration and the improvement of unfavorable conditions (e.g. isolated location, infrastructural handicaps). General features of disadvantaged areas include poor infrastructure, low quality of services, and lack of jobs. Consequently, the unemployment rate is high and the salaries are low. The migration of young generations from disadvantaged rural areas is also a common phenomenon, leading to the unfavorable age-structure in long-terms. Due to the shortage of high quality roads and highways, it is difficult to get access to rural areas, resulting in their isolation from the national economic and social circulation, which can be the obstacle in the new economic development approach. The objectives of this chapter are to summarize the major reasons for spatial inequalities and the features of rural areas lagging behind to provide some ideas for their sustainable development.

## BACKGROUND

The economic restructuring of the 1990s, e.g. in Hungary, also contributed a lot to the creation of spatial discrepancies, since it was the time when the gap between the dynamically developing centers and the underdeveloped peripheries speeded up (Dusek, 2001), not to mention the impact of revision of borders at the beginning of the 20th century on the spatial discrepancies. While examining the spatial inequalities, it has to be highlighted that the two basic components of the spatiality are inequalities and order (Nemes Nagy, 2005). The duality of inequality and configuration are usually equal to the duality in the expressions “region” and “spatial structure” (Szabó, 2006). Nowadays, in the researches on inequalities two basic questions are raised: how much are the spatial discrepancies and how do they change? Due to the developed information technology society of the 21st century, there are no places in the world about which there would be no information available regarding the environment or the society. This allows the spatial researches to show real results (Jakobi, 2002; Dusek, 2003; Nagy & Káposzta, 2003). The harmonization of spatial elements providing the social basic functions and the social needs was carried out in different ways during the history.

Both spontaneous and organized economic/social processes happen in the space used by the population. In one-centered countries, like France, Austria, Hungary, as well as in most of the Central and Eastern European countries and partly in the United Kingdom there are dominant capitals existing, while peripheries perform poorly, the railway system was developed in a radial structure (serving the needs of the national center, the capital) and the cultural and political functions are also located in the capital (Berend & Ránki, 1987; Horváth, 2004). The rapid development of sectors with high demand of raw materials started in remote areas from former growth centers (Antwerpen, Venice, Florence, Amsterdam, Bordeaux), thus the population of such developing areas (North-and East-Anglia, Lorraine, Ruhr, North-Italy) has jumped.



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However, due to the migration, other parts have become uninhabited. Industrial agglomerations in large cities were created at the turn of the 19th and 20th century and the monocentric spatial structure of several countries was also established at that time (Anderson, 1999; Nagy, 2003). Partial regulation of spatial development was included in the program of more and more governments between the two world wars. After the First World War, the new Central and Eastern European countries elaborated concepts to strengthen the cohesion of their areas that used to belong to other countries. Later, the economic depression of the early 1930s provoked state measures and developments in the areas hit by the crisis in Western Europe and in the United States. The euphoria during the reconstructions after the Second World War helped to forget temporarily about the regional discrepancies, but at the end of the 1940s overall regional development strategies were elaborated in the market economies. Eastern European socialist countries also elaborated their own spatial development programs, though much later. The large economic upswing after the reconstructions related to the Second World War generated various processes in different parts of Europe. Traditional industrial centers and their regions were modernized, while peripheries lagged further behind. Population migrating from such areas settled down in the large urban agglomerations, increasing the social problems of the conurbation rings (Granberg & Kovách, 1998; Horváth, 1998; Nagy, 2002). The gradual economic development of the 1950s-1960s, the major political current and economic thinking as well as the economic policy of welfare state opened a new era in spatial development, too. The formerly hidden and "sleeping" spatial development has been replaced by an active state intervention policy. Based on the comprehensive assessment of both theoretical and practical experience of that development period, the tasks and aims of industrial and post-industrial societies have become clear and regional policy has become an important element of social- and economic policy (Yuill, Allen, & Hull, 1980; Wadley, 1986). The developed countries have stepped into the phase of so-called structural adaptation. Spatial policies of Central and Eastern Europe were clearly in favor of cities and against villages because of the ideologically disparagement of the role of infrastructure. Despite the declarations, they supported strong concentration of settlement system (Enyedi, 1998).

Special characteristics of spatial economies, concentrated cooperation of locations, relationships in the settlements, as well as characteristics of the settlement system expanded the scope of the economy (Illés, 1997; Rechnitzer, 1998). The processes were further accelerated by the fact that the political and economic changes in the Eastern European countries in the early 1990s created a new situation in the European spatial structure. New markets had to be accessed, transportation networks had to be connected, elements of the settlement network had to be linked, and several other so-far unknown regional problems had to be faced.

## MAIN FOCUS OF THE CHAPTER

### The Characteristics of Transition Countries Regarding Local Economic Development

The dominance of the central government in the local economic development, especially in the allocation of funds and the definition of development priorities, is a general characteristic in the centralized, single-centered countries in transition (Mezei, 2006). Regional public administration units have various functions in the European countries. While increasing importance has been given to regions in the economic development strategies of Western Europe over the 1990s, Central and Eastern Europe is late



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in this regard (long reform procedures, laggard decentralization). Participation of medium-level public administration is mainly based on the type of state, its public administration system as well as the legislation (to which players duties and responsibilities are delegated by the legislators) (Mezei, 2006).

Central legislation and various roles of regional players in the local economic developments are different in the transition countries, but the essential role of local municipalities in the local developments is really emphasized. In the former socialist countries, where the market players had to face liberalization, privatization, globalization, and foreign capital inflow at the same time, local governments gained significant position in amending the legal background as well as modifying the institutional system (Young & Kaczmarek, 2000). In addition to the local municipalities, there are several other contributors in the local developments. The potential players may involve various entities, since among others, their contribution depends on the settlement-system, public administration system and its financial conditions, role of civil organizations in the society, institutional systems serving enterprise development, system of banks and financial institutions, educational system as well as the power of organizations representing interests. Since the players in local economic development vary, the organizations participating in the local developments are various too. The emphasis, however, is not on the individual players, but on their cooperation as well as on the horizontal and vertical links among the participants (Cameron, Danson, & Halkier, 2000). It should be stated that regarding cooperation, transition countries are at the beginning of the process with little experience in this regards, since they are learning the essence of partnership (Puljiz, 2004; ESPON, 2006). In addition, there is a low rate of participation in such developments due to the disappointment and unwillingness of the population towards public and common issues (Plostajner & Mendes, 2004).

General feature of the transition countries is the unfavorable financial condition of local municipalities which is due to the increasing burdens imposed on the local governments by the central government and the structure of financing that does not match the increasing duties. In most cases, local municipalities do not have real chance to increase their own income primarily because of the low standard of living of local population and the high tax liabilities. Therefore, raising money for local investments and generating local initiatives meet several challenges, and in most cases the end is failure. However, the main forming impact of external funds on the local developments is really strong in the transition countries. In such cases, mainly the idea of the external fund-raiser is realized and the demand of the local population and local businesses are not reflected in the developments. As it is mentioned above, most of the local governments do not have sufficient amount of own capital that would enable them to apply asset-based economic measures. Bank loans for local municipalities are available in most transition countries, but while in the Czech Republic the loans for development purposes are distinguished from other types of loans, in Hungary loans for development purposes and liquidity loans are subject to the same legislation (Mezei, 2006).

While analyzing the instruments for local economic development, it can be found out that the local municipalities of the countries in transition apply more or less the same measures, i.e. infrastructural development, financing, asset-related measures, marketing and promotion, as well as information services and advisory instruments. The most commonly used instruments reflect the dominance of supply-oriented strategies, i.e. the major aim is to attract investors, while the development of local human resource or the domestic SMEs is only the secondary priority (Capková, 2005). Due to the increasing importance of local developments, this trend is expected to shift to the demand-oriented policies in the future, as it is now happening in the developed countries of the world.



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## The Importance of Localization and Endogenous Resources in Rural Development

Nowadays, the public attention on the spatial inequalities has increased and is increasing in the European Union. The reason is that the discrepancies gradually rise, new forms are created, and thus the significance of spatial policy is increasing (Enyedi, 1997; Horváth, 2003). This general tendency is true in 2015 as well. The multi-stage enlargements of the European Union have brought the issue of territorial inequalities to the frontline. It can be stated that the economic and social space of Europe is very proportioned. The reasons for the differences in settlement networks, economic structures, education of the population, infrastructural supply are hidden in the history of the continent over centuries (Csite & Granberg, 2003).

Recent changes forecast two determining factors in regional policy in the early 21st century in addition to the self-governing rules of the economy: on one hand, the reforms regarding the organization, operation and finances of the European Union as well as its Eastern enlargement; on the other hand, partly due to the mentioned factor, the creation of new division of labour in the countries and the decentralization (Michalski & Saraceno, 2000). However, the basic aim is not expected to be modified, since spatial imbalances are the obstacles of economic growth, prevent the improvement of competitiveness, lead to social tensions and restrict the concept of a single Europe. Thus, cohesion is the prerequisite of integration, requiring more harmony between the national and community regional policies, therefore encouraging the mutual interdependence. Its creation is mainly prevented by spatial inequalities and the centers and peripheries (due to the discrepancies). So the key issue of regional policy is related to the elimination of peripheral situation.

Spatial development measures – from the regional resources point of view – can be planned in two different ways. Either the missing resources are provided from external sources, i.e. investors are attracted to the region, or local investments are supported by huge amount of money. In the latter case, the intention must be to discover own resources and utilize them as efficiently as possible or enable the local people to do that. It is obvious that local businesses can be the perfect ones to meet the needs of the local population. The two abovementioned approaches may be combined in the spatial development. Moreover, the most efficient solution in practice is the optimal combination of the two.

In the spatial development strategy of Hungary, for example, the dependence on external resources is the most common, which might not be the most suitable solution for the regional imbalances. Such strategies are called supply-oriented development strategies.

By now, it is proven that lasting and sustainable results cannot be achieved with solely external resources because decisions on external resources and economic factors are mostly made without involving the local community, thus the interest of the local community might not be considered and such decisions may destroy the commitments of local population to the local aims. In many cases, the involvement of external financial sources results in fast and short-term boom and almost immediate decline, afterwards. Furthermore, the external resources usually target the more-developed regions, since the economically and socially backward regions do not have the sufficient infrastructure (physical, human etc.) to receive the operational capital. Therefore, external resources themselves are not the expected solutions to prevent the break-off of such regions.

Considering the abovementioned, internal (local) resources are becoming more and more important, however, their exploitation is sometimes overshadowed. According to the demand-oriented strategy, the local strengths have to be in the focus and they need to be improved further. However, in the bottom-up approach it is sometimes difficult for the local population to list up the local strengths and potentials on



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which the developments can be built on. In many cases, the local population cannot even see the hidden values and potentials, so the expertise of external professionals is necessary to achieve success. It is usually forgotten that if the goods are kept within the region and are given to local players, eventually they serve the best for the whole community. Internal resources may include human resources (labor force, knowledge, ambition and cohesion), as well as natural and economic resources. Such goods are gaining more and more importance nowadays (in the period of gradual urbanization) like clean environment, no stress, healthy food, environment-friendly energy sources, unused local minerals as well as forgotten traditions. Similar resources are cooperation, close link between local society and the economic players, as well as exchange of goods. All these can be observed in both urban and rural areas – even if to different extent. Local economic development may be an applicable tool in dynamizing economic resources even for such places where general, common economic development tools have not been successful (Czene & Ricz, 2010). However, it is not only the disadvantaged regions where such methods can be applied. In order to achieve real success, a balance should be reached in using internal and external resources. It is aimed in the basic document of the spatial policy of Hungary, so called National Spatial Development Concept (NSDC) as well, which introduced the concept and aim of spatial sustainability to discover, protect and develop the local resources. Therefore, local development strategy, which focuses on internal resources, is favorable not only for the given region but outside of it as well, since it provides stability and development potentials. It also reduces travel-, transportation- and emission needs that originate from the region, moderating the environment- and social load.

According to some experts, spatial sustainability and spatial competitiveness are contrast, since the first is about strengthening the autonomy of the region and encouraging the circulation of information, energy, money, products and raw materials within the region as long as possible, while the latter one is usually emphasized rather in Western Europe. However, the abovementioned contrast seems to be virtual, since the right-interpreted spatial competitiveness means that every region should find their own competitiveness factors. Autonomous local economy – based on internal resources – may play key role in such processes and may be an important competitiveness factor. Local economy in general is located in a settlement or a micro-region, which uses its own resources in a sustainable way, coordinates its activities according to its resources. However, local products and services may be sold on external markets, but the primary aim is to meet the local (internal) demand. In such cases, external market represents the location of the sales of internal surplus (Czene & Ricz, 2010).

The local economic development is a complex process and has various tools, so it is not surprising that there is no generally acknowledged concept or definition either in Europe or in the world. Local economic development is a conscious interference by the local community into the economic processes to achieve sustainable local development (Lengyel, 2010). Thus, local economic development is more than just the local allocation and distribution of central/state economic development funds.

It requires new methods and should define new focuses. One of the basic principles of local economic development is to know the various endowments, conditions and resources as well as economic and social structures of regions. In addition, the integration of economic, social, cultural and nature conservation activities plays much more important and more direct role. The expression “local” reflects the territorial unit of the measures taken. A primary objective for local economic development is to expand employment of local people on a permanent, long-term basis by helping them to create their own small businesses and by creating local markets for locally produced goods and services.

As a supplement or even a contrast of globalization, localization, i.e. the evaluation of local conditions and values, gets more importance. Due to the intensive involvement of the national economy in the



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world economy, the effects of globalization directly reach certain regions and settlements, which may result in defenselessness in some cases. While focusing on local conditions, it must not be forgotten that each settlement and community should survive and act competitively not only on isolated local markets but on the global market as well. It can be observed in rural areas at an increasing extent, while their economic power is being lost resulting in increasing spatial- and rural policy actions.

Defining and implementing the economic development directions adjusted to local endowments and resources may gain important role in the creation of the economic basis in such areas. As restructuring the local conditions, encouraging entrepreneurship, cooperation between businesses, strengthening the consciousness of the population, supporting the direct links between farmers and consumers, as well as strengthening community actions can all be realized. Concrete aim is to allow the results of economic activities be used locally either in the form of products, services or jobs or income. It means that local economic development is not simply local, but economic development with local interest. It aims to support the local market through encouraging the local businesses and economic activities to meet the interest of the local community. Therefore, its aim is not exclusively of economic feature, but definitely of community and social one, meaning that it aims to improve the quality of life of local population and to increase profits by all means. Thus, it can be called as local community economic development referring both to the methodological and theoretical point of views. In an ideal situation, it is carried out based on local initiative, but external expertise cannot be avoided especially at the beginning.

It depends on the fact whether the area has ambitious and committed experts who as "engines" can generate the organization and launching of the process and whether the trust capital is available which is crucial for activating the local community. Due to the rapid changes in the international economy, rural regions need to face some obvious threats but they can have significant opportunities as well. These changes include globalization, improved communications, reduced transportation costs, changing trade patterns for commodities and the emergence of important non-farm activities in rural regions. Globalization, increased accessibility (development of transportation infrastructure and ICT) and new migration patterns offer new opportunities for rural areas to develop. In many rural areas the diffusion of clusters, as seen in food processing or in other industries, has played an important role in improving the economic performance of the area.

Moreover, thanks to the improvement in transport links, a large number of rural regions have been able to take advantage of some emerging elements that increase their economic and social performance; it is the case for some rural areas that have been able to respond to the new demand for services, such as clean environment, attractive landscapesб and cultural heritage (European Commission, 2006; Organisation for Economic Co-operation and Development, 2006). The assets of rural regions, development of transportation and infrastructure can retain or attract people and businesses. The infrastructure helps to reduce per unit costs for businesses. Therefore, in the past twenty years, many rural areas have shown an increasing capacity to attract permanent investments. Consequently, many rural regions have experienced positive employment growth rates in industrial and service sectors (and parallel the loss of agricultural jobs). Between 1996 and 2001, in many OECD countries (10 out of 27) the region with the highest rate of employment growth had rural character. In fact, the level of industrial employment in predominantly rural regions increased by 0.5% annually over the 1990s, while there was a decline in urban and intermediate regions (Organisation for Economic Co-operation and Development, 2006).

In addition to globalization, localization (Porter, 1990; Dicken, 2003) is an important factor as well, advancing local values and endogenous resources of the countryside (Moseley, 2003; Terluin & Post, 2001). Therefore, a large number of successful rural regions have been able to valorize public or quasi-



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public goods such as clean environment, attractive landscape and cultural heritage (including food). It has raised the demand for residential houses and commuting which have played an important role in changing the economic and social aspects of many rural areas. Easier commuting across longer distances has expanded the sphere of influence of major urban areas enabling people to live in rural regions while working in cities. Rural assets such as quality of life and environment, natural heritage and other amenities are also more in demand and constitute real attributes that attract investment and workers as well. All these factors have contributed to a partial reversal of the trend of rural out-migration in many rural areas in countries such as France, the UK and Italy and also in some of the EU's New Member States, such as Poland and Hungary (European Commission, 2006; Organisation for Economic Co-operation and Development, 2006). The positive perspective on globalization highlights the increasing post-productivist countryside with economic and social changes (Ilbery & Bowler, 1998), growing social demand on the new functions of the space (for example tourism, recreation, environment functions, etc. (Marsden, 1995)), expansion of services, industry and technology, and integration of new rural economy into the regional, national and international economies (Clout, 1993). That kind of expansion of modern industry and service sector is perfectly realizable by the development and researches on the agriculture, rural economy, rural clusters of the United States (Economic Development Administration, 2007; Isserman, 2000; Porter, Ketels, Miller, & Bryden, 2004; Rosenfeld, 2004) and the Organisation for Economic Co-operation and Development (2006) as well. However, as these changes are strongly related to improved transport links that make investments, recreation and residential location in rural areas increasingly feasible, growth tends to be concentrated on the more accessible rural regions.

While positive effects could be realized in accessible rural areas, countryside in general terms shows considerable heterogeneity and differentiation (Bryden & Hart, 2004). Globalization has escalated competition, as it has brought competitors at international level close to or into local markets sweeping away former geographical, identity-based community borders that had defended the local products, industry and cultural traditions of rural areas earlier. Meanwhile, new technologies and intensive production have been crowding out manpower from labour-market, especially in case of agriculture. According to Kulcsár and Brown (2005), modernization accompanied by globalization changes the rural social structure as well. It coincides with other opinions in literature where negative perspective on globalization highlights mainly the social aspects, especially from the rural point of view: e.g. cultural homogenization (Fiss & Hirsch, 2005), vulnerability of local societies (Kirby, 2006; Luloff & Bridger, 2003; Putnam, 2000), risk of poverty and social exclusion, and increasing inequality (Wade, 2003).

Whether the positive or negative side of the globalization is stronger depends on how a region or settlement is connected to the changing international economy, how much it is able to attract capital and how the residents as a critical mass make demand for goods and services (Cloke & Goodwin, 1992). These are in strong correlation with accessibility, but not just in physical or geographical meaning, but in terms of easiness to access to all those services and activities which represent public goods for people living in urban centers (such as schools, hospitals, sports, social and cultural facilities, basic services, etc.).

What is apparent is that rural areas tend to show a weaker economic performance and face significant challenges in comparison with other regions in the OECD countries and in the EU as well. The problems stem, in general, from a declining and ageing population and from the distance from markets and services. These characteristics have an impact on enterprise dynamism and job creation, on the accessibility and quality of educational and other public service resources, on the quality and density of infrastructure, and so on. These factors can interact to generate what is called the circle of decline for rural areas (European Commission, 2008; Organisation for Economic Co-operation and Development, 2006).



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Actually, the problems of rural areas in the field of demography, remoteness, education and labor market may generate their own circles, and may interact, reproduce and amplify the phenomenon of poverty of rural areas. The demography circle starts with the unfavorable demographic situation of many rural areas: large share of elderly people, few young people and low density negatively affect the economic performance of the area; as a consequence, low birth rates and migration of young people worsen the demographic situation further. The remoteness circle is generated by poor infrastructure, which negatively affects the economic performance of the area, thus fostering out-migration; this has a negative consequence on the demographic situation, representing a further obstacle to the development of infrastructure. The education circle is generated by the low educational levels of most of the rural population; this causes a low employment rate and, consequently, may increase the poverty rate, which, in turn, negatively affects the chance of receiving high quality education.

Finally, the labor market circle starts with poor labor market opportunities of many rural areas, which force many qualified people to migrate and thus worsen the quality of the local labor force; a low-skilled labor force is a disincentive for investments of domestic or foreign firms in the area; the consequence is a further deterioration of the labor market situation (Organisation for Economic Co-operation and Development, 2006; Patrick, 1997; Study on Employment in Rural Areas, 2006; European Commission, 2008). This is kind of a vicious circle, in which unemployment and lack of services lead to rural exodus (movements of population and economic activity out of rural regions over the past few decades) that has been a common pattern in rural regions ever since the agricultural sector began to shed employment (European Commission, 2008; Organisation for Economic Co-operation and Development, 2006).

However, cooperation also has a significant role in local economic development. One of its features is that in the framework of local economic development, local (economic and social) players cooperate to achieve more active local business activities matching the local conditions and meeting new demands. Joint thinking and actions of the business sphere, municipalities and local population may enable the community to preserve their own values and potentials based on special local conditions under ever-changing external and internal circumstances. It is also about their improved adjustability. It is always a proactive adjustability, which protects and maintains the local values, traditions and resources as well as meets the demand of local population and complies with the requirements of environmental, social and economic sustainability (Czene & Ricz, 2010).

Local economic development has numerous benefits that have spatial development and rural development significance as well:

- Generates local business activity;
- Has job-preservation and -creation role;
- Activate the local community, expands the local cooperation network;
- Leads to sustainable use of local resources;
- Strengthens local identity and local patriotism;
- Improves the population-keeping ability of the settlement as well as its livability;
- Renews the urban-rural relations (Czene & Ricz, 2010).



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## SOLUTIONS AND RECOMMENDATIONS

Local economic development can be carried out in several ways and forms. However, most of the actions are related to local products and local businesses, but in most cases the initiatives have to be started at changing the way of thinking of the population and encouraging change in their behavior and attitude towards the competitiveness potentials. Usually it is not money issue whether a successful strategy can be realized or not, but the approach of local population to changes, improvements and new actions. Therefore, communication plays a very important role in local developments.

In underdeveloped rural areas – facing social and economic difficulties – complex rural development activities need to be carried out which exceeds agricultural production and farming. The aim of the developments is to establish sustainable systems which uses the special local resources efficiently and maintains local value; therefore it promotes the complex catching-up of areas lagging behind. Therefore, gradual expansion of the functions of such areas and involving new resources (e.g. tourism, alternative income-generating activities) are inevitable. Moreover, in many cases total shift in functions is necessary (e.g. establishing housing and touristic functions). In addition to the new functions, the renewal of traditional agricultural and food industry functions may provide perspectives in such regions (e.g. processing industry on local products). One of the fundamental principles of economic and social catching-up is that the rural areas should be able to keep their population, especially the qualified people. Appropriate life- and working conditions are key factors as well as the infrastructural conditions and advanced access to public services.

It is important, however, that developments should be based on local identity, traditions, local values and last but not least on extended cooperation and partnership. Despite the fact that there are several rural areas in Hungary that are lagging behind with similar economic and social indicators, the way how they got to the same underdeveloped situation is not the same. Therefore, researchers and experts need to focus on finding out the reasons for recession of such rural areas. It is the only solution to find the appropriate development measures and actions. Despite the common goals and principles, rural areas are not homogenous at all. Conditions are area-specific, so solutions have to be adjusted to the specifications.

For instance, in tiny settlements, the most serious threat is becoming uninhabited, which might cause the disappearance of institutions, businesses and public services; the natural and built landscape is demolished, the traditional land use (animal husbandry, horticulture, and vineyards and orchards) loses scope. Problems addressed in such areas are ageing population, unemployment, and social and ethnic isolation. Thus, the most important tasks of rural development are to improve accessibility, to promote remote-working and distance-education, to provide appropriate healthcare and education services. In addition, to promote traditional small-scale industry and handcrafting, small-scale ecological farming and processing as well as to develop the tourism-related infrastructure and services so that complex touristic packages could be offered.

Farmhouses on the Great Plain of Hungary have lost their functions related to traditional agricultural farming. The buildings are ruined, the infrastructure is underdeveloped and most of them face severe economic and social difficulties (subsistence difficulties, low standard of living, segregation and crime, etc.). Their renewal can only be realized through establishing new functions for them (modern farming, holiday and housing functions, catering, tourism), while preserving the values which are represented by them (heritage, conventional farming, close to nature feature, etc.).

Regions habited by mainly minorities should be built on the common culture and strong community, allowing spatial- and settlement-development which is based on traditions and special endowments. In



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order to keep the population, national and cultural identity and spatial coherence have to be strengthened. In addition, development of social life and culture related to their mother tongue is inevitable. Renewal of such areas should be based on minority traditions, individual cultural values in developing the demand for alternative heritage tourism.

Over the last decades, significant changes and increasing territorial differentiation could be observed in the rural areas of developed countries, mainly in Western Europe, but – parallel with the political and economic transformations in Eastern European countries – all over the European Union. These changes have been accelerated by the unequal expansion of economic and social effects of the globalization that affect rural areas and settlements, their development and local economy differently (Bryden & Hart, 2004).

One of the most important elements of the changes is strengthening and modification of the expression rural, since it has meant a totally different and new dimension for the society and the economy in the developed countries for a while. It has been shown by the suburbanization, by the re-evaluating of natural resources, by the economic development of a certain part of the countryside (the new rural economy), etc. In addition, as the major location of the agricultural raw material production and food industry, rural areas play important role in the EU's Common Agricultural Policy (CAP) as well. Rurality has been defined by the predominance of agriculture in the economic activity, in social and environmental context as well as concerning the ethnic values of an area for a long time. By now, the transformation of the European economy and the wide-spread distribution of industry and services in the territory have profoundly modified the rural dimension, resulting in growing integration between cities and the countryside.

In spite of the abovementioned, general problems of the rural areas that are mainly caused by the fact that the importance of agriculture has been gradually decreasing in the employment, (e.g. depopulation, fewer jobs, increasing social burdens, low accessibility to the basic services, etc.) cannot be ignored. As a result of that, the unemployment causes further rural problems not only within the EU (Study on Employment in Rural Areas, 2006; European Commission, 2008), but for example in the United States as well (e.g. Lichter & Johnson, 2007; Macke, 2003).

Although declining agricultural employment is a usual tendency in the developed countries, it does not have the same effects everywhere because of the special characteristics of the territorial structure. Negative tendencies hit rather such rural areas where there are traditional agricultural activities carried out, qualification of the population is low, share of elderly population is high, there are no large cities nearby, and they have unfavorable accessibility, especially in the post-communist Eastern European countries, where the territorial aspects of economic and social processes following the political transition have even deepened those negative impacts (European Bank for Reconstruction and Development, 1999, 2002; Study on Employment in Rural Areas, 2006).

In areas with high share of Roma population, segregation, low level of qualification, high unemployment rate, health conditions of the population are the most serious problems. In the abovementioned settlements, complex development strategies are needed that deal with the challenges of employment. Self-organization of community, preservation of culture, Roma inclusion and integration of Roma and non-Roma population should be addressed.

Areas with rich natural landscape and cultural values represent increasingly important role due to the increasing demand for healthy living environment, recreation, keeping the traditions as well as demand for handcrafts, artworks with special local characters. In such settlements, the most important task seems to be protecting the values and avoiding further damage (caused by industry, agriculture, urbanization, transport as well as intensive tourism sector).



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Based on the abovementioned, it can be seen that there are no samples and universal schemes that are suitable for addressing the various challenges experienced in the regions. Every time a local development strategy is prepared, special local conditions need to be discovered and mapped that can serve as a good basis for strategy-making.

## FUTURE RESEARCH DIRECTIONS

As it is written above, there are no samples that could be applied in an unchanged form for the development of various rural areas. However, availability of such complex indicators and multi-dimensional methods that could reflect real conditions of the areas and serve as inputs of statistical analyses could help local decision-makers as well as those who are responsible for preparing local economic development strategies. At the moment, there is no such in the Central and Eastern European region, though it would be a great help in selecting the hot-points and cold-points of the rural areas. It is known that statistical methods need to be supplemented by quantitative methods while discovering the endogenous resources, but the creation of a complex resource-index could provide a good basis even for the non-professionals or experts in the local decision-making, e.g. mayors, members in the local government, etc.

## CONCLUSION

Based on all the above mentioned, the major aim of the development of rural areas is the use and activation of endogenous resources and use of spatial potentials. The basic question of development is how spatial factors can be integrated (with efficient allocation) to the local economy and society to achieve optimal operation under certain economic and social circumstances. According to the authors, the theoretical roots of such developments are hidden in the generative growth concept, saying that local development results, local development capacities lead to the growth of larger territories. Therefore, the local comparative advantage-based economic developments can provide the basis for regional developments. Local potentials, as endogenous resources, vary on a wide range. A starting assumption can be that "a unit system of geographical, environmental, historical, social and economic factors and conditions of settlements and regions as well as the factors that influence the abovementioned conditions" (Rechnitzer, 1990) may play determining role in the modernization of the given area.

Considering the system of factors that influence the development, endogenous resources as economic potentials can be related to the factors as listed below:

- Capital-potential (available production-base and assets);
- Absorption ability necessary for receiving funds;
- Presence and composition of operation capital;
- Extra income that can be spent without restrictions;
- Qualifications, age-structure and other features of labour;
- Quality of infrastructure;
- Geographical condition, distance from centrums;
- State and quality of the environment, natural endowments;
- Market relations (demand factors), logistics possibilities, tertiary sectors;



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- Socio-cultural conditions, ethnic and minority issues;
- Artificial heritage;
- Decision-making and institutional system, as well as power.

One endogenous factor can be found in another factor as well (directly or indirectly) or it may be created due to the interference of potential-components. In geographical potential the market potentials or relations of a region are already defined. This factor is able to characterize the potentials and barriers of transportation and communication infrastructure. The labour potential originates from the composition of the population; however, it defines the socio-cultural conditions and affects the capital as well. Settlement characters influence capital potentials and infrastructure, but have impact on labour force and human dimensions as well. It can be seen that these endogenous factors can also be interpreted individually, but due to their inter-dependence, they have impacts on each other. Moreover, under certain social and economic circumstances, they may start active processes and thus the renewal of the regions (Porter, 1980). Spatial potentials may be related and may be built on each other. Such relationships may open new activation scopes and may create additional endogenous resources.

Finally, it can be stated that spatial potentials include all the endogenous resources of regions. Their relationships, coherences, overlappings, and networks can offer new dimensions in economic developments in case dynamic interferences are supported by exogenous factors, i.e. due to synergies, spatial renewal may have new development path. Based on the abovementioned, endogenous resources hidden in local characters have significant impact on the economic development of regions, as well as rural economies. Therefore, without strengthening and developing such factors, the economic and social periphery is expected to expand in the future, and the spatial discrepancies are expected to increase. Overall, one – however, probably the most important – factor in the catching-up of disadvantaged regions is the local economic development based on endogenous resources. In order to achieve this, transition countries need to consider bottom-up approaches more, involve local players in the strategy-making and decision-making more since only active and efficient cooperation of the local population, local businesses, local municipalities as well as local civil organizations may lead to the sustainable development of rural, disadvantaged areas.

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## KEY TERMS AND DEFINITIONS

**Endogenous Resources:** Such resources which are related to that specific area and can provide a basis for developments.

**Local Economic Development:** The complex (economic, social, environmental) development of local territorial units, focusing on their specific needs and resources.

**Localization:** Valorizing the local, the area-specific resources and potentials rather than globalized ones in the local strategy-making.

**Rural Areas Lagging Behind:** The general features of such areas like depopulation, fewer jobs, agricultural-dominance in the economy, lack of qualified human resource, increasing social burdens, low accessibility to the basic services etc.

**Spatial Inequalities:** Such differences that should be the basis of sustainable development strategies, originating either from the unique local conditions of regions or the ineffective use of resources.

**Sustainable Rural Development:** A complex and integrated approach that pays special attention to the specific features of rural areas and defines development strategy based on their specific local resources, enabling the areas to achieve gradual and lasting development.

**Territorial Cohesion:** When the development of regions is harmonized and the differences of regions, which are due to insufficient use of resources, gradually disappear and they step on a long-term development path.

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# Chapter 23
# Channel for Vertical Spillovers: The Effect of MNCs Training Activities in Stimulating Local Suppliers Innovative Capacity

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## ABSTRACT

*The objective of this study was to fill a research gap, where the channels through which technology and knowledge were transferred remained unexplored in the existing Foreign Direct Investment (FDI) knowledge transfer literature. A case study method was adopted as it is appropriate for exploring the complex process of knowledge transfer. The findings obtained from the case studies were able to demonstrate a positive relationship between MNCs and local innovation where knowledge and technology can be diffused through training programmes offered by MNCs to local suppliers. It provides an understanding as to the extent to which MNCs, through linkages with local firms, may facilitate the innovation activities of said local firms. Policy implications are subsequently discussed and future research suggestions are then put forth.*

## INTRODUCTION

Researchers have long been focused on the study of Foreign Direct Investment (FDI) as the main vehicle for technology and knowledge spillovers (Branstetter, 2000; Keller & Yeaple, 2003; Giroud, 2003; Ivarsson & Alvstam, 2005; Liu & Buck, 2007; Blalock & Simon, 2009; Liu, Wang & Wei, 2009; Du, Harrison, & Jefferson, 2011; Hale & Long, 2011). Knowledge spillover from Mutinational Fims (MNC) to local firms were created through inter-firm relationship with indigenous firms (buyer-seller) relationship (Javorcik, 2004; Ivarsson & Alvstam, 2005; Giroud, 2007; Ivarsson & Alvstam, 2009 and 2011). The transfer of knowledge takes place through the demonstration effect (Kokko, 1992; Wang & Blomström, 1992), labor movement between firms (Fosfuri, Motta, & Ronde, 2001; Glass & Saggi, 2002;

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Meyer, 2004; Spencer, 2008) and the transfer of knowledge from MNCs to their suppliers (Ivarsson & Alvstam, 2009 & 2011). Moreover, business transaction between MNCs' subsidiaries and local firms may also vital in increasing the likelihood of knowledge and technology spillovers (Blalock & Gertler, 2008; Keller & Yeaple, 2009; Blalock & Simon, 2009).Through this vertical relationship MNCs may encourage technology and knowledge sharing between their subsidiaries and suppliers workers through labor training, innovations, quality management, production process, managerial skills and manufacturing management systems (Agosin & Mayer, 2000; Ivarsson & Alvstam, 2005; Giroud, 2007).

Despite the growing body of research on the topic and the belief that FDI may act as catalyst for technology and knowledge transfers, knowledge spillovers are still treated as a 'black box'. There is little evidence on how and in what ways through labor training, technology and knowledge were diffused. Local employees may increase their knowledge not just through formal training, but through on-the-job training, learning by doing, or learning by observing. Knowledge transfer may also take place through simple interactions between MNCs and local firms' workers who perform similar tasks. Hence, this study goes beyond the existing research in the area of FDI spillovers by investigating on what types of training offered by MNCs' subsidiaries to local firms' employees and how and in what ways these trainings could enhance technology and knowledge diffusion. This study focuses on MNCs as the generators of spillovers and local suppliers as receivers through vertical linkages and business relationships. Although a number of surveys exist on the role of technology transfer between foreign MNCs and their local suppliers in developing countries, many of these are either theoretical contributions, e.g. identifying various types of technology linkages (for reviews, see Dunning 1993; UNCTAD 2001, 2002), or empirical analyses focusing on FDI spillover effects on host-economies using aggregate industry-level data (see Blomström *et al.* 2001). Thus, the aim of this paper is to add to this small number of empirical analyses and contribute to an increased understanding of the extent to which MNCs' training activities could facilitate innovation activities among local suppliers in a developing country. Moreover, it analyses to what extent, and in what ways, MNCs through their formal and informal training programs could provide their local suppliers with different types of assistance, and discusses to what extent the linkage has a beneficial impact upon the innovation activities of their local suppliers.

## FOREIGN DIRECT INVESTMENT AND KNOWLEDGE TRANSFER

It is clearly recognised that multinational firms are widely acknowledged as having firm-specific advantages that allow them to overcome a potentially disadvantageous position with respect to domestic counterparts in foreign markets (Blomström & Sjöholm, 1999). Such advantages typically take the form of knowledge-based assets such as proprietorial information relating to product or process technology, managerial know-how, the quality of the workforce, the company culture, use marketing and branding and so on. A firm's decision to invest instead of pursuing other forms of internationalisation such as exporting or licensing results from internalisation and is due to investment being the most efficient strategy for exploiting their firm-specific assets. It has been widely acknowledged that such inward-investment offers potential indirect benefits to domestic firms, via enhanced productivity levels and/or productivity growth (Blomström, 1986; Haddad & Harrison, 1993; Görg & Greenaway, 2004). However, MNCs can also take on local firms with superior knowledge of local markets, consumer preferences and business practices because they possess superior intangible productive assets, such as managerial skills, reputation, or technological know-how (Blomström & Sjöholm, 1999; Liu, Wang & Wei, 2009; Du, Harrison, &



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Jefferson, 2011; Hale & Long, 2011). Foreign investors affect local firms in their industry in numerous ways. It is beneficial to consider the various channels through which international technology transfers occur and many studies have recognised the important routes through which inward FDI can benefit productivity and the innovation activity of domestic firms in a host-country (Blomström & Kokko, 1998; Görg & Greenaway, 2004). According to Blomström and Kokko (1998), spillovers can occur through three main channels: firstly, through a labour mobility channel; the diffusion of technology occurs when the movement of labour from foreign subsidiaries to locally-owned firms takes place (Kaufmann, 1997; Haaker, 1999; Fosfuri, Motta, & Ronde, 2001; Glass and Saggi, 2002; Meyer, 2004; Spencer, 2008). This occurs through labour turnovers, whereby local firms obtain the technological know-how of foreign firms by ''stealing'' their skilled workers. In this case, the movement of highly-skilled staff from MNCs to domestic firms results in an influx of knowledge which may be usefully applied in domestic firms. Additionally, labour mobility facilitates human capital development in a host country when a trained local work force starts their own businesses. On the other hand, there is the possibility of MNCs attracting local firms' best employees as MNCs are able to offer higher wages (Sinani & Meyer, 2004).

In fact, evidence from previous theoretical and empirical studies shows that technology transfer from export activities does occur and has a significant positive effect on product innovation. This is consistent with the effects of learning by exporting on firm innovation. It has also been recognised that the endogenous growth model is important as it considers international trade as an important channel of diffusion of technological knowledge (Grossman & Helpman, 1991; Coe & Helpman, 1995). The endogenous growth theory emphasises the role of international trade in enhancing innovation which is generated from an international flow of ideas, where the international trade process between trading countries enables the transfer of technology and knowledge. There is a vast amount of knowledge and technological information diffusion that occurs from exporting activities. Selling products to international buyers requires local firms to be more competitive as high quality products and price become crucial factors. The high standard requirements imposed by international buyers enable local firms to learn how improve product quality and production process. The "collaboration" with their foreign buyers may create the opportunity of "learning-by-exporting" where exporting firms learn from their buyers how to upgrade the product quality. MNCs can also directly affect the trade performance of host country through their own exporting activities (Blake & Pain, 1994; Barry & Bradley, 1997; Cabral, 1995). MNCs have an impact upon domestic firms through export information externalities and the demonstration effect (Aitken & Harrison, 1997; Greenaway, Sousa, & Wakelin, 2004). Export activities normally involve high costs where there is a need for a distribution network, transportation facilities as well as the "know-how" on local customer taste and preferences (Greenaway *et al*., 2004). Thus, exporting activities may act as a facilitator, whereby local firms may reduce the entry cost by collaborating or imitating MNCs' export process. The endogenous growth theory also emphasises the role of internationalisation in enhancing innovation which is generated from an international flow of ideas (Grossman and Helpman, 1991). This source of international spillovers which flow from buyers to sellers through their interactions enables local sellers to access the ideas and technology developed by their foreign counterparts. Grossman and Helpman (1991) stress that interaction between a domestic producer and its international agent contributes to the enhancement of the knowledge of domestic producers. Additionally, the importation of products from developed to developing countries also allows developing country producers to familiarise themselves with technologically better quality products from importing countries. The information from the "bilateral trade" gives them ideas on how to improve their products. Trade can facilitate knowledge



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spillovers by facilitating the interaction of 'reverse engineering' between developed country producers and developing country buyers (Grossman & Helpman, 1991; Coe & Helpman, 1995).

Finally, through linkages, spillovers may take place vertically from foreign firms to their local suppliers by means of technological know-how transfers, staff training, standard quality requirements, cost leadership and so on. A theoretical study on the impact of FDI externalities on host-country economic growth suggests that it most probably arises at inter-industry rather than intra-industry level (Rodriguez-Clare, 1996; Markusen & Venables, 1999; Javorcik, 2004; Blalock & Gertler, 2008, 2009; Arnold & Javorcik, 2009; Javorcik & Spatareanu, 2011). Multinationals are beneficial to the host-country in creating demand for local inputs, increasing the specialisation and efficiency of upstream and downstream activities and generating positive externalities for local industries (Rodriguez-Clare, 1996; Markusen & Venables, 1999). Rodriguez-Clare (1996) has developed a theoretical model that studies MNC effects on host-country firms through the generation of backward and forward linkages, particularly the externalities created from FDI via vertical linkages. The model shows that MNCs create backward linkages and thereby lead to the production of a greater variety of intermediate goods, which allows the economy to gain a comparative advantage in the production of more sophisticated final goods. This results in higher productivity and wage rates. This could also, however, generate a negative effect if MNCs import all their inputs from parent companies, thus reducing the demand for local supplies. The relative strength of the competition and spillover effects remains unclear. However, the competition effect may condition the way FDI affects the local industry, as suggested by Aitken and Harrison (1999). They cautioned that multinationals have lower marginal costs owing to some firm-specific advantages which allow them to attract demand away from domestic firms, forcing them to reduce production and move up their (given) average cost curve.

Similarly, Markusen and Venables (1999) studied the effects of multinational companies on the development of domestic firms in the host-economy. They suggest that it is possible for FDI to act as a catalyst that can lead to the development of local industry through linkage effects. Their study shows theoretically that multinationals, through the creation of linkages with indigenous suppliers, can exert a positive influence on the development of indigenous firms. They also link vertical spillovers to market structure. They argue that multinationals can change the structure of imperfectly competitive industries in the host-country by fostering the development of domestic intermediate goods- producing firms, which, in turn may have positive effects on the development of domestic final goods-producing firms. In relation to the theoretical models on vertical spillover and linkages (Rodriguez-Clare, 1996; Markusen & Venables, 1999; Javorcik, 2004; Arnold & Javorcik, 2009), the concept of linkages was first established by Hirschman (1958). Linkages can be broadly defined as direct relationships established by firms in complementary activities, which are external to pure market transactions and essential to the functioning of any normal industrial market (Lim & Fong, 1982). As inter-industry spillover may take place primarily through customer-supplier relationships which develop between foreign and indigenous firms, many domestic firms have increased their productivity through the impact of spillovers from the presence of FDI (Dunning, 1993). In these instances, spillovers may take place through knowledge transfers from MNCs who act as customers to local firms while the local firms act as suppliers. Local firms have incentives to upgrade their performance because there are higher requirements for product quality and they are under pressure to 'prove themselves' to their customer, i.e. the MNCs.



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## RESEARCH APPROACHES

This study uses firm-level case evidence, where it is able to provide new case evidence and contribute to an increased understanding as to the extent to which MNCs (through business relationships with local firms) facilitate technological upgrading among domestic firms in a developing country. Therefore, in order to have an in-depth understanding of the matter, interviews and first person accounts need to be heard from the people involved in order to get valuable information. Moreover, as suggested by Feagin, Orum and Sjoberg (1991) case studies are an ideal methodology when a holistic, in-depth investigation is needed. Moreover, many scholars suggest exploratory research and qualitative methodologies to capture multi-dimensional phenomena (Yin 2014) and this can provide a clear and holistic view of the context (Ghauri & Firth, 2009; Ruyter & Scholl, 1998). This study aims to provide a better understanding of vertical knowledge transfers as Corbin and Strauss (2014) claim that qualitative methods can be used to better understand any phenomenon about which little is known. They can also be used to gain new perspectives on matters about which much is already known, or to gain more in-depth information that may be difficult to convey quantitatively. In addition, only a few empirical studies in this area had previously used a case study approach. Therefore, by using detailed firm-level case evidence, this study is able to provide new case evidence and contribute to an increased understanding as to the extent to which MNCs (through business relationships with local firms) facilitate technological upgrading among local firms in a developing country.

A total of 9 interviews were conducted: two interviews with an American firm, five interviews with three different Japanese firms and two interviews with a European firm. In order to achieve information-richness of the case selected, this study uses three important criteria in selecting the cases. Firstly, the firm must have already operated in Malaysia for a relatively long period in which their presence has already had a significant contribution to the economic growth of the country. In addition, firms which have already had a long period of operation are more likely to have linkages/business links with domestic firms. Secondly, the selected firms must be among the largest in terms of output in the selected industries. Thirdly, the firms will be from the main industries in Malaysia which have attracted a substantial amount of FDI: that is, in this case, the electrical and electronics industry. Initially, and most importantly, in order to guarantee reliability, the details of the procedures followed in the interview process were constructed. Firstly, in order to secure the interviews, the author wrote to the CEO of respecting firms and asked them for permission to conduct an interview with a suitable person. All interviews took place at the respondent's offices, and each interview lasted between forty five minutes to one hour and was conducted in English. A semi-structured in-depth interview format was used where a list of pre-prepared open-ended questions were asked. These open-ended pre-prepared questions were designed to extract detailed and crucial information on how technology transfer occurs. Moreover, this approach enabled the researcher to focus on the main topic rather than a more general one and address more specific questions. Obviously, in the interview process, the interviewer did not attempt to influence the responses of interviewees. Each respondent explained the topics asked according to their own conscience and understanding.

In order to keep the research results confidential and use them solely for academic purposes, no specific individuals or names of companies will be identified. Hence, the study uses pseudonyms in place of the names of companies and only refers to the position or job title of the respondents. The study identifies the company as Japan co. 1, Japan co. 2, Japan co. 3, the US co. 1 and Europe co.1. The interviewees of the case companies are the Assistant Head of AU Production (BU2), Production 2 Department of Japanese Co. 1, the Procurement & Logistics Manager of the US co. 1, the Production Manager of the US co. 1,



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the Purchasing Department Manager and the Department Head of Home Shower Production of Japan co. 2, the Assistant Manager of Procurement & Administration and the Production Manager of Japan co. 3, the Purchasing Section Manager and the Director of Procurement of Europe co. 1. The interviews were conducted one-to-one, digitally recorded and subsequently transcribed. Detailed accounts of the interviews which included the transcription and coding process are presented in next section. Below were the lists of all cases:

## Case 1: Japan co. 1

Japan co. 1 is one of the world's best-recognised brand names, with extensive operation networks that span the four corners of the globe. The history of Japan co. 1 started more than 20 years ago when, it first manufacturing plant was established on the shores of Malaysia in Prai, Penang, one of the states in Malaysia. Since then, with the vision of its founder and a dedicated workforce, it has become one of the biggest companies in Malaysia, boasting a headcount of 13,000 employees. With the total production quantity per year reaching 50 Million units, it is the biggest manufacturing plant in Asia that incorporates state of the art of cutting-edge technology in the design and production of quality consumer video products. Japan co. 1 is also one of the top 5 companies in Malaysia in terms of sales volume. Presently, Japan co. 1 has two manufacturing entities: one in Prai, Penang (PG Tec) and one in Bangi, Selangor (KL Tec). The company started manufacturing audio/visual products in Malaysia in the 1980s. They manufacture high technology products such as DVDs, CD-RW, flat screens, TVs, audio products and hi-fi sets. Cumulatively, the company has invested more than RM2 billion in this country. Their products have positively enriched the lives of consumers with products that push the technology envelope and make life more enjoyable and exciting. Japan co. 1 consists of two manufacturing plants, strategically located in Prai (PG Tec) and Bangi (KL Tec).

## Case 2: Japan co. 2

The first Japan co. 2 was established in 1965 in Malaysia and since then, the Japan co. 2 Group of Companies in Malaysia has grown manifold times into 23 companies, 15 of which are Manufacturing, 3 Sales & Service, 3 Research & Development Centres, 1 Finance Centre and 1 Insurance Company. The Group is one of the largest employers in the manufacturing sector, with a current workforce of approximately 30,000 employees and its consolidated annual turnover is around RM9 billion. Its products range from simple to sophisticated components and electrical goods, where 75% of the Group's total production output is exported to overseas markets, which makes the Group's contribution to the Malaysian economy highly visible, accounting for as much as 2% of total Malaysian exports. The acceptance of Japan co. 2 'Made-In-Malaysia' products in the world market provides recognition for the Group's effort to maintain a high standard of quality equivalent to the Japan co. 2 Electric Industrial Co., Ltd. (MEI), Japan. Adhering to its motto, 'We make people before products', the Group is committed to the development of human resources and the transfer of technology and management skills. This is largely achieved through On-The-Job and Off-The-Job training conducted in Malaysia, Japan and other countries. All employees have the opportunity to develop themselves and grow with the company. Today, the Japan co. 2 brand name has emerged as one of the most welcome and trusted brand names for electrical home appliances chosen by most Malaysian households. The company manufactures, operates, delivers, and maintains a



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series of product ranges with globally competitive models under the Japan co. 2 brand name, incorporating new features, enhanced capability and improved quality.

## Case 3: Japan co. 3

Japan co. 3 has been operating in Malaysia for about 15 years and currently has more than 200 employees who represent various nationalities but are mostly locals. The company produces several parts/products ranging from lead wires, aluminium coil for electrolysis condensers, capacitor cases, electronic components, electronic engineering as well as metal products. The company has 100 percent foreign equity, that is Japanese and has a paid up capital of RM25 million. Nearly 80 percent of the products are manufactured for export markets which include the Japanese market, China, Taiwan, Hong Kong, the Philippines, Thailand and Indonesia. The remaining percentage is for the domestic market. The company also supplies certain parts or components (such as aluminium wires and aluminium coils) to large global manufacturers. The company has always ensured that productions are systematic and has been able to maintain the standard of products by abiding by the guidelines of Standards and Industrial Research Institute of Malaysia (SIRIM). The company had managed to achieve ISO-certification of ISO 9001 in the years 2000 and 2002.

## Case 4: US co. 1

Incorporated in 1974 and with more than US$1.1 billion in investment, the US co. 1 in Malaysia has established itself as a leading manufacturer of high-technology communications, information technology and electronics components, and products, equipment and accessories for the global market. With over 30 years of corporate presence, the company has established itself as a leading manufacturer of high technology wireless communications solutions and accessories for the global market. The company is now the largest manufacturing site for two-way radio products in Asia and the only design centre for two-way radios in the region. The company is a global leader in providing integrated communications solutions and embedded electronic solutions. US co. 1's Malaysia operations consist of two manufacturing sites, a world class Research & Development centre, an Asia Pacific distribution centre, a Multimedia Super Corridor (MSC)-status Software centre, and seven core sales businesses.

Until now the company presence has contributed positively to the Malaysian economy, especially in the areas of technology transfer, local vendor development and export business. In addition, the company has contributed significantly to the community by imparting its knowledge through training and development programmes, especially in the field of engineering. Some of these education initiatives include joint-development of curriculums with education institutes, research grants, scholarship programmes and cross-training for technology advancement, as well as the donation of communication equipment.

The company is one of two in Asia and the largest facility that manufactures two-way radio products. The Penang Design Centre is the first two-way radio design centre in Malaysia and the only one in Asia with over 30 years of R&D expertise. The centre is recognised as a SEI-CMM® Level 5 organisation with the highest level of software maturity as assessed by the Software Engineering Institute (SEI) from the Carnegie Mellon University in the USA. Both manufacturing operations and product development operations are ISO14001/ ISO9001/TL9000 accredited. In 2007, the Penang operations was awarded the prestigious 'Penang Chief Minister's K-ICT Award 2007' for its best practices in developing knowledge workers within its operations. The company's excellent track record is a testament to the tenacity



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and commitment of the team which has enabled it to remain as one of the key growth centres in the company's global operations.

Employing more than 1,000 R&D engineers, the company plays a strategic role as the 'Centre of Excellence' responsible for the entire product lifecycle activities including R&D, manufacturing, sales and distribution and customer support for regional and global markets for its digital two-way radios and advanced wireless broadband communications solutions. It is also a 24-hour Asia technical support centre. With its customer solution centre co-located with R&D, the company serves as a world class technology showcase for Made-in-Malaysia products and solutions, demonstrating the high level of engineering competencies in Malaysia. In addition, the company has an Advanced Communications Laboratory that houses four key laboratories - an Electromagnetic Emissions (EME) Laboratory, a Type Approval (TA) Laboratory, an Engineering Laboratory, and an Electromagnetic Compatibility (EMC) Laboratory. The company has what they have called the US co. 1 University which is globally recognised as a leader in corporate education and provides industry-related learning solutions both internally and externally to private and public enterprises and institutions.

## Case 5: Europe co. 1

Europe co. 1 was founded in 1974 and provides a full range of integrated designs, prototyping, new products and mass production services to some of the most demanding European and American OEMs, and delivers to them or directly to their customers worldwide. The company serves customers primarily in industries like industrial electronics, electrical & lighting, electronics, residential & building controls, high-end consumer electronics, power tools, communications & networking, audio & video and defence electronics. A Swiss-owned company located in Penang, Malaysia, Europe Co. 1 has more than 30 years of contract manufacturing experience in Europe and Asia and a marquee list of leading OEM customers. Among other fully-integrated providers of electronic and mechatronic design and manufacturing services, the company stands out as a world-class concern. With a full range of design and manufacturing services, the company offers a truly vertically-integrated, one-stop shop for its customers. With a first-class development team in the heart of Europe and several production locations in Asia, now for more than 30 years the company has become the preferred electronic manufacturing services (EMS) company providing integrated design and production solutions for customers in Switzerland, Europe and North America.

The company is committed to total quality management, providing product and product-related services that conform to all established requirements of customers and its quality management system. Through continual review and improvement, the company is committed to exceeding the expectations of its customers, achieving total customer satisfaction, and providing defect-free, competitive products/solutions on time. The company has a strong, 30-plus year commitment to maintaining the highest quality standards. The company has combined the principles of Kaizen with the procedural discipline of the ISO, QS and TS standards. With this combination, the company has created an innovative quality system that works throughout the entire organisation to continually maintain and reinforce its quality standards. The company is certified to the quality standards such as QS 9000, ISO 9001:2000, ISO 14001, ISO 13485:2003, ISO 13485:2003.

In a business where as much as 80% of the value of the products the company builds can be in the components and materials, supply chain management is critical to the company success. At the front end, the company design teams consult closely with its supply chain teams in order to ensure a bill of



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material optimised for eventual mass production. At the individual factory level, planning and execution of buying activity optimises lean inventory management and lead-time flexibility customer by customer. In a world driven by breakthroughs, the company is a thriving leader in the electronics manufacturing industry. With a blue-chip list of OEM customers, the company continually has exciting new design and manufacturing challenges to solve. At the company design centres in Switzerland and Malaysia, and its manufacturing facilities in Switzerland, Malaysia, Singapore and China, the company team members are challenged to learn and innovate and create value every day. The company growth in 2007 was RM612 million and until the third quarter of 2008 the company has recorded RM650 million growth.

## FINDINGS AND ANALYSIS ON TRAINING PROGRAMS AS A CHANNEL FOR KNOWLEDGE SPILLOVERS

The transfer of knowledge and technology from MNCs to local suppliers is not only embodied in machinery, equipment, production processes, product design and technical processes but is also realised through the training of local employees. This is another important area of knowledge diffusion where different types of training programmes are offered by MNCs in order to upgrade the human resource base of their suppliers. The American MNC in this study gives training to supplier's people at the MNC site as well as supplier's site. In this situation, MNC engineers will be sent to the supplier's site to train them as well as in-plant training for supplier's employees at MNC's site. Training of supplier's employees normally includes an assembly works which takes place in MNC's factory or, on some occasions, experts from the MNC will go to supplier's factory to conduct the training. This emerged clearly from an interview with the Production Manager of US co. 1:

*We will ask their people to come or our people can go there and train them. (US co. 1)*

*Normally those are typically involve a lot of assembly sometimes they need to assemble this assemble that so we will send our people there and train them. (US co. 1)*

He added:

*We send our engineers to train them. Typically assemble work we go there and train them. (US co. 1)*

The statement was echoed by the Procurement and Logistics Manager of US co. 1 as he pointed out:

*We will have our local team here to go and train supplier's workers in term of technical consultations. (US co. 1)*

He added:

*Sometimes if it is required they will come here and do some in-plant training as well before we go over there, they normally come in and do in-plant training first then later on once we will get our engineer also to go over as well to train them. (US co. 1)*



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One of the important objectives of the training programmes offered by the MNCs is to develop local talent. According to the company, human capital development is one of the three tenets of their extensive Corporate Social Responsibility programme. The company is taking a holistic approach to investing in talent development, citing the need for nurturing local talent as a key ingredient to Malaysia moving forward. The company transfers technology and knowledge to its local employees through various training programmes. The company believes these various training programmes will affect every level of employee. It involves simple manufacturing operatives to high level operations and from lower level production workers, supervisors to technically advanced professionals and top-level managers. The types of training range from on-the-job training to workshops, from in-house training to specific training at the parent company, depending on the skills needed. Most of the time, training will take place in the factory or its training facilities. At any time, as and when necessary, an expert from Headquarters will come over to conduct training. The Production Manager of US co. 1 reiterated:

*In terms of like all those tech that we are trying to ever transfer from states or other countries to Malaysia, equally all this will be transferred to them, all this tech will be passed on to them, indirectly it will help build our local talent not only inside the company but outside the company. (US co. 1)*

He added:

*Normally the latest technology will come directly to the factory it won't go directly outside, so either we will have our people going to the HQ directly for training or personnel from the HQ come over here to train us. (US co. 1)*

The company currently works alongside local universities in joint collaboration efforts and has partnerships with local universities such as the 'Inter-School Engineering Challenge' (ISEC) with International Islamic University Malaysia and the 'Creative Engineering Design Competition' with Universiti Sains Malaysia (USM) to cultivate students' interest in engineering. For outstanding engineering students who excel in their studies, the company has introduced the Gold Award, rewarding them with cash prizes and internship programme opportunities. The company believes in investing strategically in R&D and human capital as a step to continuously increase its value chain in the industry. This commitment reflects the company's position as a strong and long-term investor, as well as a committed employer in the country.

Previous studies based on developing countries have shown that training programmes are crucial for MNCs in order for them not only able to produce higher quality products but also for acquiring good quality material from local suppliers in the host country. Gerschenberg (1987) for instance, examines MNCs and their training programmes as a means of managerial skills diffusion in Kenya. From detailed career data of 72 top and middle level managers in 41 manufacturing firms, the study concludes that MNCs offer more training of various sorts to their managers than private local firms do. Managers also move from MNCs to other firms and contribute to the diffusion of know-how. Chen (1983), in a study of technology transfer to Hong Kong, chooses to emphasise the training of operatives. MNCs' training expenditures were significantly higher than those for local firms. Strikingly, the study concludes that the major contribution of foreign firms in Hong Kong manufacturing is not so much the production of new techniques and products, but the training of workers at various levels.

A constant effort is needed to enhance customer satisfaction. In this case, employees as well as suppliers' education and motivation is the key to avoiding mistakes. In their search to give customers more



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value for their money, Japanese MNCs placed extensive training programmes for both employees and their local suppliers. They believe good training and continuous retraining is essential. Generally, the focus of Japanese training is on how to perform a task efficiently while achieving better quality. Japanese management views quality training as an investment where results can be seen in the long-run. This attitude towards quality training leads to an extensive, expanded, and continuous programme. Normally, engineers from HQ will come to train subsidiary employees or an advisor from MNC's HQ will communicate technology with a subsidiary's engineers. Sometimes, subsidiaries send their people to HQ to study the introduction of new products. Japanese MNCs' commitment in relations to the importance of various training programs was evidenced as the Section Head of Production of Japan co. 2 pointed out:

*What we did was that we will ask people from HQ to come here and train us which we believe that it is the best way where many of our employees will be able to get train from people from HQ rather than only certain people. (Japan co. 2)*

He added:

*Here, we have our engineering department which acts as our R&D team. We do not have a specialised centre for R&D here. If we have any problem faced by the team they will consult with the team in Japan. Our R&D and technology are actually control by our engineering department. Suppliers do not have to come here to get along with our R&D department. Most of our engineers are local people but normally, we have one advisor from Japan who will communicate the technology between HQ and us. (Japan co. 2)*

As production technologies have a dynamic impact in relation to technology development, it is important to have continuous training programmes in order to ensure company competitiveness. Formal classroom training, informal training and on-the-job training are some of different methods of training used by Japanese MNCs. The important point is that different employees from different levels of the organisation are involved in training programmes in one way or another. For Japanese MNCs, in-house training programmes by HQ technical teams to subsidiary people normally take place on the subsidiary's site. Various training programmes were also offered at the MNC's HQ. The Production Manager of Japan co. 3 stressed:

*We do provide all sorts of trainings especially to our technical team. Some of the trainings that we conduct are in terms of product safety; sometimes our technical people have the opportunity to utilise cutting-edge machineries or work process. (Japan co. 3)*

He added:

*We do send our technical team to attend trainings at our Headquarters in Japan, or sometimes, they are in-house trained by our Japanese technical advisor. We normally send our people to our Headquarters in Japan; to have a feel of the product. Of course all new employees will have to attend basic orientation training in the initials weeks of starting work; i.e. fire safety, safety in the workplace, the correct posture when lifting heavy products. (Japan co. 3)*



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Engineers in HQ and engineers from subsidiaries will study together about the new product in MNC's HQ and, after studying the new product, a subsidiary's engineers will transfer the knowledge to the people in the subsidiary. The company believes training programmes offered by MNC are crucial in the development of local talent. The company is responsible not only in the investment of talent development, but as key to the progress of Malaysian human resources. In this case, Japanese MNCs transfers technology and knowledge to its local employees through various training programmes. The company believes these various training programmes affect every level of employees. The Section Head of Production of Japan co. 2 stressed:

*When we want to introduce certain new product, first thing we need is to have a discussion among ourselves then we will send our engineering people to Japan. Basically in Japan, they have many engineers that design and develop a new model, so we will study together between Malaysian engineers and Japanese engineers. When our engineers have learned everything there, they will transfer their knowledge to our workers here as well as our suppliers. (Japan co. 2)*

Similarly the Head of the Production Department Production manager of Japan co. 1 pointed out:

*These people will make sure the introduction of the new model will going smoothly, no defects. They will discuss with the production people on the necessary things regarding the introduction of new model. (Japan co. 1)*

Japanese MNCs send their engineers and quality control staff to the suppliers' factories to educate suppliers' employees. Workers with adequate skill, knowledge and training are an important element in the quality-related efforts of a company. This is an important point where knowledge is diffused through different types of training programmes offered by MNCs in order to raise the human resource capabilities of their suppliers. In fact, education and training of vendors is considered a top priority. Suppliers must be trained to perform rigorous quality-control on their products. The Section Head of Production of Japan co. 2 pointed out:

*We do send our people to suppliers' place to train them. We decided to go to their place and do training there so that we will be able to train most of the supplier's workers. (Japan co. 2)*

The Manager of the Purchasing Department added:

*Basically in Japan, they have many engineers that design and develop a new model, so we will study together between Malaysian engineers and Japanese engineers. When our engineers have learned everything there, they will transfer their knowledge to our workers here as well as our suppliers. (Japan co. 2)*

As production procedures will change according to any related technology developments, it is vital to have ongoing training sessions as a way of familiarizing employees with new ways of doing things and to ensure that these technological changes ensure that product quality is on a par with the product leaders. Training facilities, be they local or abroad, are also offered to local suppliers' personnel as part of a healthy technology and knowledge transfer/ sharing environment and as a testament to the principal



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companies' commitment to improving product quality. The importance of various training programmes emerged clearly from the interviews with the Director of Procurement of Europe co. 1 where he stressed:

*The company provides training for managers and technicians abroad at our HQ as and when applicable. We also have in-plant training program developed by the company for managers and technicians for example ESD, ISO QMS, etc (Europe co. 1)*

Similarly the Purchasing Section Manager said:

*Every plant has its own training plan. Sometimes when suppliers faced problem we will send our engineers and procurement to go just to go through with suppliers. (Europe co. 1)*

The company believes knowledge and know-how are important; unfortunately due to the prohibitive high cost, extensive training programmes are only offered to their own employees but not to their local suppliers. However, the company always has knowledge sharing and on-going discussions. The company provides guidance in order for the suppliers to provide high standard products. This emerged clearly from an interview with the Director of Procurement of Europe co. 1:

*The company does not assist our local suppliers in setting up their training programs as well as providing training for their workers abroad at your HQ. We also do not have in-plant training program for our for suppliers workers. (Europe co. 1)*

The Purchasing Section Manager added:

*We will have detail discussion and consultation from the start of the production process and of course we provide them with assistance especially for new suppliers. (Europe co. 1)*

## TRAINING PROGRAMMES AS CHANNEL OF KNOWLEDGE SPILLOVERS

This section aims to explore the links between training and innovative capacity of local suppliers. The pertinent question here is as follows: does training provided by MNCs to local suppliers improve their skills, enabling them to undertake more complex tasks or complete tasks better or faster? Does training strengthen local suppliers' innovation? As production technologies have dynamic changes in relation to technology developments, it is important to have continuous training programmes in order to ensure company-competitiveness. In their search to give customers more value for their money, Japanese MNCs devise extensive training programmes both for employees and their local suppliers. Generally, the focus of Japanese MNCs' training is on how to perform a task efficiently while achieving better quality. Japanese management views quality training as an investment where results can be seen in the long run. This attitude towards quality training leads to extensive, expansive, and continuous programmes. They believe good training and continuous retraining is essential because training of workers could improve their skills, enabling them to undertake more complex tasks or complete tasks efficiently. A constant effort, according to Japanese MNCs is needed in order to enhance customer satisfaction. In this case, employees as well as suppliers' education and motivation are the keys to avoiding mistakes. Though



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training is costly, the benefits that could be gained out of providing quality training to employees will translate into a more efficient human capital and with these improvements in the way workers do their jobs, the end product itself, be it in components manufactured or a harmonious supplier relationship, is ultimately improved.

In Japanese MNCs, engineers from HQ come to train subsidiary employees or an advisor from MNC's HQ will communicate technology to a subsidiary's engineers. Sometimes, subsidiaries send their people to HQ to study the introduction of new products. They also send their engineers and quality control staff to the suppliers' factories to educate suppliers' employees. The communication and transference of technology from the HQ to the subsidiaries need not be one way. Where relevant, subsidiaries do play their part in initialising technology transfer and proactively seek technology enhancement or enrichment opportunities from the HQ. This willingness and readiness help to instil the responsibility of ensuring that technology is sought out by local companies a factor which is especially important in an industry that is ever changing and demands that firms are on top of their game at all times. In this regard, local suppliers' innovation capacity could be increased as the latest technology normally comes from the HQ. It is common knowledge that Japanese MNCs have many engineers who design and develop new models and these abundant sources of expertise would be a beneficial aspect for subsidiaries' employees and local suppliers who are able to learn new techniques and technologies from Japanese engineers there and transfer the newly acquired technology information to their counterparts back home. This is an effective way of showing how knowledge could be transferred from the HQ to the subsidiary.

Japanese MNCs' commitment in relation to the importance of various training programmes is evidenced where formal classroom training, informal training and on-the-job training are used by Japanese MNCs to train local suppliers. The important point is that different employees from different levels of the organisation are involved in training programmes in one way or another. For Japanese MNCs, in-house training programmes, delivered by HQ technical teams to subsidiary people normally take place in the subsidiary's site. Various training programmes were also offered in MNCs' HQ in order to produce the desired innovation. These training programmes were able to equip their employees and suppliers' employees with greater skills and knowledge. In fact, education and training of vendors is considered a top priority. Suppliers were trained to perform rigorous quality control on their products. This is because the Japanese believe workers with adequate skill, knowledge and training are an important element in the quality-related efforts of a company. The commitment of MNCs for life-long learning is evidenced in the meticulous structuring of training for staff. For any company, it goes without saying that human capital is the most valuable asset and utmost care should be exercised for these valuable assets to flourish and serve their purposes. Providing training formal or informal is therefore beneficial in terms of generating skilled workers for the MNCs. Much has been said about Japanese MNCs' lifelong employment and the provision of training would be a way for MNCs to safeguard the companies' future and to ensure employees are well trained and highly skilled.

In American MNCs, technology was transferred to MNCs' employees through training. American MNCs in this study provide training to suppliers at the MNC site as well as at the supplier's site. In these instances, MNC engineers will be sent to supplier's site to train them as well as providing in-house training for supplier's employees at MNC's site. Training for supplier's employees normally includes assembly work, which takes place in MNCs' factories or at previously agreed time. For the previously agreed time, experts from the MNC will go to a supplier's factory to conduct training. To this end, local suppliers can consistently improve because they are willing to learn in order to secure future contracts with MNCs. The American MNCs believe that having technical discussions and consultations with



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suppliers when introducing new technology gives suppliers the opportunity to grasp the new technology. These 'learning processes' therefore not only increase the ability of their human capital, but also increase local firms' stock of innovation. Local suppliers are satisfied because once they have the new technology they can enhance their business performance and increase their innovative capacity. In addition to discussion, consultation and demonstration, intensive training helps local suppliers to master the technology. In return MNCs rarely experience major quality problems with local suppliers such as having to call the products back. This is an example of a win-win situation and how harmonious business relationships between MNCs and local suppliers could minimise product call backs and pave the way for future contracts.

As for the European MNC, the company has always been a proponent of knowledge-sharing and on-going discussions. The company provides guidance in order for the suppliers to provide high standard products. Giving some leeway in training management, the MNC does not assist local suppliers in setting up their training programmes but, as production procedures change according to any related technology developments, ongoing training sessions with local suppliers take place in order to ensure that technological changes help the local producer increase their product quality. Training facilities, be they local or abroad are also offered to local suppliers' personnel as part of a healthy technology and knowledge transfer/sharing environment and as a testament of the principal companies' commitment to improving product quality.

It is important to note that the diffusion of such knowledge can take place through different types of channels. Among the many channels through which foreign knowledge spills over to local companies in the host country, FDI is one of the most effective forms of international technology transfer because it can convey not only technology embodied in goods and services but also intangible assets such as knowledge skills (Branstetter, 2000). The case evidence in this study clearly demonstrates that FDI from foreign MNCs through their training programmes can be viewed as an essential element in enhancing organisational learning and creating new knowledge, hence leading to innovation. Extensive training programmes, discussions and consultation with MNCs provide local suppliers with knowledge about how to design a product and also increase their innovative capacity because design activities can have a positive effect on innovation outputs (Marsili & Salter, 2006). Moreover, communication between the companies also provides local suppliers with the skills of processing, and knowledge regarding specifications on technical areas. All these elements enable local suppliers to increase their innovation and produce a product that can meet MNCs' standard requirements. Having technical discussions and consultations with MNCs in the case of the introduction of new technology gives suppliers the opportunity to fully embrace the new technology. In addition to discussion and consultation, demonstration and intensive training help local suppliers to master the new technology introduced and increase the innovative capacity of local suppliers. As revealed by (Johnson et al., 1996), commitment to the development of human capital, signalled by formal and informal training programmes, is likely to be central to successful innovation in both products and processes. This view is echoed by Warner (1996 p. 348) who contends that innovation 'requires a greater human resource management investment in technician training as well as linking this with the work of engineers in design and product development'

It is evident from the discussion above that training is found to be closely related to innovation and training is a crucial factor in upgrading the skills of employees. When employees from these local suppliers learn advanced technology from MNCs, this may lead to more innovative activity in suppliers' local firms. Training programmes offered by the MNCs in this study have enabled local firms to learn about the products and technologies brought in by foreign investors by means of reverse engineering or



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demonstration effects, where domestic firms learn superior production technologies from MNCs. Previous studies by Dunning (1993) and Jenkins (1990) suggest that MNCs may impact local economies by stimulating imitation, reverse engineering and involuntary diffusion of information on advanced technologies and managerial techniques. Furthermore, training programmes offered by MNCs help to raise the human resource capabilities of their suppliers and can be considered as a major channel of knowledge transfer. In this sense, training offered by MNCs is inextricably linked to the innovation performance of local suppliers (Warner, 1996). Thus, training and education could lead to an increase in the quality of labour, by equipping employees with greater skills and knowledge. As a result, local suppliers are able to improve the efficiency of their production process and are able to undertake more difficult tasks with higher quality results. If domestic firms learn more advanced technology from MNCs then this may also lead to more innovation. This is because innovation is conceived of as a process of 'learning by interacting' (Lundvall, 1995), 'learning by doing' (Arrow, 1962) and 'learning by using' (Rosenberg, 1982). Thus, in order to take full advantage of the opportunities that FDI offers, and especially the potential for technology-enhancement to local companies, it is imperative that the governments of developing countries should prioritise the provision of a hassle and bureaucratic-free platform where technology transfer can take place between foreign MNCs and local companies.

The linkages between MNCs and local suppliers are vital because assistance provided by MNCs acts as a catalyst to stimulate innovation activity of local firms in developing countries like Malaysia. The findings in this study corroborate those of the previous work in this field. Previous studies based on developing countries have shown that training programmes are crucial for MNCs in order for them not only able to produce higher quality products but also to acquire good quality material from local suppliers in the host country. One example of this is cited by Gerschenberg (1987) for instance, who examines MNCs and their training programmes as a means of managerial skills diffusion in Kenya. Chen (1983), in a study of technology transfer to Hong Kong, emphasises the training of operatives. MNCs training expenditures were significantly higher than those for local firms. Strikingly, the study concludes that the major contribution of foreign firms in Hong Kong manufacturing is not so much the production of new techniques and products, but the training of workers at various levels. Lall (1978) finds that MNCs improve the productivity of indigenous firms by providing technical assistance and training, by assisting them in purchasing of raw materials and by pressuring suppliers to meet standards of reliability and speed of delivery. These vertical spillovers can then enhance the innovation capability of local suppliers. All of the above views on how training could catapult local companies to greater heights in producing more technologically advanced products and secure more future contracts with MNCs could well be justifications for developing countries to offer more FDI-friendly policies to MNCs.

It is imperative to comprehend the transfer of knowledge and technology from MNCs to local suppliers is not only embodied in machinery, equipment, production processes, product design and technical processes, but is also realised through the training of local employees. In the MNCs' context, this is another important area of knowledge diffusion where different types of training programmes are offered by MNCs in order to upgrade the human resource base of their suppliers. Training possibly leads to increasing in the quality of labour, equipping employees with greater skills and knowledge, improving the standard and quality of products, thus resulting in continual innovation and increased productivity and profitability (Mathews, 2002; Taylor & Davies, 2004). The training given by MNCs to their local suppliers in the area of production as well as management area enables local suppliers to know all the processes involved. Extensive discussion and consultation with MNCs during training programmes provides local suppliers with knowledge and technology know-how. These resources allow local sup-



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pliers to produce a product that can meet MNCs' standard requirements. Moreover, some of the training provides local suppliers with the opportunity to utilise cutting-edge machineries or work processes. These training activities ensure that local suppliers use machineries appropriately in order to achieve optimum production and simultaneously ensure that employees are trained for the purpose of putting health and safety in place. Therefore, it can be proposed that:

*Training programs offered by MNCs to local suppliers could stimulate local innovations.*

Table 1 indicates the findings gathered from the case study interviews, which points to the significance of training programs in enhancing local suppliers' innovative capacity.

## FUTURE RESEARCH DIRECTIONS

The limitation that should be considered in this study concerns the issue of generalisation in the use of the case study method. The research attempt is based on five cases and therefore does not permit any claim of generalisability. Furthermore, the author only interviewed MNCs, but not local suppliers thus, the evidences and findings could not be confirmed from local suppliers perspectives. Having said this, this case study have opened the black box of the MNCs and its channels to reach the local suppliers and further study might be useful to give insights how the other side of the coin will work which would too much for the scope of this study. One of the main objectives of this study was to add to limited evidence related to how and in what ways technology and knowledge are diffused. Specifically, it attempts to contribute to the FDI spillover literature by exploring the channels through which technology and knowledge could be transferred to the host country. In doing so, the author had identified that an in-depth case study method was most suitable in order to generate a deeper understanding of the significance of the assistance provided by MNCs and that this method would prove an effective strategy in generating a large volume

*Table 1. Training programmes as a channel of spillovers*

| | **Training Programms** |
|---|---|
| **Japanese MNC** | • HQ's engineers give training and communicate technology with subsidiary's engineers.<br>• Subsidiary's staff to attend training at HQ.<br>• Latest technology comes from the HQ.<br>• Formal classroom training as well as informal training to local suppliers.<br>• On-the-job training was used to train local suppliers.<br>• Education and training of vendors are considered a top priority.<br>• Suppliers were trained to perform rigorous quality control on their products. |
| **American MNC** | • Conduct training programs to local suppliers at MNC site.<br>• Conduct training programs at the supplier's site.<br>• MNC engineers were sent to supplier's site to conduct training.<br>• Training includes assembly work.<br>• Technical discussion and consultations to locals suppliers when introducing new technology.<br>• Gives suppliers the opportunity to grasp on the new technology. |
| **European MNC** | • More flexible training programmes.<br>• Ongoing training sessions according to any related technology developments.<br>• Provide training facilities local or abroad being offered to local suppliers' personnel. |



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of very meaningful data. However, future studies may consider using the survey method to empirically test the significance of channels of knowledge and technology spillover on local innovative capacity.

The findings obtained from the case studies were able to produce a new theoretical framework with propositions. For example, this research has explored how knowledge and technology can be diffused through different channels of FDI spillover. The results seem to demonstrate a positive relationship between MNCs and local innovative capacity, where knowledge and technology can be diffused through the high-quality and standard requirements imposed by MNCs. Knowledge could also be disseminated through their training programmes offered by MNCs to local suppliers, as well as the high-quality and standard requirements imposed by MNCs.

However, this study overlooked the importance of cultural differences and the impact of cultural diversity; both of these are factors which might affect knowledge and technology transfer. Although the effects of culture on business practice and organisational behaviour have been extensively studied, less effort has been made to study the effects of cultural diversity on FDI spillovers. Further studies are needed to find out whether national cultural differences have an impact on the relationship between the level of technology transfer from MNCs to local firms and whether innovation activities between MNCs and local suppliers may be impeded by cultural barriers. Further studies are needed to explore how cultural barriers may slow down or accelerate the transfer of knowledge and technology from different MNCs to local firms. Though the cases were positioned to show differences in the MNCs of the Triad countries, a deeper analysis of the differences between the use of channels across these MNCs would need to be reserved for further research. On one hand, the long term orientation may motivate Japanese MNCs to build trust and long term partnerships with local suppliers, and to transfer advanced technology or provide best training to local suppliers, whereas US MNCs may seek short-term solutions with local suppliers. The Japanese MNCs may be in a better position to understand local suppliers due to the relatively small cultural distance when compared with US and European MNCs. The cultural dimensions as distinguished by Hofstede (1982, 2001) could be used as a measure of national culture for this future study.

## CONCLUSION

As discussed in earlier section, previous studies were unable to specifically identify how knowledge and technology were transferred through vertical linkages. Little attention has been paid to discovering knowledge transfer through the various means that could be channels of spillovers and how these linkage effects may improve the innovation activities of local suppliers. This study was designed to examine how and in what ways knowledge is transferred through business linkages. This study has been able to demonstrate that significant linkages were established between MNC and local suppliers. Moreover, the evidence from this study suggests that knowledge can be transferred through training programmes offered by MNCs to local suppliers. This is evident in this study where local firms gained knowledge and understanding about products and technologies brought in by foreign investors by means of reverse engineering and demonstration effects, training, feedback and technical consultations. The present study was designed to determine how and in what ways technology is transferred through these linkages. The findings presented in this study not only provide benefit to the academic circle but also to local businesses, especially small and medium industries, as well as policy makers. As for local businesses (and especially small and medium industries), FDI and innovation activities from MNCs may represent a source of knowledge and technology know-how. Hence, local suppliers may gain a number of advantages



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from establishing linkages with MNCs. In particular, the findings show the importance of the effect of knowledge brought in by MNCs. The findings show the importance of various advantages that local businesses could gain from business relationships with MNCs. For instance, activities like vendor management programmes to improve the product-quality of local suppliers may improve local suppliers' performance. Moreover, constant interactions between MNCs' engineers and local suppliers enable them to share new ideas. Consultations and discussions about product design, processes and technical specifications provide local suppliers with skills that could enhanced their innovative capability. For policy-makers, the evidence obtained in this study related to foreign innovation activities as a significant factor for the improvement of local suppliers innovative capacity justifies government policies that aim to encourage more capital intensive foreign investments. The strategies introduced to attract foreign investments that give priority to R&D will strengthen Malaysia's capability to innovate and create indigenous technology and market new products. Hence, these strategies are critical in order for Malaysia to establish local abundant resources which are highly skilled and knowledgeable. Significant investment in innovation activities is needed for Malaysia to establish a knowledge-based economy and speed up economic development, thus stimulating innovation activities and increasing local innovative capacity.

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# Chapter 24
# IFRS, Foreign Investment, and Prevailing Institutional Structure in Africa

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## ABSTRACT

*We revisit the effectiveness of IFRS adoption for FDI attractiveness by considering the adopting country's institutional structure. Attention was on the extent of corruption control (as a measure of institutional structure). Data was tested on 42 African countries for the period 2001-2012. Using the Panel Corrected Standard Error (PSCE) estimation technique, our result suggest that the effect of IFRS adoption on foreign investment differs based on the level of corruption control instituted in the sample countries. When the variable – IFRS adoption, was tested for the sample with corruption control below the median value, the coefficient was either negative or insignificant. However, the opposite was seen for the category of countries with corruption control above the median value. This result was robust to the inclusion of alternative measures of corruption, foreign investment, and control of global financial crisis and legal origin of the country.*

## 1. INTRODUCTION[1]

Since the promulgation of the International Financial Reporting Standard (IFRS) following the creation of the International Accounting Standard Board from the International Accounting Standard Committee in 2001, there has been an improvement in the global capital flow as one of the bi-product from the usage of IFRS for global financial reporting practice. IFRS was adjudged as a better form of financial reporting practice that applies more realistic measure of accounting numbers and promotes better disclosure of

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accounting transactions; thus reducing information asymmetry between preparers and users of financial information (Portes & Rey, 2005; Ramos, 2010; Wysocki, 2011; Gordon, Loeb & Zhu, 2012). Recent studies (e.g. Gordon, Loeb & Zhu, 2012; Chen, Ding & Xu, 2014) have emphasized the role of IFRS adoption as a catalyst to spur foreign investment. The main argument is that – since IFRS promotes better disclosure – then it reduces the cost of monitoring of subsidiaries and information barriers to cross border investments. Foreign investors – therefore – will be able to have access to high-quality information that enables them to make decisions as regards the prospects of their investments at a lower cost.

Institutions, on the other hand, includes those structures and frameworks by which authorities are exercised to provide incentives for productive economic activities. It includes those rules, decrees, policies, guidelines and frameworks, which shapes relationships among economic agents, ensures security of property rights and reduces any form of losses as a result of opportunistic behaviours of economic agents (see North, 1991; Williamson, 2000; Osabuohien & Efobi, 2013; Osabuohien, 2014; Efobi, 2015a). There are recounting empirical evidences suggesting a strong correlation between institutions and foreign investment (Asiedu, 2006; Busse & Hefeker, 2007; Asiedu & Lien, 2011; Anyanwu, 2012; Bandyopadhyay, Sandler & Younas, 2014). Investors seek to protect their investment and maximise their returns, and therefore will prefer to flow into countries that have a strong institutional structure to set up their investment.

Pointing directly at the main concern raised by Wysocki (2011)[2], this chapter looks at the extent to which the resulting FDI benefit from the adoption of IFRS is affected by the prevailing institutional structure in Africa. The main issue addressed is whether the prevailing institutional structures interferes with the extent to which IFRS adoption can inform foreign capital flow to Africa. This issue is of utmost importance in the African setting because of the increasing wave of the number of IFRS adopting countries in this region and the underlining reason being to improve financial reporting infrastructure in order to be able to attract more foreign investors. More frantic, some experts in the International Accounting Standards Board (IASB)[3] encourages African countries to see the adoption of IFRS as an opportunity for deepen their capital market participation, enhance inward investment to foster the growth of the private sector and provide a suitable investment climate for multinationals who would like to set-up their operations in Africa. This therefore makes the improvement of the volume of investment in Africa the central reason for the drive towards IFRS adoption. However, the quality of institutions in this region questions the realisation of the FDI benefit from IFRS adoption.

Focusing on corruption: this represents one of the main institutional palaver in most African countries and has been charged for the slow developmental process of these countries (Fosu, 2011; Asongu, 2012; Ackah, Turkson & Opoku, 2013; Asongu, 2013, 2014; Efobi, 2015a). There are incidences in some African countries where political leaders divert developmental resources for private interest (Easterly, 2008). The spill-over effect of the reoccurrence of such incidences is that the complimentary structures like infrastructure, human capital development, among others, will be unattended to thereby creating an unfavourable environment for investment and creating a disincentive for foreign investment inflow. More so, corruption erodes the capacity of the state to deliver efficient services to economic agents that would have hitherto desired to invest in such country. For instance, corruption increases the transaction cost of setting up an investment since those who control regulatory authorities can possibly circumvent instituted guidelines in order to derive specific rents. In contrast, countries with lower corruption will experience reduced transaction cost for investors as the requisite guidelines to be followed in setting up investment is rid of unnecessary delays and procedures to attract rent from the investors. Being this the case, we



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suspect that African countries may not be able to realise the FDI benefit from the adoption of IFRS as a result of the prevailing institutional structure and bearing in mind its effect on investment decisions.

There are three plausible ways through which the prevailing institutional structure in African countries affects the FDI outcome from IFRS adoption. First, IFRS is more of principle based regulations that allows professionals to apply their value judgement in interpreting/applying the standard (Collins, Pasewark & Riley, 2012). The danger in this is that in countries with poor institutional frameworks, professionals can still perpetrate in opportunistic behaviours and thus, progress the occurrence of information asymmetry which defeats the objective of IFRS adoption. Second, for African countries to attract FDI from their adoption of IFRS, they will require the development of their institutional structure in order to reduce resultant associative transaction cost. The increased transaction cost from poor institutions signals the incidence of poor investment climate to other investors who would have wanted to invest in the affected country: thus investment is diverted to other locations with lower transaction cost and improved institutions (Bandyopadhyay, Sandler & Younas, 2014). Considering the adoption of IFRS in isolation cannot reduce such transaction cost as it is embedded in the requisite framework that is charged with investment set-up processes like licensing, documentation, legal procedures, among others. Third, in a country with poor institutions - like the prevalence of corruption – there is a higher incentive to divert public fund from development projects (such as infrastructural provisions and human capital development) to personal benefit of public officers. Consequently, such developmental projects, which would have induced foreign investment flow, will be lacking and the adoption of IFRS will matter insignificantly in informing FDI flow.

This chapter therefore presents an empirical investigation into this tripartite issues by including the three variables in an empirical model and from the analysis, learn more about the relative importance of institutional structure in the IFRS adopting country. There are a number of conceptual and empirical challenges that such an investigation has to overcome. The first is in the measurement of the concepts - IFRS adoption. There are potential overlap to the identification of the exact indicator for this concept. Nevertheless, the literature provides adequate guidance to some of the indicators that suffices in measuring IFRS. For IFRS adoption, Gordon, Loeb and Zhu (2012) proposes the use of a dummy variable where 1 connotes the period for adoption of IFRS and 0 otherwise. This is unlike Chen, Ding and Xu (2014) that applied Ding *et al* (2005) national accounting standards conformity with IFRS index, which reports the number of points on which the national accounting conforms with IFRS. While the later presents a more recent and robust measure to identify IFRS adoption, it only captures the extent of convergence of national accounting standard with IFRS and does not show the extent of adoption like most African countries are currently doing. So we recourse to the former, but faces another challenge of identifying the year to use as a base for IFRS adoption. Two options are available: the first is to capture IFRS adoption year as the year the country's Security and Exchange Commission (SEC) publicly declares its legal adoption of IFRS, while the second is to use the year the country's SEC mandates all publicly quoted entities to report their financial statements using IFRS. In this chapter, we categorise the two periods as the year of IFRS adoption and the year of implementation. We prefer to use the former for two reasons: first, it represents the year the country legally and statutorily adopts IFRS. Second, the dataset that presents the IFRS legal adoption status of countries did not explicitly state the year the country is expected to implement IFRS, which most times are within two year of the legal declaration of adoption of IFRS. Therefore, when a country declares its legal adoption of IFRS, it signals some extent of favourability of some institutional infrastructure that attracts foreign investment and improves the localisation advantage for the FDI presence (Chen, Ding & Xu, 2014; Efobi, 2015b).



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The second challenge is to examine the effect of corruption either as a conditioning factor or at varying thresholds. The first considers the relationship between IFRS adoption and FDI conditioned on corruption. This includes the indirect or intervening effect of corruption on the IFRS-FDI nexus. The second is to consider different thresholds of corruption and examine the behaviour of IFRS adoption and FDI. In this case, only the direct effect of IFRS adoption on FDI is considered but at varying thresholds of corruption. Of course, with this kind of analysis, we are able to see how the effect of IFRS adoption on FDI diminishes (or improves) across the different corruption thresholds. This fits more to the emphasis of this chapter.

Using a sample of 49 African countries for which data was available, and controlling for other FDI determinants identified by literature, we obtain result generally consistent with our expectations. Specifically, our cross-section analysis generally shows that IFRS adoption is visibly important in attracting FDI flow to countries with stronger institutional structures. Furthermore, this relationship is found to be consistent irrespective of the combination of the covariates. Also, the result does not change even when we controlled for the global economic crisis shocks.

This chapter contributes to policy and literature in some important ways. First, the effect of the institutional structure in the IFRS adopting country and how it affects the FDI outcome have not received empirical attention. Most influential studies concludes by advocating for better institutions to enhance the effect of IFRS on FDI[4]. This is without empirical estimations of the behaviour of the nexus when considering different thresholds of institutional development. We take this further by being the first (to the best of our knowledge) to provide such empirical clarifications. Second, since the focus of this chapter is on African countries; considering the institutional structure and its attendant consequence will receive influential policy attention. This is because the region have since seen ineffective institutions as a major challenge impeding development processes. Third, the chapter also advanced the theoretical explanations on the factors that determine the location of FDI by considering IFRS and institutional infrastructure as an important framework.

The contributions of this chapter is important because foreign investment presents one of the foremost developmental finance relevant for African economy. The United Nations Millennium Declaration clearly points out that an increase in the volume of foreign capital flow to Africa will aid in the speedy achievement of the Millennium Development Goals (MDG), which includes poverty reduction by at-least half in 2015[5]. Asiedu (2006) also points out that the resource gap needed to attain broad economic goals of African countries will be substantially improved if foreign capital inflow is stimulated. No wonder some of the African countries are seeing the improvement of their financial reporting infrastructure as a veritable tool for attracting foreign capital flow. This is even reverberated by the recounting push by international organisations like the World Bank, World Trade Organisation and United Nations Conference on Trade and Development (UNCTAD) for the need to improve the business environment – by adopting IFRS – in order to be capable of attracting FDI. The remainder of the chapter is organised as follows: the next section presents the development of the hypothesis. The research method, which includes the econometric model and variables, the data and the estimation technique are in the third section. The main empirical results is presented and discussed in the fourth section. The fifth section concludes with policy recommendations.



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## 2. REVIEW OF RELATED LITERATURE AND HYPOTHESIS DEVELOPMENT

There is an increased range of literature that has related institutions to the growth of foreign capital inflow to countries especially African countries. Prominent among them include Morisset (2000), Li and Resnick (2003), Asiedu (2004), Busse and Hofeker (2005), Daude and Stein (2007), Asiedu and Lien (2011), Bandyopadhyay, Sandler and Younas (2014). These authors observe that the improvement of the institutional framework of a country tend to provide a conducive environment that reduces the transaction cost on investment and improves the overall returns from investment. Based on this, it is usual to expect that a country with better institutions will attract FDI. This is so since governance structures that are reform oriented and pro-active with policies, will gain the trust of foreign investors. More so, such countries will create location-specific benefits and internationalization advantages to encourage the inflow of investment.

IFRS, on the other hand, is a global financial reporting standard that is intended to ensure better transparency and information disclosure, aimed at improving the flow of foreign investment and ensuring improved global capital mobility. The prominent contributors to this nascent body of knowledge include Barth et al (2008), Beneish *et al* (2010), Ramos (2010), Prochazka and Ilinitchi (2011), Gordon, Loeb and Zhu (2012), Chen, Ding and Xu (2014), Efobi (2015b), who all concluded that the convergence of national accounting standards with IFRS/or the adoption of IFRS promotes foreign investment by reducing information processing costs that would hitherto have been heightened if local standards were maintained. As it is well known, multinationals require transparent and comparable accounting standards in order to minimize the cost of translating financial information.

Despite the budding empirical evidence supporting the claim that improved FDI flow stems from IFRS adoption, it is essential to note that other structural factors affect the extent to which this relationship can be substantiated. An important structural factor (being considered in this chapter) is the prevalence of corruption. We argue that apart from the accounting reporting standards that is expected to affect the extent of transparency and disclosure of accounting information, foreign investment will still dwindle (or not be improved) in the face of heightened corruption.

Some studies have attempted to carry on this enquiry but without substantial empirical justification. For instance, the influential study by Chen, Ding and Xu (2014), concluded that accounting standards have no major impact on accounting quality per se, but there is the need to control for the institutional factors as a possible reporting incentives that can have an impact on foreign investors. Wysocki (2011) earlier concluded that observed outcomes from the adoption of IFRS will be more effective when benchmarked against institutions. Some other studies like Louis and Urcan (2013), Gordon, Loeb and Zhu (2012), and Hail, Leuz and Wysocki (2010) have reached similar conclusions. A common peculiarity across these studies is that there are no empirical justification to validate this relationship.

The closest attempt was Chen, Ding and Xu (2014) and Gordon, Loeb and Zhu (2012), who used rule of law variable and other measures of institutions. Since this chapter is interested in corruption control for obvious reasons, we are not able to rely on their conclusions for the African sample. More so, these authors included the measure of institution in a linear model framework, where their measures of institutions were included as part of the explanatory variable. The concern with this approach is that we are not able to empirically isolate the effect of IFRS adoption on FDI when considering the conditioning effect of institutions (or corruption control). Therefore, it will be difficult to see how the effect of IFRS adoption on FDI changes when considering different regimes of institution. Based on this, we present the main hypothesis of this chapter as:



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**Hypothesis One:** African countries will attract more FDI if they adopt IFRS and improve on the institutional structures that controls for corruption.

## 3. RESEARCH METHOD

To begin with, an econometric model was formulated to conceptualise the main aim of this chapter. The main objective is to examine the linkage between IFRS adoption and foreign investment, taking into consideration the quality of institutions in the selected sampled countries. The econometric model is a standard foreign capital explained model that is augmented by including the institutional structure. Asiedu (2006) presents a background for the formulation of an FDI explained model for African countries. This is because the model includes the prominent factors that inform the attractiveness of foreign investor into African countries. Asiedu's model is such that foreign investment into African countries is explained by structural, policy and institutional variables. Thus:

$$FDI_{it} = \alpha_1 + \beta \text{EconomicStructurei}_t + \gamma \text{EconomicPolicyi}_t + \delta \text{InstitutionalVariablei}_t + \varepsilon_i \quad (1)$$

This model was extended by including the IFRS adoption variable in Equation (1). Therefore Equation (1) is transformed as:

$$FDI_{it} = \alpha_1 + \partial IFRS\text{Adoption}_{it} + \beta \text{EconomicStructurei}_t + \gamma \text{EconomicPolicyi}_t + \delta \text{GovernanceVariablei}_t + \varepsilon_i \quad (2)$$

This model, at this point, cannot effectively explain the effect of IFRS adoption on FDI when considering corruption. To effectively accentuate this, we first of all estimate the baseline model in Equation 2 at varying thresholds of corruption, to understand how IFRS adoption variable reacts at different levels of corruption. In essence, we expect that at higher thresholds of corruption, the effect of IFRS adoption on FDI becomes insignificant due to the deteriorating effect corruption has on FDI attractiveness. On the other hand, we expect a significant and positive effect of the IFRS adoption variable on FDI when considering lower corruption thresholds.

The variables are defined as follows: *FDI* is used as an indicator of foreign investment. The reason for this is because the OECD definition of foreign investment considers FDI as a major indicator due to its long lasting relationship with the host country's enterprise and the magnitude of influence that usually comes with such relationship[6]. In measuring FDI flow, we follow the approach of Asiedu (2006) and Bandyopadhyay, Sandler and Younas (2014), where FDI is measured as the net inflow of FDI as percentage of GDP. This approach captures the volume of FDI inflow that remains in the country as a percentage of the total income of the country. A second measure was also used for sensitivity checks: net FDI inflow, computed as the net FDI flow without it being considered as a percentage of GDP.

IFRS Adoption variable was measured as earlier defined. A dummy variable structure is applied to capture this variable, where the value 1 was assigned to the year the country's Security and Exchange Commission (SEC) legally adopts the standard and 0 to other years when the standard was not adopted. This approach has received credence in Gordon, Loeb and Zhu (2012).

The variables economic structure and economic policy were included as control variables. The variable economic structure include those variables that reflects the structure of the economy in terms



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of the extent of *natural resource dependence* and *market size*. *Natural resource* was measured as the percentage of fuel and minerals in total export, while the *market size* was computed as the value of per capita GDP in constant 2005 USD. The economic policy variables include variables that are influenced by government policies and which can affect the extent of FDI flow to the country. Popular measure of this variable is the *FDI policy* (i.e. total trade to GDP). These control variables are popular covariates included in FDI models in previous studies that have focused on the determinants of FDI flow to African countries (e.g. Asiedu, 2006; Asiedu and Lien, 2011; Anyanwu, 2012).

The variable 'governance structure' is the second main explanatory variable. The variable 'rule of law' was used to capture the governance structure of the country. The reason being that it effectively captures the extent to which economic agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. This effectively explains the quality of governance in the respective countries.

Two approaches are applied in understanding corruption control in the respective countries. They are the control of corruption indicator from the World Bank World Governance Indicator (WGI) – by Kaufmann, Kraay and Mastruzzi (2010) and the corruption perception index as reported by the Transparency International. This approach has its advantage over other sources like the Transparency International and International Country Risk Guide (ICRG), especially because of the substantive nature of the methodology that was applied in generating the scores (Rohwer, 2009). More so, Glaeser et al (2004) lend support to the use of WGI measure of corruption other than the ICRG. The measure of corruption, as reported by WGI, is captured as -2.5 (increased corruption) to + 2.5 (reduced corruption). While that of the Transparency International is as defined: where higher values signify reduced corruption and vice versa.

To test the models in this chapter, data was gathered for 49 African countries for which data was available. Small countries – with population that is less than 500, 000 – were excluded from the sample, since idiosyncratic factors are likely to be a major influencer of their economic policies and decisions. For instance, countries like Cape Verde, Mayotte, Sao Tome and Principe, and Seychelles, fall into this category. The full list of the sampled countries are presented in Table 1. The period selected is between 2001 and 2012. The choice of this period was because IFRS came to existence after the formation of IASB in 2001, and 2012 was the latest year for which data was available for the variables of interest. Furthermore, to allow for longer span of variation, the selected period fits this objective.

The data was collected from several sources. The data for the explained variable, economic structure and policy variables, was gathered from the World Bank 'World Development Indicators,' 2012 version. The data for IFRS adoption was gathered from various sources including the IFRS website (www.ifrs.org), Deloitte IASPlus (www.iasplus.com) and World Bank Group Report on Standards and Codes (www.worldbank.org/ifa/rosc). Finally, the data for governance structure and institutions was gathered from the World Bank 'World Governance Indicators'.

A brief descriptive statistics of some of the key variables are also presented in Table 1. The mean net FDI inflow as a percentage of GDP for the entire sample is 4.69 percent. The net FDI flow of the individual countries, scaled by their GDP, is presented in the same Table. On the average, the entire sampled countries have since adopted IFRS for about 2 years. Some countries like Malawi and Lesotho have longer IFRS adoption period. Moving on to the measure of corruption as reported by WGI, the level of corruption in the sampled countries is still high.



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The form of the model for this chapter is such that considers IFRS adoption as a global accounting standard that is expected to bring about linkages in the accounting framework across countries. As a result of this, it is expected that the error term in the estimable model (Equation 2) may be contemporaneously correlated across countries as a result of the increasing inter-country similarity in their financial reporting framework. We therefore estimate this relationship using the Panel Corrected Standard Errors (PCSE) procedure, which allows for disturbances across the sample, and that are heteroscedastic and contemporaneously correlated. The PCSE corrects for first-order autocorrelation (AR1) that are specific to each country.

Since we intend observing the behaviour of IFRS adoption on FDI at varying thresholds of corruption, it will be important to consider how the thresholds are determined. In this chapter, we consider the thresholds above and below the median values of the corruption indicators. The reason for this is the size of our sample, which is relatively small and somewhat homogenous – in terms of corruption incidences (see Table 1). This will not allow for the considerations of thresholds at the 25%, 75% and 90%, because the sample countries that fall into these thresholds are minimal and may be affected by the degree of freedom for accurate predictions. As a result of this, we considered only thresholds lower and above the median values of the measures of corruption. In essence, countries lower than the median value for the WGI and CPI measure of corruption are termed high corrupt countries and those higher than the median are termed low corrupt countries.

## 4. EMPIRICAL RESULTS

The empirical results are discussed beginning with the correlation analysis, then followed by the main regression analysis. The robustness checks are then reported afterwards.

### 4.1 Correlation Analysis

The correlation matrix is presented in Table 7 in the appendix. The first panel of the Table for the entire sample and the thresholds of corruption are presented in Panels A-C. The essence being to have a foresight as to the bivariate behaviour of the main variables and to check for the existence of multicollinearity among the explanatory variables. From the Table, the bivariate association between the variables IFRS adoption and FDI as a percentage of GDP was positive in all the Panels except for Panel B, which presents the estimates for countries that are below the median value for corruption. Countries within this category can best be defined as those experiencing high rate of corruption (or poor rate of corruption control). In essence, the result suggest that – in these countries, IFRS adoption was not able to exert a positive influence on FDI inflow. This is unlike countries in Panel C, where the IFRS adoption variable was positively associated with FDI inflow.

Considering the issue of multicollinearity, the behaviour of the variables in all the Panels of Table 7, shows that the explanatory variables were all individually identified. Their behaviours in the model did not show possibilities of being *multicollineared*. This implies that the variables can all be included in a single model and their behaviours will be independent of themselves. Since it is only the bivariate relationships that are presented in Table 7, we may not be able to draw accurate inference as to the behaviour of IFRS adoption and FDI when considering the varying corruption thresholds. Therefore, we go further to present the PCSE estimations in Table 2.



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*Table 1. Mean statistics of sampled countries' variables*

| | FDI | Years of IFRS Adoption | Natural Resource | Market Size | FDI Policy | Corruption |
|---|---|---|---|---|---|---|
| **All Sampled Countries** *(Mean)* | 4.69 | 1.58 | 17.52 | 1597.60 | 78.26 | 3.12 |
| *(Standard Deviation-SD)* | 7.94 | 2.64 | 17.52 | 2354.27 | 36.34 | 0.54 |
| *(Median)* | 42.93 | 6.00 | 49.83 | 7509.99 | 115.42 | 2.71 |
| Algeria | 1.42 | 1.75 | 97.34 | 2923.93 | 63.30 | 3.08 |
| Angola | 6.05 | 0.83 | 0.00 | 1933.91 | 127.31 | 3.80 |
| Benin | 1.05 | 1.25 | 0.40 | 538.81 | 48.03 | 3.14 |
| Botswana | 4.12 | 1.75 | 0.17 | 5566.18 | 86.31 | 1.54 |
| Burkina Faso | 0.57 | 0.00 | 0.32 | 406.09 | 36.78 | 2.73 |
| Burundi | 0.16 | 3.75 | 1.34 | 148.86 | 37.82 | 3.52 |
| Cameroon | 1.75 | 0.83 | 39.41 | 912.50 | 55.07 | 3.50 |
| Central African Republic | 2.92 | 0.00 | 0.19 | 357.50 | 35.60 | 3.54 |
| Chad | 14.13 | 4.58 | 0.00 | 437.69 | 87.49 | 3.78 |
| Comoros | 0.70 | 0.00 | 0.01 | 629.38 | 54.65 | 3.27 |
| Congo | 14.27 | 0.00 | 77.37 | 1723.16 | 133.63 | 3.54 |
| DRC | 7.07 | 0.00 | 0.00 | 135.31 | 89.31 | 3.86 |
| Cote D'Ivoire | 1.90 | 0.50 | 24.12 | 951.43 | 85.10 | 3.59 |
| Djibouti | 7.68 | 0.00 | 6.47 | 951.93 | 94.25 | 3.01 |
| Egypt | 3.39 | 2.33 | 41.43 | 1323.17 | 53.53 | 3.04 |
| Equatorial Guinea | 13.77 | 0.00 | 0.00 | 11554.97 | 153.63 | 4.03 |
| Eritrea | 1.11 | 0.00 | 0.01 | 218.65 | NA | 2.76 |
| Ethiopia | 2.58 | 0.00 | 0.01 | 176.88 | 43.41 | 3.19 |
| Gabon | 1.93 | 0.83 | 76.92 | 6307.96 | 92.95 | 3.26 |
| Gambia | 7.19 | 1.75 | 0.28 | 439.64 | 68.43 | 3.11 |
| Ghana | 4.51 | 1.75 | 8.53 | 527.12 | 87.53 | 2.61 |
| Guinea Bissau | 1.13 | 0.00 | 0.81 | 416.89 | 85.32 | 3.56 |
| Kenya | 0.60 | 5.50 | 9.07 | 534.41 | 62.16 | 3.43 |
| Lesotho | 5.07 | 6.50 | 0.08 | 746.71 | 175.81 | 2.57 |
| Liberia | 27.38 | 1.25 | NA | 200.79 | 110.07 | 3.30 |
| Libya | 2.15 | 0.00 | 97.24 | 7627.84 | 84.67 | 3.48 |
| Madagascar | 5.92 | 3.00 | 4.07 | 277.66 | 68.65 | 2.58 |
| Malawi | 2.57 | 6.50 | 0.11 | 228.57 | 68.74 | 3.11 |
| Mali | 2.20 | 0.00 | 2.41 | 460.20 | 66.41 | 2.98 |
| Mauritania | 9.00 | 0.00 | 13.12 | 735.34 | 106.68 | 2.88 |
| Mauritius | 1.98 | 3.00 | 0.04 | 5508.44 | 120.26 | 2.00 |
| Morocco | 2.34 | 3.75 | 2.22 | 2092.04 | 72.90 | 2.76 |
| Mozambique | 7.09 | 2.33 | 14.22 | 332.84 | 74.67 | 3.01 |
| Namibia | 4.90 | 3.00 | 0.74 | 3719.11 | 94.01 | 2.29 |



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*Table 1. Continued*

| | FDI | Years of IFRS Adoption | Natural Resource | Market Size | FDI Policy | Corruption |
|---|---|---|---|---|---|---|
| Niger | 5.13 | 0.00 | 1.85 | 256.70 | 52.98 | 3.31 |
| Nigeria | 3.41 | 0.50 | 93.54 | 851.76 | 72.00 | 3.60 |
| Rwanda | 1.01 | 0.83 | 0.04 | 300.61 | 38.02 | 2.70 |
| Senegal | 2.01 | 0.00 | 17.94 | 766.07 | 68.92 | 2.80 |
| Sierra Leone | 5.45 | 2.33 | NA | 338.58 | 45.34 | 3.41 |
| South Africa | 1.82 | 3.00 | 10.57 | 5420.00 | 59.35 | 2.19 |
| Sudan | 8.18 | 0.25 | 87.13 | 720.12 | 36.76 | 3.78 |
| Swaziland | 2.24 | 0.83 | 0.80 | 2351.23 | 161.20 | 2.83 |
| Tanzania | 4.63 | 3.75 | 0.95 | 397.65 | 56.98 | 3.04 |
| Togo | 3.39 | 0.00 | 1.27 | 390.42 | 93.08 | 3.43 |
| Tunisia | 3.46 | 0.00 | 12.73 | 3377.84 | 96.56 | 2.45 |
| Uganda | 4.85 | 3.75 | 3.11 | 343.50 | 47.09 | 3.32 |
| Zambia | 6.90 | 3.00 | 0.86 | 667.05 | 75.35 | 3.17 |
| Zimbabwe | 1.50 | 0.83 | 4.49 | 462.78 | 93.24 | 3.84 |

*Note:* FDI was measured as the percentage of net FDI flow to GDP; IFRS Adoption was measured as the number of years post the year the country legally adopts IFRS; Natural resource was measured as the percentage of fuel and minerals in total export; Market size (per capita GDP in constant 2005 USD); infrastructure was measured as number of telephone usage per 100 population; macroeconomic stability was measured as inflation rate and FDI policy was measured as percentage of total trade to GDP. Other variables are as earlier defined.

## 4.2 Main Regression Result

The PCSE estimates are presented in Table 2. For robustness and sensitivity checks, two (2) indicators are included as a measure of FDI inflow, representing the two *Panels* in the Table. *Panel A* of Table 2 represents the FDI as a percentage of GDP, while the *B Panel* represents the aggregate net FDI inflow, which is logged because of the nature of this data[7]. The *Wald* statistics and its significant values are presented in the lower segment of the two panels. The significant values shows the overall fitness of the estimated model; implying the reliability of the estimates. The coefficient and significant values of the covariates are considered to ensure their consistency with theoretical expectations.

In most of the columns, the variables *Natural Resources*, *GDP Growth*, *FDI Policy* and *Governance* follow theoretical predictions (i.e. Morrisset, 2000; Asiedu, 2004; Asiedu, 2006; Asiedu & Lien, 2011; Bandyopadhyay, Sandler & Younas 2014), since they displayed a significant association with the variable 'FDI inflow' to African countries and their signs were consistent as well. This suggest that in the African context, natural resource, the GDP growth rate (measure of economic buoyancy), FDI policy and governance are important determinant of the inflow of foreign investment. The infrastructural development 'infrastructure' displayed an inconsistent behaviour in most part of the columns in both *Panels* of Table 2. Perhaps, we infer that the extent of the development of complementary factor input like infrastructure dissuades the extent of FDI inflow into African countries. This is contrary to the findings by Asiedu (2006) and Asiedu and Lien (2011), who found a positive association between the two variables. However, to ensure that our result is not affected by the inclusion of this variable, we go further to present the estimations (in Table 2) when this variable is excluded from the model.



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*Table 2. Panel corrected standard errors estimations*

| | **Panel A: FDI as a % of GDP** | | | | | **Panel B: Net FDI Inflow** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | *<=3.18* | *<=27* | *>3.18* | *>27* | | *<=3.18* | *<=27* | *>3.18* | *>27* |
| | *All* | *WGI* | *CPI* | *WGI* | *CPI* | *All* | *WGI* | *CPI* | *WGI* | *CPI* |
| IFRS Adoption | 1.020* (0.006) | -0.645 (0.444) | 0.255 (0.791) | 2.204* (0.004) | 1.761** (0.022) | 0.549*** (0.084) | -0.992*** (0.064) | -0.489 (0.138) | 1.372* (0.000) | 1.232* (0.002) |
| Natural Resource | 0.043* (0.000) | 0.056* (0.000) | 0.073* (0.000) | -0.005 (0.775) | 0.001 (0.934) | 0.039 (0.000) | 0.033* (0.000) | 0.039* (0.000) | 0.026*** (0.057) | 0.028** (0.017) |
| GDP growth | 0.170* (0.002) | 0.252* (0.004) | 0.151*** (0.098) | 0.016 (0.847) | 0.022 (0.743) | 0.058 (0.073) | 0.132* (0.009) | 0.096** (0.018) | 0.011 (0.776) | 0.020 (0.646) |
| FDI Policy | 0.046* (0.000) | 0.062* (0.000) | 0.067* (0.000) | 0.026** (0.018) | 0.033* (0.001) | 0.005 (0.463) | 0.010 (0.340) | 0.020* (0.002) | -0.006 (0.459) | -0.009 (0.299) |
| Infrastructure | -0.194* (0.006) | -0.174 (0.210) | -0.660* (0.000) | -0.131 (0.133) | -0.111*** (0.100) | -0.004 (0.931) | 0.123 (0.220) | -0.029 (0.758) | 0.015 (0.812) | 0.015 (0.806) |
| Governance | 0.979 (0.177) | 1.939*** (0.076) | 2.239*** (0.073) | 0.327 (0.813) | 0.382 (0.707) | 0.941** (0.039) | 0.893 (0.172) | 1.126* (0.002) | 0.387 (0.690) | 0.678 (0.426) |
| Constant | -0.429 (0.650) | -0.448 (0.740) | -0.040 (0.979) | 1.263 (0.252) | 0.709 (0.494) | 18.309* (0.000) | 17.906* (0.000) | 17.672* (0.000) | 19.130* (0.000) | 19.399* (0.000) |
| $R^2$ | 0.198 | 0.366 | 0.339 | 0.204 | 0.184 | 0.328 | 0.503 | 0.453 | 0.311 | 0.313 |
| Wald | 53.770 | 62.760 | 43.740 | 19.040 | 25.090 | 44.850 | 48.610 | 166.490 | 18.100 | 17.900 |
| Prob. Value | 0.000 | 0.000 | 0.000 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.006 | 0.000 |

Note: the columns 'All' imply the estimation of the baseline model without considerations of the different thresholds; '*<=3.18* and *<=27*' include the estimations below the median value for corruption when considering the definitions by World Governance Indicator – WGI, and by Transparency International Corruption Perception Index – CPI. On the other hand, '*>3.18* and *>27*' imply the estimates above the median value for both WGI and CPI. In essence, the median for WGI and CPI are 3.18 and 27 respectively.
The superscripts *, **, and *** imply the significant values at 1, 5 and 10 percent respectively. The values in parenthesis are the probability values.

Moving on to the variable of interest – *IFRS Adoption* – Table 2 reports that when considering the effect of IFRS adoption on FDI (see the columns identified as 'all' in *Panel A* and *B*) irrespective of the prevalence of corruption, the result reveal that there is a positive effect on FDI inflow. This result supports the findings of Gordon, Loeb and Zhu (2012) and Efobi (2015b), who observed that IFRS adoption has a positive influence on the volume of FDI inflow. In essence, the adoption of IFRS improves the information environment in the adopting country and makes it easier for parent firms to monitor their subsidiaries, which raises their incentives to increase their investment capitals. The findings we will like to highlight, however, are the behaviours of IFRS adoption on FDI when considering the extent of corruption in the sampled African countries.

As earlier argued, we expect that the extent to which IFRS adopting country is able to attract FDI is highly dependent on the extent of institutional framework within the country. In this case, we are particular about the prevalence of corruption and substantial argument have earlier been presented on the reasons why this form of institutional framework is most important in Africa. Our result in both *Panels* of Table 2 reveals that in countries with higher prevalence of corruption (i.e. countries that are below the median value of corruption for WGI and CPI), IFRS adoption has either an insignificant effect on FDI flow or at best the relative effect is negative. However, when considering the countries with lower prevalence of corruption (i.e. countries that are above the median score of corruption for WGI and CPI),



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the IFRS adoption variable were consistently having a positive effect on FDI inflow. This suggest that in these countries, the adoption of IFRS will most likely attract more FDI than in countries with higher prevalence of corruption. It is important to highlight that in this sample, the effect of some of the covariates were absorbed and their levels of significance were no longer visible.

Table 3 presents the regression analysis to check the behaviour of the IFRS adoption variable by re-estimating the model when the *infrastructure* variable was excluded from the model. As earlier pointed out, the infrastructure variable did not follow theoretical expectation and it is likely that its presence in the model may disturb the behaviour of the other explanatory variables, including the IFRS adoption variable. From the Table, it is evident that IFRS adoption had a significant and positive impact on FDI flow in the columns that represents better corruption control, compared to those with lower corruption control. In essence, the IFRS adoption variable was not positive and significant in the columns that includes countries with lower than median values for the *WGI* and *CPI* measures of corruption. Contrary result that are consistent with the outlook in Table 2 was observed for countries with corruption values that are higher than the mean value for the *WGI* and *CPI* measures of corruption. Therefore, irrespective of the inclusion (or exclusion) of infrastructure variable, IFRS adoption will have a better impact on FDI in countries with better control of corruption (or lower incidence of corruption).

An important feature of countries with higher incidence of corruption is that the transaction cost of doing businesses is higher compared to countries with lower prevalence of corruption. Some of these transaction cost can be seen in the risks associative with expropriation, cost of investment, such as licensing, securing property and land, cost of accessing public services and utilities (christened cost of doing business), among others. In such a situation, a foreign investment that hitherto was attracted to invest in an IFRS adopting country, will incur a higher opportunity cost when the institutional framework in such a country is low. These investors would rather prefer to invest in countries with better institution (reduction of corruption) and that have adopted IFRS.

## Further Robustness Checks

This sub-section further checks the robustness of our results. Three main items are likely to play central roles in the determination of our results. The first is the effect of the disturbances that are likely to occur in the FDI trend as a result of the inclusion of the period of financial crisis in the sampled time period. Second is the consideration of other measures of governance, since the measure of governance included is an important variable that determines the behaviour of FDI flow in empirical analysis. Third is the control of the legal origin of the sampled countries, which may likely inform the outlook of our result. We devote some space to each of these variables by discussing how they may likely affect our result and then consequently, observe consistency of the results when considering each of these variables.

### Financial Crisis Dummy

The global financial crisis was triggered by the United States housing bubble in 2007 and soon after, in September 2008, the financial turmoil erupts and contagion over the European Union's member countries escalated into the named global financial crisis. The effect of the crisis include the collapse of asset markets, decline of industrial productivity and employment and increase in government debt as a result of decline in fiscal inflows (see Reinhart & Rogoff, 2009). Consequently, to mitigate this crises, some of the prosperous countries who participated in development assistance to developing countries



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*Table 3. Panel corrected standard errors estimations excluding infrastructure variable*

| | **Panel A: FDI as a % of GDP** | | | | | **Panel B: Net FDI Inflow** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | *<=3.18* | *<=27* | *>3.18* | *>27* | | *<=3.18* | *<=27* | *>3.18* | *>27* |
| | *All* | *WGI* | *CPI* | *WGI* | *CPI* | *All* | *WGI* | *CPI* | *WGI* | *CPI* |
| IFRS Adoption | 0.927<br>(0.113) | -0.793<br>(0.340) | 0.211<br>(0.818) | 2.122*<br>(0.007) | 1.668*<br>(0.005) | 0.547***<br>(0.084) | -0.887***<br>(0.085) | -0.491<br>(0.129) | 1.383*<br>(0.000) | 1.242*<br>(0.001) |
| Natural Resource | 0.031*<br>(0.007) | 0.050*<br>(0.000) | 0.056*<br>(0.000) | 0.019<br>(0.298) | 0.010<br>(0.503) | 0.039*<br>(0.000) | 0.037*<br>(0.000) | 0.039*<br>(0.000) | 0.028**<br>(0.023) | 0.029*<br>(0.007) |
| GDP growth | 0.226*<br>(0.000) | 0.277*<br>(0.001) | 0.218*<br>(0.006) | 0.027<br>(0.744) | 0.037<br>(0.588) | 0.059***<br>(0.073) | 0.114**<br>(0.027) | 0.099**<br>(0.011) | 0.013<br>(0.751) | 0.022<br>(0.612) |
| FDI Policy | 0.038*<br>(0.000) | 0.057*<br>(0.000) | 0.050**<br>(0.011) | 0.021***<br>(0.095) | 0.030*<br>(0.005) | 0.004<br>(0.473) | 0.014<br>(0.185) | 0.019**<br>(0.022) | -0.006<br>(0.492) | 0.008<br>(0.313) |
| Governance | 0.414<br>(0.450) | 1.564<br>(0.129) | 1.568<br>(0.195) | 1.295<br>(0.165) | 0.991<br>(0.190) | 0.913*<br>(0.010) | 1.159***<br>(0.057) | 1.096*<br>(0.002) | 0.584<br>(0.365) | 0.861<br>(0.140) |
| Constant | -1.279<br>(0.195) | -0.708<br>(0.590) | -0.357<br>(0.799) | 0.834<br>(0.482) | 0.179<br>(0.867) | 18.292*<br>(0.000) | 18.091*<br>(0.000) | 17.657*<br>(0.000) | 19.184*<br>(0.000) | 19.467*<br>(0.000) |
| $R^2$ | 0.158 | 0.358 | 0.272 | 0.178 | 0.159 | 0.328 | 0.487 | 0.452 | 0.309 | 0.312 |
| Wald | 41.310 | 63.440 | 40.140 | 13.400 | 16.910 | 44.620 | 49.220 | 160.800 | 18.150 | 17.610 |
| Prob. Value | 0.000 | 0.000 | 0.000 | 0.020 | 0.005 | 0.000 | 0.000 | 0.000 | 0.003 | 0.004 |

Note: the columns 'All' imply the estimation of the baseline model without considerations of the different thresholds; '*<=3.18* and *<=27*' include the estimations below the median value for corruption when considering the definitions by World Governance Indicator – WGI, and the Transparency International Corruption Perception Index – CPI. On the other hand, '*>3.18* and *>27*' imply the estimates above the median value for both WGI and CPI. In essence, the median for WGI and CPI are 3.18 and 27 respectively.
The superscripts *, **, and *** imply the significant values at 1, 5 and 10 percent respectively. The values in parenthesis are the probability values.

and whose nationals/ investors were engaged in foreign investments, took fiscal austerity measures and some extent of investment repatriations. Atleast, it was reported that FDI flows decreased by 10 percent in 2008 and the foreign financial flow that sustained developing countries development capital were drastically affected as a result of the economic recession in 2008 and 2009 (UNCTAD, 2009; Das & Dutta, 2012; Osabuohien & Efobi, 2014).

The effect of this crisis on our result is that there may be disturbances that are contained in the dataset as a result of the inclusion of the period of the financial crisis (2007-2009) in our dataset. Therefore, to check whether our results are sensitive to the inclusion of this period, we created a dummy called the *financial crisis* dummy. A similar approach has been used by Osabuohien and Efobi (2014). This dummy was then included in the estimations that are reported in Table 2. The main function of this variable in the model is to control for the effect of the financial crisis that are typical with the years 2007-2009, which may not be captured by the other control variables.

Table 4 reports the robustness check result that examines foreign investment as a percentage of GDP (see *Panel A* in Table 4) and the logarithm value of FDI (see *Panel B* in Table 4): we find that the behaviour of IFRS adoption (our main explanatory variable) are essentially the same as those presented in Tables 2 and 3. In particular, IFRS adoption is found to exert a positive and significant effect on FDI inflow in countries with lower corruption (or higher control of corruption), and the result becomes insignificant and to some extent, negative, when considering the impact of IFRS adoption on FDI in countries with higher corruption. In essence, we surmise that the result is not affected by the disturbances caused in the trend of FDI as a result of the financial crisis.



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*Table 4. Robustness check (PCSE estimations controlling for financial crisis period)*

| | **Panel A: FDI as a % of GDP** | | | | | **Panel B: Net FDI Inflow** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | *<=3.18* | *<=27* | *>3.18* | *>27* | | *<=3.18* | *<=27* | *>3.18* | *>27* |
| | *All* | *WGI* | *CPI* | *WGI* | *CPI* | *All* | *WGI* | *CPI* | *WGI* | *CPI* |
| IFRS Adoption | 0.791 (0.153) | -0.670 (0.431) | -0.512 (0.633) | 1.975* (0.007) | 1.366** (0.015) | 0.418 (0.193) | -0.978*** (0.070) | -0.624*** (0.095) | 1.213* (0.002) | 1.053* (0.009) |
| Natural Resource | 0.041* (0.000) | 0.055* (0.000) | 0.073* (0.000) | 0.004 (0.804) | 0.001 (0.967) | 0.038* (0.000) | 0.034* (0.000) | 0.040* (0.000) | 0.026** (0.050) | 0.028** (0.015) |
| GDP growth | 0.177* (0.001) | 0.253* (0.003) | 0.164*** (0.093) | 0.023 (0.773) | 0.034 (0.604) | 0.061*** (0.054) | 0.132* (0.009) | 0.093** (0.022) | 0.007 (0.859) | 0.014 (0.743) |
| FDI Policy | 0.044* (0.000) | 0.061* (0.000) | 0.082* (0.000) | 0.026** (0.018) | 0.030* (0.001) | 0.003 (0.607) | 0.011 (0.337) | 0.019* (0.007) | 0.007 (0.419) | 0.010 (0.239) |
| Infrastructure | -0.190* (0.007) | -0.179 (0.207) | -0.635* (0.001) | -0.131 (0.128) | -0.116*** (0.080) | -0.002 (0.962) | 0.126 (0.227) | -0.007 (0.944) | 0.015 (0.810) | 0.012 (0.836) |
| Governance | 1.003 (0.165) | 1.935*** (0.075) | 3.090** (0.012) | 0.432 (0.751) | 0.716 (0.473) | 0.958** (0.033) | 0.896 (0.174) | 1.218* (0.001) | 0.460 (0.630) | 0.830 (0.324) |
| Financial Crisis | 0.892** (0.025) | 0.178 (0.762) | 0.650 (0.413) | 0.704 (0.206) | 1.366* (0.001) | 0.484* (0.010) | -0.097 (0.828) | 0.169 (0.741) | 0.468** (0.029) | 0.592* (0.002) |
| Constant | -0.503 (0.593) | -0.442 (0.744) | -0.029 (0.984) | 1.096 (0.313) | 0.621 (0.532) | 18.288* (0.000) | 17.904* (0.000) | 17.702* (0.000) | 19.047* (0.000) | 19.341* (0.000) |
| $R^2$ | 0.210 | 0.366 | 0.404 | 0.213 | 0.229 | 0.341 | 0.503 | 0.464 | 0.328 | 0.341 |
| Wald | 59.670 | 67.240 | 63.200 | 20.000 | 36.700 | 59.130 | 47.960 | 129.820 | 32.410 | 56.060 |
| Prob. Value | 0.000 | 0.000 | 0.000 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Note: the columns 'All' imply the estimation of the baseline model without considerations of the different thresholds; '*<=3.18* and *<=27'* include the estimations below the median value for corruption when considering the definitions by World Governance Indicator – WGI, and the Transparency International Corruption Perception Index – CPI. On the other hand, '*>3.18* and *>27*' imply the estimates above the median value for both WGI and CPI. In essence, the median for WGI and CPI are 3.18 and 27 respectively.
The Pairwise correlation was first carried out to ensure that the financial crisis dummy was not multicollineared with any of the other explanatory variables. This was not reported for space.
The superscripts *, **, and *** imply the significant values at 1, 5 and 10 percent respectively. The values in parenthesis are the probability values.

## Other Measures of Governance

In as much as we controlled for governance in model (2), by including the indicator - rule of law, it is important that we draw attention to some of the shortcomings of using one indicator to represent this complex concept that has faced many criticism. The concept "governance" is a framework that shows the extent of institutional development in a country, which aims at protecting the rights of economic agents and reducing economic losses from human interactions. Noting the importance of this concept in studying economic phenomenon (as earlier discussed in previous section), studies have warned that the concept cannot be adequately measured by relying on some secondary databases for which the methodology in explaining its computation cannot be readily verified. For instance, the construct validity of some of these measures, regarding their ability to measure what they purport to measure, have received heavy criticism by authors such as Knack (2006), Rohwer (2009), Thomas (2010), among others. As a result of this, empirical models that include these measures may likely be confronted with the possibility of bias estimates. However, the prevailing conclusions in some of these studies is that each measure of



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governance by different sources have their relative strengths and weaknesses, and it will be important to take account of this fact when applying the measures for policy research.

One possible way of reducing the likelihood of presenting a biased estimate is to use alternative measures of governance, and check if the results still remains consistent. This approach have been favoured by Asiedu (2006), Asiedu and Lien (2011) and Efobi (2015a). In this chapter, an alternative measure of governance is applied: it is the use of the measure of democracy, which is the average of the Freedom House's political rights and civil liberties[8]. Table 5 reports the result when this measure of governance is included in the empirical model (i.e. Equation 2).

From Table 5, the result shows that when including another measure of governance, the effect of IFRS adoption on FDI still remained consistent across the different thresholds of the prevalence of corruption. For countries with lower prevalence of corruption (i.e. higher control of corruption and CPI score), the effect of IFRS adoption on FDI remained consistently positive – just as it is for Tables 2-4. Likewise, for countries with higher prevalence of corruption (i.e. lower corruption control and CPI score), the effect of IFRS adoption on FDI remained insignificant. Therefore the result is robust and not driven by the type of governance measure included in our empirical model.

*Table 5. Robustness check (PCSE estimations including other measures of governance)*

| | **Panel A: FDI as a % of GDP** | | | | | **Panel B: Net FDI Inflow** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | *<=3.18* | *<=27* | *>3.18* | *>27* | | *<=3.18* | *<=27* | *>3.18* | *>27* |
| | *All* | *WGI* | *CPI* | *WGI* | *CPI* | *All* | *WGI* | *CPI* | *WGI* | *CPI* |
| IFRS Adoption | 1.116** (0.048) | -0.088 (0.924) | 0.512 (0.622) | 2.239* (0.003) | 1.811* (0.001) | 0.576*** (0.078) | -0.902 (0.122) | -0.648*** (0.062) | 1.380* (0.000) | 1.233* (0.000) |
| Natural Resource | 0.032* (0.005) | 0.040* (0.005) | 0.055* (0.001) | -0.011 (0.498) | 0.010 (0.480) | 0.032* (0.000) | 0.029* (0.001) | 0.034* (0.000) | 0.021*** (0.086) | 0.020*** (0.058) |
| GDP growth | 0.213* (0.000) | 0.366* (0.000) | 0.256** (0.018) | 0.015 (0.853) | 0.016 (0.800) | 0.088** (0.011) | 0.170* (0.001) | 0.127* (0.002) | 0.013 (0.729) | 0.023 (0.561) |
| FDI Policy | 0.047* (0.000) | 0.057* (0.000) | 0.059* (0.000) | 0.026** (0.017) | 0.035* (0.000) | 0.005 (0.448) | 0.008 (0.467) | 0.016* (0.007) | 0.006 (0.466) | 0.007 (0.343) |
| Infrastructure | -0.122 (0.163) | -0.155 (0.303) | -0.659* (0.002) | -0.109** (0.033) | -0.086** (0.046) | 0.056 (0.136) | 0.156 (0.137) | 0.036 (0.717) | 0.036 (0.359) | 0.049 (0.182) |
| Democracy | 0.473 (0.165) | 0.687* (0.009) | 0.529 (0.286) | 0.142 (0.577) | 0.291 (0.170) | 0.006 (0.967) | 0.064 (0.798) | -0.036 (0.786) | 0.087 (0.637) | 0.114 (0.513) |
| Constant | -1.934 (0.128) | -5.615* (0.006) | -4.327*** (0.078) | 0.665 (0.625) | -0.538 (0.672) | 17.579* (0.000) | 16.742* (0.000) | 16.874* (0.000) | 18.668* (0.000) | 18.689* (0.000) |
| $R^2$ | 0.192 | 0.369 | 0.328 | 0.206 | 0.199 | 0.295 | 0.487 | 0.434 | 0.312 | 0.310 |
| Wald | 52.860 | 66.270 | 38.720 | 19.510 | 27.280 | 39.770 | 43.420 | 27.640 | 21.210 | 20.830 |
| Prob. Value | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.002 | 0.002 |

Note: the columns 'All' imply the estimation of the baseline model without considerations of the different thresholds; '*<=3.18* and *<=27'* include the estimations below the median value for corruption when considering the definitions by World Governance Indicator – WGI, and the Transparency International Corruption Perception Index – CPI. On the other hand, '*>3.18* and *>27*' imply the estimates above the median value for both WGI and CPI. In essence, the median for WGI and CPI are 3.18 and 27 respectively.
The Pairwise correlation was first carried out to ensure that the financial crisis dummy was not multicollineared with any of the other explanatory variables. This was not reported for space.
The superscripts *, **, and *** imply the significant values at 1, 5 and 10 percent respectively. The values in parenthesis are the probability values.



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### Controlling for the Legal Origin of Sampled Countries

The legal origin of the IFRS adopting country connotes the existent jurisdictional differences that explains some fundamental structures that affects investment within the country. These differences are seen in the structure of the legal system, which explains how economic and social life should be organised (Asongu, 2011). The legal origin also explains the legal protection of outside investors and limits the risk of expropriation. Empirical documentations (e.g. La Porta et al, 1997, 1998; La Porta et al, 2008) suggest that some legal origin that are tied to the English Common Law are more protective of outside investors than the civil law- particularly the French civil laws. More so, some legal jurisdiction – like the civil law, have more government involvement in the market, thereby resulting to higher incidences of corruption and larger unofficial economy (La Porta et al, 2008). From yet another stand point, countries with common law legal structure, have lower formalism of judicial procedures and higher judicial independence, than the countries with civil law legal structure (Djankov et al, 2003; La Porta et al, 2004; Osabuohien, 2011).

Noting these issues, a regression analysis that does not control for the legal origin of countries will likely be omitting an important variable that is supposed to account for the behaviour of foreign investment as a result of their sensitivity to the extent of contract enforcement and security of property rights. Foreign investors consider these issues as an important determinant of the direction of FDI flow (Busse and Hefeker, 2007; Asiedu and Lien, 2011). Following Asongu (2014) approach, we classified the legal origin of our sample into English Common Law "*English_Law*" as 1, while 0 otherwise.

From Table 6, the legal origin variable was positive in most of the column, suggesting that legal origin that are tied to the English common law had a positive influence on the volume of FDI. However, the significant values are not verified except for some of the columns (see columns 2 and 3 in Panel B). We focus on the main variable of interest (i.e. IFRS adoption), From the Table, the signs and significant values of the IFRS adoption variable remained consistent like it has been in the previous Tables. This suggest that the effect of IFRS adoption on FDI does not change even when the legal origin of the sampled country are controlled for. Hence, we conclude that the results conform to our hypothesis irrespective of the checks conducted and the approach of measuring foreign investment.

## CONCLUSION

This chapter investigates the impact of IFRS adoption on FDI when considering the prevailing institutional structure (or corruption control) of African countries. We apply IFRS adoption data for forty two (42) African countries for the period 2001-2012. More so, alternative measures of FDI was included and further robustness checks to ensure the consistency of our estimates. This chapter distinguishes the effect of IFRS adoption on FDI across sampled countries depending on the level of corruption control in the country. Put differently, this effect was tested on countries with low corruption control (i.e. high prevalence of corruption) and countries with high corruption control (i.e. low prevalence of corruption). The result suggest that in countries with high corruption control, the incidence of IFRS adoption will have a higher and positive effect on FDI flow. This was contrary when considering countries with lower corruption control. This result validates the conceptual submission of Wysocki (2011) that there is a complimentary impact of institutional development on IFRS effect on FDI.



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*Table 6. Robustness check (PCSE estimations including legal origin dummy)*

| | **Panel A: FDI as a % of GDP** | | | | | **Panel B: Net FDI Inflow** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | *<=3.18* | *<=27* | *>3.18* | *>27* | | *<=3.18* | *<=27* | *>3.18* | *>27* |
| | *All* | *WGI* | *CPI* | *WGI* | *CPI* | *All* | *WGI* | *CPI* | *WGI* | *CPI* |
| IFRS Adoption | 0.951*** (0.100) | -0.859 (0.352) | 0.298 (0.772) | 2.344* (0.003) | 1.826* (0.003) | 0.451 (0.193) | -1.712* (0.001) | -1.014* (0.010) | 1.388* (0.000) | 1.294* (0.001) |
| Natural Resource | 0.036* (0.000) | 0.044* (0.001) | 0.061* (0.000) | -0.011 (0.507) | 0.003 (0.820) | 0.032* (0.000) | 0.023* (0.000) | 0.029* (0.000) | 0.022*** (0.083) | 0.021*** (0.051) |
| GDP growth | 0.200* (0.000) | 0.331* (0.000) | 0.227** (0.035) | 0.023 (0.722) | 0.027 (0.699) | 0.086** (0.018) | 0.184* (0.000) | 0.142* (0.000) | 0.011 (0.787) | 0.017 (0.691) |
| Trade Openness | 0.045* (0.000) | 0.058* (0.000) | 0.061* (0.000) | 0.028** (0.017) | 0.034* (0.001) | 0.004 (0.586) | 0.011 (0.289) | 0.017** (0.026) | 0.005 (0.543) | 0.006 (0.433) |
| Infrastructure | 0.018 (0.319) | -0.054 (0.689) | -0.590* (0.001) | -0.109** (0.035) | -0.091** (0.047) | 0.055 (0.153) | 0.238* (0.003) | 0.037 (0.596) | 0.035 (0.405) | 0.048 (0.215) |
| Legal Origin | 0.627 (0.627) | 0.787 (0.433) | 0.174 (0.883) | 0.520 (0.577) | -0.267 (0.724) | 0.419 (0.351) | 1.740* (0.000) | 1.406* (0.000) | 0.129 (0.845) | 0.269 (0.653) |
| Constant | -1.216 (0.152) | -2.617** (0.046) | -1.859 (0.206) | 1.084 (0.293) | 0.517 (0.579) | 17.510* (0.000) | 16.282* (0.000) | 16.258* (0.000) | 18.989* (0.000) | 19.098* (0.000) |
| $R^2$ | 0.190 | 0.351 | 0.314 | 0.207 | 0.184 | 0.305 | 0.596 | 0.505 | 0.308 | 0.306 |
| Wald | 50.330 | 58.680 | 37.330 | 19.550 | 24.150 | 35.900 | 79.630 | 22.960 | 19.600 | 19.810 |
| Prob. Value | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Note: as usual, the columns 'All' imply the estimation of the baseline model without considerations of the different thresholds; '*<=3.18* and *<=27*' include the estimations below the median value for corruption when considering the definitions by World Governance Indicator – WGI, and the Transparency International Corruption Perception Index – CPI. On the other hand, '*>3.18* and *>27*' imply the estimates above the median value for both WGI and CPI. In essence, the median for WGI and CPI are 3.18 and 27 respectively.
The Pairwise correlation was first carried out to ensure that the financial crisis dummy was not multicollineared with any of the other explanatory variables. This was not reported for space.
The superscripts *, **, and *** imply the significant values at 1, 5 and 10 percent respectively. The values in parenthesis are the probability values.

This result has diverse implications for African countries. The desire to adopt IFRS in order to improve the financial statement reporting framework, and with the utmost intention of attracting foreign investors will not be effective by disregarding the underlining role of improved institutions (in the form of corruption control). There is the need for policies to address the issue of corruption control in African countries. This, of course, will require the government commitment to setting up structures that discourages rent-seeking behaviour of any form. In essence, just as most African government are desiring to address the state of financial reporting in their countries by adopting IFRS, it should not be assumed that the state of corruption in these countries does not matter.

This chapter has suggestions for future enquiries. The main area of critical focus is to examine a case study type of inquiry, with objectives that are streamlined on country specific cases. The aim of such enquiry should be to ensure, and validate, the findings from this study. In essence, the main enquiry will be to observe whether the result remains the same when focusing on case studies of African countries that have adopted IFRS.



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## ENDNOTES

1. Foreign investment, and foreign capital are used interchangeably throughout the chapter.
2. Wysocki (2011) noted that more empirical emphasizes should be placed on some unanswered questions about the structure, types, causation, interdependency and efficiency of observed accounting framework like IFRS on economic outcomes (e.g. FDI) and how institutional structures in the IFRS adopting country interplays.
3. See http://www.ifrs.org/news/features/Pages/africa-embraces-ifrss.aspx
4. See Wysocki (2011); Gordon, Loeb and Zhu (2012).
5. Asiedu (2006) for more discussion of the role of FDI in improving development resources in Africa.
6. OECD (2014) Define foreign investments as cross-border investment by a resident entity in one economy with the objective of obtaining a lasting interest in an enterprise resident in another economy. The lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence by the direct investor on the management of the enterprise. Ownership of at least 10% of the voting power, representing the influence by the investor, is the basic criterion used.
7. The aggregate FDI inflow was presented in Billion USD.
8. Political right measures the extent to which a particular country allows for the freedom of the electoral process, political pluralism and participation, as well as the presence of a functioning government. On the other hand, the civil liberty variable captures the freedom of expression and belief, freedom to join an association and organization, the prevalence of the rule of law and other forms of personal autonomy and individual rights.

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## APPENDIX

*Table 7. Correlation for the entire sample, sub-sample below and above median corruption thresholds*

| | FDI_GDP | IFRS Adoption | Natural Resource | GDP growth | Trade Openness | Infrastructure | Governance |
|---|---|---|---|---|---|---|---|
| **Panel A: Entire Sample** | | | | | | | |
| FDI_GDP | 1.000 | --- | --- | --- | --- | --- | --- |
| IFRS Adoption | 0.054 | 1.000 | --- | --- | --- | --- | --- |
| Natural Resource | 0.245 | 0.075 | 1.000 | --- | --- | --- | --- |
| GDP growth | -0.116 | 0.075 | -0.088 | 1.000 | --- | --- | --- |
| Trade Openness | 0.197 | -0.221 | -0.021 | 0.054 | 1.000 | --- | --- |
| Infrastructure | 0.335 | 0.003 | 0.020 | 0.205 | -0.038 | 1.000 | |
| Governance | -0.099 | 0.236 | 0.002 | 0.588 | -0.361 | 0.005 | 1.000 |
| **Panel B: Below Median WGI (i.e. <=3.18)** | | | | | | | |
| FDI_GDP | 1.000 | --- | --- | --- | --- | --- | --- |
| IFRS Adoption | -0.115 | 1.000 | --- | --- | --- | --- | --- |
| Natural Resource | 0.257 | 0.075 | 1.000 | --- | --- | --- | --- |
| GDP growth | -0.051 | -0.081 | -0.045 | 1.000 | --- | --- | --- |
| Trade Openness | 0.417 | -0.307 | 0.090 | 0.334 | 1.000 | --- | --- |
| Infrastructure | 0.334 | -0.232 | 0.038 | 0.108 | 0.185 | 1.000 | --- |
| Governance | -0.040 | 0.289 | 0.048 | 0.216 | -0.237 | -0.338 | 1.000 |
| **Panel C: Above Median WGI (>3.18)** | | | | | | | |
| FDI_GDP | 1.000 | --- | --- | --- | --- | --- | --- |
| IFRS Adoption | 0.265 | 1.000 | --- | --- | --- | --- | --- |
| Natural Resource | 0.228 | 0.095 | 1.000 | --- | --- | --- | --- |
| GDP growth | -0.158 | 0.083 | -0.157 | 1.000 | --- | --- | --- |
| Trade Openness | -0.141 | -0.077 | -0.128 | 0.110 | 1.000 | --- | --- |
| Infrastructure | 0.358 | 0.196 | -0.004 | 0.256 | -0.139 | 1.000 | --- |
| Governance | -0.150 | 0.094 | -0.028 | 0.716 | -0.288 | 0.198 | 1.000 |



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# Chapter 25
# Evaluating the Role of Three Basic Factors of Prospect Theory in Decision Making: An Empirical Study

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## ABSTRACT

*The main aim of this paper is to empirically evaluate the role of three significant factors of the Prospect Theory: the S-shaped value function, the loss aversion, and the distortion of probability, in decision making. In order to do this, a general behavioral reward-risk model is firstly setup and an empirical evaluation about the role of each of these factor, separately and in interaction, on the optimal solutions of the problem follows. For the analysis, well known US equity portfolios consisting by stocks listed in NYSE, AMEX, and NASDAQ formed on investment style are employed. The findings indicate that agents differentiate their behavior according to their type of preferences and their loss aversion level but they seem to always prefer high positively skewed assets such as small and value stocks. The attractiveness of positively skewed assets is re-enforced when probability distortion is introduced in the model. The introduction of probability distortion also affects the optimal perspective values of the problem increasing significantly their magnitude. After that, results show that as loss aversion increases agents tend to follow more conservative strategies, with and without probability distortion, while the value functional form has also its role in the model; bounded value functions as the negative exponential function drives agents to more conservative behaviors while unbounded value functions as the piecewise power function give the incentive to agents to undertake great risks and follow more aggressive strategies. The examination of the interaction of these factors indicate that the combination of an unbounded value functional form with a large loss aversion index may reduce agents' aggressiveness and limit (but not alter) the value functional form effect on optimal solutions.*

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## 1. INTRODUCTION

For several years, Markowitz's (1952a) mean-variance rule was widely used in portfolio decision making analysis. This rule suggests a tradeoff between two simple but powerful criteria, the reward (mean) and the risk (variance); agents choose maximum mean portfolios under the constraint that the variance will remain below a specific risk level, or alternatively minimum variance portfolios under the constraint that the mean will remain above a specific reward level. Note that this rule concerns only totally risk averse investors whose preferences are described by a totally concave utility function while it assumes normally distributed asset returns. In practice, risky asset returns are usually not normally but positively skewed distributed while investors are not totally risk averse.

Kahneman and Tversky (1979) proposed the Prospect Theory (PT), as an alternative decision making theory that revolutionized the classical financial theories. In PT, agents behave rationally (prefer more than less) but they are neither totally risk averse nor totally risk seeking; more specifically investors tend to be risk averse for returns considered as gains and risk seeking for returns considered as losses. Gains and losses are determined by a reference point depending on the formulation of the offered prospects and the expectations of the decision maker; in the original version of Prospect Theory (Kahneman and Tversky, 1979) the most representative preference function is an S-shaped value function which is concave above the reference point (for gains) and convex below the reference point (for losses). This type of preferences, the S-shaped function, is characterized by two important parameters: the reference point (rp) and the loss aversion coefficient $\beta$. Another important issue in Prospect Theory is the probability distortion, i.e. the observation that investors do not weight outcomes linearly, but they tend to overweight small probabilities and underweight large and moderate probabilities. Several papers (Karmarkar (1978), Bleichrodt, Pinto and Wakker (2001), Nawrocki and Viole (2014) among others) are referred on how the use of Prospect Theory could improve the descriptive use of Expected Utility by taking into account issues as the probability distortion and the change of investors' risk attitude from gains to losses that the Expected Utility cannot capture.

This paper empirically evaluates the role of the three basic factors of Prospect Theory (PT): the value functional form, the loss aversion, and the probability distortion, within a PT framework. For the empirical analysis, are employed well known US equity portfolios formed on investment style, consisting by stocks listed in NYSE, AMEX, and NASDAQ, for the period between 1927 and 2013. The paper contributes to the relevant literature in a number of ways. Firstly, in order to examine how the type of agents' preferences affects decision making, two value functional forms, the piecewise power function and the negative exponential value function, are empirically evaluated and compared; these two value functions represent different types of investors while they have different properties that affect the analysis in a separate way. Secondly, in order to examine the effect of loss aversion on optimal solutions, some of the most popular loss aversion indices in the literature are employed; the choice of each of the loss aversion indices has been done in an appropriate way so as to be consistent to the value functional form under consideration. In this way, the paper arrives at general conclusions about how risk and loss aversion interact and how this interaction may affect the optimal asset allocations; the robustness of results are examined in view of loss aversion variations.

Thirdly, in order to examine the impact of the probability distortion on optimal solutions, two methods of weighting outcomes are used: (1) the classical linear probability weighting where the objective probabilities are used, as in the classical Expected Utility Theory (no probability distortion), and (2) the objective probabilities are replaced by decision weights using three different probability weighting



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functions. The reason of employing three different probability weighting functions is to ensure that the impact of the probability distortion on the optimal solutions (if any) is not due to the specific weighting functional form that is used for the probability distortion.

Fourthly, having built the behavioral model, the optimization process follows. The value functions of the model are non-smooth; they have a kinked point at the reference point because of the loss aversion index that makes the value function steeper for losses than for gains; for this purpose smoothing techniques are used so as to get around the reference point where the value functions are non-differentiable. Moreover, the value functions are non-quasi-concave which means that the first order conditions are necessary but not sufficient to describe a global maximum. Such a problem may only have local maxima that are found and given in the present paper through Matlab codes.

To anticipate the results, the authors find that positively skewed assets (such as small and value stocks) are very attractive to PT agents, for all value functional forms, and for any loss aversion index. This clear preference of PT investors to positively skewed assets is more pronounced when probability distortion is introduced to the model. Probability distortion also affects the optimal perspective values increasing significantly their magnitude; the impact of probability distortion on the optimal solutions is independent of the using probability weighting functional form. Moreover, as loss aversion increases agents tend to follow more conservative strategies for both value functions; although the bounded negative exponential value function results to a more conservative behavior than the unbounded piecewise power value function that gives to agents the incentive to undertake great risks and thus follow more aggressive strategies.

The rest of the paper is organized as follows: section 2 presents the models, section 3 the data and the methodology, while section 4 concludes the paper.

## 2. THE MODELS

### 2.1. The General Setup

Prospect Theory suggests that investors evaluate investments based on the changes of wealth rather than on the final total wealth as in Expected Utility Theory (Levy and Levy, 2002); this result is also in accordance to Markowitz (1952a, 1952b). Gains and losses are determined by a reference point (rp) where the value function is equal to zero. If returns are greater than the reference point ($r>rp$) then they are considered as gains and if they are smaller ($r<rp$) then they are considered as losses. This reference point is the first important parameter of the value function. In this paper, as reference point is used the risk-free rate, $rp = 3.5\%$ (see data and methodology section). The second important parameter of a value function is the loss aversion coefficient; the initial estimation of Tversky and Kahneman (1992) for this loss aversion parameter was 2.25.

The value function in terms of gains and losses incorporating the loss aversion index β is formulated as follows:

$$U(x) = \sum_{t=1}^{T} \left( v\left( \max\left(0, x_t - rp\right)\right) * p_t \right) - \beta \sum_{t=1}^{T} \left( v\left( \max\left(0, rp - x_t\right)\right) * p_t \right) \forall \boldsymbol{x} \in X \quad (1)$$



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In (1), *rp* is the reference point. The function $v: X \to \mathbb{R}$ is a continuous, strictly increasing function on $\mathbb{R}$ and twice differentiable on $\mathbb{R} / \{rp\}$, strictly concave for gains and strictly convex for losses with $v(rp)=0$. The evaluation of assets is done by investors according to gains and losses. The first part concerns the positive deviations of assets' returns from the reference point (gains) and it does not take into account the losses. This part of the value function is the reward measure $\mu$. The negative deviations of assets' returns from the reference point (losses) are given by the second part and it does not take into account the gains. This part of the value function is the risk measure $\rho$ and is multiplied by a loss aversion coefficient β which makes the value function steeper for losses than for gains (losses are more painful for investors than the pleasure they take from similar size gains).

PT also suggests the objective probabilities to be replaced by decision weights $w(p)$ that capture the investors' tendency to overweight small probabilities and underweight large and moderate probabilities i.e. probability distortion phenomenon. Generally, in PT framework, outcomes are transformed through an *S*-shaped value function *v*, probabilities are transformed through a probability weighting function *w*, while values and decision weights are combined through a rank-dependent weighting scheme.

Using these functions and incorporating the loss aversion index in the risk part, the Prospect Theory Preferences are formulated as following:

$$V(x) = \sum_{t=1}^{T} \left( v\left(\max\left(0, x_t - rp\right)\right) * \omega\left(p_t\right)\right) - \beta \sum_{t=1}^{T} \left( v\left(\max\left(0, rp - x_t\right)\right) * \omega\left(p_t\right)\right) \tag{2}$$

In (2) the decision weights $w(p_i)$ are derived by a non-linear monotonic transformation applied on the objective probabilities *p*. This transformation function *w* is a continuous non-decreasing function $w$: $(0,1) \to [0,1]$ with $w(p)>p$ for small probabilities *p* and $w(p)<p$ for large probabilities *p* while $w(p)=p$ for $p = 0$ and $p = 1$. Having defined the basic components of the PT, specifications of the *S*-shaped value function, the probability weighting function and the loss aversion coefficient are presented thereafter.

## 2.2. Value Function

As regards to the *S*-shaped value function, the change in the curvature of the function and specifically the concavity for gains and the convexity for losses, captures the asymmetric risk aversion of Prospect Theory investors; agents are not totally risk averse but their risk attitude changes from gains to losses i.e. they tend to be risk averse for gains and risk seeking for losses. The *S*-shaped functional form also reflects the psychological phenomenon of diminishing sensitivity, i.e. the impact of a change diminishes with the distance from the reference point. Another basic characteristic of the S-shaped value function is that is non-smooth; it has a kinked point at the reference point due to the multiplication of the loss part of the value function with a loss aversion parameter. The *S*-shaped property holds for every initial wealth level.

In this paper two different specifications are employed. The first one is the piecewise power value function of Kahneman and Tversky (1979) with equal curvature parameters for losses and gains, i.e. $\alpha^{+} = \alpha^{-} = 0.88$. More specifically:



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$$V(x)=\begin{cases}(x-rp)^{\alpha^+} & if\ \ x\geq rp\\ -\beta(rp-x)^{\alpha^-} & if\ \ x<rp\end{cases} \tag{3}$$

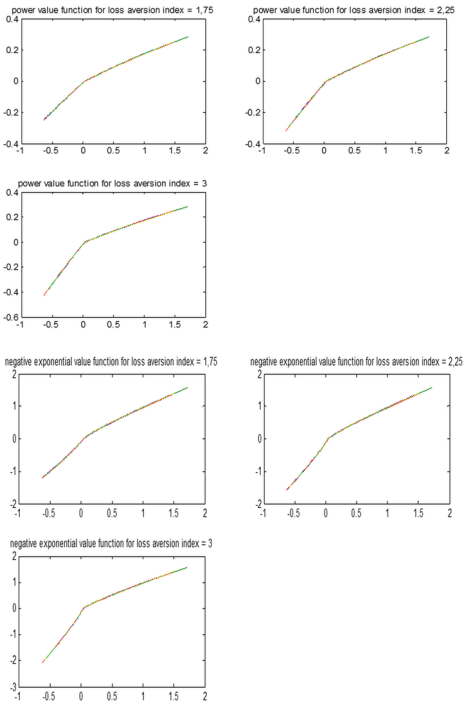
In (3), $\beta$ is the loss aversion index. The value function $V$ has a kinked point at the reference point ($rp$) because of $\beta > 1$ that makes the value function $V$ steeper for losses than for gains while it is smooth elsewhere.

Then the piecewise negative exponential value function is employed:

$$V(x)=\begin{cases}1-e^{-b(x-rp)} & if\ \ x\geq rp\\ \beta\left(e^{b(rp-x)}-1\right) & if\ \ x<rp\end{cases} \tag{4}$$

This function has been suggested as an appropriate functional form for financial problems; for instance De Giorgi and Hens (2006) indicate that the St. Petersburg paradox (see Blavatsky (2005) among others) and every paradox that arises from an infinite expected monetary value can be solved by using such a functional form. This may be so because the negative exponential value function is bounded in the sense that the marginal function decreases fast enough, and thus it ensures a finite expected monetary value; the optimal portfolios resulting by a problem with a negative exponential value function are definitely bounded (see Figure 1).

*Figure 1. Value functions for various loss aversion coefficients*






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## 2.3. Probability Distortion

In classical Expected Utility Theory (EUT), each outcome of the problem is weighted linearly by a probability $p$ that is objective and common for all investors. However, experimental findings show that investors do not use to weight outcomes linearly but they tend to underestimate large and moderate probabilities and overestimate small probabilities. Such findings are the common ratio effect (Allais, 1953) referred to the observation that the more risky of two simple prospects becomes more attractive when the winning probability is reduced equally (by equal proportion) for both prospects, and the common consequence effect that defines a class of choice problems in which choices shift as probability is moved from one common consequence to another. The main point in Allais paradox is that the independence axiom of Expected Utility Theory is violated. The common ratio effect has been largely studied in the papers of Kahneman and Tversky (1979), Karmarkar (1979), Wu and Gonzalez (1996) and Prelec (1998) who suggested to replace objective probabilities by decision weights $w(p)$ which are subjective for each agent and proposed some basic properties that an appropriate weighting function must meet (regressive, asymmetric, S-shaped and reflective). In this paper three different weighting functional forms are employed in order to extract the decision weights $w(p)$: the one-parameter probability weighting function of Tversky and Kahneman (1992), the two-parameter weighting function of Wu and Gonzalez (1999) and the two-parameter weighting function of Lattimore, Baker and Witte (1992).

More specifically, the Wu and Gonzalez (1999) probability weighting function is:

$$w(p) = \frac{p^{\gamma}}{\left(p^{\gamma} + (1-p)^{\gamma}\right)^{\delta}} \tag{5}$$

In (5) $\gamma$ is the curvature parameter (an index of discriminability) and $\delta$ is the elevation parameter (an index of attractiveness). Discriminability has to do with the way that individuals discriminate probabilities in a probability interval (0,1) and it is strictly related to the notion of diminishing sensitivity i.e. people tend to be less sensitive to probability-changes as they move away from the bounds $p = 0$ and the $p = 1$. The principle of diminishing sensitivity supports a reverse S-shaped weighting functional form that will be firstly concave and then convex. On the other hand, the attractiveness is related to the underweighting and the overweighting of probabilities and determines the position of the weighting function relatively to the identity line. Using aggregate data, Wu and Gonzalez (1996) suggest the following estimations for the curvature and the elevation parameters: $\delta = 1.565$ and $\gamma = 0.721$.

For $\delta=1/\gamma$ the Wu and Gonzalez (1999) probability weighting function becomes the well-known weighting function of Tversky and Kahneman (1992):

$$w(p) = \frac{p^{\gamma}}{\left(p^{\gamma} + (1-p)^{\gamma}\right)^{1/\gamma}} \tag{6}$$

This probability weighting function is a nonlinear reverse *S*-shaped probability weighting function. Such a transformation deflates the large probabilities and inflates the small probabilities. The parameter that determines the overweighting of small probabilities and the underweighting of large probabilities is



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the parameter *γ;* this parameter must be greater than 0.27 in order to ensure the continuity of the weighting function (Ingersoll, 2008). Tversky and Kahneman (1992) estimate this parameter as $\gamma \approx 0.65$ that keeps the new "corrected" probabilities close to the objective ones; it is also greater than the γ critical = 0.279 which implies that the weighting function is monotone and the resulting decision weights are positive.

The Lattimore, Baker, Witte (1992) two-parameter probability weighting function is given by:

$$w(p) = \frac{\delta p^{\gamma}}{\delta p^{\gamma} + (1-p)^{\gamma}} \tag{7}$$

Wu and Gonzalez's estimations for the function parameters are: $\delta = 0.84$ and $\gamma = 0.68$.

## 2.4. Loss Aversion

Loss aversion describes the psychological phenomenon according to which investors are much more sensitive to losses than to gains and shows the unwillingness of investors to accept mixed prospects. The loss aversion is expressed by a loss aversion index $\beta$ that gives the tradeoff between gains and losses. One of the most used loss aversion indices is that of Kahneman and Tversky (1979) which is equal to 2.25 for small values of losses and gains, and implies that losses are almost twice painful for investors than the pleasure they take from same-size gains. He and Zhou (2011) in their paper also study the agents' loss aversion attitude but for large values of losses and gains and they introduced a new measure of loss aversion, the Large Loss Aversion Degree (LLAD). They conclude that risk exposure decreases monotonically as the LLAD value increases while the Kahneman and Tversky's (1979) estimation of 2.25 is a good approximation for such a loss aversion index.

In this paper, three of the most popular loss aversion indices and their estimations are employed (always in consistency to the value function under consideration). More specifically, the first loss aversion coefficient is based on the definition of Kahneman and Tversky (1979) and it can be expressed as the mean or the median of

$$\beta = \frac{-u(-x)}{u(x)}$$

for $x>0$. This definition may be applied without problem to any utility function among which the piecewise-power function with equal curvature parameters for gains and losses, and the piecewise negative exponential value function that are employed in this paper.

Another loss aversion coefficient used in this paper is the

$$\beta = \frac{\inf\left(-u(-x)/u(x)\right)}{\sup\left(u(y)/y\right)}$$

for $x,y>0$ that is based on the definition of Neilson (2002). Bleichrodt et al. (2001) provide two estimations for this loss aversion coefficient: 2.17 and 3.06, using two different datasets. The first estimation is



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approximately the same to that of Kahneman and Tversky (2.25), so the second estimation that implies a high loss aversion coefficient (around 3) will be employed.

Finally, Köbberling and Wakker (2005) support in their study that the loss aversion is the main factor of risk aversion which means that differences in loss aversion may lead to differences in risk attitude. The loss aversion index

$$\beta = \frac{\lim_{x \to rp^{+}} u'(x)}{\lim_{x \to rp^{-}} u'(x)} \geq 1$$

(at the reference point (rp)) that they propose provides an exchange rate between gains and losses in utility units while it drives to a decomposition of risk attitude into three components: utility, probability weighting, and loss aversion making prospect theory easier to analyze. The derivatives of the index exist and they are positive and finite, since the value function is non-differentiable only at the reference point (*rp*) and differentiable elsewhere. However, this definition is a local definition in the sense that the derivatives of the utility function concern a specific point, the reference point. Such a definition cannot be applied on constant relative risk aversion (CRRA) utilities, such as the power utility functions, with reference point equal to zero because at this point the utility function has extreme derivatives (zero or infinity). Note that this is not the case of this paper; the employing reference point in this paper is the risk-free rate that is different to zero ($\neq 0$). The definition can be applied on constant absolute risk aversion (CARA) utilities as exponential utilities, without problem. The estimations of Booij and van de Kuilen (2009) for this loss aversion coefficient, using low and high monetary amounts, are 1.74 and 1.79 respectively.

The main purpose of using these three loss aversion coefficients is to examine the impact of a change in loss aversion attitude on the optimal solutions. Each of these loss aversion indices represents a specific investor's type: a great loss aversion coefficient (around 3) concerns a "too loss averse" investor, a median loss aversion coefficient (2.25) concerns to a "moderately loss averse" investor and a small loss aversion coefficient (of about 1.75) concerns a "less loss averse" investor. Note that these estimates are consistent with the estimates of Abdellaoui, Bleichrodt and Paraschiv (2007) and Abdellaoui, Bleichrodt and l'Haridon (2008) who found a mean loss aversion estimation of 1.72 using exponential utilities, and an estimation of 2.7 to 2.9 using power utilities.

## 3. DATA AND METHODOLOGY

For the empirical analysis, data on US style portfolios (stocks listed in on the NYSE, AMEX, and NASDAQ) are employed. More specifically, the sample consists of ten canonical decile portfolios formed on size (market equity, ME) and ten decile portfolios formed on value (Book to Market Equity ratio, B/M) expressed in annual real returns for the period 1927-2013 (87 years). All data are available to Kenneth French's online data library.

Table 1 presents descriptive statistics of the sample portfolios; note that there seems to be an inverse relation between firm size and stock returns; that is, the smaller the market capitalization of the firms included in a portfolio the larger the portfolios' return. Also, for portfolios formed on B/M ratio, the



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higher the B/M ratio the higher the average return, i.e. value stocks seems to outperform growth stocks. Small and value stocks seem to have higher variance /standard deviation than large and growth stocks, indicating that higher returns may be a compensation for the higher variance. Note, however, that small and value stocks also have positive skewness while large and growth stocks are negatively skewed. This is a quite desirable feature of assets especially for Prospect Theory investors. After that, the maximum return that small and value stocks may offer is in excess of 100% and too high relatively to the maximum return of large and growth stocks. This fact may enhance the belief of PT investors that the positively skewed and more profitable small and value stocks seems to be a better investment than the negatively skewed and less profitable large and growth stocks.

*Table 1. Descriptive statistics*

| | Mean | Variance | Standard Deviation | Kurtosis | Skewness | Sharpe Ratio | Min | Max |
|---|---|---|---|---|---|---|---|---|
| **Panel A: Portfolios Formed on Market Capitalization** | | | | | | | | |
| **Small** | 0.1919 | 0.1551 | 0.3939 | 1.1246 | 0.7736 | 0.4871 | -0.5437 | 1.4272 |
| **Dec 2** | 0.1711 | 0.1286 | 0.3586 | 3.1056 | 0.8874 | 0.4772 | -0.5553 | 1.7165 |
| **Dec 3** | 0.1679 | 0.0992 | 0.3150 | 2.5915 | 0.6410 | 0.5329 | -0.5420 | 1.4776 |
| **Dec 4** | 0.1592 | 0.0868 | 0.2946 | 0.7666 | 0.3699 | 0.5405 | -0.4911 | 1.1476 |
| **Dec 5** | 0.1539 | 0.0759 | 0.2755 | 1.0778 | 0.2161 | 0.5585 | -0.4788 | 1.1539 |
| **Dec 6** | 0.1537 | 0.0679 | 0.2606 | 0.6752 | 0.1021 | 0.5899 | -0.4765 | 1.0141 |
| **Dec 7** | 0.1463 | 0.0653 | 0.2554 | 1.4656 | 0.1824 | 0.5727 | -0.4451 | 1.0829 |
| **Dec 8** | 0.1369 | 0.0549 | 0.2344 | 1.4449 | 0.0507 | 0.5842 | -0.4716 | 0.9793 |
| **Dec 9** | 0.1298 | 0.0471 | 0.2171 | 0.6579 | -0.3904 | 0.5980 | -0.5053 | 0.7136 |
| **Large** | 0.1117 | 0.0372 | 0.1929 | -0.0896 | -0.4499 | 0.5788 | -0.4172 | 0.4861 |
| **Panel A: Portfolios Formed on B/M Ratio** | | | | | | | | |
| **Growth** | 0.1102 | 0.0507 | 0.2252 | -0.4265 | -0.1836 | 0.4894 | -0.4108 | 0.5829 |
| **Dec 2** | 0.1211 | 0.0393 | 0.1983 | -0.2360 | -0.2394 | 0.6106 | -0.3606 | 0.5751 |
| **Dec 3** | 0.1186 | 0.0391 | 0.1978 | 0.09036 | -0.2386 | 0.5994 | -0.3886 | 0.634 |
| **Dec 4** | 0.1215 | 0.0494 | 0.2223 | 2.1081 | 0.1204 | 0.5466 | -0.5239 | 0.9575 |
| **Dec 5** | 0.1320 | 0.0507 | 0.2251 | 1.9613 | -0.0407 | 0.5867 | -0.6142 | 0.9126 |
| **Dec 6** | 0.1327 | 0.0491 | 0.2215 | 1.7590 | -0.1960 | 0.5988 | -0.6160 | 0.7671 |
| **Dec 7** | 0.1343 | 0.0576 | 0.2400 | 1.7269 | -0.1073 | 0.5596 | -0.6318 | 0.9626 |
| **Dec 8** | 0.1561 | 0.0705 | 0.2655 | 2.6297 | 0.4950 | 0.5881 | -0.5448 | 1.2063 |
| **Dec 9** | 0.1641 | 0.0721 | 0.2686 | 2.5199 | 0.4397 | 0.6112 | -0.5256 | 1.2408 |
| **Value** | 0.1751 | 0.1127 | 0.3358 | 1.9364 | 0.3705 | 0.5216 | -0.5799 | 1.4991 |

Note: The table presents descriptive statistics (average, variance, standard deviation, skewness, kurtosis, min, max and Sharpe ratio) for the annual real returns of US style portfolios, i.e. ten canonical decile portfolios formed on size (market equity, ME) and ten decile portfolios formed on value (Book to Market Equity ratio, B/M). All data are available from Kenneth French's online data library. The sample period is from 1927 to 2013 (87 years). The Sharpe ratio is the ratio of mean to standard deviation; quite important in the mean-variance analysis where the investment with the highest Sharpe ratio will be preferred.



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These findings resulting by the descriptive statistics of the portfolios under consideration, are directly related to the analysis of the present paper; they illustrate investors' preferences to specific assets such as small and value stocks and B/M portfolios and contribute to the explanation of the results below, in combination with the behavioral factors of the PT models and the technical analysis. As results of the paper show, small and value stocks tend to be strictly preferred by PT agents over the large and growth stocks; a first explanation for this behavior has to do with the high returns that these assets offer and their positive skewness as the Table 1 shows. Moreover, B/M ratio portfolios seem to gain ground over the size portfolios as the loss aversion index increases; based on the descriptive statistics this may be justified by the fact that B/M portfolios offer satisfying rewards but they are less risky choices than size portfolios.

In order to formulate the asset allocation problem, as $\boldsymbol{\lambda}$ is considered the vector of the assets' weights in the investor's portfolio; *N* assets are assumed with $\lambda_i$ i = 1, …, N the weight of each asset in the agent's portfolio. The constraints imposed in the model are the budget constraint, i.e. an agent can purchase assets whose prices are less or equal to his wealth in order to maximize his welfare $\left(\sum_{i=1}^{N}\lambda_t = 1\right)$, and the short-selling constraint, i.e. the weights of portfolios assets must be non-negative ($\lambda_i \geq \forall i$). In this way, the case of infinite leverage and a great risk exposure are avoided.

Hence, the asset allocation model is formulated as follows:

$$\max_{\lambda} \sum_{t=1}^{T} w(p_t) * V\left(\left(\sum_{i=1}^{N} r_{it} * \lambda_i\right)\right)$$

$$\text{s.t. } \sum_{i=1}^{N}\lambda_t = 1 \tag{8}$$

$$\lambda_i \geq \forall i$$

In (8), $\sum_{i=1}^{N} r_{it} * \lambda_i = r_t^T * \lambda$ is the portfolio return at each t = 1…T, $r_t$ is the vector of the assets' returns at each t = 1…T, and λ the vector of the assets' weights while V is the value function under consideration (see (3) and (4)). There are various difficulties in maximization process of a behavioral reward-risk model. Firstly, since the value function is not quasi-concave (and of course not totally concave) the first order condition may only describe local maxima. Another difficulty is that the loss aversion index which is incorporated in the value function makes the objective function non-smooth and results a non-differentiability at the reference point. In the case of a piecewise linear value function this problem can easily be dealt with by using linear programming. In the general case of changing risk aversion, which is the case of the value functions under examination in this paper, several computational issues arise. For example, the value function is non-smooth but it has a kinked point at the reference point where the value function is non-differentiable; here smoothing techniques are used in order to get around the reference point. Also, the value function is non quasi-concave which implies that there are upper sets that are non-convex sets and consequently, the portfolio optimization problem may have several local maxima but not a global solution.



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In this paper, a process similar to that of De Giorgi, Hens and Mayer (2007) is followed introducing probability distortion, different loss aversion indexes and different value functional forms. Firstly, the non-smoothness of the value function is treated using cubic spines. Specifically, in order to deal with the non-differentiability problem, the non-smooth value function V(x) is replaced by the smooth $\tilde{V}(x)$:

$$\tilde{V}(x)=\begin{cases} a_0x^3+a_1x^2+a_2x+a_3 & if\ x\in[rp-\delta,rp+\delta] \\ V(x) & elsewhere \end{cases} \tag{9}$$

In the above, $\delta = 10^{-6}$. The goal of this method is to replace the non-smooth part of the value function by a smooth and thus differentiable cubic polynomial. A too small random number $\delta$ is taken in order to be as close as possible to the reference point and the non-smooth part of e value function to be approached using cubic splines in order to make it smooth. So, around the reference point the value function is replaced by a cubic polynomial which is now differentiable. The rest of the value function remains the same, since away from the reference point the value function is smooth and differentiable and thus there is no problem in maximization process.

Note that the role of the smoothing technique is to make the maximization process feasible without distorting basic characteristics of the model i.e. the Loss Aversion and the value function's behavior. The "new" value function $\tilde{V}(x)$. is still convex for losses and concave for gains; applying the cubic interpolation the 3rd order polynomial replaces continuously only a too small part of the function around the reference point without changing the curves of the function (convexity-concavity). Moreover, the presence of loss aversion in the model is not affected; the coefficients used in this paper are based on global definitions of loss aversion applied to the entire value function, not only to the reference point around which the cubic interpolation is applied; the only local definition used in the analysis is that of Köbberling and Wakker (2005) that however separates the risk attitude into three components: utility, probability weighting, and loss aversion permitting the cubic interpolation to be applied to the utility function without influencing the loss aversion effect in the model.

Thus, the asset allocation model is now formulated as:

$$\max_{\lambda}\sum_{t=1}^{T}w(p_t)*\tilde{V}\left(\left(\sum_{i=1}^{N}r_{it}*\lambda_i\right)\right)$$

$$\text{s.t. } \sum_{i=1}^{N}\lambda_t=1 \tag{10}$$

$$\lambda_i \geq \forall i$$

The second problem is that the value function is non quasi-concave which implies that the portfolio optimization problem may have several local maxima but not a global solution. In order to overpass this problem $N$ starting points randomly generated on the unit simplex $\left\{\lambda \mid \sum_{i=1}^{N}\lambda_t=1,\lambda_t\geq 0\forall i\right\}$, are con-



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sidered. The algorithm of Rubinstein (1982) is employed in order to find the optimal allocation in the problem. Briefly, this algorithm starts with the generation of *n* pseudo-random numbers ($x_i \; \forall \; i = 1 \ldots n$) according to the uniform distribution on [0, 1], continues with their transformation to $y_i = -\log(x_i) \; \forall \; i = 1 \ldots n$, corresponding to the exponential distribution with parameter 1, and terminates with their normalization as following $\frac{y_i}{\sum_{i=1}^{n} y_i}$ corresponding to the uniform distribution over the unit simplex. This process is repeated *N* times. Thus, starting from *N* starting points the authors get *N* locally optimal allocations for each of the value functions that are used to find the corresponding optimal perspective values (at each of these optimal allocations). The allocation with the highest perspective value is considered as the solution of the problem.

Having set up the behavioral optimization problem, the analysis is continued to the practical part of the paper, by building Matlab codes and applying the above-described maximization process in practice. In this way, the optimal asset allocation for PT investors and their optimal perspective values (resulting by the optimal allocation) are firstly extracted; after that, the analysis goes on by empirically evaluating the role of each of the three main elements of Prospect Theory (value functional form, loss aversion, and probability distortion) on the optimal solutions of the problem, separately and in interaction, within a PT framework. The results are presented below.

## 3.1. Results

### 3.1.1. The Case of Non-Probability Distortion

Figure 2 presents the effect of loss aversion on optimal asset allocation when objective probabilities are used in the model. It depicts the optimal asset allocations for each of the three loss aversion indexes (small, average and large) using the piecewise-power and the piecewise negative exponential value function. A first result obtained by Figure 2 is that both the value functional form and the loss aversion index affect the optimal asset allocation i.e. there are differentiations in optimal allocations from one loss aversion index to the other and between the two value functional forms. Specifically, as the loss aversion index increases agents tend to shift their preferences from too risky to less risky choices for both value functions e.g. for the low (1.75) and the average (2.25) loss aversion indexes, agents give the greatest weight to the riskiest but also most profitable small stock portfolio while for the large loss aversion index the greatest weight is given to the less risky decile 8 portfolio formed on B/M. Thus, concerning the loss aversion effect, the smaller the loss aversion index the more aggressive the strategy that agents choose to follow; agents with low loss aversion index (1.75) adopt the most aggressive strategy by investing to the riskiest positively skewed assets in order to have great potential returns, for both value functions.

However, it is the value functional form that also affects the optimal allocation (in interaction with loss aversion) i.e. there are differences in allocations between the two value functions within each loss aversion coefficient. Namely, for the low loss aversion index, agents with a piecewise negative exponential value function prefer to allocate their wealth among the most risky positively skewed stock portfolios formed on size: the small stock portfolio (about 40% of wealth), the size decile 2 (about 18% of wealth), the size decile 3 (about 10%) while they allocate less than 10% to value stocks. On the other hand, agents with a piecewise power value function prefer to allocate about 35% to small stocks and about 30% of wealth to the highest B/M portfolio and a further 25% approximately to B/M decile



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8 portfolio. Hence, despite the riskiness of strategies that agents with a low loss aversion index choose to follow, those whose preferences are described by a piecewise power value function tend to be more aggressive than agents with a piecewise negative exponential value function who choose to reduce the weights of the riskiest assets and increase the weights of less risky choices e.g. they prefer to allocate the greatest part of their wealth among B/M portfolios instead of the riskier (and more profitable) size portfolios clearly preferred by agents with a piecewise power value function. The main reason for this differentiation is that the piecewise negative exponential value function is a bounded function that permits only bounded returns and bounded perspective values, a characteristic that discourages an extreme risk exposure driving agents to follow more conservative strategies. Such a bounded value functional form may also limit the aggressiveness of agents with a small loss aversion index. This is not the case of the unbounded piecewise power value function that permits unlimited potential returns giving to the agents the incentive to undertake great risks.

In the case of the average loss aversion parameter (2.25), investors allocate the greatest part of their wealth among four positively skewed assets (decile 8 and decile 9 portfolios formed on B/M, the value and the small stocks' portfolio), for both value functions. These assets are quite risky (and profitable) but less risky than that agents with a small loss aversion index choose. This agents' turn to less risky choices shows that as loss aversion increases agents start to be more cautious about the undertaken risk.

For the large loss aversion index (3) PT investors follow the most conservative strategy, for both value functions. The greatest weight is given to the less risky positively skewed decile 8 portfolio formed on B/M. Moreover, agents increase their investment to less risky assets such as the decile 9 portfolio formed on B/M decreasing the weights of very risky assets such as the value stocks' portfolio. Finally, investors' choice to diversify their portfolios by investing non-insignificants percentages of their wealth to more than six assets, for both value functions, is another evidence that as investors become more loss averse they follow more conservative strategies – diversification is adopted in order to disperse the undertaken risk; note that for the low (1.75) and the average (2.25) loss aversion indexes agents chose to invest to only four or less assets.

Another strong result obtained by this part of the analysis is the clear preference of PT agents to positively skewed assets (although the exact allocations differ) irrespective of the value function and the loss aversion under consideration. It is remarkable that for all loss aversion indices and for any value function, the weights that agents give to the positively skewed small and value stocks' portfolios are much greater than the infinitesimal weights of the negatively skewed large and growth stocks' portfolios. In general, extreme positively skewed decile portfolios (low capitalization and high B/M portfolios) are the most preferred assets to PT investors.

### 3.1.2. The Case of Probability Distortion

Figure 3 presents the optimal asset allocation results in the case of probability distortion using the piecewise power value function, while Figure 4 presents the optimal allocation employing the negative exponential value function. Both results are obtained for various loss aversion coefficients. As figures show the optimal solutions are quite similar for all probability weighting functions, for both value functions and for all loss aversion indices. This indicates that the influence of probability distortion on the optimal solutions is independent of the specific weighting functional form that will be employed; because of the similarity of the solutions obtained by the Wu and Gonzalez (1996) and the Lattimore, Baker, Witte (1992) probability weighting functions, that of Wu and Gonzalez will be used to the rest of the analysis for probability distortion.



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*Figure 2. Optimal allocation without probability distortion*

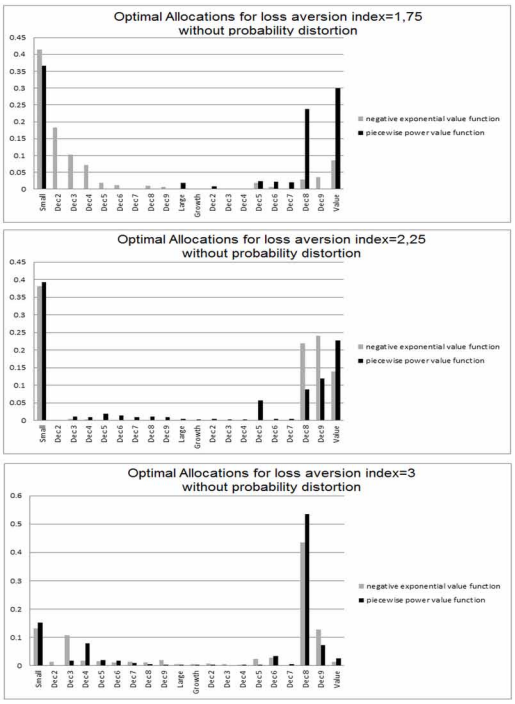



*Figure 3. Optimal allocations for the Piecewise Power value function (probability distortion)*

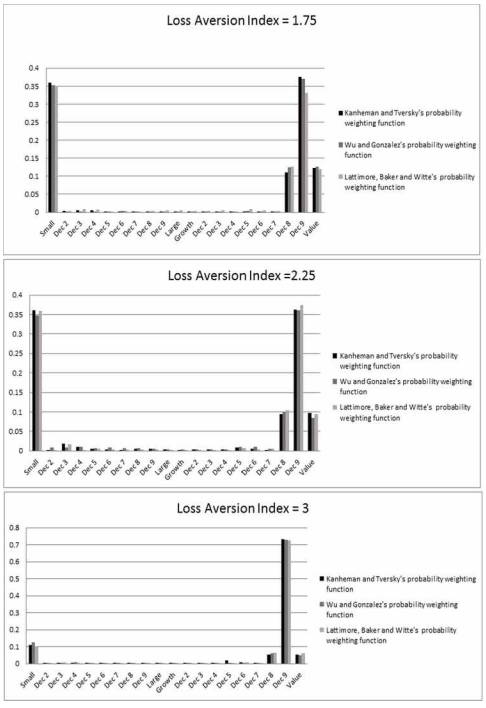
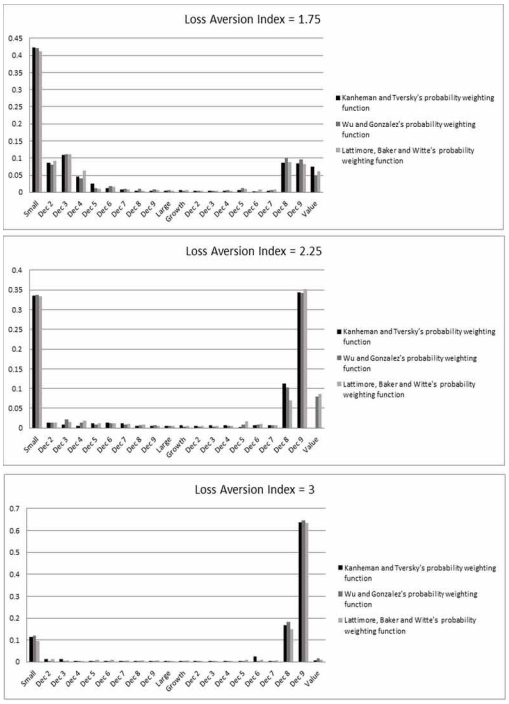



*Figure 4. Optimal allocations for the Piecewise Negative Exponential value function (probability distortion)*





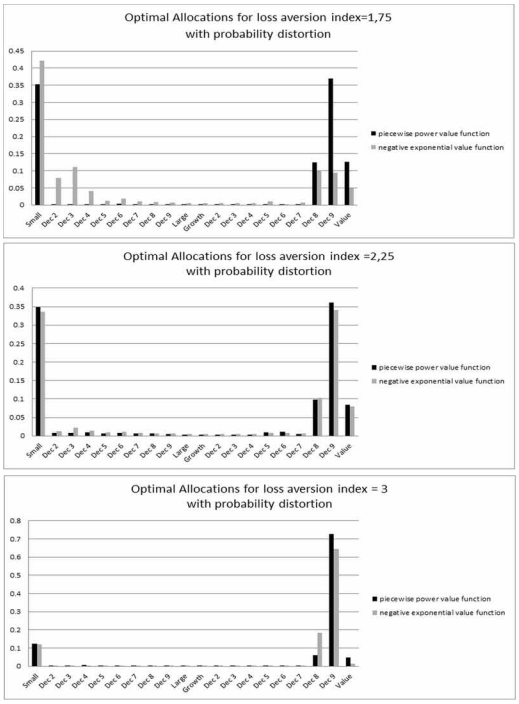

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Figure 5 presents the effect of loss aversion on optimal asset allocation when subjective probabilities are used in the model. It depicts the optimal asset allocations for each of the three loss aversion indexes (small, average and large) using the piecewise-power and the piecewise negative exponential value function. An immediate result obtained by Figure 5 is that both the value functional form and the loss aversion index affect the optimal asset allocation.

For the low loss aversion index, agents still follow the most aggressive strategy, for both value functions, e.g. they choose to invest more than 35% of their wealth to the riskiest but also most profitable small stocks' portfolio. This is due to the low loss aversion coefficient that makes agents more inclined to undertake great risks (by investing to quite risky and quite profitable positively skewed assets such as decile 2, decile 3 and decile 4 size portfolios) in order to have high potential returns, for both value functions. In the case of the average loss aversion parameter (2.25), the small stocks' portfolio remains a quite attractive asset. However, agents with this loss aversion parameter choose to increase the weights of less risky assets such as the decile 8 and the decile 9 B/M portfolios and decrease the weights of too risky assets such as the size portfolios.

For the large loss aversion parameter (3), agents with both value functional forms follow the most conservative strategy. In this case, the highest weight is not given to the riskiest small stocks' portfolio but to the less risky decile 9 B/M portfolio. After that, the weights of the riskiest portfolios decrease remarkably while the weights of less risky choices as the decile 8 B/M portfolio increase significantly. The large loss aversion index makes agents to turn to clearly less risky choices in order to reduce the undertaken risk with a particular preference to high B/M stocks. Thus, as the loss aversion index increases agents shift their preferences from very risky to less risky choices for both value functions, as in the case of non-probability distortion.

*Figure 5. Optimal allocation with probability distortion*






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Another factor that influences the optimal allocations is the value functional form. Agents with a low loss aversion index and a bounded piecewise negative exponential value function choose to introduce a greater number of assets in their portfolios than agents with a piecewise power value function i.e. they choose to diversify their portfolios. This fact implies that a bounded piecewise negative exponential value function may limit the aggressiveness of agents with a low loss aversion index. In the cases of the average (2.25) and the large (3) loss aversion parameters, agents with a piecewise negative exponential value give much smaller weights to very risky assets such as the value stocks' portfolio and greater weights to less risky assets such as the decile 8 B/M portfolio comparing to the weights that agents with the unbounded piecewise power value function give to these assets. Thus, the strategies that agents with a bounded piecewise negative exponential value choose to follow are more conservative than that of agents with the unbounded piecewise power value function, for all loss aversion indexes.

So, the loss aversion effect and the value functional form effect remain unaffected to the introduction of probability distortion in the model (although the exact allocations differ). However, the probability distortion does influence the optimal allocations and especially the optimal perspective values. The basic probability distortion effect on the optimal allocations is that it reinforces the clear preference of PT investors to positively skewed assets, in all cases. This is due to the fact that positively skewed assets are related to very small gain-probabilities; when probability distortion is introduced in the model these too small objective gain-probabilities are overweighted making the positive skewed assets more attractive to PT investors driving them to increase further the percentages of their wealth that they invest to these assets.

### 3.1.3. Optimal Perspective Values

The optimal perspective values are the values resulting by the value function under consideration if the optimal asset allocations are used as weights of the assets in an investor's portfolio. Figure 6 presents the results for the two value functions, with and without probability distortion, for various levels of loss aversion.

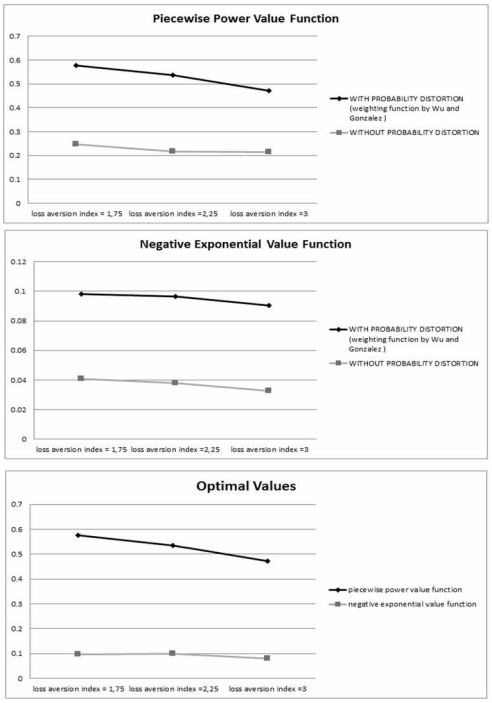
Three important results emerge. Firstly, the piecewise function provides much higher values compared to the negative exponential, i.e. the functional form matters. For instance, for the piecewise function with probability distortion the perspective values are in the area of 45% to 60% depending on loss aversion, while for the negative exponential the respective values are between 9% and 10%. This result may be justified by the fact that the negative exponential value function is a bounded *S*-shaped function i.e. for large outcomes, the piecewise negative exponential function exhibits more curvature and discourages an extreme risk taking. A bounded value function as the piecewise negative exponential function permits only bounded returns and thus limited perspective values.

Secondly, when objective probabilities are used the resulting perspective values are much lower compared to the case where probability distortion is assumed, for both value functions e.g. for the piecewise power function and a loss aversion index of 1.75, the resulting perspective value is about 25% without probability distortion and nearly 60% with probability distortion; for the negative exponential function and a loss aversion index of 1.75, the resulting perspective value is about 4% without probability distortion and nearly 10% with probability distortion. This means that probability distortion has a significant effect on optimal perspective values. The objective probabilities which weight the outcomes of the problem are too small but when probability distortion is introduced in the model, the too small objective probabilities are overweighted; thus the resulting subjective probabilities which weight the outcomes of



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*Figure 6. Optimal perspective values*




the problem (the decision weights) become greater increasing in this way the perspective values. After that, the probability distortion makes the positive skewed assets more attractive by overweighting their small gain-probabilities; this drives agents to increase the percentages of their wealth that they invest to these quite profitable assets increasing in this way further the optimal perspective values. These are the probability distortion effects on optimal perspective values and hold for both value functions and for all loss aversion indexes.

Thirdly, there seems to be a negative relation between loss aversion and perspective values. Recall that as the loss aversion increases agents follow a more conservative strategy by investing to less risky and thus less profitable assets. Hence, the highest perspective value (e.g. 25% for the piecewise power function and almost 4% for the piecewise negative exponential function (without probability distortion)) is observed for the lowest loss aversion index (related to the riskiest strategy), a mean perspective value for the average loss aversion index (e.g. 22% for the piecewise power function and almost 3.8% for the piecewise negative exponential value function) and the lowest perspective value for the largest loss aversion index (e.g. 21% for the piecewise power function and almost 3% for the piecewise negative exponential function). So, there is loss aversion effect on optimal perspective values and hold for both value functions.

## 4. CONCLUSION

The basic purpose of this paper was to empirically evaluate the role of the three main factors of Prospect Theory: the *S*-shaped value function, the loss aversion, and the probability distortion, in decision mak-



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ing. In order to do this, a general behavioral reward-risk model is firstly setup; the analysis continues with the optimization process so as to find the optimal allocations and the optimal perspective values of the model; the paper ends with the empirical evaluation of the role of the probability distortion, the value functional form and the loss aversion on the optimal solutions of the problem. The findings of the paper indicate that all the factors under examination are crucial for a behavioral analysis and influence the optimal solutions of a PT model.

More specifically, PT agents differentiate their behavior according to their type of preferences and their loss aversion level but they seem to always prefer high positively skewed assets such as small and value stocks. The attractiveness of positively skewed assets is re-enforced when probability distortion is introduced in the model; the probability distortion tends to overweight the too small gain-probabilities of such assets driving PT agents to increase further their weights increasing consequently the magnitude of their optimal perspective values. The probability distortion impact on the optimal solutions is independent of the used probability weighting functional form.

The investment style of agents is another determinant factor for the optimal allocation of the problem; a conservative style assigns higher weights to less risky assets and smaller percentages of wealth to very risky assets. These investors have smaller optimal perspective values relatively to investors who follow more aggressive strategies. The value functional form also plays a significant role in this analysis; results showed that agents with an unbounded piecewise power value function have the incentive to undertake great risks in order to obtain higher potential returns. On the other hand, agents with a bounded negative exponential value function which permits only bounded potential returns choose more conservative strategies lowering in this way their optimal perspective values, for any loss aversion index. Finally, results show that as agents become more loss averse they tend to follow more conservative strategies, with and without probability distortion. This loss aversion effect is strong enough to limit (but not alter) the value functional form effect on optimal solutions e.g. the interaction of a large loss aversion index with the unbounded piecewise power value function may reduce agents' aggressiveness.

It would be useful here to mention that this paper is a behavioral analysis that gives emphasis to behavioral factors and their role in decision making using technical methods as tools. This analysis is developed into a Prospect Theory framework as the studies of Best and Grauer (2016) and Pirvu and Schulze (2012) that however do not give emphasis to the role of behavioral factors in decision making but they focus at most to the optimization process of a PT model under the appropriate constrains. One interesting issue for future research would be the development of such a behavioral analysis into a Cumulative Prospect Theory framework. In this direction are the paper of Shi, Cui, and Li (2015) and especially the working paper of Hens and Mayer (2014) where algorithms for optimization into a Cumulative Prospect Theory framework are presented, the probability distortion is applied on cumulative rather than on individual probabilities (see Tversky and Kahneman (1992), Wakker and Tversky (1993) among others) while it is taken into account the additional non-smoothness that is introduced in the model because of the sorting of scenarios.

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# Chapter 26
# The Role of Institutional Quality on Total Factor Productivity:
## A Comparative Analysis on the CEE and MENA Economies

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## ABSTRACT

*Within the settings of the economic growth literature, this study aims at analyzing the determinants of total factor productivity in the Central and Eastern Europe (CEE) and the Middle East and North Africa (MENA) regions, with a special emphasis on institutional quality. Beside descriptive analyses, several fixed-effect panel data regressions are estimated, which enables both cross-country and cross-regional analyses. Estimation results provide strong statistical evidence of institutional influences on total factor productivity in the CEE and MENA economies.*

## INTRODUCTION

Cross-country differences in economic performances have been discussed both theoretically and empirically with a broad perspective in the literature for years. A vast literature focuses on East Asian countries because of their successful – miracle – development and growth experiences and on Sub-Saharan Africa due to its very poor growth performance. However, the economies of the Central and Eastern Europe (CEE) and the Middle East and North Africa (MENA) draw more attention nowadays in the world's economic development process. The former group of economies, which were ruled by communism in the past, are now charming as they are either the new members of or the candidates for the European Union enlargement process. On the other hand, the MENA countries, which are characterized by unindustrial-

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ized state-oriented economies and by the Islamic structure (except for Israel), have high potential for growth and development owing to the abundance of natural resources, unless their economic and social reforms are disrupted by the unstable political environment of the region. Although these two groups of countries have almost similar scopes of economic development and growth, the degree of vulnerability to internal and external shocks is considerably different due to their distinct sociocultural environments and geographical locations, which, in fact, shape their institutional structure. Hence, one expects both cross-country and cross-regional income disparities to exist between the CEE and MENA regions, driven by various qualitative factors beside their physical- and human-capital endowments, and thus, reflected in their total factor productivity levels.

Along with the development of the endogenous growth theory by the mid-1980s, a wide variety of factors are considered to be the competing determinants of economic performance, beside the conventional factors of production, i.e., capital and labor. Particularly, the institutional aspects of the economic performance have become one of the recent concerns of the researches in the literature with the emphasis that institutions are the essential determinant of the growth potential of the economies, which set the rules of the economic exchange and the market mechanism. In this respect, in many studies, sources of growth that cannot be explained by the capital- and labor-accumulation are attributed to changes in the structural factors involving the institutions, geographies and the cultures. Thus, the total factor productivity growth, which is known to be the residual component of economic growth in the Cobb-Douglas type output models, stands as the most relevant growth element through which the structural factors can influence the growth performance of the economies. In the relevant literature, the structural factors that reflect the quality of institutions in a society are basically (i) the level of democracy, reflected by the extent of the civil liberties and political rights, (ii) the goodness of government services, resulting from fine bureaucracy, low corruption and sound legal system, (iii) the risks for entrepreneurs, due to government instability, poor socioeconomic conditions, and low investment profile. Weakness in any one of these factors is expected to slow down total factor productivity growth in an economy, possibly due to the increased transaction costs, which propagate inefficiency in resource allocation and curb economic growth accordingly. Institutional deficiencies constitute obstacles against entrepreneurship and innovative incentives, by discouraging the flow and the mobility of resources in the economy. Therefore, in the recent analyses of the institutional influences on growth performance in the literature, changes in the total factor productivity component of economic growth are argued to be a more relevant aggregate than the factor accumulation component.

The objective of this chapter is to provide a comparative analysis of the growth dynamics in the CEE and MENA countries in the last two decades, particularly, based on their total factor productivity differentials, with the following research questions in the mind: (i) In what respects do the sources of growth in these two regions diverge from those in other regions of the world? (ii) What is the share of the contribution of the total factor productivity growth to economic growth rate in these two regions? (iii) What are the demographic, economic and political particularities that are expected to shape the institutional quality of the two regions? (iv) Can prevailing institutional quality differences in these regions explain their total factor productivity differentials? (v) Which of the institutional factors appear as the major driving forces of the total factor productivity changes in these regions? The sample period of the study is limited to the 1990-2011 period due to the unavailability of a long-span comparable data. The period in question coincides with structural reforms in most of the MENA countries, and with reforms of transition to a post-communist era in CEE. Hence, economic performances and growth related issues have gained great importance for both of the regions from the 1990s onwards.



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Within this context, the chapter, first, briefly reviews the relevant literature so as to illustrate the association between institutions and economic growth in theory and then concentrates on the researches that link the institutional factors with total factor productivity, after demonstrating the theoretical underpinnings of the economic growth and total factor productivity nexus. In the next step, the chapter aims at giving an overview about the sources of growth in various regions of the world as well as in the CEE and MENA countries by making use of a comparative growth accounting analysis. The purpose of such an analysis is to figure out the relative contributions of total factor productivity growth and factor accumulation to the economic growth in the economies of interest. Following the growth accounting analysis, a descriptive part takes place in the chapter to provide some snapshots from demographic peculiarities and from the characteristics of the economic and political institutions in the CEE and MENA regions. The objective is to explore the embedded economic and social differences that are expected to shape the history of the institutional development in the CEE and MENA countries, which, in fact, is argued to affect the incentives of higher total factor productivity growth. Finally, the chapter consists of an empirical analysis part, which allows for a comparative inquiry about the influences of institutional quality on total factor productivity in the CEE and MENA countries through panel data regressions. Unlike the majority of the empirical studies in the literature, analyses in this chapter rest on regression estimates that employ total factor productivity as the dependent variable, instead of using the income level or the income growth rate as dependent, with the rationale that "[W]hile a determinant of productivity will also be a determinant of income, the converse is not necessarily true." (Islam, 2008: p. 203) Thus, the empirical analysis here is carried out through several estimates of fixed effects panel data regressions, which appears to be rewarding as the cross-country and cross-regional variations are taken into account over time in the determination of the productivity levels in the panel data estimates.

## AN OVERVIEW OF THE LITERATURE

### Institutions and Economic Growth

The concern about the role of institutions on growth dates back to the "new institutional economics", a term originated by Williamson (1975) and a discussion with roots in the Coase theorem. The most recent theoretician of this school is the Nobel Prize laureate Douglas North. In his Nobel lecture, North (1994) states that economic performance is shaped by economic rules defined and enforced by the governmental system. Hence, a stable long-run growth entails a legitimate set of rules and adaptive efficiency, rather than allocative efficiency, to generate "… flexible institutional structures that can survive the shocks and changes that are a part of successful evolution" (North, 1994, p. 367). The recent followers of the new institutional economics, Acemoglu et al. (2005), similarly, emphasize that economic institutions are the fundamental cause of different patterns of economic growth, and hence, the income differences across countries. According to them, institutions reflect the decisions of humans who organize their society to achieve prosperity through enforcing property rights that encourage investment, innovation and entrepreneurship in an environment of equal opportunities. However, Olson (1982) argues that it is the encompassing organizational structure, which can induce prosperity in a society, not the one with special interests, as the latter type of organizational structure involves more divisive political life and cannot have the incentive to cease redistributing income to their members when the excess burden exceeds the social cost of the redistribution. However, the neo-classical presumptions of the new in-



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stitutionalism, which take the individuals as given and rational, are criticized by the proponents of the Veblenian institutionalism. Accordingly, Chang (2002) proposes the "institutionalist political economy" approach, by which he rejects the temporal priority of individuals over institutions and emphasizes the role of institutions in affecting human actions. In the same vein, Hodgson (2006) describes institutions as common settled habits of thought, which form the rule-following behavior of the individuals, rather than as the rules of the game or the constraints, which shape the human interaction in the society. However, regardless of their being the consequence or the cause, institutions are argued to play the fundamental role in determining the growth potential of the economies.

There are various channels for institutional structure to influence growth. One widely accepted view is that policies and institutions characterized with economic freedom and democracy promote growth more across countries over time. Institutional structures that succeed in removing infrastructural inadequacies and resistance to the adoption of new technologies can increase output performance. Good institutions can reduce transaction costs and increase the efficiency of the market mechanism by providing the security of rights through sound legal systems and by reducing corruption and bureaucratic obstacles. As Rodrik (2000, p. 5) states, "… the market economy is necessarily "embedded" in a set of non-market institutions", some of which may not serve the needs of the market economy, whereas property rights, regulatory institutions, institutions for macroeconomic stabilization, institutions for social insurance, and institutions of conflict management are market-supporting institutions. The transmission channels of institutional influences are sophisticated and widespread. Even the financial sector's ability of mobilizing and channeling resources to production is an issue of institutional quality. Jones (2001) argues that if there were no institutions allocating resources toward innovation in the 20th century, the Industrial Revolution would have been delayed by more than 300 years.

Cross-country empirical works in this strand of the literature proliferate from the mid-1990s onwards, however, employing a broad range of measures in describing the institutional characteristics: the democracy index as the indicator of political rights (Barro, 1996; Rodrik, 2000; Rivera-Batiz, 2002; Esfahani & Ramirez, 2003; Butkievicz & Yanikkaya, 2006), government anti-diversion policies, type of organizations, language, and climate as the indicators of the social infra-structure (Hall & Jones, 1996; Hall & Jones, 1999; Chanda & Daalgaard, 2008), trust and civic norms as the indicator of social capital (Knack & Keefer, 1997), ethnic diversity as the determinant of the structure and policies of the institutions (Easterly & Levine, 1997), economic freedom of the world index, reflecting the key elements of the new institutional economics (Gwartney et al., 2004), institutional quality indicated by composite indices including the measures of rule of law, bureaucracy quality, corruption, risk of expropriation, security of contractual and property rights, political freedom and civil liberties (Knack & Keefer, 1995; Keefer & Knack, 1997; Rodrik, 1997; Sachs & Warner, 1997a; Sachs & Warner, 1997b; Grigorian & Martinez, 2000; Rodrik et al., 2004; Islam, 2008), mortality rates of settlers in the colonies as the determinant of the characteristics of the early and current institutionalization process in countries colonized in the past (Acemoglu et al., 2001). The cross-country studies using these various institutional measures all affirm the positive effect of good institutional structure on the level of income or on economic growth.

## Economic Growth and Total Factor Productivity

Income differences and the dynamics of the catch-up process of developing economies have been analyzed traditionally within the settings of the Solow (1956) growth model in the literature. The failure in the neo-classical prediction that poor economies grow faster than the rich led to doubts on the Solow



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(1956) growth model until Romer (1990) introduced the perspective of the endogenous technological change that provides the incentive for continued capital accumulation. As argued both by Barro (1991) and Mankiw et al. (1992), the Solow growth model augmented by human capital accumulation is capable of explaining the international differences in per capita income, in a sample of 98 countries over the 1960-1985 period. Mankiw et al. (1992) point out the relevance of explaining the cross-country variation by the differences in tax policies, education policies, tastes for children, and political stability, which are, actually, the ultimate determinants of human capital quality. However, the empirical findings of Hall and Jones (1996, 1999) imply that the income differentials between the poor and rich countries are mostly attributed to differences in total factor productivity rather than differences in factor accumulation. This implication is agreed by Prescott (1998), who states that a theory of total factor productivity is required to explain international income differences, because broadening the concept of capital with human capital and other forms of intangible capital still is not capable of explaining the income disparity due to differences in the saving rates unless implausibly large intangible capital is invested. Accordingly, Prescott (1998) concludes that the neo-classical growth model works only if total factor productivity differs across countries.[1] Easterly and Levine (2001), through demonstrating some stylized facts about "something else" as a source of growth, emphasize that more effort should be dedicated to modelling and quantifying total factor productivity growth than focusing on physical and human capital accumulation in investigating the divergence between the poor and rich countries. Solow (2001) agrees with all these arguments noting that growth-oriented cross-country studies including countries at different stages of development should explain the potential output or total factor productivity, as Solow (2001, p. 286) thinks "… of growth theory as precisely the theory of the evolution of potential output." Consistent with the purpose of this chapter, Solow (2001) argues that in the multivariable cross-country growth regressions, the left-hand side variable should be an estimate of the potential output or the total factor productivity, while the right-hand side variables should precisely be accounting for differences in total factor productivity or in factor-augmented technological change. Following Solow (2001) literally, Islam (2008) develops and discusses an empirical model of productivity in broad perspective with the hope of contributing to the further development of a theory of total factor productivity.

In Solow's (1956, p. 85) framework, neutral technological change represents perfectly arbitrary changes over time in the production function and is modelled by an increasing scale factor, i.e., *A(t)* that multiplies the production function such that:

$$Y_t = A\left(t\right).F\left(K_t, L_t\right) \tag{1}$$

where *Y* is output, and *K* and *L* are capital and labor inputs. Expression (1) can be re-written in a functional form relevant for a cross-country analysis as:

$$Y_{it} = A_{it}.F\left(K_{it}, H_{it}\right) = A_{it}.\left[K_{it}^{\alpha_{it}}\left(L_{it}.hc_{it}\right)^{1-\alpha_{it}}\right] \tag{2}$$

where $H=L.hc$ denotes human-capital ($hc$) augmented labor ($L$); $\alpha$ is the output elasticity of capital (measured by the share of capital income in the national output) in the Cobb-Douglas aggregate production function. Subscripts $i$ and $t$ stand for the cross-section and time dimensions. The growth literature calls $A$ the total factor productivity (TFP, henceforth), which is assumed to be an indicator of both the tech-



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nological and non-technological sources of random changes in output that cannot be explained through changes in capital and labor inputs. That is, TFP is a residual representing deviations from constant returns to scale. The concern related to this residual term increases along with developments in growth accounting, as estimations imply significant and non-constant contributions to output that cannot be quantified with the traditional factor accumulation approach. Accordingly, the cross-country analysis of Hall and Jones (1996), based on output decomposition accomplished through the levels accounting method (Solow, 1957; Jorgenson & Griliches, 1967), implies that most of the difference between the output of the US and that of the rest of the world (132 countries) is attributed to TFP differences, and the differences are more pronounced for less developed countries. Moreover, the estimations by Hall and Jones (1996) indicate that differences in infrastructure (or institutions and government policies) are fundamental to physical- and human-capital accumulation and to productivity, causing different levels of economic success across countries (Hall & Jones, 1997, p. 173, 175). All these findings are confirmed by strong empirical evidence once again in another cross-country study by Hall and Jones (1999).

## Quality of Institutions and Total Factor Productivity

In the relevant literature, the influence of institutional quality on economic performance has been investigated often through regressions on growth or level of income, as in Knack and Keefer (1995), Barro (1996), Easterly and Levine (1997), Sachs and Warner (1997a, 1997b), which are the pioneering studies of the issue. However, in their recent studies, both Prescott (1998) and Solow (2001) draw attention to the importance of TFP and its non-technological driving forces in growth analysis. Thus, the institutional characteristics of the economies undoubtedly appear as one of the potential determinants of the non-technological sources of TFP growth in the economies. Nonetheless, there is a scant literature concerning the cross-country TFP implications of the institutional aspects.

Among the few studies of this type, Hall and Jones (1996, 1999) decompose the differences in output into differences in physical- and human-capital inputs and differences in TFP, and show that the contribution of TFP differences to output differences between the poorest and richest economies is significant, whereas contributions from physical- and human-capital are modest. The social infrastructure, referred as the counterpart of the institutional quality in Hall and Jones (1999), is found to affect each of the three components of contributions to output strongly. In another study, Chanda and Daalgaard (2008), by decomposing TFP into components, i.e., relative (or inter-sectoral) and absolute efficiencies, conclude that TFP levels are affected substantially by the institutional environment and geographic conditions. However, it is the relative efficiency across agricultural and non-agricultural sectors that is found to be affected, not the (absolute) efficiency in the economy. Most recently, Islam (2008) developed four TFP models discriminating them with respect to the classification of the types of productivity determinants, i.e., economic factors, institutions, social base, and physical phase. In his estimations with institutional indicators, only the 'democratic rights' indicator - a combination of the 'political rights' and 'civil liberties' indices - can explain the variation in TFP significantly, among the other institutional indicators such as 'political stability', 'risk of appropriation' and 'rule of law'.

In the MENA region, TFP is not found to be a significant source of growth according to the growth accounting figures given by Yousef (2004), Sekkat (2004), Makdisi et al. (2006), and Abu-Qarn and Abu-Bader (2007). However, it appears as the primary reason for the slowdown of the economic growth in the region in the 1980s and 1990s. Accordingly, the estimates of Makdisi et al. (2006) imply that poor institutional quality and human capital are responsible for the poor TFP performance of the MENA



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region. TFP appears to be a more important source of growth in the CEE region than it is in the MENA region, especially in the recovery phase of the transition process, as put forth by Dobrinsky (2003), Ark and Piatkowski (2004), Bah and Barada (2009), and Rapacki and Prochniak (2009). However, there is no empirical evidence as to the influence of the institutional structure on TFP changes in the CEE economies. Havrylyshyn and Rooden (2003) show the important role of market-enhancing institutions only on the economic growth rate in transition economies.

## THE CEE AND MENA IN FIGURES

### Growth Accounting

The economic performance of a country can be analyzed in terms of sources of growth through breaking down the GDP growth rate of an economy into components within the framework of the growth accounting approach. This decomposition process is based on the estimation of the expression given in (2) by its observable variables *Y*, *K*, *L* and *hc* so that *A* is recovered as a residual term. Hence, GDP ($Y_{it}$) growth is decomposed into contributions from physical- and human-capital ($K_{it}$ and $E_{it}hc_{it}$) growths and from TFP ($A_{it}$) growth, respectively. Growth components can be obtained from the log-linearized and differenced version of (2) as follows:

$$\Delta ln\ y_{it} = \alpha_{it}\Delta ln\ k_{it} + \left(1-\alpha_{it}\right)\Delta ln\ hc_{it} + \Delta ln\ A_{it} \tag{3}$$

where $y_{it}=Y_{it}/L_{it}$ and $k_{it}=K_{it}/L_{it}$. The output elasticity of capital $\alpha$ is usually assumed fixed around $\alpha=1/3$ across countries, or estimated values can be utilized alternatively. Moreover, one minus the share of labor compensation in GDP can be used as the counterpart of $\alpha$, which allows capital- and labor-elasticity varying both across countries and over time, as in the Penn World Table 8.

In order to provide a rough comparative overview of the sources of economic growth in various regions of the world and, particularly, in the CEE and MENA economies, the growth accounting estimates of the Conference Board are summarized in Table 1 and 2, respectively. The figures in Table 1 allow for a regional comparison of the components of the average GDP growth rates in the world economy. As can be seen in the GDP column under the full period case (1990-2012 or 1997-2012), relatively poor or less developed regions have grown more than the early industrialized rich regions over the past two-decade. However, the groups of CEE and MENA economies do not seem to outperform the Asian and the Sub-Saharan African economies.

With respect to the TFP and K&L columns of Table 1, in all regions except for Central Asia, factor accumulation contributes more to GDP growth than does TFP growth. Particularly, more than 80% of GDP growth is accounted for by the accumulation of capital and labor inputs in the MENA region, while the contribution of the TFP to GDP growth is about 40% in the CEE region, which is the highest TFP contribution rate after that of Central Asia. Relatively high productivity growth in Central and Eastern Europe and in Central Asia may be explained by the efficiency gains owing to transitional dynamics of the post-communist era, which involve market-oriented structural reforms and institutional changes. However, according to the figures computed for the two sub-periods, while TFP contribution to growth



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*Table 1. Contributions to economic growth by regions (average annual percentages)*

| | 1990-2012 | | | 1997-2012 | | | 1990-99 | | | 2000-2012 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Full Period | | | Full Period† | | | Sub-Period 1 | | | Sub-Period 2 | | |
| | GDP | TFP | K&L | GDP | TFP | K&L | GDP | TFP | K&L | GDP | TFP | K&L |
| Central and Eastern Europe | 2.94 | 1.23 | 1.71 | 3.53 | 1.41 | 2.12 | 1.34 | 0.88 | 0.46 | 3.76 | 1.45 | 2.32 |
| Middle East and North Africa | 4.37 | 0.49 | 3.88 | 4.82 | 0.85 | 3.97 | 3.65 | -0.02 | 3.67 | 4.96 | 0.89 | 4.06 |
| Western Europe (EU-1) | 2.15 | 0.25 | 1.90 | 1.99 | -0.04 | 2.03 | 2.97 | 0.86 | 2.11 | 1.52 | -0.21 | 1.73 |
| Western Europe (EU-2) | 1.82 | 0.05 | 1.77 | 1.96 | -0.05 | 2.01 | 2.26 | 0.49 | 1.77 | 1.49 | -0.29 | 1.77 |
| Western Europe (Other) | 2.83 | 0.62 | 2.21 | 2.63 | 0.49 | 2.14 | 3.42 | 0.89 | 2.53 | 2.37 | 0.44 | 1.94 |
| North America and Oceania | 2.60 | 0.08 | 2.52 | 2.71 | 0.01 | 2.70 | 2.87 | 0.44 | 2.43 | 2.39 | -0.20 | 2.59 |
| Central Asia | 6.31 | 3.31 | 3.01 | 6.76 | 3.88 | 2.88 | 3.24 | 0.97 | 2.28 | 7.30 | 4.18 | 3.12 |
| South and East Asia | 5.24 | 1.06 | 4.17 | 4.84 | 0.79 | 4.05 | 5.22 | 0.98 | 4.24 | 5.26 | 1.14 | 4.12 |
| Latin America | 3.28 | 0.26 | 3.02 | 3.28 | 0.11 | 3.17 | 3.20 | 0.42 | 2.79 | 3.34 | 0.14 | 3.20 |
| Sub-Saharan Africa | 4.29 | 0.74 | 3.55 | 5.01 | 0.96 | 4.05 | 3.13 | 0.55 | 2.58 | 5.18 | 0.88 | 4.30 |
| World (116 countries) | 3.58 | 0.81 | 2.77 | 3.75 | 0.84 | 2.91 | 3.13 | 0.65 | 2.48 | 3.76 | 0.84 | 2.92 |

Source: The Conference Board Total Economy Database, Growth Accounting and Total Factor Productivity Country Details, 1990-2013.

GDP: GDP growth rate, TFP: Total Factor Productivity Growth, estimated as Tornqvist index, K&L: Contributions of capital and labor to the GDP growth

†Because of the missing observations of the transition economies, the full sample period is constructed starting also from 1997 to provide full comparability.

Western European countries classified as EU-1 are Belgium, Denmark, France, Germany, Ireland, Italy, Luxembourg, Netherlands and United Kingdom; the ones classified as EU-2 are Austria, Finland, Greece, Portugal, Spain, Sweden; and the others are Iceland, Norway, Switzerland, Cyprus, Malta and Turkey.

increases from 30% to 57% in Central Asia in the 2000s, it falls from 66% to 39% in the CEE region. Note that, in the 2000s, Western Europe and North America and Oceania record negative TFP contributions that curb their economic growths.

The sources of GDP growth in the CEE and MENA regions can be analyzed by country in detail in Table 2. It is seen that the relatively higher average TFP contribution in CEE is owed only to six of the seventeen economies in the region, that is, Belarus, Estonia, Lithuania, Moldova, Romania, and the Russian Federation. On the other hand, among the MENA countries only Iraq and Kuwait contribute to growth through TFP. Overall, although the relative contributions are not similar in the two regions, it is evident that factor accumulation plays the major role in growth both in CEE and MENA. However, the contribution of TFP in the CEE (40%) is above the world average (22%), while the contribution of K&L in the MENA (82%) is also slightly above the world average (78%). Unless the driving forces behind the disparity in the TFP contributions are explored, it is not easy to reveal the residual growth dynamics. Hence, further analysis is needed to explain the TFP variation both across and within these regions. As a preliminary step to this, an overview of some demographic, economic, and institutional factors pertaining to these regions is presented below.



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*Table 2. Contributions to economic growth by countries (average annual percentages), 1997-2012*

| CEE Region | GDP | TFP | K&L | MENA Region | GDP | TFP | K&L |
|---|---|---|---|---|---|---|---|
| Albania | 4.67 | 0.87 | 3.80 | Bahrain | 4.83 | -1.28 | 6.11 |
| Belarus | 6.34 | 2.97 | 3.36 | Iran | 4.27 | 0.79 | 3.48 |
| Bulgaria | 3.32 | -1.23 | 4.56 | Iraq | 7.01 | 5.95 | 1.06 |
| Croatia | 2.06 | -0.20 | 2.26 | Israel | 3.66 | 0.03 | 3.64 |
| Czech Rep. | 2.42 | 0.08 | 2.34 | Jordan | 5.00 | 1.12 | 3.88 |
| Estonia | 4.63 | 2.90 | 1.74 | Kuwait | 4.04 | 2.95 | 1.09 |
| Hungary | 2.09 | -0.39 | 2.49 | Oman | 4.11 | 0.09 | 4.02 |
| Latvia | 4.29 | 1.17 | 3.11 | Qatar | 11.82 | 2.90 | 8.92 |
| Lithuania | 4.37 | 2.31 | 2.06 | Saudi Arabia | 4.68 | 0.79 | 3.88 |
| Macedonia | 2.58 | 0.66 | 1.92 | Syria | 3.53 | 0.67 | 2.87 |
| Moldova | 3.09 | 4.74 | -1.66 | UAE | 4.52 | -0.41 | 4.93 |
| Poland | 4.05 | 1.80 | 2.26 | Yemen | 3.57 | -1.79 | 5.36 |
| Romania | 2.40 | 2.62 | -0.23 | Algeria | 3.47 | 0.03 | 3.44 |
| Russian Fed. | 4.15 | 3.15 | 1.00 | Egypt | 4.53 | 0.66 | 3.87 |
| Slovak Rep. | 3.85 | 1.47 | 2.37 | Morocco | 3.93 | 0.03 | 3.90 |
| Slovenia | 2.64 | 0.95 | 1.69 | Tunisia | 4.13 | 1.05 | 3.08 |
| Ukraine | 3.01 | 0.02 | 2.99 | | | | |
| **Average** | **3.53** | **1.41** | **2.12** | **Average** | **4.82** | **0.85** | **3.97** |

Source: The Conference Board Total Economy Database, Growth Accounting and Total Factor Productivity Country Details, 1990-2013.
GDP: GDP growth rate, TFP: Total Factor Productivity Growth, estimated as Tornqvist index, K&L: Contributions of capital and labor to the GDP growth

## Some Regional Descriptive Indicators

### Demography

The demographic characteristics of societies play a crucial role in economic performance through many different channels, the outcome of which, however, may be ambiguous. For example, while rapid population growth is argued to lower living standards and the steady-state output due to the need for higher capital investment to keep the growing labor force productive, some counterarguments point out the merits of population growth that helps to increase the aggregate saving rate in the economy by increasing the working-age population relative to population of the old- and young-dependents. Less developed country experiences show that there is a trade-off between the poverty trap and the comparative advantage of low labor costs in growing populations, where in the former case the speed of infrastructural and institutional changes cannot keep up with the speed of the population growth, while in the latter, per capita output tends to grow fast, however, with deteriorating income inequalities. In this sense, especially the institutions for health and education should have infrastructural capacities that can adequately satisfy the needs of growing populations, for a better quality of human capital and for improvements in total factor productivity. Otherwise, unbalanced population growth is detrimental to moral values and social peace, leading to political and economic instabilities and efficiencies in a society.



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In the context of the life-cycle theory of the consumption, the age-structure of the populations in CEE and MENA may have some implications for the private savings differentials and hence for total factor productivity growth potentials in the two regions. According to the age–dependency ratios, the share of dependents (population younger than 15 or older than 64) in the working-age population in MENA has been high throughout the 1960s, but falling from about 80% to 50% in about fifty years' time (1960-2013). Figures show that most of the dependency in the region is young-age dependency and about 30% of the population is at ages below 15, whereas only the 5% of the population is above the age 65, with respect to the 2013 figures. However, the dependency ratios vary substantially across the countries in the sample.[2] For example, the average ratio of the 2000-2013 period is 28% for Qatar and 82% for Iraq, while the regional average of the age-dependency ratio is 53%. On the other hand, the age dependency ratios in the CEE region have been sluggish and lower than those in the MENA region over fifty years, decreasing from about 55% in the 1960s to 45% in the 2000s.[3] Unlike the MENA countries, the ratios do not vary much across the CEE countries, which lie within the 40-50% range. Moreover, in CEE, dependency ratios exhibit a decreasing trend for the young-age whereas an increasing trend for the old-age. The recent figures show that the age dependency ratios are now mostly below 50% by the year 2013 both in the CEE and MENA countries. The declining age dependencies in these two regions are expected to generate positive effects on private savings, which constitute the sources of funds to be channelized to the total-factor-productivity increasing activities, unless the declines in the age-dependency ratios are associated with greater unemployment rates in these regions. The high annual average of the population growth rate (3.3%) in MENA in the last ten years' time indicate that unemployment is a growing concern in this region, in contrast to the case in CEE, where the population growth rates are mostly close to zero or negative.

The share of the population living in the urban areas is about 60% in CEE and 80% in MENA with respect to the 2013 figures. The agglomeration economies of urbanization are expected to improve total factor productivity more in MENA than in CEE through reducing the production costs and through the economies of scale effects. However, the urbanization in the MENA region does not seem to generate efficiency despite the young population, because 65% of the youth and 70% of the women stay out of the labor force, with respect to the annual averages of the 2000-2012 period. The share of females in the total labor force in the MENA region is far below that in the CEE region, 22% in the former and 47% in the latter, with labor force participation rates of 30% and 60%, respectively. This gender gap in the labor market is due to the Islamic traditions prevailing in most of the MENA countries, which discourage the entry of women into labor markets, and due to the high unemployment ratios, which prevent women from competing with men in labor participation. Moreover, although the youth-unemployment rates seem to be close to each other in the CEE and MENA regions (about 20-25%), in MENA, these figures do not reflect the young population that is unemployed but not accounted in the labor force as they are discouraged to work due to the lack of job opportunities and due to the social barriers against females.

Overall, despite the continuously declining age dependency ratios and young population in MENA, the demographic profile seems to be less convenient than that of the ageing CEE region in mobilizing the potential sources of total factor productivity growth. The demographic factors play an essential role on the build-up of institutions and on their decisions in resource allocation. Unless the resources are allocated efficiently to health and education and to the projects of research and development, the high rates of population growth in the MENA region seem to discourage productive foreign direct investments (FDI) in the region.



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## Economic Institutions

The role of economic policies and institutions in growth and productivity is another crucial issue, again nesting some controversies in terms of their outcome. The most controversial cases seem to be the repercussions of international-trade openness and the size of the government. Openness is argued to provide the transfer and diffusion of new technologies and ideas through the flow of goods and services. Moreover, the degree of openness may indicate the economic institutions' attitude towards the free-trade mechanism and the competition, which indirectly determine the size of international funds flowing to an economy. However, if not accommodated by the proper economic policies, openness increases the vulnerability to external shocks destabilizing the economies through exchange rate fluctuations in the short-run, which in fact cause fluctuations in the cost of acquiring imported capital goods, equipment, and machinery. A similar controversy exists for the role of the government, which is usually measured in terms of the size of government spending. In some cases, government size may be the indicator of the degree of policy interventions in the economy, acting negatively on economic performance due to government failures. The high share of the public sector activity may be detrimental to total factor productivity when it evolves to be a threat for macroeconomic stability due to fiscal sustainability problems. On the other hand, there is a noteworthy literature discussing the crowd-in effects of productive government spending, such as research and development expenditures. Thus, in economies with insufficient private resources or immature financial markets, government can assume a leading role in investment in high-cost areas and advanced technologies.

The openness ratios in the CEE and MENA regions, measured by the volume of trade as a percentage of GDP, are respectively 110% and 88% with the annual averages of the 2000-2011 period, where the ratio is 127% in East Asia. Estonia, the Slovak Republic, and Hungary in CEE, and Bahrain and Jordan in MENA are economies that appear with high trade shares at around 150% and 130%, respectively. However, despite the free trade agreements, the international trade in MENA is characterized still by high tariff and non-tariff barriers. A particularity of the trade in MENA is that most of the economies in the region are net exporters of energy products importing manufactural goods in return, mostly from the European Union. On the other hand, in the CEE region, only the Russian Federation is a net exporter of energy products. The merchandise trade of the other CEE countries are based mostly on manufacturing goods that are exported and imported within the European Union. The natural-resource-oriented exports of the MENA region discourage the production of the agricultural and manufacturing export goods, which, in fact, downgrade the diffusion of new technologies through knowledge spillovers and the diversification of the international trade. The openness in this region is associated with less technology inflows than in CEE, which is implied by the three times lower share of the information and communication technology (ICT) goods imported in the MENA region. Moreover, the average ratio of the research and development (R&D) expenditures to GDP in MENA is far below that of in CEE, with the exception of Israel, whose average ratio is about 4% in the last decade, which is four times the CEE's average ratio. When international capital movements are taken into account, the GDP share of the net FDI inflows in the CEE region appears to be higher than that in the MENA region, i.e., around 6% in the former and around 3% in the latter according to the annual averages of the 2000-2011 period, implying that the CEE economies are more open in terms of fixed capital flows than the MENA economies. The low FDI figures of the MENA countries may be explained not only by the political and economic risks of the region but also by the low quality of the labor and the production technologies. In MENA, there seems to be the "curse of natural resources" on trade and investment as well as on the build-up of modernized



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institutions, which preclude innovative activities and the enlargement of job opportunities for the young and educated population, and thereby hinder total factor productivity growth.[4] Therefore, the political and economic institutions in MENA should be reformed so that the investment environment, production and trade integrate to the world economy through more democratic and stable society.

The MENA region, with its tradition of interventionist redistributive governments, and the CEE region, with its history of the state-owned economy, recently, have governments with moderate size. The size of the public sector, measured by the GDP share of the cash payments for operating activities of the government in providing goods and services, is 27% in MENA and 34% in CEE, with respect to the 2000-2011 annual averages. The latter figure is close to the one in the Western Europe (37%). The high GDP shares of public expenditures in the CEE and the Western Europe can be attributed to subsidies, which are exceeding 60% of the total expenses in the government budget in the last years. Although the subsidies and the compensation of public employees constitute the largest parts of the total government consumption expenses in both regions, the latter, which is an unproductive type of government expenditure, is in larger shares in most of the MENA economies than in the Europe. Thus, the composition of government expenses in MENA seems to be more detrimental to total factor productivity growth than that in CEE. Alternatively, the size of the public sector can be indicated also by the size of government's burden and drain on private sector. In this respect, when the figures on the GDP share of the compulsory transfers to the central government for public purposes are taken into account, both the CEE and MENA regions appear with approximately equal shares (16%), which is slightly above the world average (15%) and below the Western Europe average (22%). Although the shares of the government burden in CEE and MENA do not seem to be extremely high, they are above those in the developing economies of the Asia (10%) and the Latin America (12%). However, as long as the burdens are efficiently allocated to finance productive expenses in the economy, compulsory transfers to the government may not be detrimental to economic growth.

To conclude, it seems that benefits of openness can be utilized better in the CEE region than in MENA because of the safe investment environment and the geographic proximity to the advanced Europe. Although the size of the public sector expenses in the MENA region is smaller than that in CEE, payments to the public employee in the former seems to drain the resources that can be used for infrastructure investments and human capital improvements, which have the potential to increase the total factor productivity.

## Political Institutions

The most critical part of all discussions about the factors influencing growth and productivity is the institutions that would organize, audit, regulate and rule the mechanism in favor of the interests of the society. However, the definition of a 'good institution' is rather broad and hard to quantify for comparison purposes. Therefore, measures of the institutional quality are often produced based on the perceptions of the parties of interest or derived as a weighted index of quantifiable factors. The institutional indicators employed in this study are going to be the Freedom House's "Freedom in the World Country Ratings by Region" and the ratings published by the International Country Risk Guide (ICRG).

The political history of the CEE and MENA regions are characterized with autocratic institutional structures. Basically, the reason for the existence of authoritarian regimes in MENA is argued to be the abundance of natural resources. Institutions are shaped with the objective of keeping control over natural resources and their rents through an autocratic power. Unlike in MENA, autocracy in the CEE region



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originates from the socialist elites of the centrally planned economies of the pre-1990s. However, the rent from natural resources has been the crucial part of the total rents, also, in most of the transition economies both before and after the collapse of the Soviet Union. Thus, the quality improvement in institutional structure is highly dependent on a build-up process that removes or reduces the ruins of the rent-seeking objectives in the CEE and MENA regions. The transparency and the trust established through economic and political freedoms provide the efficient allocation of capital and human resources to activities that enhance total factor productivity growth.

An overview of the institutional characteristics of the CEE and MENA regions can be given by making use of the Civil Liberty and Political Rights indices of the Freedom House and various indicators from the International Country Risk Guide (ICRG) database.[5] According to the figures given in Table 3, the CEE countries outperform the MENA countries in terms of civil liberties (*CL*) and political rights (*PR*), with respect to the average values of *CL* and *PR*, which are 2 in the CEE and 5 in the MENA.[6] This shows the success of transitional reforms on political liberalization in the CEE region. However, Russia stands as an exception in the region with low freedoms. Poor civil liberties and political rights in Russia and in most of the MENA countries can be explained by the abundance of natural resources, which provides high rents and benefits to the political power. Thus, the autocratic structures in these type of economies involve rent-seeking rulers, who are reluctant to liberalize rights and to build-up market oriented institutions. Especially, in MENA, the presence of undemocratic administrations may be related with the internal and external conflicts based on ethnicity and religion as well as on natural resources. Lack of freedoms not only prevent institutional reforms to adopt new ideas and technologies inside but also discourage capital investments from abroad.

Some important aspects of the political structure in the CEE and MENA regions can be investigated by using the sub-indices of the ICRG.[7] The average figures of the 2000-2012 period given in Table 3 indicate only slight differences between the two regions. The most significant differences between the regions are observed for the 'religion in politics' (*RELP*) and the 'democratic accountability' (*DEMA*) variables. Both of these indicators have higher ratings in the CEE region, implying the presence of a more secular and democratic institutional structure in the CEE. As in the cases of civil liberties and political rights, again Russia appears as an exception in the region with the poorest stance in democratic accountability, because of its autocratic administrations inherited from the past socialist-bloc leadership. In the MENA region, Israel is the exception, however, with the highest democratic accountability (*DEMA*) rating, implying the existence of an alternating democracy in Israel, unlike the other countries in the region. The low values of *RELP* for MENA countries, given in Table 3, indicate the significant religious influences on politics in MENA. This can be explained by the Arab-Israeli conflict and the inter-Islamic sectarian tensions, which have been dominating the political decisions and the structure of the institutions in the region for years. Accordingly, the degree of military participation in politics in MENA is also higher than that in CEE, shown by the lower *MILP* values in Table 3. The military interference to politics in MENA can be explained not only by the prevailing regional tensions but as well by the struggle for sovereignty over natural resources in the region. Under such religious and military influences on politics, governance in MENA appear with a worse stance of democratic accountability compared to governance in CEE. The lower *DEMA* ratings observed for most of the MENA countries in Table 3 indicate the prevalence of dominated democracies or one-party states as opposed to almost alternating democracies in the CEE countries. Correspondingly, the government stability (*GOVST*) ratings in Table 3, which indicate the legislative strength and the unity of the governments, appear to be higher in MENA than those in the CEE region. It implies that governments in MENA have better



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capabilities in carrying out declared programs and staying in office. Although government stability can ensure economic policy stability by lowering the unexpected effects of political risks in most of the developing market economies, this may not be the fact in the case of stability achieved through governments without democratic accountability.

In developing economies, the decision of investments that are favorable for the diffusion and the spillover of the productivity-enhancing know-how is determined substantially by institutional risks. Beside the government instability, there are risks associated also with business conditions and social dissatisfactions. In this respect, ratings for *INVP* in Table 3 indicate the investment profile of the CEE

*Table 3. Institutional Indicators (annual averages, 2000-2011)*

| *CEE Region* | **CL** | **PR** | **GOVST** | **SOCEC** | **INVP** | **MILP** | **RELP** | **CORR** | **LAW** | **DEMA** | **BUREA** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bulgaria | 2 | 2 | 8 | 5 | 11 | 5 | 5 | 2 | 3 | 5 | 2 |
| Croatia | 2 | 2 | 8 | 5 | 9 | 5 | 5 | 3 | 5 | 5 | 3 |
| Czech Rep. | 1 | 1 | 7 | 7 | 11 | 6 | 6 | 3 | 5 | 5 | 3 |
| Estonia | 1 | 1 | 9 | 7 | 10 | 5 | 5 | 3 | 4 | 5 | 3 |
| Hungary | 2 | 1 | 8 | 7 | 11 | 6 | 5 | 3 | 4 | 6 | 3 |
| Latvia | 2 | 2 | 8 | 6 | 10 | 5 | 5 | 2 | 5 | 5 | 2 |
| Lithuania | 1 | 1 | 8 | 7 | 10 | 5 | 5 | 2 | 4 | 5 | 2 |
| Moldova | 4 | 3 | 9 | 4 | 6 | 4 | 6 | 2 | 5 | 5 | 1 |
| Poland | 1 | 1 | 7 | 6 | 11 | 6 | 5 | 2 | 4 | 6 | 3 |
| Romania | 2 | 2 | 8 | 5 | 8 | 5 | 5 | 3 | 4 | 6 | 1 |
| Russian Fed. | 5 | 6 | 11 | 5 | 9 | 4 | 5 | 2 | 4 | 3 | 1 |
| Serbia | 2 | 3 | 7 | 3 | 7 | 4 | 5 | 2 | 4 | 5 | 2 |
| Slovakia | 1 | 1 | 8 | 7 | 11 | 6 | 4 | 3 | 4 | 6 | 3 |
| Slovenia | 1 | 1 | 9 | 7 | 11 | 5 | 6 | 3 | 5 | 5 | 3 |
| Ukraine | 3 | 4 | 7 | 5 | 6 | 5 | 5 | 2 | 4 | 4 | 1 |
| Average | 2 | 2 | 8 | 6 | 9 | 5 | 5 | 2 | 4 | 5 | 2 |
| *MENA Region* | CL | PR | GOVST | SOCEC | INVP | MILP | RELP | CORR | LAW | DEMA | BUREA |
| Bahrain | 5 | 6 | 10 | 8 | 11 | 3 | 4 | 2 | 5 | 3 | 2 |
| Egypt | 5 | 6 | 9 | 5 | 7 | 3 | 3 | 2 | 4 | 2 | 2 |
| Iran | 6 | 6 | 8 | 6 | 6 | 5 | 2 | 2 | 4 | 4 | 2 |
| Iraq | 6 | 6 | 8 | 1 | 6 | 0 | 2 | 1 | 2 | 2 | 0 |
| Israel | 2 | 1 | 7 | 7 | 10 | 3 | 2 | 3 | 5 | 6 | 4 |
| Jordan | 5 | 5 | 10 | 5 | 10 | 5 | 4 | 3 | 4 | 4 | 2 |
| Kuwait | 5 | 4 | 9 | 10 | 10 | 5 | 3 | 3 | 5 | 3 | 2 |
| Morocco | 4 | 5 | 10 | 5 | 9 | 4 | 5 | 3 | 5 | 4 | 2 |
| Qatar | 5 | 6 | 11 | 8 | 10 | 4 | 4 | 2 | 5 | 2 | 2 |
| Saudi Arabia | 7 | 7 | 10 | 7 | 11 | 5 | 3 | 2 | 5 | 0 | 2 |
| Tunisia | 5 | 6 | 11 | 6 | 8 | 4 | 5 | 2 | 5 | 2 | 2 |
| Average | 5 | 5 | 9 | 6 | 9 | 4 | 3 | 2 | 4 | 3 | 2 |



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and MENA regions. The regional averages of the *INVP* ratings imply that investment risks associated with factors such as contract viability, profits repatriation and payment delays are almost similar in the two regions. Both regions seem to succeed in facilitating trade, as implied by the average *INVP* country ratings that are close to the maximum, which is 12. Another risk indicator given in Table 3 is the one associated with socioeconomic conditions (*SOCEC*). Low values indicate greater dissatisfaction resulting from unemployment, poverty and lack of consumer confidence. The average levels of dissatisfaction in CEE and MENA appear to be almost the same but unpromising. Massive layoffs due to privatization of the state-owned companies in the CEE economies and the high population growth rates along with internal political tensions in the MENA countries seem to be the basic reasons for the persistently poor socioeconomic conditions in the regions. Hence, risks associated with bad socioeconomic conditions appear to be the more important source of uncertainty in the CEE and MENA economies than risks associated with government instabilities and poor investment profiles.

Government service quality is one of the essential indicators of institutions' capacity to accommodate production without unexpected costs. The habit of rent seeking inherent both in the CEE and MENA economies due to authoritarian regimes and overstaffed state-companies constitute the primary problem of trust in governmental institutions in these regions. Correspondingly, the CEE and MENA countries appear with high levels of corruption in their political systems, shown by the average *CORR* rating of 2 out of 6 for both regions in Table 3. Such low figures imply serious treat for international merchants and investors, who will be exposed to unexpected doing-business costs in these regions. Similarly, the strength and the quality of the bureaucracy exhibit equal averages, which are 2 out of 4 for the two regions, as shown by the ratings of *BUREA* in Table 3. It means that bureaucracies in these regions cannot isolate themselves completely from drastic changes in policy or interruptions in government services, except for Israel in the CEE region. This is due to the persistence of state-oriented traditions in governance in CEE and MENA. The strength and the impartiality of the legal systems that associated with the popular observance of the law is another indicator of the good governance. Ratings given in Table 3 show that CEE and MENA regions have superior stances in terms of rule of law and order (*LAW*) compared to their stances in corruption and bureaucratic quality. However, the impartiality and the popular observance of the legal systems in question may not mean good governance for the foreign investors, unless these systems are market-friendly and democratic. As a matter of fact, this situation can be observed for many MENA countries when the ratings of *LAW* and *DEMA* in Table 3 are compared. Many MENA countries have better law and order scores than their democratic accountability scores, which shows the rule of law under authoritarian administrations. Russia is the only case among the CEE countries exhibiting the similar situation.

The cross-country analysis of the influence of institutional disparities can be more informative when the above indicators are exploited in the regression framework by allowing variation in both the time and cross-country dimensions of the data. Therefore, the next section of the study is devoted to a panel data regression analysis to enable the investigation of the relationship between the institutional quality and the TFP in the CEE and MENA countries.



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## PANEL REGRESSION ANALYSIS

### Data and the Model

For a consistent cross-country comparative analysis of TFP and its determinants in the economies of the CEE and MENA regions, a panel data regression analysis is preferred so that we can exploit the time-varying information in the data, beside the cross-sectional variations. As the dependent variable of our regressions will be TFP, which, in fact, is the residual part of a relevant production function estimated properly, there is a need for time-varying TFP estimates in our analysis. For this purpose, we exploit the latest TFP estimates provided by the next generation of the Penn World Table (PWT) (Feenstra et al., 2013; Inklaar & Timmer, 2013). These estimates are computed so that they are comparable across-countries, as in the following:

$$CTFP_{ij} = \left( CGDP_i^0 \Big/ CGDP_j^0 \right) / Q_{ij}^T \tag{4}$$

where $CGDP_i^0$ and $CGDP_j^0$ are the real gross domestic products of the countries *i* and *j*, which account for differences in the terms of trade, and $Q_{ij}^T$ is the Tornqvist quantity index of factor inputs, which allows for comparing productivity between the countries *i* and *j* at a given time and computed from

$$lnQ_{ij}^T = 0.5\left(\alpha_i + \alpha_j\right)\left[ln\left(K_i / K_j\right)\right] + \left[1 - 0.5\left(\alpha_i + \alpha_j\right)\right]\left[ln\left(L_i / L_j\right)\right] \tag{5}$$

where $\alpha$ is the output elasticity of capital, of which the value is estimated indirectly by the share of GDP that is not earned by labor. *K* and *L* are capital and labor inputs. Note that the TFP figures, as denoted by *CTFP* in PWT version 8, are computed annually with current reference prices for each country *j* relative to the United States. For an overview, Table 4 gives the 1990-2011 averages of the per capita real GDPs and the TFP levels of the economies in CEE and MENA. According to the figures, there appears to be a correlation such that countries with higher per capita GDP levels are those with higher TFP levels. Thus, the simple correlation coefficient computed with the average figures for CEE countries is 0.8, while that for MENA countries is 0.9, indicating strong positive linear relationships. Per capita income figures in the table clearly show the large income disparity within each region; i.e., Slovenia and the Czech Republic are about 13 times richer than Moldova in the CEE region, and Qatar's per capita income is 18 times that of Iraq in the MENA region. When disparity is considered across the two regions, top-income countries of the MENA are much richer than those in the CEE, whereas, the poor of the CEE are not as poor as those of the MENA. Correspondingly, it is possible to relate income disparity to the presence of significant differences in the TFP levels in these economies. Except for the outliers of the MENA, i.e., Qatar and Kuwait, the developing CEE and MENA economies have TFP levels below the productivity level of the US economy. However, the MENA countries, apart from Jordan and Morocco, have TFP levels very close to maximum levels observed for the CEE economies. As shown before in Table 2, this may not necessarily correspond to higher GDP contributions from TFP in the MENA than in the CEE region.



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*Table 4. Some Descriptive Statistics (annual averages, 2000-2011)*

| | CGDPE/POP | CTFP | | CGDPE/POP | CTFP |
|---|---|---|---|---|---|
| Slovenia | 20604 | 0.66 | Qatar | 57529 | 1.46 |
| Czech Rep. | 19437 | 0.61 | Kuwait | 35231 | 1.27 |
| Slovak Rep. | 14883 | 0.63 | Israel | 24072 | 0.87 |
| Hungary | 14569 | 0.60 | Bahrain | 18651 | 0.80 |
| Estonia | 13132 | 0.56 | Saudi Arabia | 15802 | 0.87 |
| Croatia | 12967 | 0.68 | Iran | 7209 | 0.62 |
| Russia | 12847 | 0.45 | Tunisia | 6206 | 0.60 |
| Poland | 12044 | 0.63 | Egypt | 3710 | 0.81 |
| Lithuania | 11788 | 0.67 | Jordan | 3709 | 0.40 |
| Latvia | 10993 | 0.54 | Morocco | 3559 | 0.46 |
| Bulgaria | 8650 | 0.54 | Iraq | 3141 | 0.64 |
| Romania | 8132 | 0.42 | | | |
| Serbia | 6868 | 0.40 | | | |
| Ukraine | 5979 | 0.28 | | | |
| Moldova | 2623 | 0.24 | | | |
| | | | | | |
| Average | 11701 | 0.53 | Average | 16256 | 0.80 |

Source: Penn World Table version 8.0.
CGDPE/POP: Expenditure-side real GDP at current PPPs (in mil. 2005 US$) divided by the population
CTFP: TFP level at current PPPs (USA=1)

Using the log of TFP level as the dependent variable, a fixed effect panel regression is constructed to estimate the influence of the institutional quality on TFP as follows:

$$ln\left(CTFP\right)_{it} = \mu_i + b_t + \sum_{k=1}^{K_1} \beta_k X_{k,it} + \sum_{k=K_1+1}^{K} \beta_k \left(IQ\right)_{k,it} + v_{it} \tag{6}$$

where $\mu_i$ denotes the unobserved country-specific fixed effects; $b_t$ represents dummies for capturing common time effects and $v_{it}$ is the random disturbance term. Here, $X_{it}$ includes the first set of $K_1$ demographic and economic control variables, such as the age dependency ratio (*AGEDEP*), population density (*POPDEN*), degree of openness to international trade (*OPEN*), rate of price inflation (*INF*), government expenditure to GDP ratio (*GOVX*), energy import ratio (*ENERM*), and number of telephone lines (*TLINES*). The other left-hand side variables of the TFP regression are denoted by $IQ_{it}$, which are various institutional quality indicators frequently used in the literature, i.e., the Gastil index (*GASTIL*), a country risk indicator (*RISK*), and a composite index for the quality of the governmental services (*GSQ*). The sub-indices of the *RISK* index, that is, the government stability index (*GOVST*), the investment profile index (*INVPR*), and the socioeconomic conditions index (*SOCEC*) on the one hand, and the sub-indices of the *GSQ* index, that is, the corruption index (*CORR*), the law and order index (*LAW*) and the bureaucracy quality index (*BUREA*) on the other hand, are also used as regressors for detailed



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analysis of the institutional quality.[8] In our regression estimations, we exploit a generalized least squares (GLS) method that takes into account the possibility of different residual variances for each of the cross-sectional units. Hence, standard errors of the regression are cross-section correlation-consistent error estimates (Beck & Katz, 1995).

## Estimation Results

### Basic Model Estimates

The first set of regressions given in Table 5 are estimated separately for the whole sample of countries, for the Central and Eastern Europe (CEE) countries and for the Middle East and North Africa (MENA) countries, respectively, in the first three columns of the table. When the sizes and the statistical significances of the *K* regression coefficients in the first column are compared with those in the second and third columns, it is seen that the whole sample estimates do not reflect the information provided by the estimates for the separate regions, which means that a cross-regional distinction should be taken into account in the analysis. As the difference in the influences of the age dependency ratio *AGEDEP* on the TFP levels between the CEE and MENA regions shows, there may even be adverse effects in the two regions. However, because high levels of age dependency may influence TFP from different channels with different outcomes, there cannot be a clear-cut a priori expectation about the sign of the *AGEDEP* in regressions. The significant and negative sign found for the CEE case (in column 2) is consistent with the arguments that higher age dependency in a population crowds out funds financing investments that can help to increase TFP. On the other hand, the significant and positive sign of *AGEDEP* found for the MENA case (in column 3) may be interpreted in accordance with the arguments interpreting the increase in age dependency as an indicator of the increase in longevity or human health quality. In this respect, when trends in the Human Development Index (HDI) of these two regions are analyzed between 1980 and 2013, it is seen that the MENA region has an upward HDI trend much steeper than that in the CEE region, however, starting from a relatively low average index value. Not until 2000 does the MENA region reach the 1980-average of the CEE region. At present, the 2013-average of the HDI is 0.76 in the MENA and 0.80 in the CEE. Thus, we think that due to the differences in the initial endowments of the demographic structure in these two regions, the percentage influence of the changes in the age dependency ratio on TFP levels in the 1990-2011 period appears with different outcomes. However, the increases in the population density (*POPDEN*) appear to affect TFP levels negatively in both regions, implying that population growth prevents institutions from restoring efficiency in the economy. It is an evident fact that the increased quality of human capital both in terms of education and health improves efficiency in the use of technology and in resources allocated for technological development.

The indicators named as *OPEN*, *INF* and *GOVX* are included as regressors to capture the influence of economic institutions on TFP level. Although openness to international trade is usually assumed to affect TFP positively, with the rationale that free flows of goods and services across countries lead to the adoption of more efficient techniques of production, our findings implied by the negative coefficients on *OPEN* in regressions point to an inverse relationship between openness and TFP in both CEE and MENA regions. One explanation for this controversy may be the fact that when the degree of openness is measured by the volume of trade (exports plus imports), it may be much more an indicator of the degree of vulnerability to external shocks in less developed economies rather than an indicator of the quality of technology adoption. Since international trade in less developed economies is sensitive to



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*Table 5. Panel Regressions (Dependent Variable: lnCTFP)*

| | $\hat{\beta}_{k,ALL}$ | $\hat{\beta}_{k,CEE}$ | $\hat{\beta}_{k,MENA}$ | $\hat{\beta}_{k,MENA} - \hat{\beta}_{k,CEE}$ |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| CONST. | 0.015 | -1.025*** | 0.448*** | |
| | (0.023) | (0.068) | (0.091) | |
| *AGEDEP* | -0.129 | -2.738*** | 0.378** | 3.116*** |
| | (0.121) | (0.227) | (0.168) | (0.283) |
| *POPDEN* | -0.063*** | -0.856*** | -0.056*** | 0.800*** |
| | (0.007) | (0.064) | (0.009) | (0.064) |
| *OPEN* | -0.154*** | -0.371*** | -0.248*** | 0.123* |
| | (0.024) | (0.032) | (0.056) | (0.065) |
| *INF* | -0.162*** | -0.059** | -0.283*** | -0.224** |
| | (0.034) | (0.024) | (0.095) | (0.098) |
| *GOVX* | -0.814*** | 0.034 | -0.992*** | -1.025*** |
| | (0.141) | (0.174) | (0.179) | (0.250) |
| *ENERM* | -0.079*** | -0.033 | -0.046*** | -0.013 |
| | (0.015) | (0.062) | (0.015) | (0.064) |
| *TLINES* | 0.703*** | 0.507*** | 0.880*** | 0.373 |
| | (0.100) | (0.097) | (0.281) | (0.297) |
| *GASTIL* | -0.087*** | -0.051*** | -0.126*** | -0.075*** |
| | (0.013) | (0.011) | (0.024) | (0.026) |
| *RISK* | 0.035*** | 0.017** | 0.028** | 0.011 |
| | (0.007) | (0.008) | (0.012) | (0.014) |
| *GSQ* | 0.010 | 0.047** | 0.069** | 0.022 |
| | (0.017) | (0.021) | (0.031) | (0.038) |
| | N=26 | N=15 | N=11 | N=26 |
| | N×T=498 | N×T=248 | N×T=241 | N×T=498 |
| | $R^2$=0.933 | $R^2$=0.978 | $R^2$=0.886 | $F_{10,443}$ = 29.51*** |

Figures in parenthesis are cross-sectional weighted standard errors. Asterisks ***, ** and * denote the 1%, 5% and 10% significant levels, respectively.

fluctuations in partner's demand and in exchange rate markets, negative influences of these fluctuations on economic growth may explain the deterioration in TFP, which is, in fact, nothing but the residual growth that cannot be explained by the changes in factor growth. Hence, we conclude that higher volume of trade does not imply a better performance in adopting technological change in the CEE and MENA economies, but rather implies shocks to current account balance deteriorating the TFP. The rate of price inflation (*INF*), which is employed as a proxy indicator of the discipline in monetary policy making, has significantly negative regression coefficients in the estimations. This means that the poor performances of the monetary policy makers and the governments in preserving the price stability reduce TFP in both the CEE and MENA economies. From another perspective, it can be argued that the negative sign on



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*INF* in the regressions may be an indicator of the adverse supply-side effects of inflation on productivity in the CEE and MENA economies. On the other hand, a higher government size or a lower fiscal discipline, denoted by the GDP share of government expenditures (*GOVX*), seems to be reducing TFP only in the MENA economies. Although the average GDP share of government expenditures in the CEE region is higher than that in the MENA region, TFP changes seem to be more responsive to government spending in the latter, maybe because the allocation of government spending in the MENA countries is not as efficient as that in the CEE region, due to institutional deficiencies.

The inclusion of the variables *ENERM* and *TLINES* aims at accounting for the influence of the comparative advantage owing to the abundance of natural resources that allow for cheap energy use and the influence of the infrastructure on productivity. As seen in the coefficients of *TLINES* in the regressions, this variable captures the positive effect of infrastructure on TFP well in both regions. As expected, *ENERM* appears with significantly negative coefficients in the regressions for MENA because the MENA countries have very disparate ratios of exported and imported energy use. For example, according to the 2000-2011 averages, while Qatar, Kuwait and Iraq export about 300-400% of their energy use, Israel, Jordon and Morocco import about 90-95% of their energy use, and there are countries in between. On the other hand, the countries in the CEE region are all net importers, except for the Russian Federation. We argue that the disparity in the natural resources in the MENA region is an important source of variation in TFP levels in the MENA economies.

Finally, the effect of institutional quality on TFP is investigated through the estimated regression coefficients on the three different institutional indicators, i.e., *GATSIL*, *RISK*, and *GSQ* in Table 5. The first is a composite index combining the indices of 'civil liberties' and 'political rights', which is published by the Freedom House and known as the Gastil index in the literature. Higher values of these indices imply lower levels of freedom. The second is an index based on the average of the 'government stability', 'investment profile' and 'socioeconomic conditions' ratings, while the third one is an index based on the average of the 'corruption', 'bureaucracy quality' and 'law and order' ratings of the International Country Risk Guide (ICRG). Higher values for each of these indices imply better quality for the issue in question. Hence, the negative and statistically significant coefficients on *GASTIL* in the regressions mean that TFP improves along with the freedom environment in both regions. Similarly, if, due to government instabilities together with poor investment profile and socioeconomic conditions, the total *RISK* can be reduced by the relevant institutions, the TFP increases significantly both in CEE and MENA. In accordance with the positive TFP effects of higher freedom and lower risk, the higher quality in governmental services, denoted by *GSQ* in regressions, also exhibits significantly positive effects on TFP in both regions. Overall, it can be concluded that there is significant statistical evidence that institutional quality plays a crucial role in TFP in the economies in question.

In order to test if the effects of institutional quality on TFP in the two regions differ from each other significantly, we run regressions with two regional dummies by assuming that all of the slope coefficients are different in the two regions, i.e., $\hat{\beta}_{\mathrm{k,MENA}} \neq \hat{\beta}_{\mathrm{k,CEE}}$. The coefficient differences and their statistical significances are given in the fourth column of Table 5 together with their standard errors. Leaving the interpretation of the estimates on other variables to the reader for brevity, we focus only on the estimates associated with the institutional quality indicators. According to the statistical significances reported in Table 5, total factor productivity in MENA is found to be more sensitive to freedoms (*GATSIL*) than those in the CEE region. The positive effects of lower *RISK* and higher quality in governmental services (*GSQ*) on TFP are found equally important in both regions. This implies that the MENA countries



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should primarily focus on reforming their institutions so as to improve civil liberties and political rights for a better economic environment. Bad impressions about civil liberties and political rights in a country discourage international flow of funds and knowledge, which are the major impetuses of innovations and technological changes. The MENA countries are already less advantageous in terms of these impetuses compared to the CEE countries, since the latter are very close to developed Europe both culturally and geographically.

## Implications

Our estimation results imply that institutional structures that increase freedoms, reduce risks and improve governance quality can significantly contribute to TFP growth in the CEE and MENA regions. Because of the authoritarian institutions inherent from the past, the two regions need to increase their institutional quality to encourage the inflow of innovative knowledge through trade and investment. Moreover, our estimations point out that TFP changes in MENA countries are more sensitive to changes in civil liberties and political rights than those in CEE countries. This can be explained by the prevailing conflicts and tensions in the region, which delay the democratization of the institutions in MENA.

## Detailed Model Estimates

The estimations in Table 6 are carried out to allow analysis of the influences of *RISK* and *GSQ* on TFP in detail through exploiting them in components. Estimations in the first three columns of Table 6 imply that government stability (*GOVST*), which is an assessment of the government's ability to carry out its declared programs and its ability to stay in office, has no statistically significant effect on TFP in either of the regions. However, the investment profile (*INVPR*), which is a measure of the risks to investment that are not covered by other political, economic, and financial risk components, appears to have a statistically significant influence on TFP only in the MENA region. On the other hand, the socioeconomic conditions (*SOCEC*) indicator, which reflects the pressures at work in society that could constrain government action or fuel social dissatisfaction, is found to have a significant effect on TFP in the CEE region. However, among these three sub-indices of *RISK*, the regional difference is significant only in terms of the effects of socioeconomic conditions on TFP. Though at a weak significance level, this finding implies that the positive influence of good socioeconomic conditions on productivity is more important in the CEE than in the MENA region.

The last three columns of Table 6 contain the estimations detailed for the sub-indices of *GSQ*. According to the regression coefficient estimates, while the lower corruption within the political system (*CORR*) and the higher bureaucracy quality (*BUREA*) are estimated to influence TFP in MENA, the strength of the legal system (*LAW*) effects TFP in the CEE. However, when these individually significant effects are tested in comparison to each other, regional differences are statistically significant, however, at 10% level only in terms of the effects of *CORR* and *LAW* on TFP. That is, while productivity is affected more by corruption in MENA, it is affected more by the strength of the legal system in CEE.

## Implications

Our estimation results, which are based on the disaggregation of the risk indicator used, imply that TFP growth in CEE is significantly affected by changes in socioeconomic conditions. This finding can



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be explained by the fact that the CEE countries, most of which are EU members, have improved their investment profile and government stability but still have bad socioeconomic conditions (high unemployment, severe poverty, and poor consumer confidence). In the EU standards, bad socioeconomic conditions signify a serious institutional deficiency in the economy, which discourage the inflow of the good quality human capital that can increase TFP. Therefore, TFP growth in CEE is sensitive to changes in socioeconomic conditions. On the other hand, TFP growth in MENA is significantly affected only by changes in the investment profile, because government stability in the MENA region is generally an authoritarian one, which has no potential to encourage TFP-increasing investments, and because the socioeconomic conditions in MENA are chronically bad, which decrease the relative significance of the problem for TFP growth.

*Table 6. Panel Regressions detailed for RISK and ICRG (Dependent Variable: lnCTFP)*

| | $\hat{\beta}_{k,CEE}$ | $\hat{\beta}_{k,MENA}$ | $\hat{\beta}_{k,MENA} - \hat{\beta}_{k,CEE}$ | $\hat{\beta}_{k,CEE}$ | $\hat{\beta}_{k,MENA}$ | $\hat{\beta}_{k,MENA} - \hat{\beta}_{k,CEE}$ |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| CONST. | -1.007*** | 0.456*** | | -1.027*** | 0.486*** | |
| | (0.069) | (0.093) | | (0.070) | (0.094) | |
| *AGEDEP* | -2.833*** | 0.401** | 3.233*** | -2.714*** | 0.452*** | 3.165*** |
| | (0.235) | (0.181) | (0.297) | (0.235) | (0.181) | (0.297) |
| *POPDEN* | -0.838*** | -0.058*** | 0.780*** | -0.858*** | -0.049*** | 0.809*** |
| | (0.064) | (0.010) | (0.065) | (0.065) | (0.010) | (0.066) |
| *OPEN* | -0.358*** | -0.280*** | 0.079 | -0.367*** | -0.225*** | 0.142** |
| | (0.032) | (0.059) | (0.067) | (0.033) | (0.056) | (0.065) |
| *INF* | -0.057** | -0.281*** | -0.223** | -0.060** | -0.289*** | -0.230** |
| | (0.024) | (0.098) | (0.101) | (0.024) | (0.095) | (0.098) |
| *GOVX* | 0.136 | -1.071*** | -1.207*** | 0.046 | -1.077*** | -1.122*** |
| | (0.180) | (0.179) | (0.254) | (0.176) | (0.171) | (0.246) |
| *ENERM* | -0.034 | -0.045*** | -0.011 | -0.031 | -0.037** | -0.006 |
| | (0.064) | (0.015) | (0.065) | (0.066) | (0.015) | (0.068) |
| *TLINES* | 0.503*** | 0.971*** | 0.468 | 0.504*** | 0.979*** | 0.475 |
| | (0.098) | (0.300) | (0.315) | (0.099) | (0.318) | (0.333) |
| *GASTIL* | -0.048*** | -0.129*** | -0.081*** | -0.053*** | -0.117*** | -0.064** |
| | (0.012) | (0.024) | (0.027) | (0.012) | (0.024) | (0.026) |
| *RISK* | | | | 0.018** | 0.028** | 0.010 |
| | | | | (0.008) | (0.011) | (0.014) |
| *GSQ* | 0.055** | 0.062* | 0.007 | | | |
| | (0.021) | (0.031) | (0.038) | | | |
| *GOVST* | 0.001 | 0.012 | 0.011 | | | |
| | (0.004) | (0.008) | (0.009) | | | |
| *INVPR* | 0.008 | 0.024*** | 0.016 | | | |

*continues on following page*



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*Table 6. Continued*

| | $\hat{\beta}_{k,CEE}$ | $\hat{\beta}_{k,MENA}$ | $\hat{\beta}_{k,MENA} - \hat{\beta}_{k,CEE}$ | $\hat{\beta}_{k,CEE}$ | $\hat{\beta}_{k,MENA}$ | $\hat{\beta}_{k,MENA} - \hat{\beta}_{k,CEE}$ |
|---|---|---|---|---|---|---|
| | (0.006) | (0.009) | (0.011) | | | |
| *SOCEC* | 0.013** | -0.009 | -0.022* | | | |
| | (0.006) | (0.011) | (0.012) | | | |
| *CORR* | | | | 0.011 | 0.056*** | 0.044* |
| | | | | (0.012) | (0.020) | (0.023) |
| *BUREA* | | | | 0.012 | 0.056* | 0.043 |
| | | | | (0.018) | (0.031) | (0.036) |
| *LAW* | | | | 0.022* | -0.009 | -0.031* |
| | | | | (0.012) | (0.015) | (0.019) |
| | N=15 | N=11 | N=26 | N=15 | N=11 | N=26 |
| | N×T=248 | N×T=241 | N×T=489 | N×T=248 | N×T=241 | N×T=489 |
| | $R^2$=0.975 | $R^2$=0.884 | $F_{12,439}$ = 23.57*** | $R^2$=0.976 | $R^2$=0.886 | $F_{12,439}$ = 25.15*** |

Figures in parenthesis are cross-sectional weighted standard errors. Asterisks ***, **, and * denote the 1%, 5%, and 10% significant levels, respectively.

The disaggregation of the government service quality indicator in the estimations points out that reducing the level of corruption in the political system improves TFP significantly in MENA. Although its statistical significance is not so high, bureaucratic quality has also a similar effect on TFP in MENA. This shows that incentives of TFP in the MENA region are influenced positively by the institutional structure that deports rent-seeking behavior. Finally, the rule of law is found to be weakly significant in CEE, but not in MENA. This implies that the legal system makes sense for TFP incentives, only if the system is democratic and market-friendly.

## CONCLUDING REMARKS

This chapter is an attempt to analyze the determinants of total factor productivity in the Central and Eastern Europe and the Middle East and North Africa regions, with a special emphasis on institutional quality. The analysis in this study focuses on the total factor productivity issue, which is challenging because it is the most controversial source of economic growth in the literature. Although average figures do not lend support for any substantial contribution from total factor productivity to GDP growth in the CEE and MENA regions, their average contribution rates are above the world average in the 2000-2013 period. Although the average rate of contribution from total factor productivity in the MENA region is slightly above the world average, the CEE region has the second highest average rate (1.45%) after the Central Asia region (4.18%) along with GDP growth rates at 3.76% and 7.30%, respectively. Hence, analyzing the driving forces behind total factor productivity changes in these regions is crucial to develop policies for growth based on sources other than factor accumulation.



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In this chapter, when various institutional quality indicators are analyzed prior to constructing their relationships with TFP, it is seen that civil liberties and political rights in the MENA countries are substantially worse than those in the CEE countries. Many studies in the literature show that the lack of a freedom environment is the major obstacle against a stable economic growth. Transfer of new ideas and knowledge, which can be succeeded through trade and investment inflows, increases total factor productivity through innovative technologies and through the increase in the quality of human capital. Moreover, indicators show that both the CEE and MENA regions are characterized with high levels of corruption in politics and low bureaucracy quality, which implies the existence of poor quality institutions that are far from establishing a safe investment environment in these regions. The differences in the demographic and cultural endowments of the two regions are inevitably reflected in their governance structure. Despite the fact that CEE has an autocratic governance history due to the communist regime, indicators point to higher levels of democratic accountability in this region compared to MENA, most probably owing to the inherited democracy culture of the old Europe. In similar vein, military and religious participations in politics appear to be more common in the MENA countries according to the ratings of the relevant indicators. Such political structure ironically seems to increase the government stability ratings of the MENA countries, if these ratings, which are higher than those in CEE, cannot be explained by some other reasons.

Our regression estimates, which aim at investigating the influence of institutional factors on TFP, imply that the freedom environment, investment risk and the quality of the governmental services are the significant determinants of productivity in the CEE and MENA regions. However, a statistically significant regional difference exists only in the influence of the freedom environment, proxied by the Gastil index. When the estimations are carried out alternatively by the components of the investment risk and the quality of the governmental services, the investment profile and corruption are found the sole statistically significant determinants of total factor productivity in the MENA region, while socioeconomic conditions are found to effect productivity significantly in the CEE region. Bureaucracy quality and the strength of the legal system also appear to affect productivity in MENA and CEE, respectively, however, at a weak significance level.

To summarize, the strongest statistical evidence of regional differences in institutional influences on productivity are observed for the institutional quality indicator measured by the Gastil index, which is the combination of the civil liberties and political rights ratings. This evidence is consistent with the arguments in the literature that a freedom environment is one of the crucial determinants of cross-country total factor productivity disparities in the world economy. Within each region, investment risk and the quality in governmental services, and some of their components are also found to influence total factor productivity. Overall, the results demonstrate the sensitivity of total factor productivity to cross-country and cross-regional variations in the institutional quality in CEE and MENA.

Further research may focus on the determinants of the total factor productivity contribution to GDP in the CEE and MENA regions, rather than focusing on the determinants of the level of total factor productivity, as done in this study.

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## ENDNOTES

1. See Islam (1999) for an extensive review of the methodologies and results of the cross-country studies concerning total factor productivity and see also Felipe (1999) surveying the literature on total factor productivity growth in East Asia.
2. Henceforth, the MENA region includes only the countries Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Morocco, Qatar, Saudi Arabia, and Tunisia, which form the sample used in our regression estimates in the following section.
3. Henceforth, the CEE region includes only the countries, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russian Federation, Serbia, Slovak Republic, Slovenia, and Ukraine, which form the sample used in our regression estimates in the following section.
4. See Sachs and Warner (2001) and Gylafson (2001) for the discussions of the curse of natural resources.
5. See the Appendix for the definitions and sources of the data.
6. High values of CL and PR imply low freedoms.
7. High values of the ICRG indices imply the favorable stance.
8. The sample period of the study is limited to the 1990-2011 period due to the lack of comparable data before 1990 for the CEE economies. Detailed definitions and the sources of all variables are given in the Appendix.

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## APPENDIX

*Table 7. Data Definitions and Sources*

| Name | Definition | Source |
|---|---|---|
| *AGDEP* | Age dependency ratio (% of working-age population) | WB WDI |
| *ENERM* | Energy imports, net (% of energy use) | WB WDI |
| *POPDEN* | Population density (people per sq. km of land area) | WB WDI |
| *TLINES* | Telephone lines (per 100 people) | WB WDI |
| *INF* | Inflation, consumer prices (annual %) | WB WDI |
| *CTFP* | TFP level at current purchasing power parities (USA=1) | PWT 8.0 |
| *GOVX* | GDP share of government consumption at current purchasing power parities | PWT 8.0 |
| *OPEN* | GDP share of merchandise exports and imports at current purchasing power parities | PWT 8.0 |
| *GASTIL* | The Gastil index (Index values: 1–7)<br>[Civil liberties (CL) + Political rights (PR)]/2 | Freedom House |
| *GOVST* | Government stability (Index values: 0-12) | ICRG |
| *INVPR* | Investment profile (Index values: 0-12) | ICRG |
| *SOCEC* | Socioeconomic conditions (Index values: 0-12) | ICRG |
| *CORR* | Corruption (Index values: 0-6) | ICRG |
| *BUREA* | Bureaucracy quality (Index values: 0-4) | ICRG |
| *RELP* | Religion in politics (Index values: 0-6) | ICRG |
| *MILP* | Military in politics (Index values: 0-6) | ICRG |
| *DEMA* | Democratic accountability (Index values: 0-6) | ICRG |
| *LAW* | Law and order (Index values: 0-6) | ICRG |
| *RISK* | Country risk (Index values: 0-12)<br>(Government stability + Investment profile + Socioeconomic conditions)/3 | ICRG |
| *GSQ* | Government service quality (Index values: 0-6)<br>(1.5×Corruption + Bureaucracy quality + Law and order)/3.5 | ICRG |

Notes: WB WDI: World Bank World Development Indicator, PWT 8.0: Penn World Table version 8.0, ICRG: International Country Risk Guide



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# Chapter 27
# Quantum-Inspired Computational Intelligence for Economic Emission Dispatch Problem

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## ABSTRACT

*Economic emission dispatch (EED) problems are one of the most crucial problems in power systems. Growing energy demand, limited reserves of fossil fuel and global warming make this topic into the center of discussion and research. In this chapter, we will discuss the use and scope of different quantum inspired computational intelligence (QCI) methods for solving EED problems. We will evaluate each previously used QCI methods for EED problem and discuss their superiority and credibility against other methods. We will also discuss the potentiality of using other quantum inspired CI methods like quantum bat algorithm (QBA), quantum cuckoo search (QCS), and quantum teaching and learning based optimization (QTLBO) technique for further development in this area.*

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## INTRODUCTION

Electrical power system of almost all countries in the world mainly consists of thermal plants which use fossil fuel such as coal, oil and gas to produce electricity. The use of fossil fuels increases tremendously due to the rapid economic growth in the developing countries especially in China and India. At the same time, the capacity to deliver fossil fuels as per their growing demand are limited due to limited production capacity and lack of infrastructure such as pipelines, refineries and terminal capacities. In order to build such infrastructure to support such increasing demand of fossil fuels could cost trillions of dollars (Birol, 2004). Moreover fossil fuels are always not easily accessible to all as fossil fuel reserves are concentrated in a small number of countries. Almost 85% of the world's total coal reserves are located in just eight countries (Dudely, 2015). Again, more than 65% world's total gas stock has been found in only four countries (Agency, 2015) and eight countries (six of them are OPEC members) have almost 80% of the world's total proved oil reserves (Dudely, 2015). Some of these countries may exercise their power to restrict supply or influence the supply of fossil fuels. On the other hand, with the increase of economic growth fossil fuels reserves are declining. According to a research conducted by S. Shafiee and E. Topal, coal will be the only fossil fuel remains after 2042 (Shafiee & Topal, 2009). Several other studies indicate that projected crude oil reserves will run out between 2050 and 2075 (Ivanhoe, 1995; Walsh, 2000). From these studies, it is very clear that fossil fuels will become distinct and too expensive in the near future, which will lead the electricity production to be much more expensive.

In addition, thermal plant is one of the main sources that releases polluted particulates and gases into the air such as sulfur dioxide ($SO_2$), carbon dioxide ($CO_2$), nitrogen dioxide ($NO_2$), ozone ($O_3$) etc. Burning coal can even cause to emit radioactive materials (McBride, Moore, Witherspoon, & Blanco, 1978) and toxic heavy materials like arsenic, mercury etc. Sulfur and nitrogen dioxide contribute to smog and acid rain, whereas large emission of carbon dioxide is contributing to the greenhouse effect which ultimately leads us to global warming. Global warming has far-reaching, long-lasting and, in many cases, devastating consequences on environment. As the temperature is rising due to global warming, lower areas of the world will soon be flooded by sea water.

Therefore, it is important to employ a model that optimizes both the generation/fuel cost as well as the cost associated with the control of emissions from thermal unit operation and other constraints. Both the objectives cannot be optimized simultaneously and hence there exist a conflict between them. This conflicting behavior gives rise to a type of optimization called multi-objective optimization. The economic emission dispatching (EED) option is an attractive option (Kumar, Bavisetti, & Kiran, 2012), where the objective is to minimize fuel cost and polluted emission while satisfying all constraints including transmission loss, load balance, upper and lower generation of thermal unit, ramp rate limit, prohibited zone of thermal unit etc. Multiobjective optimization with two or more objective functions that are usually noncommensurable and conflicting in nature often gives rise to a set of optimal solutions rather than a single optimal solution. It is because that none of the solution can be considered to be better than any other solutions with respect to the objective functions. All these optimal solutions are known as Pareto-optimal solutions. Fuzzy set theory (Vasant, 2006) often utilized to get the best compromised solution from obtained Pareto-optimal set of nondominated solutions (Abido, 2003).



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## Computational Intelligence (CI)

Being a relatively new field for the researchers, Computational Intelligence (CI) has no such fixed accepted definition (Xing & Gao, 2014). However, researchers have tried to define CI through their own understanding about it. Roughly, CI can be said to be a heterogeneous field of computer science that can be defined as any biologically, naturally, linguistically or any other sciences like Physics, chemistry, mathematics etc. motivated computational paradigms that include, but not limited to, artificial neural network (NN), connectionist machine, fuzzy system (FS), evolutionary computation (EC), autonomous mental development, and hybrid Intelligent System (IS) in which these paradigms are contained (Duch, 2007; Manju & Nigam, 2014; Xing & Gao, 2014). Genetic algorithm, particle swarm optimization, ant colony, harmony search, gravitational search, cuckoo search, artificial bee colony etc. and their hybridization versions are some of the examples of CI methods.

## Advantages and Applications of CI

CI methods are gradually replacing classical Artificial Intelligence (AI) approaches for their broad applicability, robustness to dynamic environments and self-optimization capability which established its role as an optimization and design tool in various fields such as in emerging energy technologies (Senvar, Turanoglu, & Kahraman, 2013), prognostic and health management (Bonissone, Hu, & Subbu, 2009), automated insurance underwriting (Bonisone, Subbu, & Aggour, 2002), interpretation of medical images (Tadeusiewicz, 2008), medical diagnosis (Steimann & Adlassnig, 1998), plug-in hybrid electrical vehicle (PHEV) charging stations (Rahman, Vasant, Singh, & Abdullah-Al-Wadud, 2015), supply chain management (Che, 2010) etc. On the other hand, AI based approaches face severe challenges when dealing with multi-object nature of design problems as these are purely rule based approach and when taking an action which involves a number of parameters to decide upon in combination (Manju & Nigam, 2014). Use of synergistic combinations of CI methods are proved efficient in multi-object multi parameter nature of design problems as it allows combining the strength of several CI methods by letting each method to take care of a certain issue constituting the complexity of the problem (Bittermann, 2010).

## Quantum Computational Intelligence (QCI)

QCI is the extension of CI into the domain of quantum computing (QC). Quantum computation is a computation based upon the time evolution of a physical system, characterized by certain principles of Quantum Mechanics (QM) and very much probabilistic in nature. Two important and powerful ideas of quantum computation are quantum parallelism and entanglement (Ventura & Martinez, 1998). Quantum parallelism is referred to the fact that a quantum system exists as a superposition of many states at once, and therefore computation involving the system is simultaneously applied to all states represented in the quantum system. Entanglement is the non-classical correlations that can exist between different quantum systems through which the systems may be said to communicate (Ventura, 1999). Quantum genetic algorithm, quantum particle swarm optimization, quantum evolutionary algorithm etc. are some of the known QCI methods.



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## Advantages of QCI Over Other Methods

Quantum computation is very counterintuitive and even unsettling from a physical standpoint but from a computational standpoint it can predict results with high level of accuracy and has provided us with perhaps the most accurate physical theory ever. The advantage of quantum inspired algorithm is that it can exploit massive quantum parallelism which can be expressed as the principle of superposition. This phenomenon is combined with existing methods of CI, thus instead of a single state, a superposition of states will be used, resulting all these states compute in parallel. As a result it will increase the speed of computation by many orders of magnitude (K.-H. Han & Kim, 2002; Hogg & Portnov, 2000). For this reason Quantum Inspired CI has been shown used in solving a wide range of problems and many efficient strategies have been proposed as improvement (Manju & Nigam, 2014).

## Some QCI Methods and Their Applications

Kak first proposed the concept of quantum neural computing (QNC) in 1995 (Kak, 1995). Later T. Menneer and A. Narayanan developed quantum inspired neural network (QNN) where they introduced some basic concepts inspired by quantum theory for use in neural network training (Narayanan & Menneer, 2000). Finally, Gupta et al. presented QNN as a potential way to build scalable parallel computers with the help of quantum computing under very tight constraints (Gupta & Zia, 2001). QNN successfully used in medical application (Gandhi, Prasad, Coyle, Behera, & McGinnity, 2014; Karayiannis et al., 2006), image compression (Kouda, Matsui, & Nishimura, 2002), fault diagnosis in integrated circuits (Zhu, Chen, & Yang, 2005) etc. Researchers begin to introduce quantum computing phenomenon of performing efficient parallel computations into the classical evolutionary methods to overcome their shortcomings thus introducing quantum inspired evolutionary methods (K.-H. Han & Kim, 2002). This technique has proved very resource consuming even a classical computer. Quantum inspired evolutionary algorithms have been used in solving unit commitment problem (Lau, Chung, Wong, Chung, & Ho, 2009), knapsack problem (Zhang, Gheorghe, & Wu, 2008), economic dispatch (Neto, Bernert, & Coelho, 2011), for determining the optimal operating strategy, cost optimization and reducing emissions of a micro-grid etc.(Hosseini, 2014).Other QCI methods like quantum inspired genetic algorithm and quantum inspired particle swarm optimization will be discussed later into this chapter.

# BACKGROUND

In electrical power generation system, the goal of economic dispatch (Wood & Wollenberg, 2012) is to find an optimal combination of power generation in order to minimize the total production cost satisfying all other constraints like transmission loss, load demand, generation limit in each generating unit, generator ramp rate limit etc. On the other hand, emission dispatch deals with the minimization of total emission of hazardous gas and particulates in the generation plant. Thus economic emission dispatch (EED) problems of an electrical power generation system can be formulated as an optimization problem in which two conflicting parameters i.e. fuel cost and emission of hazardous gases and particulates are minimized simultaneously to ensure optimal output of generated power whilst satisfying all other equal and unequal constraint.



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## Problem Formulation

The general simplified fuel cost function or the object function can be mathematically formulated as (Kothari, 2012),

$$F(P) = \sum_{i=1}^{n} a_i P_i^2 + b_i P_i + c_i \tag{1}$$

where,

$F(P_{gi})$= Total fuel cost, (in \$/hr)
$P_{gi}$= Real Power Output of the $i^{th}$ generating unit
$a_i, b_i, c_i$= Cost coefficients of the $i^{th}$ generating unit

The emission function which can also be defined by a quadratic function (Kothari, 2012) can be formulated as,

$$E(P) = \sum_{i=1}^{n} d_i P_i^2 + e_i P_i + f_i \tag{2}$$

where,

$E(P_{gi})$= Emission Function (in Kg/hr)
$d_i, e_i, f_i$= Emission coefficients of $i^{th}$ generating unit

Researchers have also used cubic function to define and formulate economic and emission dispatch problem (Krishnamurthy & Tzoneva, 2012). Polynomial function effectively reduces the nonlinearity and thus gives actual response of power generating unit. However, to limit the scope of this book chapter the authors only focus on quadratic function which is the most used fitness function to solve EED problems.

Fuel cost and emission of hazardous gases and particulates are two conflicting objectives to be achieved. When fuel cost decreases, emission increases and decrease of emission will increase the fuel cost. Thus sometimes both objectives are converted into a single objective function (Krishnamurthy & Tzoneva, 2012) with the help of a penalty factor. The combined economic emission dispatch problem can then be formulated as,

$$OF = F_T = \sum_{i=1}^{n} F(P_{gi}) + \sum_{i=1}^{n} h_{i,\max/\max} E(P_{gi}) \tag{3}$$

where,



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Penalty factor, $h_i = \sum_{i=1}^{n} \frac{F(P_{i,\max})}{E(P_{i,\max})}$

$$\sum_{i=1}^{n} F(P_{i,\max}) = \sum_{i=1}^{n} a_i P_{i,\max}^2 + b_i P_{i,\max} + c_i \tag{4}$$

$$\sum_{i=1}^{n} E(P_{gi,\max}) = \sum_{i=1}^{n} d_i P_{gi,\max}^2 + e_i P_{gi,\max} + f_i \tag{5}$$

Economic emission dispatch problems are often subjected to constraints. Some of the most common constraints in electrical power generation systems are given as follows,

1. **Equality/Power Balance Constraint:** Total generated power must be able to meet total system demand considering total system loss. It can be formulated as,

$$\sum_{i=0}^{N} P_{gi} = P_{SD} + P_L \tag{6}$$

where,

$N$ = Total number of generation unit.
$P_{SD}$ = Total system load demand.
$P_L$ = Total transmission loss.

2. **Inequality/Generation Limit Constraint:** There will be some upper as well as lower limit for each generation unit. Thus, the power generation of each generation unit must be within these limits. It can be formulated as,

$$(P_{gi})_{\min} < P_{gi} < (\mathrm{P}_{gi})_{\max} \tag{7}$$

where,

$(P_{gi})_{\max}$ = Maximum power output by $i^{\text{th}}$ generating unit.
$(P_{gi})_{\min}$ = Minimum power output by $i^{\text{th}}$ generating unit.

3. **Generator Ramp Rate Limit:** Generating units are restricted to operate in certain operating zone due to their ramp rate limits and thus operate in two adjacent specific operation zones. To formulate EED accurately, generator ramp rate limit must be taken into account. The power output of each generating unit then can be formulated as,



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$$Max(P_i^{\min}, P_i^{t-1} - DR_i) \le P_i^t \le Min(P_i^{\max}, P_i^{t-1} + UR_i) \quad (8)$$

where $P_{gi}^{t-1}$ is active power generation of the $i^{th}$ unit at the $(t-1)^{th}$ hour, $P_{gi}^{t}$ is real power output of the $i^{th}$ generating unit at the $t^{th}$ hour, $DR_i$ and $UR_i$ are down rate and up rate limits of the $i^{th}$ unit respectively.

## Related Works on Economic Dispatch

Classical mathematical programming based methods like lambda iterative method (Zhan, Wu, Guo, & Zhou, 2014), Lagrange multiplier (Thang & Asme, 2012), Lagrangian relaxation (Hindi & Ab Ghani, 1991), interior point methods (Balbo, Souza, Baptista, & Nepomuceno, 2012), Bender's decomposition algorithm (Abdolmohammadi & Kazemi, 2013), gradient method (C.-L. Chen & Wang, 1993), linear programming (Farag, Al-Baiyat, & Cheng, 1995; Somuah & Khunaizi, 1990), nonlinear programming (X. Han, Gooi, & Kirschen, 2001), dynamic programming (Liang & Glover, 1992) etc. had been used to solve economic dispatch problem for their certain advantages like availability to large-scale problems, mathematically proven optimality, fast computational speed (in some algorithms), no problem specific parameters to define etc. (Bansal, 2005). However, some of these conventional methods require the unit input-output curves of generators. But, these curves do not increase monotonically due to operating zones of the approaches. Thus, the conventional dispatch algorithms cannot be directly used to optimize such nonlinear cost function. To overcome these limitations, conventional algorithms often hybridized with other (especially intelligent) algorithms like Hopfield neural network (Dieu & Ongsakul, 2011), differential evolution (Duvvuru & Swarup, 2011) etc. and let these handle the part that cannot be handled efficiently by them (conventional algorithms). In the conventional economic dispatch problem, the cost function for each generator approximately represented by a single quadratic function (Ling, Lam, Leung, & Lee, 2003). But, the characteristics of generating units are highly nonlinear inherently, because of different constraints in the power system. Again, polynomial function can handle nonlinearities in the system (as discussed earlier) for that reason some researchers also used cubic function to solve economic dispatch problem (Adhinarayanan & Sydulu, 2006; Truong, Vasant, Balbir Singh, & Vo, 2015). However, most of the researchers ignored higher order polynomial to avoid excessive complexities and higher computational time. Intelligent and stochastic algorithms like artificial neural networks (ANN) (Yalcinoz & Short, 1998), evolutionary programming (EP) (Sinha, Chakrabarti, & Chattopadhyay, 2003), biogeography based optimization (BBO) (P. Roy, Ghoshal, & Thakur, 2009), nature-inspired meta-heuristic algorithms like genetic algorithm (GA) (Ling et al., 2003), tabu search (TS) (Naama, Bouzeboudja, & Allali, 2013), ant colony optimization (ACO) (Pothiya, Ngamroo, & Kongprawechnon, 2010), particle swarm optimization (PSO) and it's variants (Chaturvedi, Pandit, & Srivastava, 2008; J.-B. Park, Jeong, Shin, & Lee, 2010; J. B. Park, Lee, Shin, & Lee, 2005; Selvakumar & Thanushkodi, 2007), cuckoo search (M. Basu & Chowdhury, 2013), bat algorithm (BA) (Gherbi, Bouzeboudja, & Lakdja, 2014), etc. successfully used for solving economic dispatch problems. ANNs have self-adapting capabilities that make them suitable against nonlinearities, uncertainties and parameter varieties which are common in economic emission dispatch problems. One of the advantages of stochastic optimization methods is that it can solve economic dispatch problem without any or fewer restrictions on the shape of the cost function curves for their ability to seek the global optimal solution. In the meantime, intelligent techniques suffer from the drawbacks of long computation time (in some algorithms) and large number of arbitrary or problem-specific parameters (Xia & Elaiw, 2010).



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## Related Works on Economic Emission Dispatch Problem

Like economic dispatch problem, scholars previously focused on classical conventional methods like Lagrangian relaxation (Shalini & Lakshmi, 2014), Newton Raphson method (S.-D. Chen & Chen, 2003), Quadratic programming (Ji-Yuan & Lan, 1998), linear programming (El-Keib & Ding, 1994) etc. to solve economic emission dispatch problem. Conventional techniques have certain advantages over other methods like they don't have any problem specific parameters, their optimality are mathematically proven and some of them are computationally fast etc. (Papageorgiou & Fraga, 2007). These methods as usual suffer from non-satisfactory results and take large computational time for nonlinear and nonconvex complex problems. Furthermore, in conventional techniques, the economic emission dispatch problem was tackled considering only one loading condition for a given system (Krishnan & Krishnan, 2011). The impact of different loading conditions on the shape of Pareto optimal set was not addressed in the most of the traditional methods.

In second stage, researchers focused on stand-alone intelligent methods to solve the EED problems and finally most of the researchers are now focusing on hybrid intelligent techniques to tackle economic emission dispatch problems. In the early stages of using intelligent techniques to tackle EED problems, fuzzy logic controlled genetic algorithm has been exploited by Song et al. to solve EED problem and compared with conventional GA and Newton-Raphson method to validate its performance (Song, Wang, Wang, & Johns, 1997). Basu came up with particle swarm optimization based goal-attainment method to solve EED problem considering the ramp rate limit of the generating units (M Basu, 2006) where he used goal-attainment method to convert this multiobjective problem into a single objective problem then solved the problem with the help of PSO. But, PSO technique sometimes prematurely converges to local optima. To counter this problem, different improved and modified versions of PSO later used in solving EED problems (Bahmani-Firouzi, Farjah, & Azizipanah-Abarghooee, 2013; Jadoun, Gupta, Niazi, & Swamkar, 2015; Mandal, Mandal, Bhattacharya, & Chakraborty, 2015). New nature inspired metaheuristic Cuckoo Search (CS) algorithm had been used recently to solve EED in 3-unit and 6-unit thermal system (Thao & Thang, 2014). Obtained result showed that CS gives better result than TS and non-dominated sorting genetic algorithm (NSGA-II) and similar performance as BBO in the first system, whereas it's emission cost is higher than TS and same as in BBO and NSGA-II. However, in both systems CS takes less time to reach the convergence point. Almost in the same time, fuzzy set theory integrated CS algorithm was exploited to solve EED problems (Chandrasekaran, Simon, & Padhy, 2014). This method had been tested in 6-unit test system, IEEE standard 24 and 118 bus system which validated its effectiveness on this complex problem. Apart from these methods, some new intelligent methods like bacterial foraging (Hota, Barisal, & Chakrabarti, 2010), differential evolution (Abou El Ela, Abido, & Spea, 2010), firefly algorithm (Apostolopoulos & Vlachos, 2011), teaching and learning based optimization (Niknam, Golestaneh, & Sadeghi, 2012), bat algorithm (BA) (Ramesh, Chandra Jagan Mohan, & Veera Reddy, 2013) etc. have been exploited to reduce fuel and emission cost in electrical power generation systems.

From the recent literature on solving EED problems, the authors can assume that researchers are now more interested to use hybrid algorithms instead of stand-alone algorithms. An improved version of PSO that can represent the control variables in natural way was introduced with GA to improve the overall performance against EED problems (Roselyn, Devaraj, & Dash, 2011). Combinational approach of biogeography based optimization and powerful differential evolution algorithm presented in (Bhattacharya & Chattopadhyay, 2011). This hybrid algorithm searches for global optimum in two different



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steps, migration and mutation. Several tests with different number of units confirmed that this proposed method performed better than other methods like NSGA-II, fuzzy logic controlled GA (FCGA), PSO, BBO and Newton-Raphson. regarding solution quality and computational efficiency A novel hybrid PSO with gravitational search algorithm was proposed to solve EED problem considering various practical constraints by Jiang et al. where the authors incorporated the social element of PSO with the motion element of GSA (Jiang, Ji, & Shen, 2014). The result of proposed hybrid method was compared with PSO and GSA separately which showed its superior performance over these methods when used separately. Dieu and Ongsakul proposed a combination of Lagrangian function and continuous Hopfield neural network which gave better global solution and less convergence time (Dieu & Ongsakul, 2010). This method can be considered as a good example of a conventional and intelligent technique hybridization. Hybrid optimization techniques provide better solution for EED problems especially in the cases where the processes are too complex to be analyzed by conventional or stand-alone techniques (Krishnan & Krishnan, 2011).

## LITERATURE REVIEW

### Quantum Genetic Algorithm (QGA)

Genetic algorithm (GA) is a classical nature inspired algorithm that has been used to solve the combinational or nonlinear optimization problem with non-differential or complicated constraint condition. Figure 1 shows the complete process of GA. Although, GA has been used to solve EED problem for its parallel computing character and the ability of adaptive search (Koridak & Rahli, 2010), its more iterative approach with slow convergence speed easily makes it fall into local optimum. A. Narayanan and M. Moore proposed QGA which introduced the quantum theory into GA (Narayanan & Moore, 1996). Due to its stronger search capability and more efficient and simple characteristics, QGA has been proven to be a favorable technique to tackle economic emission dispatch problems of power generation systems (G.-C. Liao, 2012).

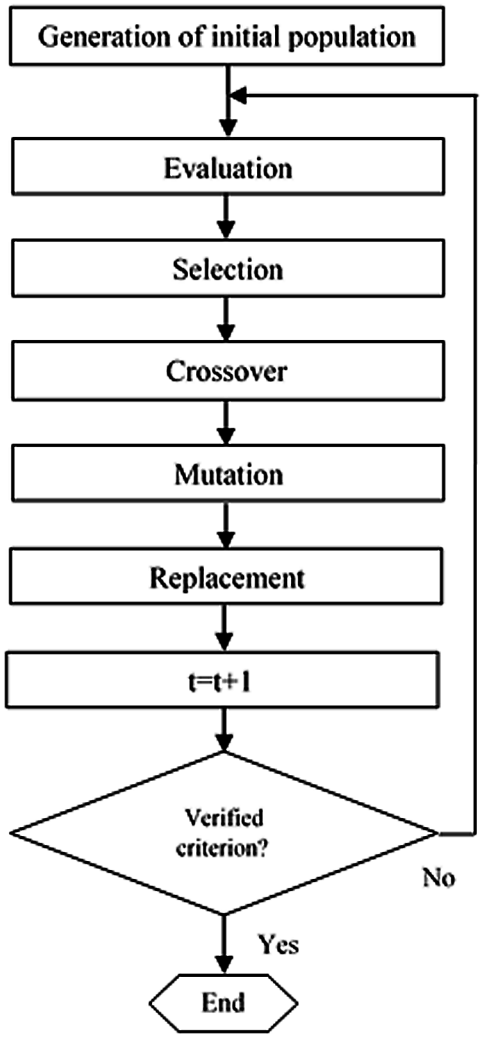
*Gwo-Ching Liao,* in his developed algorithm (G. C. Liao, 2010), exploited the global optimization ability of genetic algorithms with local searching capability based quantum probability model, the sensitive dependence of chaotic algorithms to initial value and the traverse of the search space to establish a new improved quantum evolution algorithm known as Chaotic QGA (CQGA). More about chaotic systems and their recent implication can be found in (Köse & Arslan, 2013). In CQGA method, quantum bit was adopted for problem coding. One of the features of this algorithm was the quantum choromosome was generated using quantum encoding and it carries information about multiple states which ultimately helped to produce a richer population than the simplistic genetic method. The population possessed inherent diversity with this method, thus it wasn't prone to fall into the local optimal trap during the optimization process. Simulated results showed that CQGA outperformed other well-known methods like QGA, evolutionary programming (EP), GA and dynamic programming (DP) in terms of average convergence of power generation cost.

*Wenxia Liu, Yuying Zhang, Bo Zeng, Shuya Niu, Jianhua Zhang, and Yong Xiao* (Liu et al., 2014) proposed a hybrid heuristic algorithm for a large-scale nonlinear and non-convex electrical power system. This algorithm utilizes the complementary of multiple techniques including the variable step size opti-



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*Figure 1. Flow chart of a genetic algorithm (Laboudi & Chikhi, 2012)*




mization, the rotation mutational angle fuzzy control, and the quantum genetic algorithm. This algorithm follows five steps before it gives final optimal output. Steps of this proposed algorithm is given as follows:

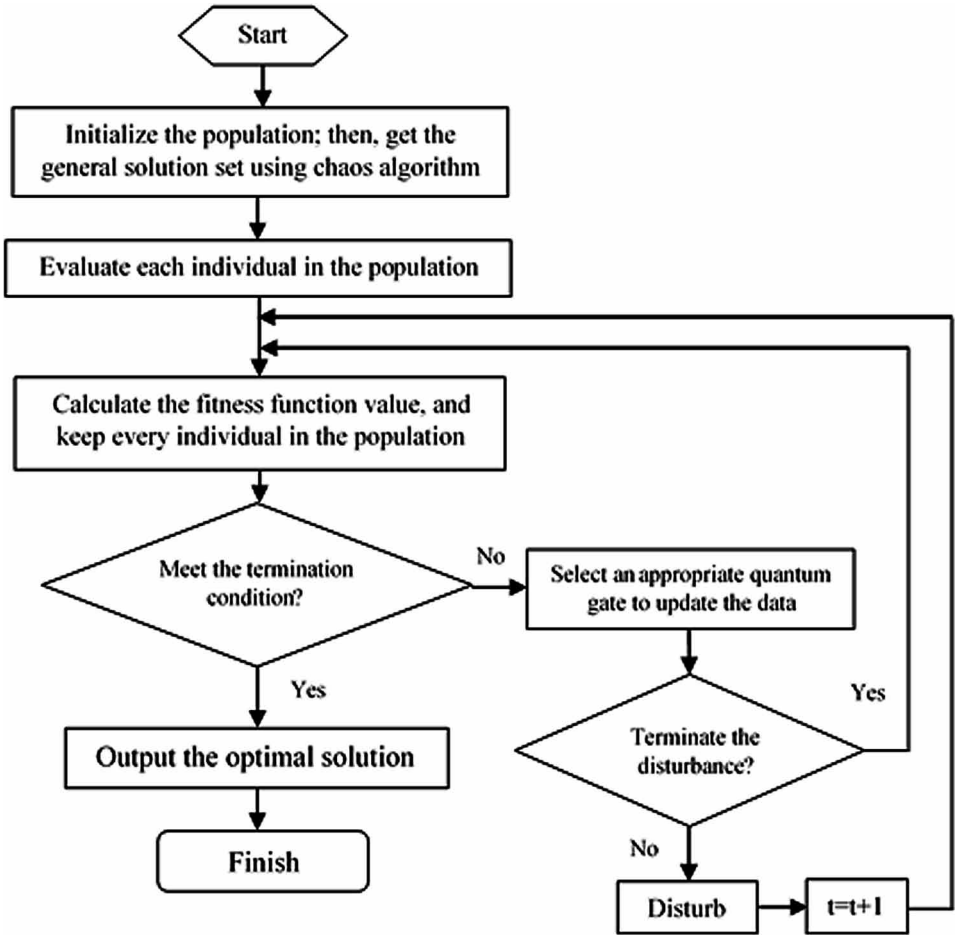
**Step 1:** Population initialization with variable step size chaos algorithm.
**Step 2:** Encoding and individual measurements to the generator power output where chaotic QGA and EA are probability algorithms.
**Step 3:** Evaluation of individual targets separately in the obtained solution set.
**Step 4:** Update the solution set by using suitable quantum rotating gate.
**Step 5:** Perturbation in the population to escape it from local optima.

Figure 2 shows the steps of VSS_QGA in a flowchart. It shows better performance with superior accuracy and efficiency when comparing with GA, EP approach, QGA and chaotic quantum genetic algorithm (CQGA). One of the reasons of its faster convergence is unlike the searching strategies of GA,



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*Figure 2. Flow chart of the variable step-size chaotic fuzzy QGA (VSS_QGA) (Liu et al., 2014)*




EP, and QGA this algorithm obtain the optimal solutions by improving chaos motion ergodicity and local search strategy, which is more suitable and efficient for solving the scheduling optimization problem.

*A. A. Mousa and E. E. Elattar* (Mousa & Elattar, 2014) presented a hybrid multi-objective quantum genetic algorithm (HM QGA) for solving EED optimization problem where EED problems were formulated as a nonlinear constrained multi-objective optimization problem with both equality and inequality constraints. This technique has been applied successfully to solve EED problems considering two objectives simultaneously where there is no limitation in handling more than two objectives. Instead of a single solution it gives multiple Pareto-optimal solutions in a single simulation run which is useful in giving a reasonable freedom in choosing operating point from the available finite alternative. Overall it provides a sound optimal power flow by simultaneously considering conflicting multi-objective functions.

## Quantum Particle Swarm Optimization (QPSO)

Particle swarm optimization (PSO) was first introduced by Kennedy in 1995 (Kennedy & Eberhart, 1995) and later explained more deeply in 1999 (Shi & Eberhart, 1999) by Y. Shi and Eberhart. PSO

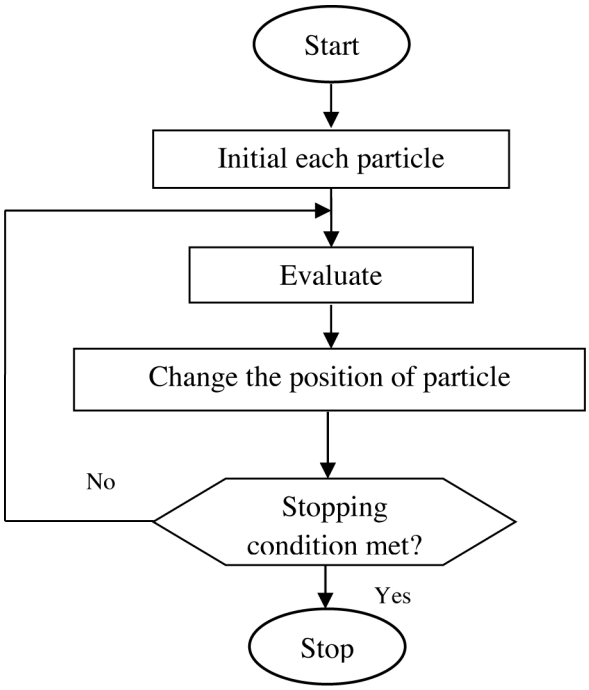


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is inspired by the social behavior of animals such as bird flocking and fish schooling. It gained a lot of attention in various optimal control system applications for its faster convergence, reduced memory requirement, lower computational complexity and easier implementation as compared to other evolutionary algorithms. Many improvements have been achieved in PSO since its introduction in 1995 (Li, Ngambusabongsopa, Mohammed, & Eustache, 2011; Shi & Eberhart, 1998). Inspired by quantum mechanics, Sun et al. proposed QPSO which is a novel variant of the PSO and outperforms the PSO in global search ability (Cai et al., 2008; Sun, Feng, & Xu, 2004). QPSO algorithm has been applied to the power system optimization such as economic load dispatch with valve-point effects (Nie, Xu, & Yue, 2010), engineering design problem (Coelho, 2010) etc.

*Songfeng Lu, Chengfu Sun, Zhengding Lu* (Lu, Sun, & Lu, 2010) developed an algorithm for hydrothermal power system, where hydrothermal scheduling was formulated as a bi-objective problem. This method combines QPSO algorithm with differential mutation operation to enhance the global search ability. Heuristic strategies were exploited to handle the equality constraints and at the same time a feasibility-based selection technique was also employed to meet the reservoir storage volumes constraints. The simulation results of the case studies revealed that this method had superior features, such as high quality solutions and good convergence properties than the other tested optimization methods like Differential Evolution (DE) or PSO.

*Figure 3. Flow chart of PSO (S. Yang, Wang, & Jiao, 2004)*






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## PROPOSED METHODS

The use of quantum computational intelligence (QCI) for solving economic emission dispatch (EED) problems is still in its primary stage. The QCI methods so far used to handle EED problems proved successful compared to other methods. In future, different QCI methods like quantum cuckoo search (QCS), quantum bat algorithm (QBA) and quantum teaching and learning based optimization (QTLBO) algorithm etc. should be explored to solve EED problems in power system.

### Quantum Cuckoo Search Algorithm (QCSA)

The cuckoo search (CS) method is one of the most recent developed meta-heuristic algorithms (X.-S. Yang & Deb, 2014; X. S. Yang & Suash, 2009) that utilizes the breeding behavior of cuckoos, where each individual searches the most suitable nest to lay an egg (compromise solution) in order to maximize the egg's survival rate and achieve the best habitat society (Chandrasekaran et al., 2014). It gives better solution quality, computational efficiency and robustness than many other classical or nature inspired algorithm like genetic algorithm, PSO etc. (X.-S. Yang & Deb, 2014). QCS algorithm exploits the quantum computing principles like qubit representation, quantum mutation and measure operation in the core of the CS algorithm as explained in Figure 4 (Djelloul, Layeb, & Chikhi, 2015). QCS contains three essential modules to operate. Quantum representation of cuckoo bird is contained in the first module. Quantum representation of cuckoo bird allows QCS to represent the superposition of all potential solutions for a given problem. Fitness function and selection operator are contained in the next module. The function of selection operator is quite similar to the elitism strategy of GA where some portion of the fittest chromosome are kept unchanged into the next generation to ensure the algorithm does not waste time on rediscovering previously discarded past solutions. The last module contains the most important part of the algorithm and it is the main quantum cuckoo dynamics (QCD). Four main operations, inspired by cuckoo search and quantum computing, are done in quantum cuckoo dynamics. They are measurement, mutation, interference and Lévy flight operations. QCS algorithm exploits these operations to evolve the entire swarm through generations (Djelloul et al., 2015). The authors expect that this powerful mechanism of proposed QCS will be very efficient to solve EED problems.

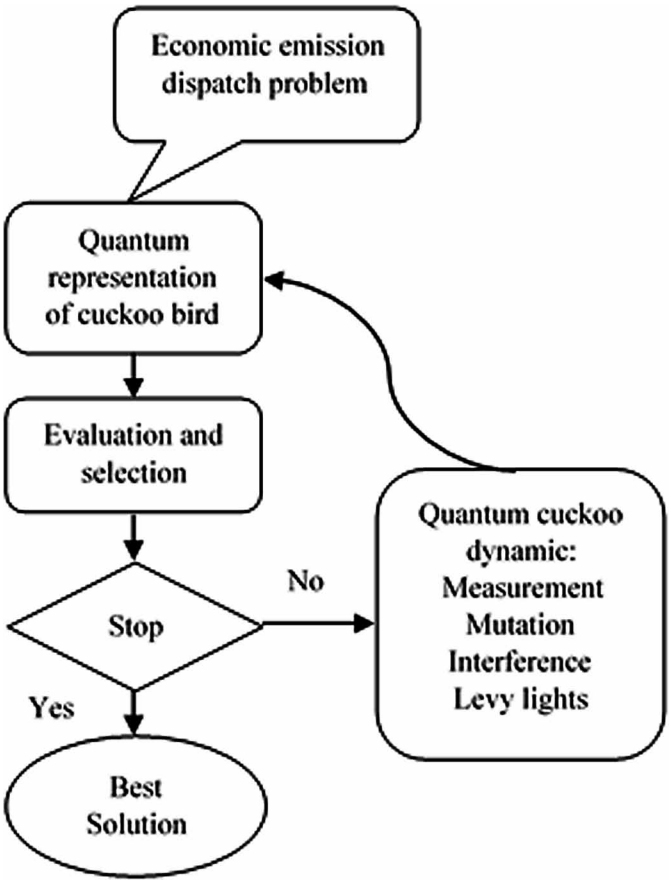
### Quantum Bat Algorithm (QBA)

Bat algorithm (BA) was developed by Xin-She Yang that mimics some of the characteristics of micro bats (X.-S. Yang, 2010). It is proved to be easy to implement and has superior features like quality of solution, stable convergence characteristics and superior computational efficiency which is suitable for multiobjective problem (X.-S. Yang, 2011). Bat algorithm has already been successfully implemented to solve EED problems. Comparison with different versions of GAs and artificial bee colony (ABC) reflects its superiority over these methods (Ramesh et al., 2013). The authors believe that integration of the efficient mechanism of quantum computing will boost its search ability and convergence which will be very suitable for complex multiobjective problems like EED problem.



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*Figure 4. Proposed flowchart of quantum cuckoo search algorithm for economic emission dispatch problems (Layeb, 2011)*




## Quantum Teaching and Learning Based Optimization (QTLBO)

Teaching and learning based optimization (TLBO) is an efficient algorithm proposed by Rao et al. (Rao, Savsani, & Vakharia, 2011) and based on teaching-learning phenomena. This algorithm has been proved effective in terms of the quality, speed, and stability of the final solutions when comparing with other state of the arts algorithms (Satapathy, Naik, & Parvathi, 2013). Recently, TLBO algorithm has been successfully applied in different areas of power system such as Hydro-thermal Scheduling (HTS) (P. K. Roy, 2013), optimal capacitor placement (Sultana & Roy, 2014), load frequency control (LFC) (A. Roy, Dutta, & Roy, 2015), transient stability constrained optimal power flow (TSC-OPF) (Mukherjee, Paul, & Roy, 2015), finding optimal location in thyristor controlled series compensator (TCSC) (Mukhopadhyay, Dutta, & Roy, 2015) and last but not least for solving dynamic economic emission dispatch problems (Niknam et al., 2012). In TLBO, learners develop their knowledge by mean of interaction between learners and from the teacher, which we can define as random learning strategy. Some researchers propose to exploit quantum behaved (Jun, Wenbo, & Bin, 2004) learning strategy using a certain probability in learner phase to improve the performance of TLBO (Zou, Wang, Hei, Chen, & Yang, 2014). The probabilistic learning phenomena by means of quantum-behaved learning strategy enhances



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the exploitative nature of TLBO and thus ultimately improve the overall convergence performance of the algorithm. Thus, TLBO has excellent prospects in solving EED problems. Integration of quantum computing phenomenon with this algorithm will make it more robust and efficient against different nonlinear multiobjective complex EED problems.

## DISCUSSION

Power generation of almost all countries depend on fossil fuels like coal, oil and gas. Unlike coal, fossil fuels like oil and gas has declining reserves. Besides, fossil fuels are not always easily accessible due to different infrastructural and geopolitical constraints. It is thus a matter of concern for every power generation system to minimize the fuel cost. On the other hand, due to many environmental issues like global warming, smog, acid rain etc. emission of hazardous gases and particulates are also a matter of concern. But these two objectives of reducing fuel cost and minimizing emission are conflicting to each other. Reduction of fuel cost may cause the emission problem and vice versa. Thus, there rises the need of multi-objective optimization. Many classical, intelligent and hybrid methods have been proposed to achieve both objectives simultaneously. Traditional methods have suffered against the growing nonlinearities of economic emission dispatch (EED) problems; where different intelligent methods suffer from long computational time degrade performance. Quantum based advanced computational intelligence methods show better optimization result than their predecessor. The parallel computing phenomenon of quantum computing reduces computational time to reach optimization point and makes it computationally efficient. In the later part of this chapter, we have proposed quantum inspired cuckoo search (CS), bat algorithm (BA) and teaching and learning based optimization (TLBO) methods for solving EED problems. Previously CS, BA and TLBO methods have successfully been implemented for solving EED problems and thus these methods are very prospectus with the integration of quantum computing phenomenon.

## CONCLUSION

In this chapter, authors have shown why it is necessary to be concerned about the fuel cost by describing fossil fuels complex accessibility and declining reserves problem. Authors have also discussed briefly about the necessity of controlling emission of polluted particulates and gases and thus undermining the need of combined economic and emission dispatching. Later, some short discussions are added on computational intelligence (CI), quantum computational intelligence and some of their advantages, and applications. After discussing and comparing a number of heuristic and meta-heuristic methods and optimization algorithms, it can be said that, in handling multiobjective nonlinear and non-convex complex problems like economic emission dispatch problems, where objectives are conflicting with many other equal and inequality constraints, quantum inspired computational intelligence methods are so far very successful. Its quantum computing phenomenon makes it computationally very efficient and robust than the other conventional algorithms. Improved metaheuristic algorithms like artificial bee colony, firefly, cuckoo search, biogeography based optimization etc. also showed good performance in solving economic and emission problem. For further development of electrical power generation system, advanced methods like quantum cuckoo search, quantum bat and quantum teaching and learning based optimization algorithms have been proposed and discussed in this chapter.



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# Section 4
# Utilization and Applications

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# Chapter 28
# The Determinants of Foreign Direct Investment Outflows from Turkey

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## ABSTRACT

*The aim of this study is to specify the determinants of the outward Foreign Direct Investment (FDI) flows from Turkey. For this purpose, the ARDL Bounds Test is used in order to observe the possible relation between these flows and define potential factors that might have an effect on them. The evidences of the empirical analysis reveal that the destination countries' market size, the home country's development level, trade openness and wage rate are positively related to outward FDI while the home country's interest rate shows a negative relationship. Turkey's outward FDI is significantly determined by the opportunities of the foreign markets as well as the outstanding home country factors.*

## INTRODUCTION

Foreign direct investment (FDI) flows have made an important impact on the globalization process. Since 1980's, the volume of FDI inflows has shown a substantial increase especially in developing countries. Even though the impact of FDI inflows on developing economies is still discussed by various perspectives in the literature, main findings state that it is hard to ignore the long run benefits of these types of investments for many developing countries. Nowadays, many firms or investors from developing countries seek to invest in abroad. This type of investment, which is termed the outward foreign direct investment (OFDI), reveals that the investors from developing world intend to compete in foreign countries. However, economic development performance of countries is not the only motivation for firms and investors to

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make a decision on investing abroad. There might be some other factors determining the outward foreign direct investment flows. From this point of view, the analysis of this chapter attempts to investigate the determinants of the FDI outflows from an important emerging market and developing country; Turkey.

Since the foundation of the Republic of Turkey in 1923, Turkish Economy has passed through several policy periods. During the first decade of the republic, the government had promoted the private sector and also established some public enterprises to provide the necessary inputs for the private sector. Despite these public interventions, until the great depression the main objective of the Turkish economic policies was forming an open economy model that advanced the country to an industrialized stage. As from the 1930's, the Turkish Economy had been considerably affected by the great depression. Moreover, the incentives given in the previous decade did not serve the purpose of the open economy. In order to change the course of economic developments, the government applied state-oriented economic policies and changed its exchange rate regime to the fixed system. In 1930s, the Central Bank of the Republic of Turkey was also established. In the late 1940's and 1950's Turkey shifted to liberal economic policies. In 1947, Turkey became a member of the International Monetary Fund (IMF) and World Bank. Also some foreign economic supports, such as under the Marshall Plan, were received to help rebuild the development process. Likewise in 1950's, foreign capitals were encouraged to come to Turkey for the purpose of contributing to the development process of the country. Besides, the means of credit were expanded and credit volume was increased particularly with the infrastructural investments. However, the inflation problem that showed itself later left behind the initial benefits. As a result, the paradigm of the Turkish economic policy was again changed to the planning mentality. Between 1960 and 1980, Turkey had been aiming to limit the volume of import and raise the exports. The oil shock in the mid 1970's influenced Turkish economy in a unfavorable way and the high prices in energy damaged the industrialization process. During the 1970's the country also faced with some internal and external political issues. Even if the economic administration had tried to overcome the emergent economic issues, their efforts could not succeed. In the beginning of 1980's, the economy was upgraded to a new stage which might be called as a transition stage to a free market economy. In 1980's the main economic policies were as followings; encouraging foreign investment inflows, limiting the public interventions and ensuring the economic stability (Boratav, 2009; Eğilmez and Kumcu, 2015).

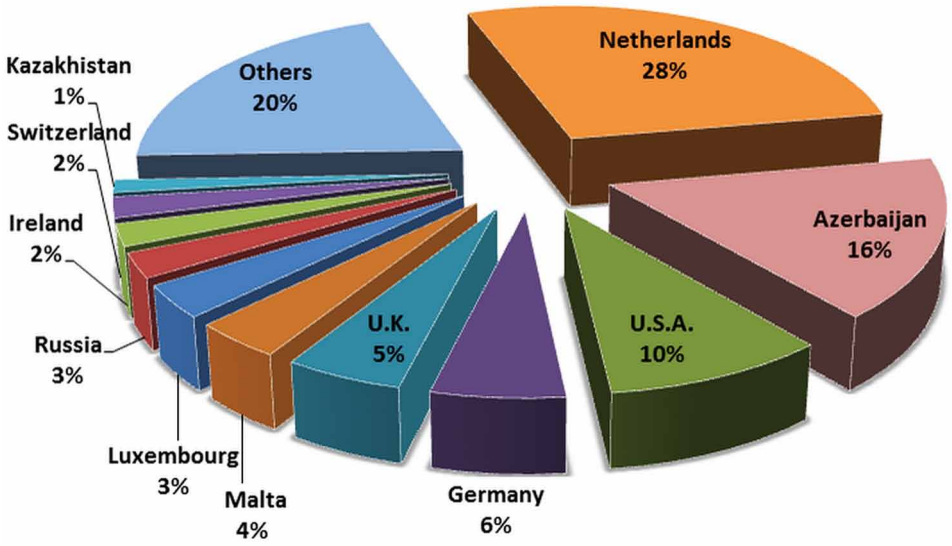
The financial liberalization process of the Turkish Economy in the late 1980's was accompanied by the commercial deregulation process; and thus the free movement of both goods and capital became possible. Since then, the great deal of foreign direct investment has been flowing into Turkey and making the economy more integrated with the world. The obvious effects of this transformation have been being observed since the early 1990's. In the same time, the outward FDI flows have shown significant increase. To be able to investigate these investment developments, econometric time series analysis methods on the outward FDI flows from the Turkish Economy are used over the period 1992-2015.

In 2015, the volume of the outward foreign direct investment flows from Turkey was worth about USD 5.3 billion. Figure 1 provides information about the destinations of these investments for the period of 2005-2015. 54% of these flows go only towards three countries; Netherlands, Azerbaijan and USA. Of the total outward FDI from Turkey, Germany, U.K., Malta, Luxemburg and Russia receive 6%, 5%, 4%, 3% and 3%, respectively. Thanks to its largely liberal economic structure and conveniences for foreign investors, Netherlands is one of the most attractive countries for the global FDI flows. Like many other investors around the world, Turkish investors also mostly invest in Netherlands. Due to the fact that both countries have a long historical and cultural relationship, Azerbaijan is the second biggest destination for the Turkish outward foreign direct investments. As for the USA, being the land of opportunity and



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*Figure 1. The destinations of outward FDI flows from Turkey (2005-2015 total)*
*Source: The Central Bank of the Republic of Turkey.*




providing remarkable conveniences for investors, it comes after Azerbaijan by getting 10% of the total outward foreign direct investments from Turkey.

Table 1 shows the share of the outward Turkish foreign direct investments by sectors and presents the tendency of the Turkish investors over the period 2005-2015. The outward Turkish FDI mainly consists of industrial and service sector, 57% and 42%, respectively. The data states that mining, food production, textile production and non-metallic mineral production are the outstanding industrial sector for the outward FDI flows while financial and insurance activities, information and communication services, construction, transportation and real estate activities are the major activities in service sector. It is also observed that the total amount of the industrial outward FDI flows is about 1.5 fold greater than that of services. This is an expected symptom for a developing country that is still pursuing its industrialization process. For sure, it is hard to claim that there is an absolute positive relationship between economic development and the share of the services sector in the total outward FDI. Today, many highly industrialized countries' industrial sectors progressively invest in abroad while their services sectors mainly chose to stay in domestic market.

*Table 1. Turkey's outward foreign direct investment flows by sectors (2005-2015 total)*

| Sectors | Amount (Million $) |
|---|---|
| **Agriculture** | **98** |
| **Industrial** | **18540** |
| Mining and Quarrying | 8517 |
| Manufacturing | 9444 |
| Manufacture of Food Products | 4272 |

*continues on following page*



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*Table 1. Continued*

| Sectors | Amount (Million $) |
|---|---|
| Manufacture of Textiles and Textile Products | 1141 |
| Manufacture of Leather and Leather Products | 6 |
| Manufacture of Wood and Wood Products | 241 |
| Manufacture of Pulp | 84 |
| Manufacture of Coke | 63 |
| Manufacture of Chemicals | 504 |
| Manufacture of Rubber and Plastic Products | 102 |
| Manufacture of Other Non-Metallic Mineral Products | 1175 |
| Manufacture of Basic Metals and Fabricated Metal Products | 385 |
| Manufacture of Machinery and Equipment | 648 |
| Manufacture of Computers | 434 |
| Manufacture of Transport Equipment | 175 |
| Manufacturing n.e.c. | 214 |
| Electricity | 575 |
| Water Supply | 4 |
| **Services** | **13736** |
| Construction | 1569 |
| Wholesale and Retail Trade | 522 |
| Transportation and Storage | 1390 |
| Accommodation and Food Service Activities | 458 |
| Information and Communication Services | 1743 |
| Financial and Insurance Activities | 5951 |
| Real Estate Activities | 1426 |
| Professional | 216 |
| Administrative and Support Service Activities | 34 |
| Public Administration and Defense | 8 |
| Education | 24 |
| Human Health and Social Work Activities | 95 |
| Arts | 16 |
| Other Service Activities | 281 |
| Activities of Households as Employers | 0 |
| Activities of Extra-Territorial Organizations and Bodies | 3 |
| Total | 32374 |

Source: The Central Bank of the Republic of Turkey.



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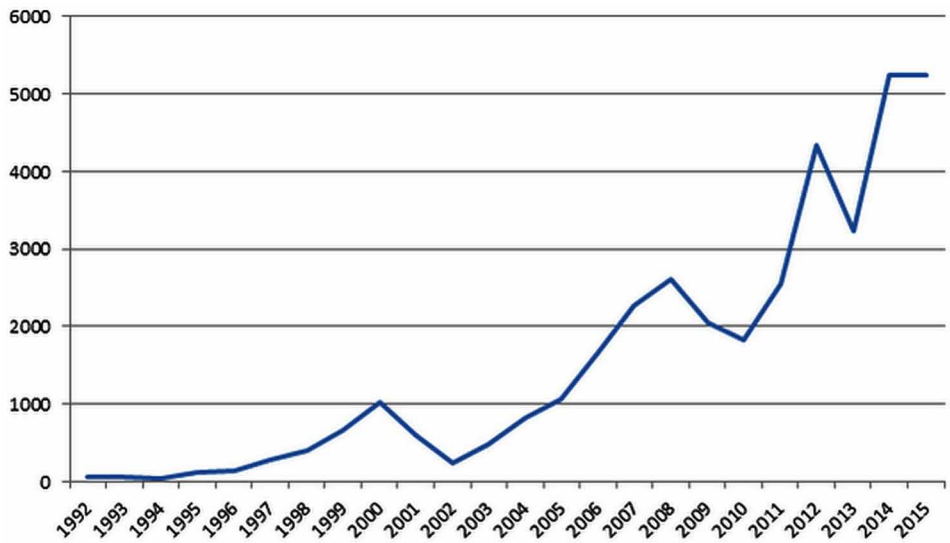
The developments of the outward foreign direct investment flows from Turkey are shown on Figure 2. As the data clearly exhibits, since 2001 the outward FDI flows from Turkey have shown a dramatic increase. At the first part of 1990's, the yearly volume of the flows was about less than USD 500 million while it reached USD 5 billion in 2015. Although the Turkish Economy has integrated with foreign countries since a long time ago, the yearly total flows did not surpass the level of USD 1 billion until 2000. It may imply that even if the Turkish Economy has opened its gates to foreign countries since 1980, its impacts on the outward FDI could be seen only after 2000's.

The outward foreign direct investment of a country may follow different paths and might be affected by various factors. Firms or investors may decide to invest in abroad due to the following main reasons;

- If the potential market size of their home country is insufficient (i.e. FDI by rich firms or investors of developing world).
- If the return on investment in the home country is relatively lower than investing in abroad (i.e. FDI from developed world).

With this study, it is tried to determine these factors and compare their impacts on investment decision in abroad. Undoubtedly, two main reasons which are mentioned above could be composed of many sub factors. For instance, the first reason implies factors such as low population and low household income level while the second reason implies factors such as high labor and production costs and low market share caused by extreme competition. For sure, the home country's conditions are as important as the conditions of the host country are important for the determinants of the outward FDI. In the literature, there are several studies which investigate the outward FDI flows between two or limited number of countries. In such analyses, it is possible to analyze both home and host country. However, in this study,

*Figure 2. Outward FDI flows from Turkey (million, USD)*
*Source: The Central Bank of the Republic of Turkey.*
**Note: To avoid monthly fluctuations, the figure is displayed by transforming the monthly data to yearly.*






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the total outward FDI flows from Turkey is examined and this makes it impossible to measure the conditions of each host country. Thus, only the home country determinants of the outward foreign direct investment flows from Turkey have been focused.

## BACKGROUND

To present a brief literature survey, several studies from the existing theoretical and empirical literature have been composed. Unlike many topics in the economics literature, the number of studies focused on the outward foreign direct investment is relatively low. However, in this section some significant studies in the relevant literature either in a general view or in a country-specific view on the outward FDI will be presented.

For sure, it would not be rational to think the outward FDI by dissociating it from the global FDI flows. The logic is simple; the outward FDI of a country is the inward FDI of another one. Therefore, also the conditions of the destinations countries might be important determinants of home country's outward FDI. So, by keeping this fact in mind let us start with some early studies in the outward foreign direct investment literature that have focused on the investment flows between the U.S. and European Economic Community (EEC). Scaperlanda and Mauer (1969) have investigated the determinants of U.S. direct investments in the E.E.C for the 1952-1966 period. The evidences obtained from their least squares regressions reveal that the *market size* of the destination country (or countries) is the prominent and the most significant determinant of US direct investment. Although their analysis contains some other indicators such as openness, the volume of the export between the two regions and within the EEC, growth rates of countries, the estimation results do not yield significant coefficient for these variables. Also Lunn (1980) has examined the determinants of US outward FDI in the EEC for the 1957-1970 period. Beside the basic determinants, his model specification allowed to observe the impact of growth of the market for the US affiliates and their net plant and equipment expenditures in the destination country which are estimated significantly via the regression analysis. Scaperlanda and Balough (1983) have revisited some previous studies including Scaperlanda and Mauer (1969) and Lunn (1980) papers by making some changes in the model structure and extending the time series which covers 1953-1977 period. The results of the newer study support the market size finding of the former studies and reveal that the market size of the destination country positively affects the US outward FDI. Moreover, the findings also show that the growth of the market for the US affiliates attract the potential US foreign direct investments. However, in the same issue of the same journal, Lunn (1983) has responded again to Scaperlanda and Balough (1983) and defended his (1980) paper in some aspects. Lunn (1983) has estimated the base theoretical model of Lunn (1980) by using the variable used by Scaperlanda and Balough (1983) for the 1957-1970 period. The findings are similar to the results of the Lunn (1980) paper and Lunn (1983) has annotated also some critics for the former study; such as the estimated model specifications and the period of the analysis covered. Lunn (1983) has stated that 1970's contain many national and global structural breaks that might have influence on the results and the period that has been extended to 1977 by Scaperlanda and Balough (1983) could lead to biased results.

Some other studies have focused on the home country determinants of outward direct investment. Kyrkilis and Pantelidis (2003) have investigated the country-specific determinants of the outward FDI for the 1977-1997 period of five European-Union and four non-European Union countries. The results vary across countries. However, as it is understood from the evidences, the reel GNP level of the home



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country is an important determinant of OFDI almost for all countries in the analysis. Secondly, the effective exchange rate and interest rate are estimated significantly for some countries even though some unexpected signs are observed for the exchange rate coefficients. These kinds of defects are possibly caused by the simple estimation method of the analysis which is ordinary least squares regression. Similarly, Kueh et al. (2010) have made a country-specific analysis and dealt with the macroeconomic determinants of Singapore's outward FDI. The empirical findings of their cointegration analysis that covers the 1975-2007 period reveal that the income of the home country, trade openness and interest rate are positively correlated with the FDI outflows of Singapore.

Kalotay and Sulstarova (2010) have investigated the determinants of Russian outward FDI for the 1993-2007 period. Despite the authors have used both home and host countries' factors such as home country's GDP, host country's GDP, policy change, natural resources of the host country, ratio of services to GDP, geographical distance, exchange rates and patents, only the GDP levels of countries and natural resource variables are significantly estimated. Besides the justification of the previous literature's evidence on GDP levels (both for the *home* and the *host*), this study's finding on the natural resources of the host country is a remarkable evidence. Yet another study focused on the impact of natural resources is Kolstad and Wiig (2012) which has estimated the impacts of the host country factors on Chinese outward FDI. Unsurprisingly, also this study's first evidence show that host country's market size is the most significant determinant of the outward FDI. The second and interesting evidence of the study has been observed via the interactive structure of its model. In the main model of the study, the impacts of institutions and natural resources has been estimated interactively (with an explanatory variable created by multiplying natural resources and institutions) that implies the interpretations of these factors are not independent of each other. The sign of the interactive variable has been estimated significantly and negative which has been interpreted by the authors as follows; "The worse the institutions are in the host country, the greater Chinese investment is attracted by natural resources." (Kolstad and Wiig, 2012: 32).

Goh and Wong (2011) have analyzed the impacts of market size and government policy on outward FDI flows of Malaysia over the 1999-2008 period. The evidences of the study reveal that Malaysian outward foreign direct investment is positively associated with the market size of the destination country, trade openness, reel effective exchange rate and international reserves held by the Malaysian Central Bank.

Mihci et al. (2011) have examined the home country determinants of FDI outflows of 12 European Union countries for the 1997-2003 period via a panel data analysis. Their findings reveal firstly that cost related factors such as interest rates, environmental sensitivity index and real labor cost (even if the last one was estimated as insignificant) have positive impacts on FDI outflows. As distinct from studies that measure the impacts of the market size of the destination country, Mihci et al. (2011) have employed the growth of the domestic market size and observed that the growth of the domestic market size is negatively associated with the FDI outflows.

As it has been clearly inferred from the existing literature some factors such as home and destination countries' market size, interest rate, production costs and openness come to the fore. Therefore, to examine whether there is any significant relationship, in the empirical analysis of the study these variables or appropriate proxies of them are used.



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## DATA AND METHODOLOGICAL FRAMEWORK

The aim of this study is to investigate the determinants of outward FDI in the Turkish economy both in the short and the long-run, over the 1992Q1 - 2015Q2 period by using the ARDL bound testing approach. Due to the important trade and financial liberalization process undertaken during the 1980s that radically transformed the Turkish economy and the data constraints for outward direct investments, the sample period stars from 1992Q1. All the data are obtained from IMF International Financial Statistics (*IFS*), Republic of Turkey Ministry of Development-Economic and Social Indicators and The Central Bank of the Republic of Turkey (*CBRT*). All the variables in the data set are transformed into natural logarithms for econometric estimation. Based on the theoretical discussions and previous studies, the following model is suggested;

$$OFDI = f(RGDP, INT, OPEN, WAGE, MARKET) \quad (1)$$

where *OFDI* is Turkey's outward *FDI*, *RGDP* is real *GDP* which stands for the development level of the home country, *INT* is nominal interest rate in the home country, *OPEN* is openness indicator (foreign trade amount of the home country, % of *GDP*), *WAGE* is wage rate which stands for the labor costs of the home country investors, *MARKET* is market size of the destination countries. Expected impacts (signs) of the variables on the outward *FDI* are as follows:

$$\frac{\partial OFDI}{\partial WAGE} > 0, \frac{\partial OFDI}{\partial INT} < 0, or > 0, \frac{\partial OFDI}{\partial OPEN} > 0, \frac{\partial OFDI}{\partial GDP} < 0 \; or > 0, \frac{\partial OFDI}{\partial MARKET} > 0 \quad (2)$$

Theoretically, increases in wage rate, trade openness and market size are expected to raise outward FDI. The expected signs of real GDP, nominal interest rate could be negative or positive. The definition and sources of all variables used in this study are shown in Table 2.

*Table 2. Variables: definitions and sources*

| Notation | Definition | Source |
|---|---|---|
| *OFDI* | Turkish Outward Foreign Direct Investment | CBRT |
| *RGDP* | Real Gross Domestic Product Index (2010=100) | IMF |
| *INT* | Nominal Interest Rate | IMF-IFS |
| *OPEN* | (Exports of goods and services + Imports of goods and services) / Gross Domestic Product | IMF-IFS |
| *WAGE* | Nominal Unit Wage Index (2010=100) | CBRT, ESI |
| *MARKET* | This variable is constructed as a weighted average of real foreign incomes of Turkey's major partners, each country receiving a weight equal to its share in Turkey's OFDI. $MARKET = \sum_i w_i GDP_i^*$ where $w_i$: share of country i in Turkey's OFDI, *Y**: Real GDP Index of *i* country (2010=100), *i*: Netherlands, Azerbaijan, United States, Germany, United Kingdom and Switzerland (these 6 countries constitute two-thirds of total market of the Turkish OFDI). | IMF-IFS, Datastream |

Note: ESI: Republic of Turkey Ministry of Development-Economic and Social Indicators.



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The long run relationship among outward FDI, real GDP, nominal interest rate, openness indicator, wage rate and market is investigated by applying the ARDL Bounds testing approach. The ARDL bounds testing approach of cointegration is developed by Pesaran and Shin (1999) and Pesaran et al. (2001). The ARDL cointegration approach has numerous advantages compared to other cointegration methods such as Engle and Granger (1987), Johansen (1988), and Johansen and Juselius (1990). The existence of a long run relationship among the variables used in the econometric model are performed, regardless of their order of integration contrary to Engle and Granger (1987), Johansen (1988, 1991), and Johansen and Juselius (1990) cointegration methods. Furthermore, ARDL bounds testing approach providing that the variables have different optimal lags and the estimation results are consistent in small sample size allows to estimate the long and short run parameters of econometric model (Panopoulou and Pittis, 2004; Baek and Kim, 2013).

The F and t-statistics are essential for ARDL bounds testing approach. The asymptotic distributions of these statistics are non-standard under the null hypothesis that there exists no level relationship, irrespective of whether the variables are I(0) or I(1). However, if the order of integration of any of the variables is greater than one (i.e. I(2)) then the critical bounds provided by Pesaran et al. (2001) are not valid. Thus, before proceeding to the estimation stage the integrating properties of variables must be checked. Two sets of asymptotic critical values are provided; when all variables are I(1) and when they all are I(0). These two sets of critical values provide a band covering all possible classifications of the variables into I(0), I(1) or mutually cointegrated (Pesaran et al., 2001).[1] For econometric estimation, the following ARDL model is employed:

$$\begin{aligned}\Delta OFDI = {} & \alpha_0 + \sum_{i=1}^{p} \alpha_1 \Delta OFDI_{t-i} + \sum_{i=0}^{p} \alpha_2 \Delta RGDP_{t-i} + \sum_{i=0}^{p} \alpha_3 \Delta INT_{t-i} + \sum_{i=0}^{p} \alpha_4 \Delta OPEN_{t-i} \\ & + \sum_{i=0}^{p} \alpha_5 \Delta WAGE_{t-i} + \sum_{i=0}^{p} \alpha_6 \Delta MARKET_{t-i} + \lambda_1 OFDI_{t-1} + \lambda_2 RGDP_{t-1} + \lambda_3 INT_{t-1} \\ & + \lambda_4 OPEN_{t-1} + \lambda_5 WAGE_{t-1} + \lambda_6 MARKET_{t-1} + \varepsilon_t\end{aligned} \tag{4}$$

where the terms from $\lambda_1$ to $\lambda_6$ indicates the long-run relationship among the variables, while the expression from $\alpha_1$ to $\alpha_6$ with the summation signs corresponds to the short-run dynamics of variables. Moreover, $\alpha_0$ stands for the constant term, $\Delta$ is the first difference operator, and $\varepsilon_t$ is the Gaussian white noise.

The complete results for short and long-run dynamics through ARDL Bounds testing are obtained through two steps. In the first step, Eq. (4) is estimated by using OLS method employing an optimal lag selection criterion such as Akaike Information Criterion (AIC) and Schwarz Information Criterion (SIC). The existence of a long-run relationship among the variables is examined by applying the F-test which indicates the joint significance of the coefficients at their one period lagged level of the time series variables in Equation 4. The null hypothesis of no cointegration

$\boldsymbol{H_0}$**:** $\lambda_1 = \lambda_2 = \lambda_3 = \lambda_4 = \lambda_5 = \lambda_6 = 0$

is tested against the alternative of cointegration

$\boldsymbol{H_1}$**:** $\lambda_1 \neq \lambda_2 \neq \lambda_3 \neq \lambda_4 \neq \lambda_5 \neq \lambda_6 \neq 0$.



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The calculated F-statistics value is then compared with upper and lower critical values which are given by Pesaran et al. (2001). The calculated F-statistics value is greater than upper critical value obtained from Pesaran et al. (2001), indicating that the null hypothesis of no-cointegration is rejected irrespective of whether the regressors are I(0) or I(1).

$$\Delta OFDI_i = \beta_0 + \sum_{i=1}^{p} \delta_i \Delta OFDI_{t-i} + \sum_{i=0}^{p} \phi_i \Delta RGDP_{t-i} + \sum_{i=0}^{p} \phi_i \Delta INT_{t-i} + \sum_{i=0}^{p} \phi_i \Delta OPEN_{t-i} + \sum_{i=0}^{p} \phi_i \Delta WAGE_{t-i} + \sum_{i=0}^{p} \phi_i \Delta MARKET_{t-i} + \alpha ECT_{t-1} + u_t \quad (5)$$

where $\Delta$ is the first difference operator and $u_t$ represents residual terms that are assumed to be identically, independently, and normally distributed. $\alpha$ is the speed of adjustment parameter and *ECT* is the error correction term. The statistical significance of lagged error correction term $ECT_{t-1}$ with negative sign validates the established long-run relationship between the variables and its coefficient indicates the proportion by which deviations from the long-run equilibrium in the dependent variable are eliminated or corrected in in each period (Yusoff, 2010).

Finally, the cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) tests are employed to investigate the stability of the short and long run parameters of the model. Ignoring structural breaks in econometric models might lead to model misspecification and inconsistent estimation results of model parameters. In these methods, staying within the critical bounds of CUSUM and CUSUMSQ statistics implies that long and short run parameters are stable over the time.

## EMPIRICAL FINDINGS

Before estimating the econometric model, the stationarity of the time series was checked by unit root tests in order to avoid *spurious regression problem* suggested by Granger and Newbold (1974). In the literature, there are different unit root tests such as Dickey-Fuller, Augmented Dickey-Fuller, Phillips-Perron and KPSS to investigate integrating properties of variables.[2] In this study, Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests were used to evaluate the order of integration. Table 3 provides results from unit root tests for all variables used in the model. According to these results, all variables are non-stationary at level but stationary at their first difference. In other words, they are integrated of order one I(1). Hence, the ARDL Bound Testing Approach can properly be used in the model.

The selection of optimal lag length is essential for the ARDL bounds testing approach. To determine the optimal lag length for the econometric analysis Schwarz Information Criterion (SIC) is employed. Based on SIC results, it is found that lag 0 is appropriate for trade openness, while lag 1 is fitting for outward FDI, real GDP, interest rate, wage rate, and market size. The estimation results of the ARDL are shown in Table 4. F-statistics for

*F*(*OFDI* | *RGDP, INT, OPEN, WAGE, MARKET*)

greater than the upper critical value, thus there is a long-run relationship between outward FDI, trade openness, real GDP, interest rate, wage rate, and market size at 5% significance level.



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*Table 3. Unit root test results*

| Variable | ADF Unit Root Test | | PP Unit Root Test | |
|---|---|---|---|---|
| | T-Statistic (Level) | T-Statistic (First Difference) | T-Statistic (Level) | T-Statistic (First Difference) |
| OFDI | -1.685 | -13.120*** | -2.032 | -13.909*** |
| RGDP | -0.186 | -3.706*** | -2.635* | -14.882*** |
| INT | -3.079 | -5.775*** | -2.870 | -8.997*** |
| OPEN | -1.892 | -3.745*** | -1.143 | -13.810*** |
| WAGE | -2.430 | -4.355*** | -1.632 | -10.598*** |
| MARKET | -1.999 | -3.697*** | -2.427 | -5.686*** |

Note: The superscripts ***, ** and * denote the significance at 1%, 5% and 10% level, respectively.

*Table 4. The results of ARDL cointegration test*

| | Optimal Lag Length | F-Statistics | Critical Values %5 | | Critical Values %10 | |
|---|---|---|---|---|---|---|
| | | | I(0) | I(1) | I(0) | I(1) |
| F(OFDI \| RGDP, INT, OPEN, WAGE, MARKET) | (1, 1, 1, 0, 1, 1) | 9.13 | 2.62 | 3.79 | 2.26 | 3.35 |

Notes: The critical values for the lower I(0) and upper I(1) bounds are taken from Pesaran et al. (2001).

After investigating the existence of cointegration among the series, the long-run and short-run relationship between outward FDI, trade openness, real GDP, interest rate, wage rate, and market size are examined. The results of ARDL bounds test are given in Table 5 and all variables' expected sign are statistically significant at 1% level except for market size. The long run elasticity of market size is significant at 5% level. According to the estimation results, in the long run, real GDP is positively related to outward FDI, suggesting that 1% increase in real GDP raises outward FDI by 0.82%. The relationship between interest rate and outward FDI is negative and an increase of a 1% in interest rate decreases outward FDI by 0.83%. The effect of trade openness on outward FDI is positive and 1% increase in trade openness raises outward FDI by 0.68%. The long run elasticity of wage rate is positive, implying that a 1% increase in wage rate raises outward FDI by 0.24%, ceteris paribus. The impact of market size on outward FDI is also positive, indicating that an increase in market size raises outward FDI by 0.70%.

At this point, it might be useful to debate over the evidence on the relationship between the interest rate and outward FDI. Let it be known that there is not a single, commonly-held impact of interest rate on outward direct investment. The classical view on the interaction between foreign direct investment and interest rate is so obvious; lower interest rates induce foreign direct investment. If one thinks a country's outward FDI as the inward FDI of another country, it might be clearly suggested that higher home country interest rates cause the domestic investors to escape through foreign countries with lower interest rates. The logic here is simple; investors always pursue lower cost of capital. However, to specify the determinants of outward direct investment, one should primarily consider that getting into foreign markets requires a considerable amount of capital. As Kyrkilis and Pantelidis (2003) has stated, for a firm which has not got into foreign markets yet, capital accumulation is directly in association with the home country interest rate. In such a condition, lower home country interest rates raise the capital abundance of the domestic firms and pave the way for getting into foreign markets.



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*Table 5. Long and short run analysis*

| Dependent Variable: OFDI | Coefficients | |
|---|---|---|
| **Regressors** | **Short Run Coefficients** | **Long Run Coefficients** |
| RGDP | 0.484 (3.487)*** | 0.818 (7.341)*** |
| INT | -0.340 (-4.053)*** | -0.833 (-9.793)*** |
| OPEN | 0.113 (4.047)*** | 0.675 (3.045)*** |
| WAGE | 0.409 (3.765)*** | 0.237 (3.350)*** |
| MARKET | 0.810 (7.696)*** | 0.701 (1.886)* |
| Constant | | 5.236 (1.981)** |
| ECT(-1) | -0.167 (-11.182)*** | |
| **Diagnostic Tests** | | **p Value** |
| $\chi^2$ (Serial correlation) | | 0.17 |
| $\chi^2$ (Heteroskedasticity) | | 0.13 |
| $\chi^2$ (Normality) | | 0.11 |
| $\chi^2$ (Functional form) | | 0.28 |

Note: The superscripts ***, ** and * denote the significance at 1%, 5% and 10% level, respectively. Parentheses are t-statistics.

As it can be seen from Table 5, the $ECT_{t-1}$ has a negative expected sign and this is statistically significant at %1, suggesting that there is a long-run relationship between the variables in Turkey over the 1992-2015 period. The short run deviations from the long run equilibrium are corrected by 17% towards long-run equilibrium path each year. The diagnostic test results are reported in Table 5 showing that there is no diagnostic problem in the econometric model.

Finally, the cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) tests are used to check stability of long run and short run parameters of the econometric model. The result presents that the estimated coefficients lie within the critical bounds of 5% significance. It means that the estimated parameters are stable over the sample period.

## SOLUTIONS AND RECOMMENDATIONS

As it has been clearly mentioned in the previous sections, the main goal of the study is to determine the main factors of the outward foreign direct investment flows from Turkey. In this context, some potential determinants have been presumed in a theoretical framework and estimated in via an econometric model. Before the empirical analysis, it has been stated that the openness rate of the home country, the wage rate of the home country and the market size of the destination countries are expected to have positive impacts on the outward foreign direct investment flows of Turkey. However, it was indicated that the development level and the interest rate of the home country could have either positive or negative impacts. Higher development levels may bring about higher domestic market size and this may keep the investor in domestic market. On the impact of the domestic country's interest rate, the issue is more complicated. Higher home country interest rates may cause domestic investors to escape through foreign countries



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*Figure 3. Plot of cumulative sum of recursive residuals*
*Note: The dashed-lines show critical bounds at 5% significance level.*

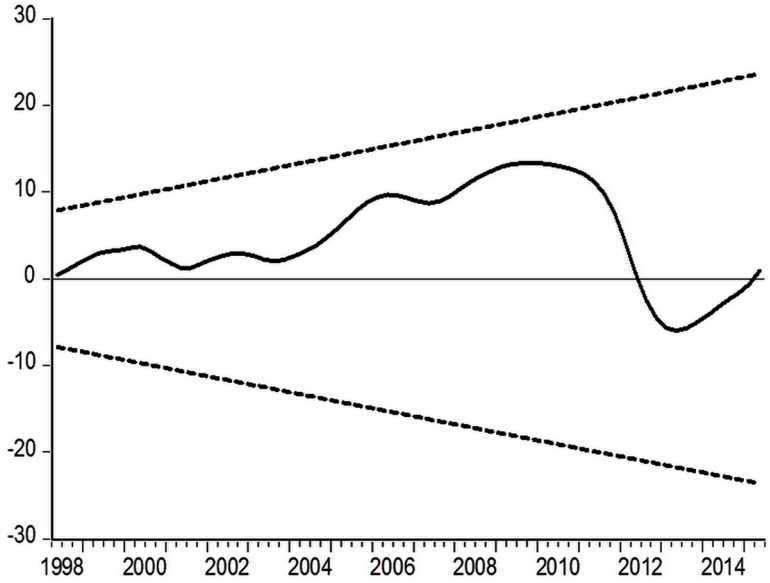
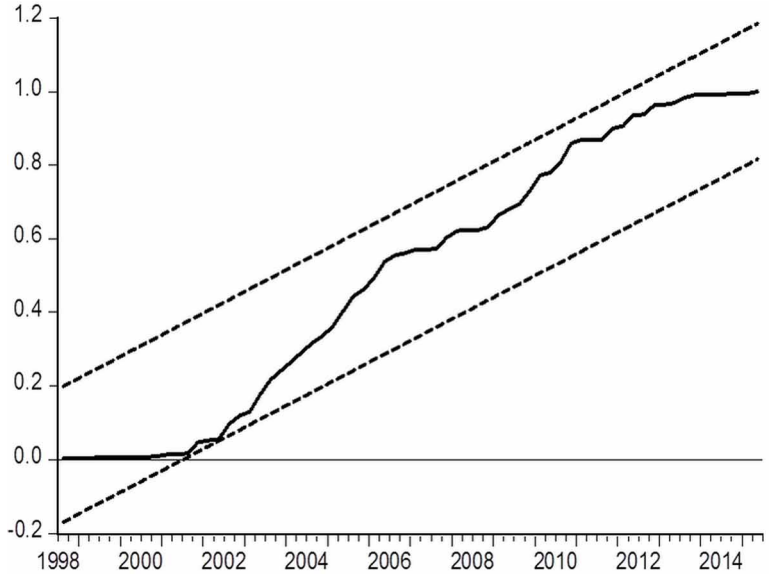



*Figure 4. Plot of cumulative sum of squares of recursive residuals*
*Note: The dashed-lines show critical bounds at 5% significance level.*






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with lower interest rates. But there is another possibility; since moving into markets in abroad requires a considerable amount of capital, lower home country interest rates may raise the capital abundance of the investors and make it easier to branch out.

Since Turkey is still in the developing stage, firms and investors still need capital accumulation for great decisions; such as investing in abroad. The empirical finding that suggests the domestic interest rate negatively affects Turkey's outward FDI caused by this fact. We may also suggest that in the further development paths, this impact might become reversed.

## FUTURE RESEARCH DIRECTIONS

Even though the findings obtained in this study reveal significant and considerable results, there are still some deficiencies and improvable points. Firstly, the analysis includes five variables in addition the outward FDI variable. For sure, there might be many other factors and variables that have an impact on Turkish OFDI. In this study, due to the data limitations a model with only these five variables has been employed. Future analyses may extend the model used. Secondly, in the analysis of this study, a destination country market size variable has been calculated by considering the share of Turkey's OFDI to these countries and their GDP levels. Although defining the market size of the destination countries with such a methodology is a useful way, it also has some disadvantages. Each destination country has different economic, geographical, historical and cultural relationship with Turkey (*or with any home country*). For instance, the underlying reasons of Turkey's outward FDI flowing into Netherlands and Azerbaijan are probably different from each other. Thus, to overcome this issue, applying country-by-country analyses (*i.e. gravity models*) might give more explicit results.

## CONCLUSION

International capital movements and foreign investments have an important role on today's globalizing world. Since 1980's, with the speed-up of globalization around the world, capital holders and investors have been seeking for profitable areas out of national borders. In this study, the determinants of outward foreign direct investment flows are investigated for Turkey, which is an important emerging country in global economy.

The detailed data on the outward direct investment flows from Turkey shows that about 60% of the total investment flows from Turkey are shared by Netherlands, Azerbaijan, USA and Germany which implies that these four countries constitute an important part of the market for the Turkey's outward FDI. Correspondingly, to be able to create a proxy variable for market size, two more countries (U.K. and Switzerland which induce %5 and %2 of Turkish OFDI respectively) have been added to this group of countries and attained a ratio of %67 which makes two-thirds of the total flows. In addition to this variable, also the impacts of home country's real GDP level, interest rate, openness and wage rate have been estimated via the ARDL bounds test approach. The results of the analysis show that all the variables used are significantly associated with the outward foreign direct investment flows from Turkey. However, the signs of the estimated coefficients vary across variables. All the other variables are in a positive relationship with Turkish outward foreign direct investment while the home country interest rate has a negative impact on it.



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The evidences reveal that, higher development level of the home country, higher rate of openness in the home country, higher labor cost in the home country and higher market size of the destination countries encourage outward foreign direct investment tendency for Turkish investors while higher interest rates in the home country discourages them. Within the observed evidences of the present study one may suggest that these five variables might be counted as significant determinants of Turkish outward foreign direct investment.

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## KEY TERMS AND DEFINITIONS

**ARDL Bounds Testing Approach:** It is a cointegration test providing that the existence of a long run relationship among the variables used in the econometric model are performed, regardless of their order of integration contrary to the other cointegration methods.

**Cointegration:** It is known that if two or more time series are not stationary but some linear combinations of them are stationary, hence the time series are said to be cointegrated.



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**Foreign Direct Investment (FDI):** A kind of investment made in one country by an investor in another country.

**Home Country:** The country that is the origin of the investors that make OFDI.

**Host (Destination) Country:** The country that is the destination and the target of the investors that make OFDI.

**Market Size:** The intensity of demand in the destination country.

**Outward Foreign Direct Investment (OFDI):** The flowed FDI that has been counted for the home country.

## ENDNOTES

1 See Pesaran et al. (2001) for further details on ARDL bounds testing approach.

2 See Dickey and Fuller (1979), Phillips and Perron (1988) and Kwiatkowski et al., (1992) for detailed information on unit root tests.

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# Chapter 29
# The Nexus Between Institutional Quality and Foreign Direct Investments (FDI) in South Asia:
## Dynamic Heterogeneous Panel Approach

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## ABSTRACT

*South Asia is one of the world's fastest growing regions, averaging 6.7 percent annual increases in real GDP over the past decade. However, South Asia's FDI inflows as a share of GDP are the lowest of all developing regions, averaging less than 2 percent in 2000-11(World Bank, 2013). Institutional quality is one of the factors that determine the volume of FDI inflow in any country. This study covers the data of three sampled countries of South Asia provided by the World Bank for the period 2003-2014. By using both static and dynamic models, this study reveals that regulatory quality and the political stability have significantly positive impact on the FDI inflow into each of the three countries. For Robustness, this study also employs dynamic heterogeneous panel approaches like Pool Mean Group (PMG) and found that institutional quality factors are significantly relevant to the FDI. As a policy implication, the regression results indicate that during the process of reform, the relation between FDI and institutional quality warrants a certain amount of attention.*

## INTRODUCTION

The role of foreign direct investment (FDI) as a key driver of economic development has been proved by many researchers (Borensztein et al., 1995). It contributes to economic development through raising capital accumulation, increasing production capacity, enhancing technology, transferring knowledge, creating employment opportunities, improving management practices, enhancing competitiveness and

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fostering macroeconomic stability. The United Nations Conference on Trade & Development (UNCTAD) in their 2013 World Investment Report states that developing countries take the lead in foreign direct investment (FDI). In 2012 developing economies received a higher inflow of FDI than developed countries. Also, Aizenmann, J. (2003) sees an increase in FDI in emerging economies. Thus, based on the increase of FDI it seems like companies are more interested in investing in emerging markets. However, investing in developing economies is not without risk. Ghemawat & Khanna (1998) argue that doing business in emerging economies is challenging due to information asymmetry and uncertainties. Political and economic risks are also significant risks. Institutions, both formal and informal, provide rules and procedures that reduce uncertainties involved in economic exchange. Informal institutions such as codes of conduct or conventions can trim down these uncertainties. Formal institutions via rules and regulations, laws, effective judicial systems and other institutions can reduce the uncertainties and provide effective enforcement mechanism. Codes of Institutional quality can be helpful by creating a more stable environment and accordingly reduce risks for multinationals associated with investing in developing countries.

However, for most of the countries, success in attracting sufficient amount of FDI inflows is not an easy job. Because of diversity in nature of factors affecting FDI inflows between countries, it is difficult to assess all these factors provided some of them are related to government political system. Governance indicators are identified by many researchers as significant determinants of FDI. The research acknowledges the gap in literature on the relationship between Institutional quality indicators and FDI flows particularly with respect to the Sub continental countries namely Bangladesh, India, and Pakistan.

Due to deep-rooted corruption, weak political and institutional structure, subcontinent is a very interesting region for case studies. Sahoo (2006) believes that there is a gap between policies and their implementations in this regions due to its dysfunctional institutional quality. Therefore, it may be worthwhile to provide strong foundation for a policy formulation through exploring the relationship between FDI and institutions based on country specific analysis. Subcontinent is a very interesting case study, because it is one of those regions which has experienced political turmoil in one form or the other, wide spread corruption, worse law and order situations, etc., which seem to be hurdles in attracting FDI in this region. The objective of the study is to find the impact of institutional quality on FDI(both inward and outward) of these three south Asian countries.

## PRESENT STATUS OF FDI IN SELECTED SOUTH ASIAN COUNTRIES

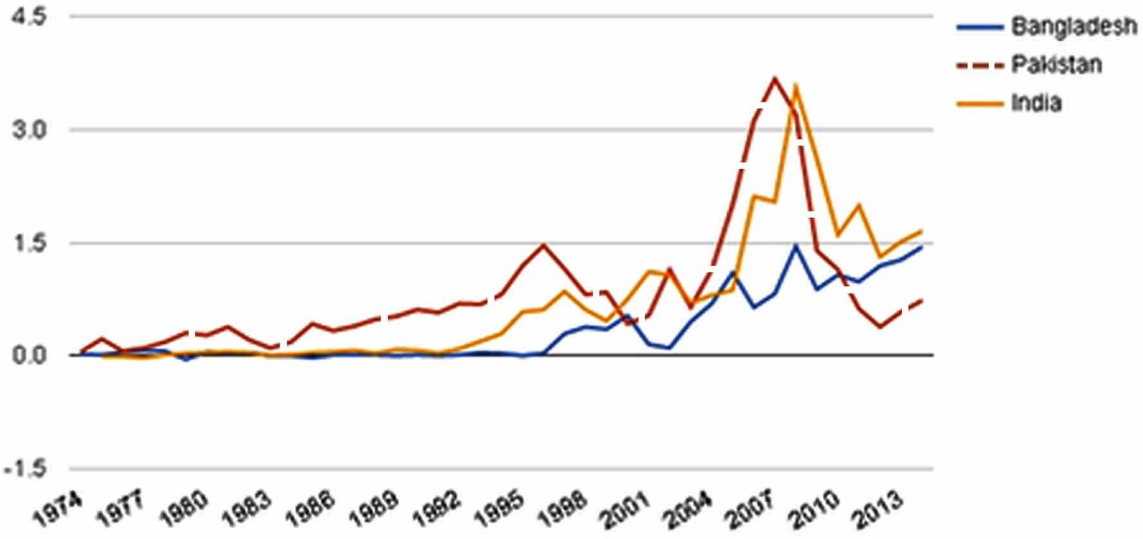
Like many other developing countries, South Asian nations have been experiencing increased FDI inflows over the past decade as developing countries get a larger share of cross-border investments once sent to developed countries. Nonetheless, South Asia's FDI inflows remain the lowest relative to GDP among developing country regions. Of the inflows that do reach South Asia, India dominates, with much of the inflow reaching the service sector and very little going into industry, agriculture, or mining.

This series shows in Figure 1 net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP. Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments.



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*Figure 1. FDI percentage to GDP in subcontinents*
*Source: World Bank.*




Foreign direct investment refers to direct investment equity flows in the reporting economy. Broadly, It is the sum of equity capital, reinvestment of earnings, and other capital. Direct investment is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy. Ownership of 10 percent or more of the ordinary shares of voting stock is the criterion for determining the existence of a direct investment relationship. According to the Figure 2, India leads regional inflow of FDI in south Asia accounting for $34 billion investment during 2014 and the upward trend is likely to continue in the upcoming years.

South Asia has seen FDI increases in the past decade and reaped their benefits; however, the region lags the rest of the other developing nations. Weak fundamentals have prevented more FDI flows into South Asia. The composition of FDI is heavily focused on the service industry, which may reflect the region's comparative advantage in this sector, but also may indicate that FDI into other sectors, such as manufacturing, is low due to insufficient infrastructure and cumbersome regulations discourage FDI inflows to these industries more than into services.

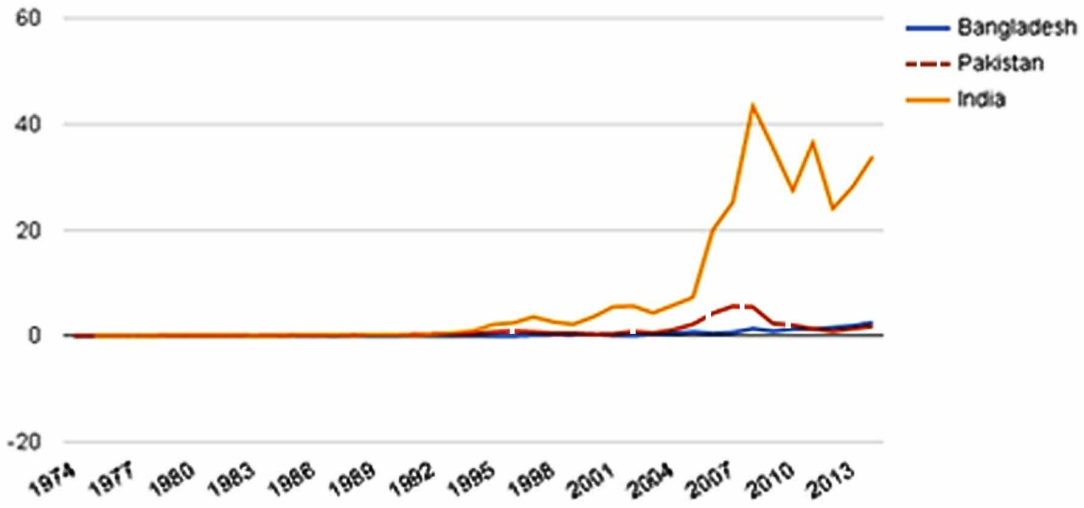
## INSTITUTIONAL QUALITY AND ITS PRESENT STATUS IN SELECTED SOUTH ASIAN COUNTRIES

Institutional quality entails a guidance process that is institutionally and technically structured, that is, based on principles, norms, procedures and practices to collectively decide about common goals for coexistence and about how to coordinate and cooperate for the achievement of decided objectives. There are as many definitions of the term Institutional quality as there are contributors to the theoretical discourse. Available literature indicates that definition of the term varies from situation to situation as well as from party to party. For example, to the development actors such as the World Bank, the term



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*Figure 2. FDI in subcontinents (billion USD)*
*Source: World Bank.*




bears a meaning completely different from the meaning understood by the Civil Society; in the case of public enterprises or social institutions meaning of the term tends to be completely different from the meaning it bears when applied for the profit-seeking organizations. And day after day the variations in meaning continue to increase.

In the light of its definition, the World Bank (2003) explicitly recognizes six dimensions of Institutional quality for measurement in countries as part of a research project in support of its assistance activities:

1. Voice and accountability;
2. Political stability and absence of violence;
3. Government effectiveness;
4. Regulatory quality;
5. Rule of Law; and
6. Control of corruption.

## 1. Rule of Law

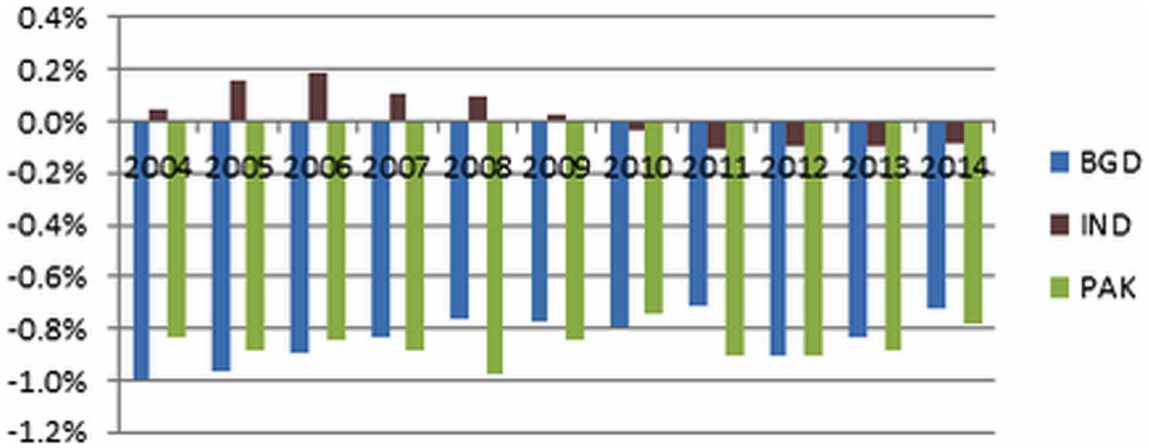
The rule of law specially defined as the existence of a set of formal rules and enforcement mechanism has been regarded as the basic condition for economic development. Better rule of law desire large economic growth. But in subcontinent countries rule of law is not in not preferable. Graphically it is shown in Figure 3 that, from 2004 to 2008, the rule of law in India was pretty good. Lately, from 2008, it became negative.

In 2011, it was in −0.11% while in 2012 and 2013 it was in −0.10%. At last in 2014, it was in −0.09%. The present condition of Bangladesh and Pakistan is not up to mark. In 2005, it was −0.97% and during 2014, it was 0.72%. Pakistan's rule of law in 2008 was in its extremely tremendous point −0.98%, though it was −0.78% in 2008 which represents the laggard rule of law in Pakistan. This graph indicates that the rule of law ratio in subcontinent is not so good for the economy



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*Figure 3. Rule of law index in subcontinents*
*Source: World bank global database.*

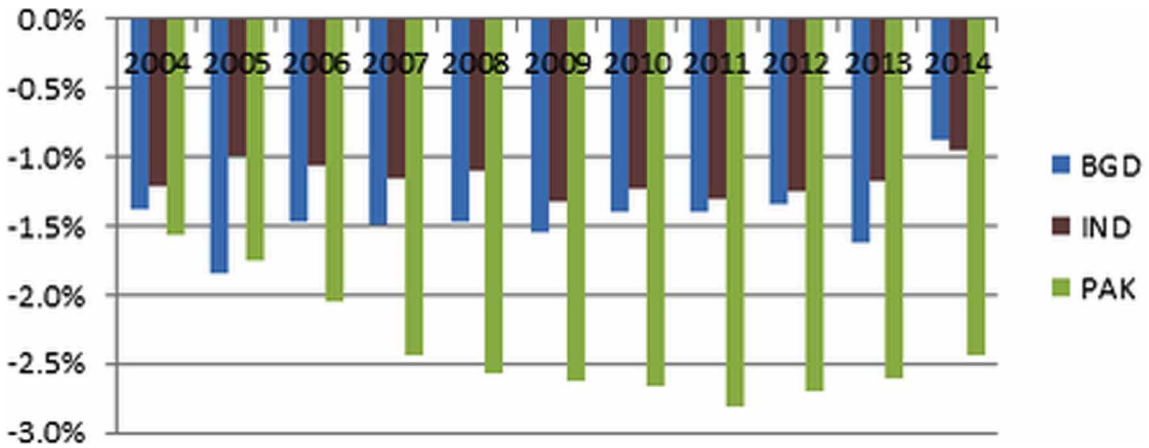



## 2. Political Stability

Political instability adversely affect in the economic growth by lowering the rates of productivity. It is regarded by economist as serious malaise to economic performance.

Our collected data shows in Figure 4 that, political stability was unsteady in the subcontinent. The status of political stability was inferior. Out of the three countries, the situation of Pakistan was dangerous. In 2011, Pakistan's political stability rate was −2.81%, which is its most adverse level. Bangladesh's political stability was −1.39% and India's political stability was −1.30% at the same time. From last ten years' political stability of Bangladesh, India and Pakistan as figured in sum, which is figured as −15.87%, −12.77% and −26.20% respectively that clearly shows the political imbalance of the three countries.

*Figure 4. Rule of law index in subcontinents*
*Source: World bank global database.*






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## 3. Regulatory Quality

The regulatory quality indicates the efficiency of the legal and operational institutional performances of the country. It can also reflect the bureaucratic situation of a country. Normally the scale of regulatory quality ranges from -2.5(weak) to 2.5(strong). In our estimation in Figure 5, it has been found that none of these south Asian countries scores positive sign meaning that the regulatory quality of these sampled countries are lower than the average.

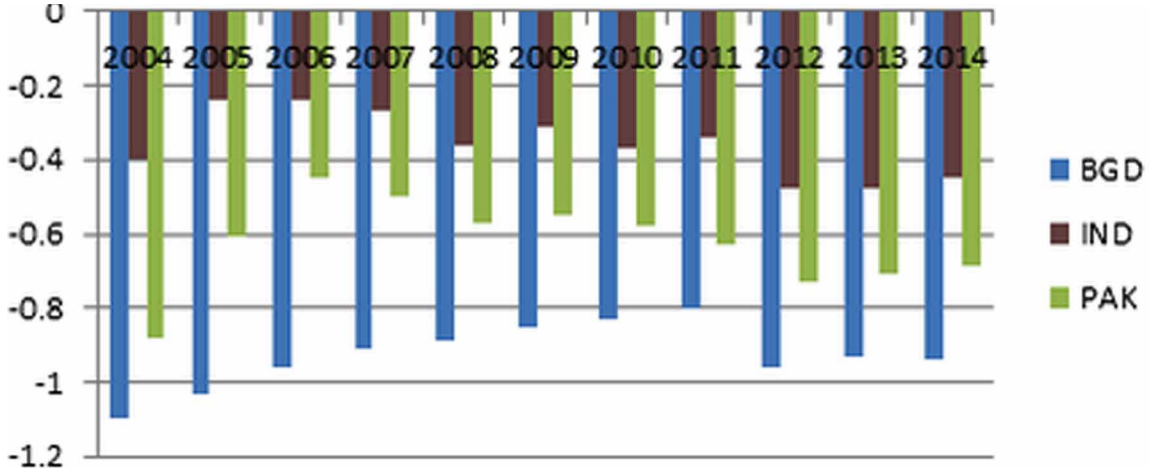
## 4. Corruption Perception Index

Corruption perception index ranges from 0 to 100. The common perception of corruption in this region is not satisfactory at all. Although India is comparatively performing better than Bangladesh and Pakistan but the growth rate of higher perception is still lower. According to Figure 6, in 2004 the average score of corruption perception index score was around 30 in India and it increases only up to around 38 in 2014. The similar trend exists from Bangladesh and Pakistan.

## 5. Voice and Accountability

The voice and accountability is one of the most important institutional quality factors which ensures the human rights and legal situations of a country. The index of voice and accountability ranges from -2.5 to 2.5. Other than India, both Bangladesh and Pakistan scores negative scores in terms of voice and accountability shown in Figure 7.

*Figure 5. Regulatory quality index in subcontinents*
*Source: World bank global database.*






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*Figure 6. Corruption perception index in subcontinents*
*Source: World bank global database.*

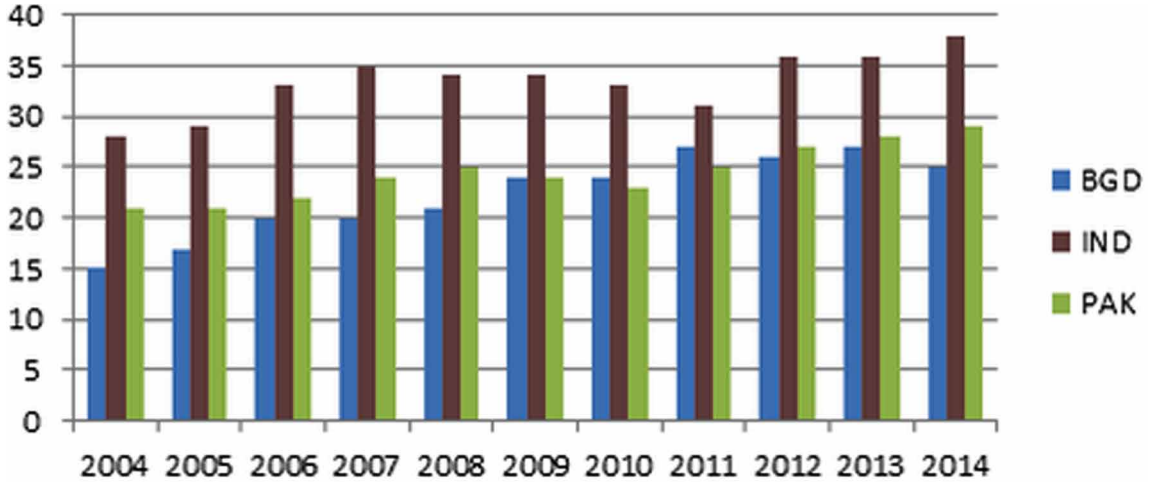
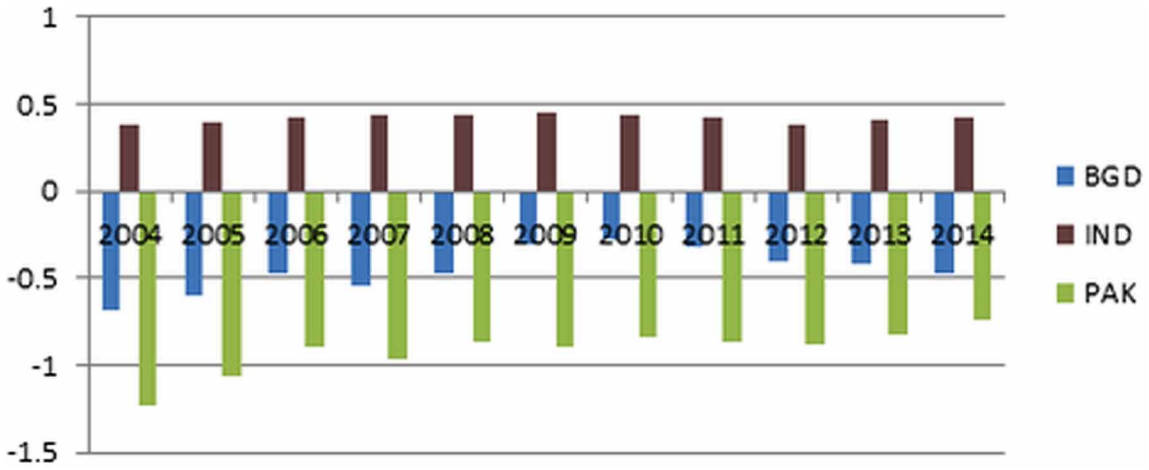



*Figure 7. Voice and accountability index in subcontinents*
*Source: World bank global database.*




## LITERATURE REVIEW

Kaufman, Kraay and Zoido-Lobaton (1999) have aggregated a database of hundreds of cross-country governance indicators into six fundamental indicators: voice and accountability (VACR), political stability and absence of violence (PSR), government effectiveness (GER), regulatory quality (RQE), rule of law (RLR) and control of corruption (CCR). The VACR indicator is about political freedom of government selection and freedom of media while the PSR indicator reflects the likelihood of government maintaining order in case of destabilization by unconstitutional means. Further, the GER indicator reveals the quality of public and civil services, and the policy formulation and credibility. Furthermore, the RQE



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indicator represents policies and regulations that permit and promote private sector development. The RLR indicator illustrates agents' confidence in and abidance by the rules of society. Finally, CCR shows the extent of using public power for private gain (Kaufmann et al., 1999a, b).

However, the relationship between Institutional quality indicators and FDI remained debatable in empirical research for a long period of time. Some of the studies focused on only one indicator such as political stability, corruption, RLR and RQE while the others examined all the six indicators. Investigation of this relationship is given in La Porta et al. (1999), Edwards (1990), Jaspersen et al. (2000), Hausmann and Fernandez-arias (2000), Globerman and Shapiro (2002), Asiedu (2002, 2011), Samimi and Ariani (2010), Ahmad et.al (2014). While some of these studies failed to find significant relationship between governance indicators and FDI, the majority of them confirmed the significance of the relationship. For instance, Globerman and Shapiro (2002) find that improving governance attracts foreign capital and creates conducive conditions under which MNCs operate. Gangi and Abdrazak (2012) investigate the impact of governance on FDI flows using a panel data of 50 African countries. They find that three out of the six World Bank's governance indicators are statistically significant: VACR, GER and RLR. The rest of the indicators (i.e. political stability, CCR and RQE) are insignificant.

With regard to the relationship between Institutional quality and FDI, the prevailing view is that countries with Institutional quality tend to attract more FDI because in the absence of Institutional quality, investment cannot be protected (Globerman and Shapiro 2002) and poor governance increases costs and uncertainty (Cuervo-Cazurra 2008a). Due to the relatively irreversible nature of FDI, foreign investors are keen to minimize unnecessary risks resulting from poor governance. Although poor governance may influence the entire economy, it may act as a deterrent to foreign firms. For example, the low level of 'bureaucratic quality', which involves extensive regulation, discretion rather than rule, red-tape, lack of skilled personnel, administrative inefficiency, unfair tax system, complicated rules to establish a firm, lack of transparency and weak protection of property rights, may generate opportunities for rent-seeking and cause inefficiencies. The unpredictable and low quality of government services may increase firms' exposure to additional risks and their operational costs (Drabek and Payne 1999). The high levels of bureaucratic quality also act as a shock absorber and tend to minimize the risk associated with drastic revisions of policy when governments change and there are interruptions in government services. The lack of transparency can increase information cost and lead to corruption. Weak property rights may increase risks and reduce investment.

Laws could be restrained or governments could overturn court decisions for political reasons. Weak legal provisions and the lack of effective legal enforcement could result in high levels of corruption. The lack of law and order may create conditions in which corruption can easily thrive. Random interpretation and enforcement of laws and regulations can create uncertainties that civil servants can take advantage of in their corrupt activities (Johnson and Dahlström 2004). The transaction costs such as negotiation costs, search costs, surveillance costs and enforcement costs can be higher in poorly governed countries. According to North (1990), reducing the transaction costs by constraining the behavior of economic agents and reducing the risk of opportunistic behavior is the main function of institutions.

Zhu (2007) argues that foreign firms are heterogeneous in dealing with poor governance and strategically adjust to the local environment in order to get business contracts. In a Institutional quality environment with well-developed laws, courts, democratic institutions and property rights protection, the firms play the game according to the rules as misbehavior would cost them heavily in terms of legal sanctions as well as reputation. However, in a poor governance environment where foreign firms compete with both domestic and other foreign firms, they adjust to the local business climate, and pay bribes in order



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to get business contracts that magnify the problems of poor governance in target countries. Therefore Zhu (2007) states that 'in more democratic and developed countries, increasing FDI inflows are likely to contribute to reduction of corruption, while in non-democratic and less developed countries, a rise in FDI inflows is associated with a higher level of corruption'.

Zhu (2007) also suggests that in a poor governance environment, foreign firms would have few incentives to try to improve governance. Those firms that benefit from poor governance through paying bribes would obviously have no incentives to speak out against it. Those firms that lose business contract because of corruption may prefer to remain silent for two reasons. First, speaking out or prosecution often fails because of the weak legal system and the strong relationship between the winner and the courts. Second, business is a repeated game and losers in a single business contract may not want to damage their relation with local authorities given the opportunities to get contracts next time. Complaining about poor governance is likely to create more hostility and reduce opportunities to get future contracts.

In the case of corruption, the literature is richer compared with the other governance indicators. The dominant 'sand the wheels' view suggests that corruption deters FDI as it is a sign that the government is malfunctioning, which adds costs to foreign investment. Many researchers have argued that high corruption levels deter FDI in the transition countries (Resmini 2000; Hellman, Jones and Kaufmann 2002; Cuervo-Cazurra 2006). This implies that FDI should be lower with corruption in a country with relatively high quality of governance. In this case, corruption entails costs and has no distortions to grease. Although limited, a few empirical studies have found no negative link between corruption and FDI in non-transition countries (Moskalev 2007) which question the overall validity of the 'sand the wheels' argument.

Finally, it cannot rule out the possibility that poor governance itself may be a source of better investment opportunities for MNCs. Poor governance may be a source of rent not only for corrupt politicians and policy makers in the target countries but also for large MNCs. As Li (2005) argues, in a relation-based system, the political system tends to be dominated by powerful rulers and policies tend to favor big business, which provides fertile ground for large MNCs that have large sources to finance their rent seeking activities. Such arguments are not new. Many scholars have argued that undemocratic and authoritarian regimes in developing countries provide investors with higher returns and attract more FDI (Bellos & Subasat 2012).

Furthermore, recognizing that FDI as a key factor for economic growth and important tool for bringing technology to recipient countries, it has received great attention from many economists in recent literature. The literature on FDI can be categorized into three main groups: the first group investigates the effect of FDI on macroeconomic indicators, such as economic growth, exchange rate, rates of inflation, balance of payments and rates of unemployment. The second group examines the impact of FDI on different factors such as technology transfer to recipient countries, management practices by national firm and labor skill and productivities in hosting countries. The third group focuses on the determinants of FDI and the main driving forces for its inflow and outflows to different countries. This topic remains a hot issue for researchers from different disciplines for a long period of time. Their main concern has been to identify the key variables that cause variation in FDI and hence can be used as instruments for economic policies conducive for FDI attractiveness. This group can be subdivided into two sub-groups: the first sub-group undertaken at country level using time-series data. In these studies determinants of FDI were examined for individual countries over specific period of time. The variables identified by these studies include, GDP growth, GDP level, degree of openness measured by balance of trade, real exchange rate, political stability, market size measured by per capita income and size of population,



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domestic investment, the return or cost of capital rate as variable reflecting the costs of production in the host countries. The second subgroup undertaken across a set of country level over specific period of time using panel data an example of which includes Samimi and Ariani (2010).

In the literature there were no studies that examined the relation between Institutional quality and FDI flows especially to the Sub continental countries. However, the impacts of some of the Institutional quality indicators on FDI flows were examined as part of the determinants of FDI. Because of that, our review of the literature concentrated on the empirical studies that were related to the determinants of FDI. This can help identify the main factors that cause variation in FDI flows to different countries and at the same time investigate the relation between Institutional quality indicators and FDI flows. It has been apparent from the foregoing literature review that although there is no dearth of research done on various aspects of governance and FDI, no work done on the nexus between Institutional quality and FDI especially in India, Pakistan and Bangladesh. To this end, the prime focus of this paper to find the impact of Institutional quality on FDI inflow for the sampled countries.

## DATA AND METHODOLOGY

### Data

In this part of the paper the impact of Institutional quality on FDI using panel data analysis is explored. Empirical analysis is performed on sample 3 South Asian countries namely Bangladesh, India and Pakistan in the period between 2003 and 2014. All Institutional quality indicators such as corruption control, Political stabilities, regulatory quality, startup procedure, startup time and startup cost etc. have been taken from the Heritage Foundation, the database of World Bank.

### Methodology

This research is conducted to econometrically analyze the relationship between FDI and Institutional quality factors. The methodologies applied in this study are both static and dynamic.

#### Static Models (Fixed and Random Effects)

The panel data is used in analyzing the FDI determinants. In the panel data, the used model consists n cross-sectional units, denoted n=1, ...,N, observed at each of T time periods, t=1, ...,T. In data set, the total observation is n × T. The basic framework for the panel data is defined as per the following regression model:

$$Ynt= \alpha+\beta Xnt+ \varepsilon nt \quad (1)$$

In functional form, FDI = f (Institutional variables, Macro-economic Variables)
Econometric specifications:

$$FDI= \alpha+\beta 1COR+ \beta 5GDP+ \beta 9PS+ \beta 9REQ+ \beta 9\ SP+ \beta 9\ SC+\beta 9\ INF+ \varepsilon \quad (2)$$



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Here, Y represents the dependent variable FDI,
Independent variables:
FDI = Foreign Direct Investment
COR = Control of Corruption
GDP = Gross Domestic Products
PS = Political Stability
REQ = Regulatory Quality
SP =Startup Procedure
SC = Startup cost
INF = Inflation

## Dynamic Models

This study employs the pooled mean group (PMG) estimators to address to estimate non-stationary dynamic panels in which the parameters are heterogeneous across groups Taking into account that analyzed 3 economies are different with the respect to their economic policy, the two mentioned dynamic panel models are estimated. Since, the focus of this paper is the impact of regulatory quality on FDI in the long and in the short- run, in order to capture that relationship empirically, the following equation is estimated:

$$FDI_{it} = \gamma_{0i} + \gamma_{1i} GDP_{it} + \gamma_{2i} CORs_{it} + \gamma_{3i} PS_{it} + \gamma_{4i} RQ_{it} + ł_{it},\ i = 1, 2, ..., N;\ t = 1, 2, ..., T \quad (3)$$

where FDI is the Foreign Direct Investment, *gdp_growth* is the annual percentage GDP growth rate, *COR* is the Control of Corruption, PS is the political stability and RQ represents the regulatory quality. Error term capturing the effects of unexpected shocks to *FDI* is denoted by $ł_{it}$. The subscripts *i* and *t* denote country and time respectively, suggesting an unbalanced panel. Since FDI differs across countries in the short-run, this assumption is hereby implemented by using conventional statistical criteria and determining lag length of each variable. Furthermore, an important issue that needs to be dealt with in econometric analysis is the dynamic structure of FDI model, assuming that certain economic aspects prevent immediate adjustment of FDI to changes in its fundamental determinants. Accordingly, the first and foremost step of the empirical analysis was to choose the lag order of ARDL model by applying the Schwarz information criterion (SBC). Even though there was no clear evidence of a most common representation, after choosing a country specific lag order of the ARDL model by applying the SBC information criterion, the preferred specification for the whole sample of analyzed countries was an autoregressive distributed lag ARDL (1,0,0,0,0) model:

$$FDI_{it} = Ł_i + \beta_{10i} GDP_{it} + \beta_{20i} COR_{it} + \beta_{30i} PS_{it} + \beta_{40i} RQ_{it} + \gamma_i FDI_{t-1} + \eta_{it}$$

That is, FDI is lagged once, whereas *COR (*Control of Corruption), PS is the (political stability) and RQ (regulatory quality), GDP are given in levels.

According to Engle and Granger (1987) if the variables are I(1) and co-integrated, the error term is an I(0) process for all countries (i). Furthermore, co-integrated variables show great responsiveness to any deviation from long-run equilibrium, so this feature implies an error correction re-parameterization of equation (2) such as:



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$$\Delta FDI_{it} = \dot{N}i\ (FDI_{i,t-1} - \gamma_{0i} - \gamma_{1i} GDPt_{it}) - \beta_{1li}\Delta \mathrm{GDP}_{it} - \beta_{2li}\Delta COR_{it} - \beta_{3li}\Delta iPS_{it} - \beta_{4li}\Delta RQ_{t} + \eta_{it} \quad (4)$$

where,

$$\phi_i, = -(-1-\gamma_i), \gamma_{0i} = \delta_i / (1-\gamma_I)\gamma_{1i} = (\beta_{10i} + \beta_{11i}) / 1-\gamma_I$$

Parameter $\phi_i$ is the error-correcting speed of adjustment term, so we expect it to be significantly negative under the prior assumption that the variables of interest show a return to long-run equilibrium

Here, the dependent variable is the Foreign Direct investment.

## FINDINGS

### Descriptive Statistics

To better understand the preliminary features of the data the descriptive statistics of all the variables selected are presented in Table 2. The average of our dependent variables, the FDI of 3 countries used in the study is 9.49 in natural logarithm form. The average GDP growth rate is 6.02%. The mean of all other independent variables are also positive except political stability and Regulatory quality. From the socioeconomic perspective, the negative mean of the PS and the RQ signifies that the political stability and the Regulatory Quality of these 3 countries are less than the standard level.

### Correlation Matrix

The correlation matrix between the selected variables is presented in table 6. From the main variables of our study, socioeconomic determinants, all the variables are positively related to the FDI except the startup time. From the macroeconomic perspectives, the relationship between the GDP and the FDI is negatively correlated on the other hand Inflation has a negative relation to the FDI.

*Table 1. Details of the independent variables*

| Variable | Definition | Descriptions |
|---|---|---|
| GDP | Annual GDP Growth rate | Taken from the World Bank Database |
| INF | Inflation | Taken from the World Bank Database |
| COR | Control of corruption | Ranges from -2.5 (weak) to 2.5(strong). |
| PR | Property Rights | The property rights index (0-100). Collected from The Heritage Foundation |
| PS | Political Stability | Ranges from -2.5 (weak) to 2.5(strong). Collected from the World Bank Database. |
| REQ | Regulatory Quality | Ranges from -2.5 (weak) to 2.5(strong). |
| SP | Startup Procedure | Taken from the World Bank Database |
| SC | Startup cost | Taken from the World Bank Database |



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*Table 2. Descriptive statistics*

| | COR | LFDI | GDP | PS | REQ | SP | SC | INF |
|---|---|---|---|---|---|---|---|---|
| Mean | 25.93939 | 9.492558 | 6.028949 | -1.659769 | -0.633968 | 10.40909 | 37.33636 | 35.70909 |
| Median | 25.00000 | 9.305781 | 6.177542 | -1.482810 | -0.610984 | 11.00000 | 38.90000 | 26.50000 |
| Maximum | 36.00000 | 10.63755 | 10.25996 | -0.990955 | -0.233571 | 13.00000 | 78.40000 | 81.00000 |
| Minimum | 13.00000 | 8.428597 | 1.606692 | -2.811578 | -1.095224 | 8.000000 | 5.800000 | 19.00000 |
| Std. Dev. | 5.910475 | 0.654387 | 2.193414 | 0.557226 | 0.257993 | 1.400081 | 21.80364 | 18.95398 |
| Skewness | -0.056674 | 0.409362 | -0.116222 | -0.940517 | -0.052406 | 0.163412 | 0.251330 | 1.199492 |
| Kurtosis | 2.504259 | 1.929466 | 2.573456 | 2.467078 | 1.706590 | 2.180813 | 1.773665 | 3.088132 |
| Obs. | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 |

**Notes 1:** The dependent variables FDI is Foreign Direct investment, GDP indicate GDP growth rate, PS measures the political stability COR refers the Control of corruption, SP refers stratup procedure, SC refers the Startup cost, INF refers Inflation

*Table 3. Correlation matrix*

| | COR | LFDI | GDP | PS | REQ | SP | SC | INF |
|---|---|---|---|---|---|---|---|---|
| **COR** | 1 | | | | | | | |
| **LFDI** | 0.863 | 1 | | | | | | |
| **GDP** | 0.318 | 0.367 | 1 | | | | | |
| **PS** | 0.268 | 0.313 | 0.722 | 1 | | | | |
| **RQ** | 0.755 | 0.861 | 0.319 | 0.136 | 1 | | | |
| **SP** | 0.716 | 0.838 | 0.299 | 0.190 | 0.835 | 1 | | |
| **SC** | 0.217 | 0.348 | 0.619 | 0.764 | 0.300 | 0.382 | 1 | |
| **INF** | -0.257 | -0.168 | 0.3791 | 0.449 | -0.058 | -0.239 | 0.499 | 1 |

**Notes 1:** The dependent variables FDI is Foreign Direct investment,. GDP indicate GDP growth rate, PS measures the political stability COR refers the Control of corruption, SP refers stratup procedure, SC refers the Startup cost, INF refers Inflation

As expected corruption of corruption and political stability favors the FDI in the courtiers but the late startup time causes the negative FDI in the sampled countries. Finally, since there is no value more than .85, we can say that there should not be any multicollinearity.

## Model Estimations as a Whole

### Static Model

In static relationship, the literature usually applied least square methods of fixed effects (FE) or random effects (RE). The FE estimator is the most restrictive of all. It imposes equality of all slopes coefficients (both short and long run) and equality of error variances across units or countries and only the intercept across units or countries are allowed to vary. On the contrary, Random effect estimator also imposes equality of all slope coefficients (both short and long run) but allows error variances and intercepts to differ across countries. It assumes random intercepts, the mean of which is captured by the constant term and the variances of which is captured by the variance of the error term. To find which model is superior,



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this study tested the Hausman test. Since the probability of Chi-square value (7.45) with P-value 0.019, it can be said that random effect model is comparatively more suitable than fixed effect model meaning that this study accepts the result of random effect model.

The analysis of the variables confirms with the findings of a numbers of the previous literature while providing some new ground for study. In both Static models such as the fixed effects and the Random Effects, the results of the analysis proved a number of variables have a significant impact on the FDI of the country. In all our analysis, it has been found that the institutional /socio-economic factors such as Regulatory quality, Control of Corruptions are positively correlated to the FDI.

Since the Hausman test has proven that in our case random effect is more suitable than fixed effect.[1] This paper will give more focus on random effect from the static model. As expected, high startup cost causes the negative FDI in the sampled countries. It has been found that 1% increases in the regulatory

*Table 4. Result of static and dynamic models*

| Variables Dep. Variable : FDI | Static Model | | Dynamic Model-PMG | |
|---|---|---|---|---|
| | Fixed | Random | Dependent Variable: FDI | PMG |
| Intercept | 6.819 (.9325706) *** | 8.239 (1.001599) *** | Convergence coefficient (ECT) | -.970959 (.2545973)*** |
| FDI –lag of dep.Variable | _____ | _____ | GDP | .5387247 (.1957853)*** |
| GDP | -0.006 (.0255069) | -0.0152 (.0308769) | RQ | .6714 (.091963) *** |
| RQ | 1.0714 (.3919631) ** | 0.9185 (.3596054) *** | PS | -.1686112 (.1343574) |
| PS | -0.9837 (.1594826) | 0.2341 (.1616658) | COR | .0518712 (.0042735)*** |
| COR | 0.0132 (.0143829) | 0.0412 (.0131982) *** | dGDP | .0601597 (.0227681)*** |
| SP | -0.3097 (.0731242) *** | -0.1268 (.0626947) *** | dRQ | .6714 (.091963) *** |
| SC | -0.0090 (.0037857) ** | -0.0019 (.0037063) | dPS | -.6225866 (.1876477)*** |
| INF | -0.016 (.00150)*** | -0.0812 (.0269)*** | dCOR | .0445079 (.0091942)*** |
| R-squared | 0.8320 | 0.8820 | No. of countries: | 3 |
| F-stat/ Wald-$\chi^2$ | 37.69*** | 194.42*** | Log-likelihood | 49.855 |
| No of Obs. | 33 | 33 | | |

**Notes 1:** The dependent variables FDI is Foreign Direct investment, GDP indicates GDP growth rate, PS measures the political stability COR refers the Control of corruption, SP refers stratup procedure, SC refers the Startup cost, INF refers Inflation

**Notes 2:** The dependent variables FDI is Foreign Direct investment, is a proxy measure of size, calculated as a natural logarithm of total bank assets. GDP indicate GDP growth rate, PS measures the political stability COR refers the Control of corruption, SP refers stratup procedure, SC refers the Startup cost, ST startup time. D.FDI is Foreign Direct investment in differenced form. d.GDP indicate GDP growth rate in differenced form, d.PS measures the political stability in differenced form . d. COR refers the Control of corruption in differenced form, d.SP refers stratup procedure, d.SC refers the Startup cost, d. ST startup time in differenced form.

**Notes 3:** Estimations are performed using the PMG estimator of Pesaran et al. (1999); the reported short-run coeficients and the speed of adjustment are simple averages of country-speciic coeficients; all equations include a constant term; standard errors are in brackets

**Notes 4:** Values in parenthesis are t statistics, (***), (**), (*) indicates significance at 1, 5, and 10% level respectively.



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quality can increase 1.07% in FDI. The Control of corruption can also bring positive outcome for the FDI. If there is 1% level of corruption control increase, it will increase 0.041% percent of FDI. The burucratic problems such as long stratup procedure and the startup cost decreseas FDI by -0.12% and -0.001% percent respectively. From the macroeconomic perspectives, it has been found that only inflation has inverse and statistically strong relationship with the FDI for these sampled countries.

### Dynamic Heterogeneous Model

The Table 4 presents the results of the baseline model of FDI specified by the equation (iv). Furthermore, the Hausman test of long-run homogeneity of coefficients is employed in order to determine which estimator is more appropriate. According to Pesaran et al. (1999), the MG estimator provides consistent estimates of the mean of long-run coefficients, but these are inefficient if slope homogeneity assumption holds. However, if the slope coefficients are indeed homogeneous, then PMG estimator is consistent and efficient. That's why, this study employs PMG estimators.

According to results presented in Table-4, error correction mechanism is in place, since the adjustment coefficient has the correct negative sign and is statistically significant on 1% significance level. The average value of the error correction coefficient (according to PMG estimator) is -0.97 implying that equilibrium is reached in less than 1.5 years. In the above table, it can be seen that the GDP, Regulatory quality and the control of corruptions are positively related to the performance of FDI inflow in the long run. According to PMG model, 1% increases in the GDG growth rate increases FDI by 0.53%. Regulatory quality also effects positively on the growth of FDI. For example if there is 1% increases in the regulatory quality, 0.67% of FDI will be increased. The same trend exists in the control of corruption variable where 1% increases in the control of corruption bring 0.05% of FDI.

Furthermore, according to estimated model, all three control variables have statistically significant influence on FDI in the short run with economically meaningful signs, stressing a positive influence of those variables on FDI, with having the largest coefficient (0.67).

## CONCLUSION AND FUTURE RESEARCH IMPLICATIONS

The importance of institutions can hardly be exaggerated. These are hallmarks of development. For strong institutions are often associated with good governance, transparency, accountability and integrity, while weak institutions breed poor governance, macroeconomic mismanagement, endemic corruption, and serious misallocation of resources. Evidently, developed countries have fairly strong institutions, while institutions are extremely weak, especially in least developed countries. Institutional quality is highly associated with FDI given the relative irreversible nature of this type of capital flows. Corruption, loss of public confidence in the government, likelihood of destabilization of the government by unconstitutional means, rent-seeking and uncertainties about law enforcement will all create a highly risky atmosphere for FDI. It has been found in the study that the Institutional quality indicators such as Regulatory quality, control of corruption have significantly positive impact on the performance of FDI for the long run for all the three countries. Since these two factors were found to be significant determinants of FDI inflow into the countries, policymakers should give proper focus onto these indicators in order to make the region an attractive destination for the potential foreign investors. As because each of the three countries put emphasis on sustainable growth of GDP and since contribution of FDI to GDP



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for all the three countries have been meager(less than 1.5%) the countries must ensure unhindered FDI inflow by addressing Institutional quality issues such as Control of corruption and Regulatory quality in policy making. In the absence of solid property rights, foreign firms may have very few incentives to engage in new investment as the return on their investment may be uncertain. 'Law and order' may be a major concern for foreign firms. The empirical analysis presented in this study offers a powerful set of factors as key contributors to FDI growth— regulatory quality, control of corruption, reduced trade protection, and greater investment openness.

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## KEY TERMS AND DEFINITIONS

**ARDL:** Autoregressive-Distributed Lag- A commonly used testing for the presence of long-run relationships between economic time-series.

**FDI:** Foreign direct investment (FDI) is an investment made by a company or individual in one country in business interests in another country.

**Institutional Quality:** Institutional quality is the comprehensive attributes that captures law, individual rights and high quality government regulation and services.

**MNC:** An enterprise operating in several countries but managed from one (home) country.

**PMG:** Pooled Mean Group (PMG) is the econometric techniques where long run coefficients to be should be identical, but allows the short run coefficients and error variances to differ across groups.

## ENDNOTE

[1] To find which model is superior, this study tested the Hausman test. Since the probability of Chi-square value (7.45) with P-value 0.73, so, this study accepts the result of random effect model.

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# Chapter 30
# Inward and Outward Foreign Investments of the Asian Economies in Transition and India:
## Determinants of FDI and India's Prospects in CLMV

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## ABSTRACT

*This chapter is divided into two parts. The first part examines panel data evidence concerning empirical significance of the determinants of Foreign Direct Investment (FDI) in CLMV countries. Theoretical and empirical findings and outcomes on FDI have been considered to test the model for the aforementioned nations. The data has been taken from the World Bank through 2005-2014. Findings accept the four proposed hypotheses and the results are significant. The second part explores the trade and FDI situation in CLMV through secondary data, and establishes that India has potential to augment bi-lateral ties through this route. Literature review for this section also corroborates with the findings of the first part.*

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## INTRODUCTION

The economic reforms of the 1990s in the developing countries were poised to bring about a sea change in the global market system. However, the post reform era exhibited a bleak growth trajectory for the countries. The Latin American crises, not just put a halt to the reform era but what ensued was years of lost growth opportunity. The starkest scenario was in Sub-Saharan Africa that was enmeshed in extreme poverty and debt. The Middle East, which had countries reeling under stagnation, became the breeding ground for terror activities. Finally, the currency crisis dealt a major blow to the promising growth take off exhibited by the Asian Tigers.

However the steady growth of both China and India, post the adoption of liberation strategies, came to salvage the situation. It had rippling effects on the world market due to increased demand for raw materials to fuel its export-led growth. This acted as a boost to the African and Latin American economies, as commodity prices ascended. With the developing economies recovering from their downturn, BRICS began to emerge as a major powerhouse (Jim O'Neill assigned the acronym BRIC to identify the four large countries, Brazil, Russia, India, and China, that encompass over 40% of the world's population, and whose fast-growing economies best represent the beginning of a new era of emerging markets) (Hidalgo, 2013). Thus began the golden era of the emerging economies wherein the advanced economies grew on average a 1.6% a year, while the 154 economies defined as emerging by the International Monetary Fund (2007) expanded by 6.2% every year. The emerging economies are classified as follows:

- Central and Eastern Europe and the Former Soviet Union (now the Commonwealth of Independent States (CIS)) (Kvint, 2008).
- Latin American countries emerging towards a market-based economy.
- African countries.
- Asian economies (India, China, and CLMV)

The late 1980s race to transform into market economies has led to the categorization of countries that are at various points along the track into transition economies. At present, the transition economies in Asia primarily comprise of Cambodia, Lao PDR, Myanmar, and Vietnam (CLMV). The 1997-1998 financial and economic crises had alerted the Association of Southeast Asian Nations (ASEAN) on the need to strengthen intraregional cooperation, which in turn resulted in the creation of a blueprint of the ASEAN Economic Community (AEC) in 2006. The ASEAN Economic Community Blueprint, which was signed by the ASEAN member countries in 2007, focusses on the following four core areas:

1. ASEAN as a single market and a base international production with elements of the free flow of goods, services, investment, skilled labour, and freer flow of capital;
2. ASEAN as a region with high economic competitiveness, with elements of competition rules, consumer protection, intellectual property rights, infrastructure development, taxation, and e-commerce;
3. ASEAN as a region with equitable economic development with elements of small and medium enterprise development, and the initiative for ASEAN integration CLMV countries (Cambodia, Myanmar, Laos, and Vietnam);
4. ASEAN as a region to be integrated fully into the global economy with elements of a coherent approach to economic relations happen outside the region, and increase participation in global production networks (Association of Southeast Asian Nations, 2008).



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The AEC with an integrated market and a three-year grace period for the less developed CLMV countries is slated to come into existence by the end of 2015. Despite the promise held forth by the AEC, there are pertinent concerns regarding successful implementation, given the development gap among member countries.

Against this backdrop, the chapter's aim is to examine a) the determinants of FDI flows to the CLMV and b) how India's developments and prospects are in investing with the CLMV. The former is undertaken with the help of panel data techniques, while the latter is exploratory in nature.

## BACKGROUND

In the late 1990s, the CLMV joined ASEAN, raising apprehensions about a gap in average per capita GDP between older and newer members. As a consequence, the Initiative for ASEAN Integration (IAI) was formed by the ASEAN for regional integration policy. Its aim was bridging this developmental rift, which was plagued by inequalities in per capita GDP and differences in extents of human development, such as, life expectancy and literacy rates, etc. Other than the IAI, additional programmes for the development of the Mekong Basin (where the CLMV economies are located) that would focus on infrastructure development have also sanctioned.

In general, ASEAN (with the exception of Singapore) does not have the financial resources to extend substantial grants or loans to the new members. Therefore, it usually leaves the financing of these infrastructure projects to international financial institutions and to developed countries. The CLMV has somewhat managed funding and investment from these institutions and countries, especially from the ASEAN-6 (Indonesia, Malaysia, Philippines, Brunei Darussalam, Singapore, and Thailand). The focus is specifically in areas where the development gap needs to be bridged through the IAI programme. Other programmes intended for the development of the ASEAN-4 (Indonesia, Malaysia, Philippines, and Thailand) also take advantage of the geographical proximity of the CLMV economies and tend to invest in infrastructure development in areas like transport, tourism, and power transmission to enhance mutual benefits in trading amongst each other (Severino, 2008).

The opening up of the centrally planned economies of the CLMV countries through trade and foreign direct investment (FDI) into the global market has resulted in fast growth and macroeconomic stability for Vietnam, Cambodia, and Lao PDR. They have even managed to recover from the global crisis of 2008-2009 because of trade and investment linkages with the economically larger regional neighbours that have helped strengthen these economies and boost export growth in the sectors such as apparel, tourism, agricultural products, and hydropower. However, for a better economic future, growth and development reforms in these economies seem to be imperative. While Myanmar is just about politically stabilizing at the moment, its economic liberalisation compared to the other three siblings is still very gradual (Organisation for Economic Co-operation and Development, 2013).

As mentioned before, the development financing of the CLMV has been largely left to institutions and other developed and neighbouring nations due to the various constraints face by the IAI. Employment generation, skills development, market linkages, availability of additional capital and foreign exchange, increasing consumer benefits (through lower prices, availability of variety and raising demand), etc., are some of the aspects that the CLMV need help with in bridging the development gap. These insufficiencies are, to a certain extent, fulfilled by investing nations who gain economic advantages by gaining access to global markets and fulfilling the resource and efficiency seeking requirements by liaising through



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trade and Foreign Direct Investments (FDI) with the CLMV. Some factors that are hinder investment are corruption (Transparency International, 2015), global competitiveness (World Economic Forum, 2015), and ease of doing business (World Bank, 2015a) – all of which are fairly low on the scale for the CLMV economies. However, in the recent years these four nations have experienced increasing shares of intra-ASEAN FDI flows. This indicates the catching-up process of industrialization in less developed economies (Abe, 2011). For example, Table 1 below shows the recent data for FDI inflows in CLMV economies (in USD million) from 2009 to 2013.

According to the World Investment Report 2014 (United Nations Conference on Trade and Development, 2015), FDI inflows in the low-income CLMV countries amounted to $13.2 billion in 2013, which is a 7% increase since 2012 (refer to Table 1). The higher inflows in 2013 have been partly because of improved FDI flows in Cambodia, Myanmar, and Vietnam. In addition, in 2013, the CLMV region accounted for 10.5% of total FDI inflows to the ASEAN region. Among the CLMV countries, FDI inflows into Vietnam were the highest at $8.9 billion in 2013, followed by Myanmar with $2.6 billion worth of inflows and Cambodia with $1.4 billion.

It is to be noted that ASEAN Member States as a group are a leading investor in the CLMV countries. This aids in reinforcing regional connectivity and contributing to the increase in intra-regional investment. According to the ASEAN Investment Report (Association of Southeast Asian Nations, 2015), ASEAN investment to Cambodia, the Lao People's Democratic Republic, Myanmar and Vietnam rose by more than 75% in 2013, attracted by wage cost differentials, market potential and opportunities.

During the last five years, FDI inflows in Myanmar have increased at an annual average of 30.5% (2009-2013) and in Cambodia by 30.8%. These countries have received an increasing amount of FDI driven by the desire of investors to reduce costs for labour intensive manufacturing, to harvest mineral resources and to participate in infrastructure projects. The low-income CLMV countries have emerged as a positive aspect for the ASEAN region, particularly for labour intensive FDI and value chain activities. These low-income countries have also experienced a rise in investment in the extractive sector and infrastructure, including those under contractual arrangements. A number of large transnational companies (TNCs), including Nike (USA) and Adidas (Germany), have strengthened their contract manufacturing activities in the low-cost production locations of the CLMV region.

Attracted by growth prospects, Japanese companies invested $1.8 billion in Vietnam in 2011, while $4.4 billion worth Japanese investments were approved in 2012. Some of the other sectors that have seen significant FDI inflows in recent years in Vietnam include banks, property and infrastructure. However,

*Table 1. FDI inflows in CLMV economies, $ million*

| Country | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Cambodia | 539 | 783 | 815 | 1,447 | 1,396 |
| Lao PDR | 190 | 279 | 301 | 294 | 296 |
| Myanmar | 973 | 1,285 | 2,200 | 2,243 | 2,621 |
| Vietnam | 7,600 | 8,000 | 7,519 | 8,368 | 8,900 |
| CLMV | 9,302 | 10,347 | 10,835 | 12,352 | 13,213 |
| CLMV/ASEAN, % | 19.9 | 10.4 | 10.9 | 10.5 | 10.5 |

Source: United Nations Conference on Trade and Development, 2015



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there has been a shift in investment interests, with a rise in FDI into manufacturing, retail and technology, among others.

In Lao PDR, Chinese investments in infrastructure have been increasing. Cambodia and Myanmar have emerged as attractive locations for investment in labour-intensive industries, including textiles, garments and footwear.

Over the past few years, foreign participation in extractive industries (including both oil and gas, and metal mining) has also helped boost FDI in this region. In Myanmar, new investments in extractive industries have seen increased inflows, especially after the lifting of sanctions. In the oil and gas industry, companies from India, South Korea, Thailand, and Singapore have entered into oil and gas exploration activities, and are ready to expand their operations. For instance, Total (France) and Chevron (USA) have long held stakes in oil and gas projects, but only after the recent easing of sanctions are the two companies expanding their operations in Myanmar. In metal mining, among others, a joint venture between a local company and Ivanhoe Mines (Canada) started operating a large copper mine in 2004, and later a Chinese investor has become involved instead of the Canadian company. Following the introduction of a new mining law in 2013, investors from China, India, Philippines, Russia, Vietnam, and the USA have expressed interest in mining, expanding the number of possible contributors of FDI inflows to extractive industries in Myanmar. A number of companies from Europe and the USA have also recently established or are establishing operations in Myanmar. For instance, Hilton is opening a hotel in Yangon under a management contract.

Again, it is notable that resource-rich countries have continued to receive significant FDI in the extractive and agricultural industries (e.g. Indonesia and Myanmar). The share of manufacturing in total FDI flows in the CLMV countries is proportionately greater than that in the other ASEAN Member States. This difference partly reflects the stages of economic development among member countries and the locational cost advantages of the CLMV countries for labour-intensive manufacturing operations, which often connect with the operations of affiliates in other ASEAN Member States (Association of Southeast Asian Nations, 2015; United Nations Conference on Trade and Development, 2015).

In 2014, however, Asian LDCs saw a 2% drop in FDI inflows, a negative growth for the first time in four years. This was mainly owing to declines in seven Asian LDCs, including Bangladesh ($1.5 billion, a decrease of 5%), Cambodia ($1.7 billion, an 8% fall), and Yemen ($1 billion of divestment), despite strong FDI growth in the Lao PDR (69%) and Myanmar (62%). FDI inflows to Haiti faced a 50% reduction (United Nations Conference on Trade and Development, 2015; CLMV Capital Asia, 2013; Shiells, 2013; Export-Import Bank of India, 2014).

Although CLMV poses a lot of potential for investment, the distribution of inwards FDI from the ASEAN to the four economies have a small range between the lower side of $1.0–9.9 billion (Cambodia, Vietnam, Myanmar) or $0.01–0.9 billion (Lao PDR) (United Nations Conference on Trade and Development, 2015)

## MAIN FOCUS OF THE CHAPTER

### The Determinants of FDI to CLMV: A Brief Investigation

As mentioned in the previous section, literature points out and experts have recommended that FDI in international trade (inward and outward flows) is crucial to regional cooperation and development. The



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CLMV, a part of MRB (Mekong River Basin) countries that have limited and inadequate literature and published data. Therefore, it becomes a challenge to get insights into this region in the light of Asian economies in transition. However – as some previous studies have emphasized – the positive effects of trade and FDI on growth have been a key driving force behind the East and South East Asia's development parameter and performance since the mid-1980s. The liberalization of trade and investment regimes undertaken by the reforming and transitioning economies in the region has improved the economic and business environment, favouring the expansion and trade and specifically FDI flows. This has led to the governments formulating outward oriented policies for economic development through integration of international markets. Thus, the trade-FDI nexus has shown promise in this region (CLMV).

Foreign direct investment (FDI) is the flow of capital through multinational companies (MNCs), from one country to another. There are many factors that affect the extent and direction of such flows. Some reasons include the utilization of economies of scale and scope, the use of specific economic and geographic advantages (Hymer, 1960), life-cycle pattern of products or simply because competitors are engaged in similar activities. Governments may also bring about policy competition by altering domestic labour market conditions, corporate taxes, tariff barriers, subsides, privatization and regulatory regime polices, etc., in order to attract FDI to the domestic economy (Tsoukis, Agiomirgianakis, & Biswas, 2004).

The mid-1950s witnessed an interest in the effects and outcomes of FDI, especially after the initial growth models were proposed (Solow, 1956). Since then, the extent of multinational activities has significantly augmented over the past two decades, implying FDI as a desirable element for economic development, mostly because it is characterized by a combination of capital, technology, marketing (Balasubramanyam, Salisu, & Sapsford, 1996), entrepreneurship and human resources management.

Rugman and Dunning (1973) and Dunning (1981, 1993, 2001) provide a comprehensive analysis based on ownership, location and internationalization (OLI) model. The study points to the fact that the size, growth, domestic savings, country's solvency, trade openness and macroeconomic stability variables are the catalysts of FDI (Ranjan & Agrawal, 2011).

Romer (1993) also emphasizes upon the role of FDI in transferring these factors across borders. Specifically, Romer (1993) considers FDI as one of the instrumental elements in the diffusion and dissemination of knowledge and assimilation of technologies and ideas.

The factors responsible for FDI inflows to transition economies (Central and Eastern Europe) are country risk, labour cost, host market size, and gravity factors. In a paper published in 2000 by Bevan, Estrin, and Grabbe (2000) it was found that during the period 1994 to1998, country risks were influenced by private sector development, industrial development, government balance, reserves, and corruption.

FDI often takes a form of capital flows from a parent company to its foreign affiliate by relocating technical factors from one region to another and substituting capital movement with labour mobility in host regions while profiting from domestic markets. Ethier (1986) suggests that one more driving force could be uncertainty and asymmetric information (Latorre, 2008).

Amongst many academic evidences that try to understand the reasons for cross-border investments, Mundell (1957) said that FDI could be determined by relative factor endowments and factor costs. He adds that in the presence of barriers to trade and migration, and with the existence of large differences between capital-rich and capital-poor countries, the incentive for capital flows is greater. The geographical distribution of latter-day investments, however, suggests that FDI does not target only low GDP-level and low-wage countries. In fact, many studies now suggest that additional explanatory variables affecting FDI should be incorporated in a general equilibrium model. In this context, many researchers have incorporated such additional variables that are assumed to affect cross-border investment decisions.



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Market size, domestic labour market conditions, cultural and language differences, exchange rate stability, governmental and geographical indicators, corporate restructuring and macroeconomic evaluation of FDI cash-flows, financial incentives, political instability, etc. are some of them (Tsoukis et al., 2004). New Trade Theories (NTT) and New-New Trade Theories (NNTT) have attributed FDI stimulus to the importance of product differentiation, existence of imperfect competition or trade costs and economies of scale in investment choice, capacity of the domestic market share from indigenous firms, self-selection of firms, educational variables and role of human capital accumulation, and the gravity model (Black & Krugman, 1991; Krugman and Venables, 1995; Benhabib & Spiegel, 1994; Deardorff, 1998; Melitz, 2003; Chaney, 2008).

FDI and Portfolio investment flows analyzed by Garibaldi, Mora, and Sahay (2002) to 26 transition economies in Eastern Europe including the former Soviet Union from 1990 to 1999 indicates that market size, fiscal deficit, inflation and exchange rate regime, risk analysis, economic reforms, trade openness, availability of natural resources, barriers to investments, and bureaucracy – all affect the FDI flows considerably.

While some of these studies conclude that there are growth benefits associated with FDI, many tend to find no effects or limited effects (results that are not robust across alternative specifications) through traditional channels such as capital accumulation for developing countries (Kose, Prasad, Rogoff, & Wei, 2009; Dabla-Norris, Honda, Lahreche, & Verdier, 2010). Sound macroeconomic policies can create a general stimulus for FDI spillovers to domestic investment by raising the marginal product of new investments and creating an enabling environment for technology diffusion (Mody & Murshid, 2005; Dabla-Norris et al., 2010).

As cited so far, it is clear that there are multitudes of academic investigations that indicate various results from the same set of parameters that affect FDIs in different ways and proportions under non-similar circumstances. Therefore, it is difficult to get substantial and reliable aggregate information about the determinants related to FDI that can be generalized across varied socio-economic circumstances.

The following section explores the standard determinants of FDI inflow to CLMV with help of Panel Data analysis. The techniques are borrowed from (Baltagi, 1995; Hsiao, 1985, 1986; Woolridge, 2003), and others.

The model has been based according to the FDI determinants given by UNCTAD (Table 2) (Walsh & Yu, 2010) such as market size, labour cost, trade openness, infrastructural facilities, gross capital formation, labour force, macroeconomic stability, and growth prospects, etc.

*Table 2. FDI determinants (as given by UNCTAD)*

| Determining Variables | Examples |
|---|---|
| Policy variables | Tax, trade, privatization and macroeconomic policies |
| Business variables | Investment incentives |
| Market related economic determinants | Market size, growth and structure |
| Resource related economic determinants | Raw materials, labour costs and productivity |
| Efficiency related economic determinants | Transport and communication costs and labour |

Source: United Nations Conference on Trade and Development, 2015



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Data from the World Bank has been used for a period of ten years (2005-2014). Given the lack of data, many significant variables such as the infrastructure index, cost of labour, transport and communications, efficiency of socioeconomic parameters could not be introduced or proxied in the model that has been used. The data set is sparse, and there are only six variables that could be employed to check the FDI determinants in CLMV.

## Market Size

Market size indicates potential for consumption and hence, trade. It can be measured by Gross Domestic Product (GDP), GDP per capita income, and size of the middle class population. These are expected to be positive and significant determinants of FDI flows. Literature made available through studies undertaken by Lankes and Venables (1996), Resmini (2000), Bevan et al. (2000), Garibaldi et al. (2002), Nunes, Oscategui, and Peschiera (2006), and Sahoo (2006) – all point towards the same findings. In contrast, Holland and Pain (1998) and Asiedu (2006) have found out that growth and market size are insignificant determinants of FDI flow (Narayanamurthy, Perumal, & Kode Chandra, 2010).

**Hypothesis 1 (H1):** Market size is proportionate to the amount of FDI attracted.

## Economic Stability and Growth Prospects

Higher market growth indicates a potentially larger market and more prospects that are promising. FDI, therefore, tends to flow to the countries with larger market size and higher economic growth rates in which larger economies of scale could be provided for FDI to exploit their ownership advantages (Culem, 1988). A country which has a stable macroeconomic condition with high and sustained growth rates will receive more FDI inflows than a more volatile economy. The proxies measuring growth rate are GDP growth rates, industrial production index, interest rates, inflation rates (Amaya & Rowland, n.d.; Dadush, Dasgupta, & Ratha, 2000).

**Hypothesis 2 (H2):** Stable macroeconomic conditions with high and sustained growth rates attract more inward FDI.

## Trade Openness

International trade tends to boost and support FDI. Much of FDI is export oriented and may also require the import of complementary, intermediate and capital goods. Most MNCs are now trading through Global Value Chains (GVC). In either case, volume of trade is augmented, thereby increasing trade openness (Lankes & Venables, 1996; Sahoo, 2006). Trade openness can be proxied as the ratio of the total trade by GDP (Nunes et al., 2006).

**Hypothesis 3 (H3):** Liberal business and economic policies attract more inward FDI.



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## Gross Capital Formation

Increase in the gross capital formation helps the economy grow. This in turn, will result in improving the investment climate and attract FDI. Krkoska (2001) and Lipsey (2000) found that there was no significant impact on FDI with an increasing rate of capital formation. This finding is purely from the dataset that they used for the study. However, a positive or negative and significant relationship between FDI and capital formation is anticipated.

**Hypothesis 4 (H4):** High gross capital formation implies potential for consumption and spending, thereby, attracting FDI.

Therefore, the present exploration has following four hypotheses:

**H1:** Market size is proportionate to the amount of FDI attracted.
**H2:** Stable macroeconomic conditions with high and sustained growth rates attract more inward FDI.
**H3:** Liberal business and economic policies attract more inward FDI.
**H4:** High gross capital formation implies potential for consumption and spending, thereby, attracting FDI.

While the dependent variable in this study (in all four countries) is Log of FDI Net Inflows (BoP in current USD); the independent variables are:

- GDP (in current USD).
- Inflation (CPI).
- Trade Openness.
- Work Force Participation Rate.
- Gross Capital Formation.

The independent variables that are expected to determine FDI flows have been chosen based on previous literature and availability of dataset for the selected period.

Based on the hypothesis posed, the estimated model is as follows:

FDI = f (market size, economic stability and growth prospect, trade openness, labour force, gross capital formation) (1)

Equation (1) can be changed into mathematical form using log-linear model:

$$LFDI_TOT_{it} = \alpha + \beta_1 LGDP_{it} + \beta_2 INF_{it} + \beta_3 LLFPR_{it} + \beta_4 LGROSSK_{it} + \beta_5 TR_OPNS_{it} + e_{it} \quad (2)$$

where:

$LFDI_TOT_{it}$ – log of net inflow of Foreign Direct Investment (BoP in current US dollars) for country i at time t.

$LGDP_{it}$ – log of Gross Domestic Product in current US dollars for country i at time t and is the measure of market size.



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$INF_{it}$ – Inflation Rate for country i at time t, which is the measures of growth prospects of a country.
$TR_OPNS_{it}$ – trade openness for country i at time t and is computed as the ratio of import of goods and services plus export of goods and services divided by GDP.
$LLFPR_{it}$ – log of total labour force participation for country i at time t.
$LGROSSK_{it}$ – log of gross capital formation (% of GDP) for country i at time t.
$e_{it}$ – error term over the time t.

## Findings from the Descriptive Statistics and Panel Data Estimation

The descriptive statistics and correlation analysis for the variables are given in the Table 3 and Table 4.

Trade openness (TR_OPNS) has the maximum value of 119.5749 and a standard deviation of 31.68617 (from Table 3). This is followed by the gross capital formation (GrossK) that has a value of 27.06087 and a standard deviation of 6.962616; while, inflation (INF) has a value of 7.595854 and a standard deviation of 5.547673. Clearly, trade openness is largely varied in the CLMV countries and bears significant impact on the attraction of FDIs. Also, gross capital formation seems to be next in line, in terms of attracting FDI but it is far behind in the impact that trade openness has (in this data set and study). The standard deviations of gross capital formation and inflation are close in value though there is a distinct gap in the measure of their means.

*Table 3. Descriptive statistics for the dependent and independent variables*

| Variables | Value | Standard deviation | Minimum value | Maximum value |
|---|---|---|---|---|
| LLFPR | 1.8971620 | 0.0127132 | 1.8842290 | 1.9164540 |
| LGDP | 10.2641300 | 0.5725018 | 9.4370460 | 11.2335600 |
| GrossK | 27.0608700 | 6.9626160 | 17.0979100 | 39.5662700 |
| INF | 7.5958540 | 5.5476730 | -2.9320740 | 22.6733200 |
| LFDI_TOT | 0.8007747 | 0.2153849 | 0.0082034 | 1.0614940 |
| TR_OPNS | 119.5749000 | 31.6861700 | 70.9726000 | 165.0942000 |

Source: Authors' own development

*Table 4. Correlation coefficients of the dependent and independent variables*

| Variables | LLFPR | LGDP | GrossK | INF | LFDI_TOT | TR_OPNS |
|---|---|---|---|---|---|---|
| LLFPR | 1.0000 | | | | | |
| LGDP | -0.4553 | 1.0000 | | | | |
| GrossK | -0.8838 | 0.4863 | 1.0000 | | | |
| INF | -0.4718 | 0.4393 | 0.4212 | 1.0000 | | |
| LFDI_TOT | 0.2816 | 0.3349 | -0.0354 | 0.0410 | 1.0000 | |
| TR_OPNS | 0.0240 | 0.7847 | 0.0660 | 0.3587 | 0.5454 | 1.0000 |

Source: Authors' own development



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The Correlation Coefficients' matrix show very high correlation amongst several variables. This does bring about a problem of multi-collinearity in the model. However, that problem is taken care of by the inherent techniques used in panel data analysis.

Intuitively, the variables do have a bearing on the FDI inflows in a host nation and can therefore, be considered in the model.

In the panel data analysis the Hausman (1978) test rejects the Fixed Effects model and hence, the Random Effects model is accepted. The findings from the Random Effects (RE) and the Ordinary Least Squares (OLS) models are given in the Table 5.

The results from Table 5 indicate the following:

- The regression from the RE model fits well. The adjusted $R^2$ is largely significant at 0.81 that means that the variation in the dependent variable is well explained by the independent variables in the model.
- All explanatory variables have the right signs (direction of change) though they may not be significant in several cases.
- The co-efficient signs for one out of five variables are negative. Positive values for coefficients indicate a positive impact of the determinant variable on FDI inflow and vice-versa. In this model, only the inflation (INF) variable has a negative sign.
- The coefficients of gross domestic product (LGDP) and trade openness (TR_OPNS) are statistically significant at high level of 1%, while the inflation rate (INF), gross capital formation (GrossK), and labour force participation rate (LLFPR) are also significant, but at 5%.
- Out of the five variables considered in the model, FDI inflows in the CLMV is more responsive to the variables: LGDP, GrossK, and TR_OPNS.

Hence, all four hypotheses that were set at the beginning can be accepted.

## India and CLMV: Prospects and Progress in FDI

The adoption of the "Look East Policy" by India in 1992 was an initiative towards developing extensive economic and strategic relations with the ASEAN nations (including CLMV countries). Since then India has progressed from a dialogue partner to the present status of a strategic partner. The economic

*Table 5. Results from the Random Effects (RE) and the Ordinary Least Squares (OLS) models*

| Variables | RE | | | OLS | | |
|---|---|---|---|---|---|---|
| | Coefficient | T-Statistic | p-Value | Coefficient | T-Statistic | p-Value |
| LLFPR | 0.2247 | 0.18 | 0.78 | 0.1456 | 4.11 | 0.10 |
| LGDP | 3.1894 | 17.93 | 0.00 | 3.2919 | 13.11 | 0.00 |
| GrossK | 1.4670 | 4.88 | 0.01 | 1.1441 | 2.92 | 0.10 |
| INF | -0.0010 | -2.55 | 0.01 | -0.0002 | -1.73 | 0.10 |
| TR_OPNS | 1.4416 | 5.01 | 0.00 | 1.4101 | 3.51 | 0.00 |
| Adjusted $R^2$ | 0.81 | | | 0.78 | | |

Source: Authors' own development



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and trade linkages which saw an expansion of trade volume stand as evidence to the deepened economic ties. During the last ten years, India's total trade with the CLMV countries has grown from $1.1 billion in 2004 to $11.2 billion in 2013, which was more than a ten-fold increase. Trade balance was in India's favour, with the surplus amounting to $2.6 billion in 2013 (United Nations Conference on Trade and Development, 2015). Among the CLMV countries, India has a trade deficit with Myanmar, owing to increased imports of pulses and forest products from the nation. In the last four years, India's trade balance with Lao PDR also flipped to a deficit, stemming from increased imports of copper ores and concentrates from the nation.

India's exports to the CLMV countries comprise pharmaceuticals; machinery and instruments; vehicles other than railway; plastics and articles thereof, and cotton. On the other hand, India's key imports from the region include rubber and articles, wood and articles of wood, ores, slag and ash, mineral fuels, oils and distillation, products, and coffee, tea and spices.

India and the CLMV share similar potential in manufacturing – these countries have a young workforce with labour abundance. The CLMV countries are also large potential markets for Indian products. The region has a population of 165 million, growing incomes, and a rapidly expanding middle class. In Vietnam alone, the middle class is expected to increase from 2 million in 2014 to 33 million by 2020.

However, India also faces competition from CLMV because of the integrated global value chains in South East Asia. For example, instance, in 2013-14, the phone manufacturer Nokia moved its operations from India's Chennai to Vietnam's Bac Ninh province largely to take advantage of cheaper regional logistics (Dixit, 2015). In fact, a survey by the Japanese External Trade Organization (JETRO) in December 2014 showed that base monthly salaries for manufacturing employees of Japanese-invested companies in CLMV countries were lower than those in India. While base monthly salaries in India were reported at $239, those reported for CLMV countries were $113 in Cambodia, $112 in Laos, $127 in Myanmar, and $176 in Vietnam (Japan External Trade Organization, 2014).

## Investment Opportunities in CLMV

As India is trying to tap the emerging industrial power of the CLMV economies, it is also seeking cooperation from individual cities in these countries. Some of the major potentials for investment and collaboration between India and the CLMV nations are:

- Basic Infrastructure: An area of grave concern, infrastructure situation of the CLMV region is amongst the lowest in the ASEAN region. The key reason being, limited economic capacity to invest in infrastructure. Development of infrastructure essentially encompasses railroad, airport connectivity, logistics and water supply, among others.
- Power: Cambodia has one the lowest electrification rates outside Sub-Sahara Africa and some of the highest energy costs in the world (World Bank, 2002).
- Agriculture and Allied Activities: There is gross lack of technology and logistical support for this sector. CLMV being largely agrarian, this sector could be capitalized upon to increase profits and steer growth.
- Financial Services: Financial sector in the CLMV region which is still relatively underdeveloped due to its isolation from global banking system, also presents opportunities for collaboration.
- Information and CommunicationsTechnology (ICT): With countries in the CLMV region still on the path of modernization and computerization, ICT is a potential area of investment.



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- Healthcare: The CLMV countries are overwhelmed with inadequate healthcare services, and thus face difficulties in meeting health needs of the population.
- Education: The CLMV countries face the common problem of low education participation, widespread adult illiteracy, and poor quality of education.
- Extractive Sectors: Mining and Oil and Gas.
- Tourism: The CLMV region is considered as one of the fastest growing tourism destinations in the world, bringing in foreign exchange, creating jobs, and contributing to economic growth. While the CLMV countries have strong comparative advantage in tourism in terms of natural and cultural heritage sites, this potential needs to be fully tapped to make it an instrument to spur broad based economic growth.

## SOLUTIONS AND RECOMMENDATIONS

While the econometric analysis shows that the chosen variables are statistically significant, literature and data confirm that although the CLMV nations are still lacking in trade openness, gross capital formation, tax laws, ease of doing business, transparency, etc., they do have the right climate to be tapped for FDI. CLMV countries need transport (physically links an area or region), logistics (not only physically links an area or a region but also harmonises the corridor institutional framework to facilitate the efficient movement and storage of freight, people, and related information), industrial (links key industrial nodes in a geographical area through integrated supply chain networks; these supply chain networks provide value-added activities along the corridor in order to meet respective customers' requirements), and economic (is able to attract investment and generate economic activities along the less developed area or region; physical linkages, logistics facilitation and supply chain integration must be in place in the corridor as a prerequisite) corridors to be developed urgently (Banomyong, 2010). Although CLMV nations are trying to address these issues, India's goal of deepening economic relationship with the CLMV countries also faces a number of challenges. For example, despite sharing a border that is 1,643 km long, India's immediate neighbor Myanmar is not connected to the country by rail and there is only one poorly maintained road that connects the two countries. In addition, infrastructure projects in the pipeline like the Kaladin Multimodal project and the India-Myanmar-Thailand highway are fraught with uncertainty in terms of execution. The construction of the trilateral highway has experienced numerous delays and may miss its 2016 completion deadline. Another challenge is the Indian government's policy itself. The government has still not defined which sectors need to be focused on by investors in the proposed manufacturing hubs.

India also faces competition from other countries already investing in CLMV. While connectivity may hinder Indian investment, in December 2014 China pledged $11.5 billion to develop 92 high priority investment and technical assistance projects in the Greater Mekong Sub-region, which includes the CLMV countries, Thailand, and China's Yunnan Province and Guangxi Zhan autonomous regions. 46% of these projects will be based in the CLMV countries. Although trade between India and the CLMV countries has increased ten times in the last decade, it is not quite robust in comparison to these countries' economic relations with other partners such as China and other ASEAN countries. Intra-ASEAN FDI in CLMV countries stood at $3.5 billion in 2012-2013 and Chinese FDI in CLMV countries stood at $2 billion. In the same period, more than 80% of Chinese FDI in the four countries went to manufacturing.



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Setting up manufacturing facilities in CLMV could help India tap into the highly integrated regional value chain networks within Southeast Asia and between Southeast Asia and China.

The "Make in India" campaign to set-up manufacturing infrastructure outside the country will help Indian companies will benefit from utilizing the easier logistics, integrated supply chains, and cheaper labor costs in the CLMV region. Competition with foreign companies in the CLMV will also increase the competitiveness of Indian businesses and as a result the quality of Indian goods and services which means that in the long-term, Indian companies will bring better production practices and improved technology back home. Provided that connectivity between India and CLMV countries improves, government support for investment ensures that companies will "Make in India" by utilizing regional supply chains (Dixit, 2015). In addition, the strong suit that India has in IT, Indian firms in this sector could have many prospects in the CLMV countries – investment in business affiliates and subsidiaries, as well as, joint ventures in the areas of e-governance, financial services and e-education, could serve both, India and the CLMV, well. Indian companies could also share their know-how in software programmes and services for banks and financial institutions in the region. India can actually participate in financial services, automotive industry, education and healthcare, given the comparative and competitive advantage that it has over other ASEAN (especially, CLMV) countries. The bilateral ties can be enhanced through technology exchange, development of investment promotion agencies, and regional co-operation such as the Mekong-Ganga Cooperation (MGC). Multilateral funded projects in infrastructure development, agriculture, health and education, as well as mining of natural resources, could well pave the way for augmented FDI opportunities.

## FUTURE RESEARCH DIRECTIONS

While India should look at streamlining opportunities and tapping investment potential in CLMV countries, the four nations should also make the investment environment strong. Since very little research pertaining to this aspect is available and data is scarce, a better understanding of macroeconomic variables and finding ways to enhance international relations between the CLMV nations and India would definitely bring up recommendations that could help in the implementation of enhanced multi-lateral trade and investment and strong regional cooperation.

## CONCLUSION

The CLMV have had steady growth in FDI inflows over the past decade or so, however, there are many lacunae in the socio-economic and political parameters, which, if developed and enhanced, would definitely make them an attractive economic group to invest in. In such an event, the four-some could well be a potentially dominant bloc to reckon with in the ASEAN and AEC. In addition, India's expertise, knowledge-sharing and investment in many sectors that need upgrading and expansion in the CLMV countries, are bound to enhance bilateral ties and increase socio-economic prosperity that is mutually advantageous for both, India and the CLMV.



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## KEY TERMS AND DEFINITIONS

**ASEAN:** The Association of Southeast Asian Nations is a politico-economic organisation of ten Southeast Asian countries formed in 1967. The CMLV has recently been a part of the ASEAN.

**CLMV Countries:** Cambodia, Laos, Myanmar, and Vietnam are known as CLMV countries. These countries are a part of ASEAN and transition economies, as well.

**Foreign Direct Investment (FDI):** FDI takes place when there is an existence of a controlling proprietorship in a business enterprise in one country by an entity based in another country.



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**Gross Capital Formation:** Capital accumulation/formation refers to the stock of capital and/or its growth, usually by augmenting saving and investment at the macroeconomic level. The gross measurement of capital formation is usually calculated before deduction depreciation.

**Inward Foreign Direct Investment (FDI):** When a foreign entity invests in a local economy by purchasing another business or establishing new operations for an existing business.

**Market Size:** In economic terms, a proxy for the potential market size can be expressed as Gross Domestic Product (GDP). The confines of a market (in the context of the chapter) are the economic size of the concerned country trying to attract FDI.

**Panel Data:** This term is used in Econometrics and Statistics, for multi-dimensional data frequently involving measurements over time. Time series and cross-sectional data are special cases of panel data that are in one dimension only (one panel member or individual for the former and one time point for the latter).

**Trade Openness:** This refers to the inward and/or outward orientation of an economy to trade with other countries. Some determinants of trade openness are trade barriers, import-export, infrastructure, technologies, scale economies, and market competitiveness.

**Transition Economies:** These are economies that are undergoing structural changes in order to become market-driven economies.

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## APPENDIX

*Figure 1. Imports of goods and services (BoP, current USD, in $ billion) – CLMV countries*
*Source: World Bank, 2015b*

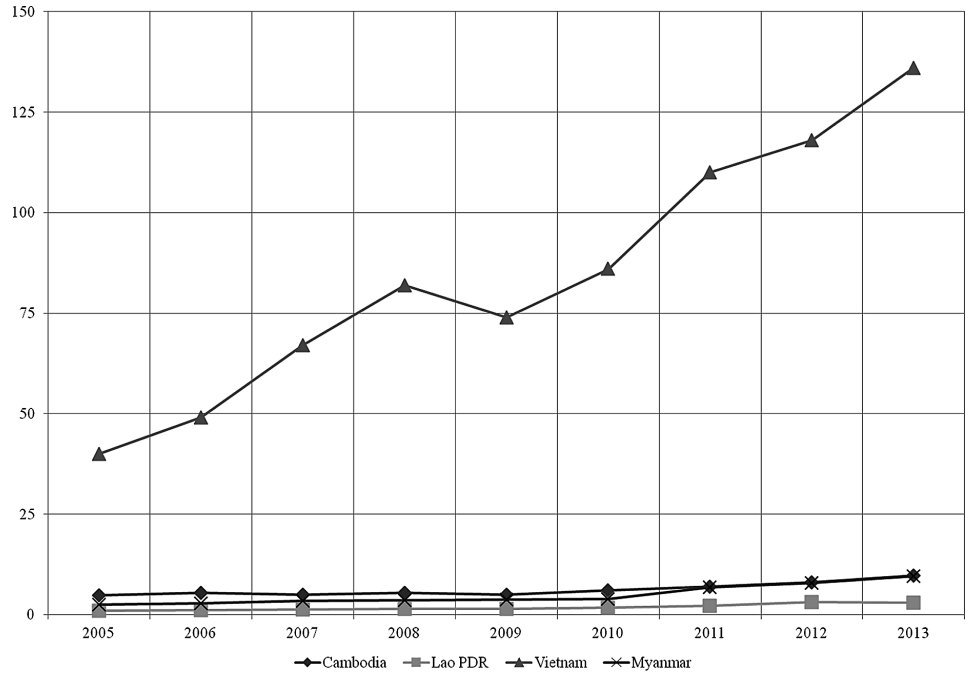
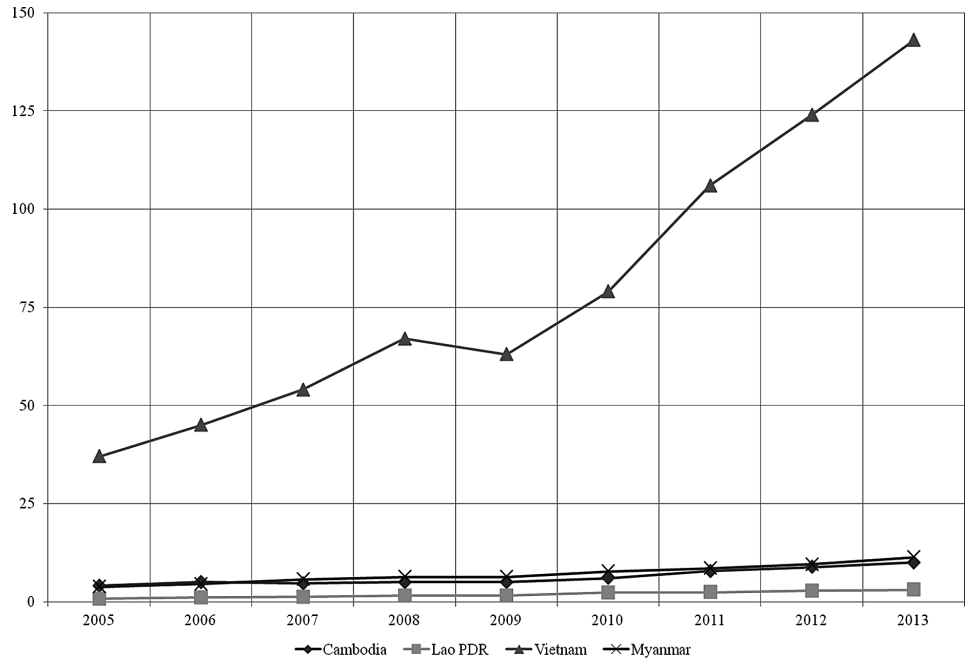



*Figure 2. Exports of goods and services (BoP, current USD, in $ billion) – CLMV countries*
*Source: World Bank, 2015b*






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*Figure 3. FDI, net inflows (BoP, current USD, in $ billion) – CLMV countries*
*Source: World Bank, 2015b*

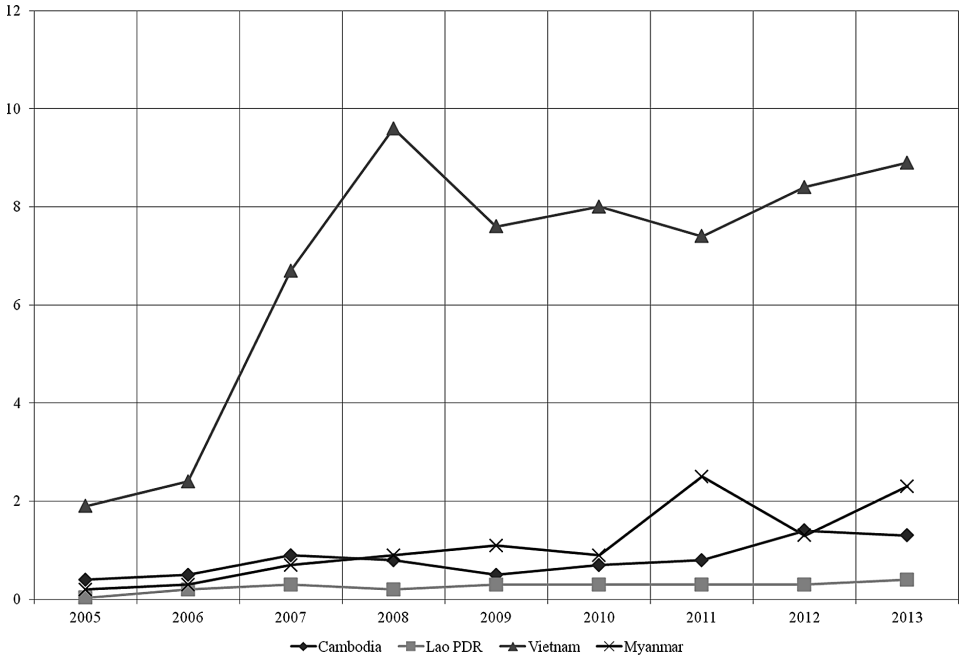
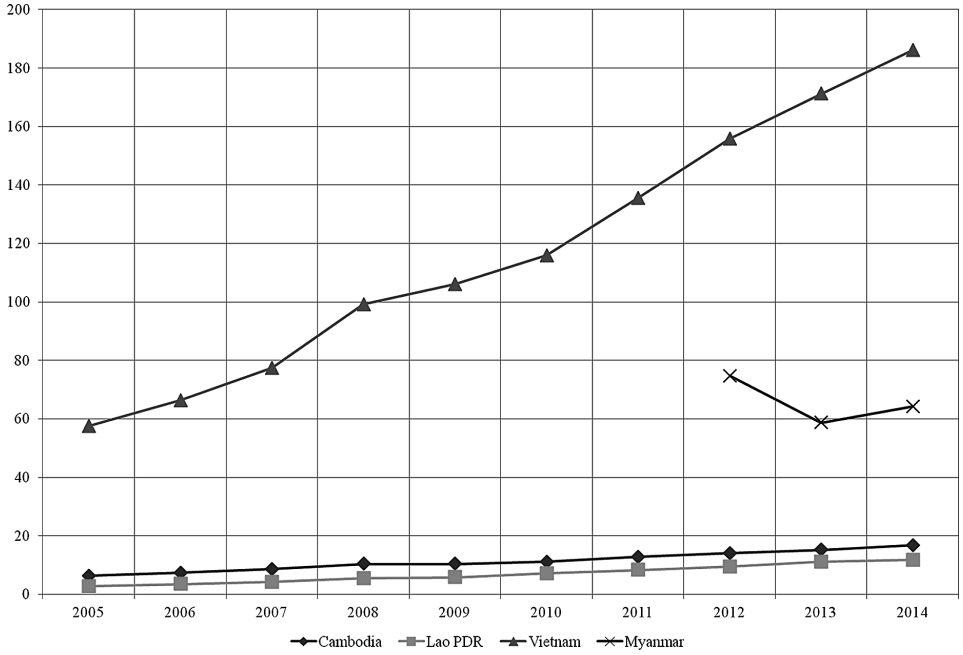



*Figure 4. GDP (current USD, in $ billion) – CLMV countries*
*Source: World Bank, 2015b*






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*Figure 5. Trade (% of GDP) – CLMV countries*
*Source: World Bank, 2015b*

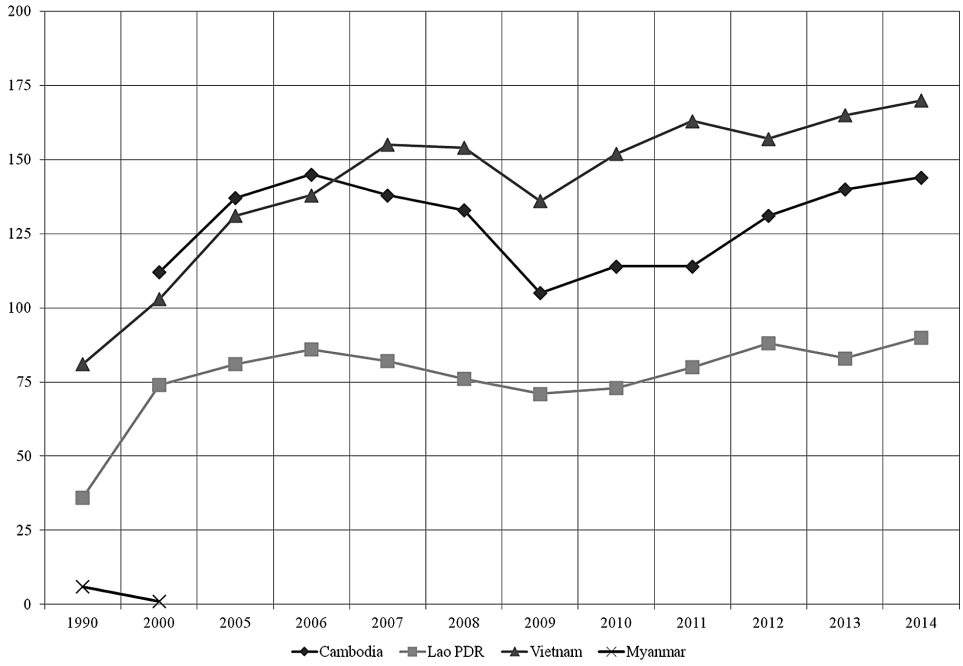
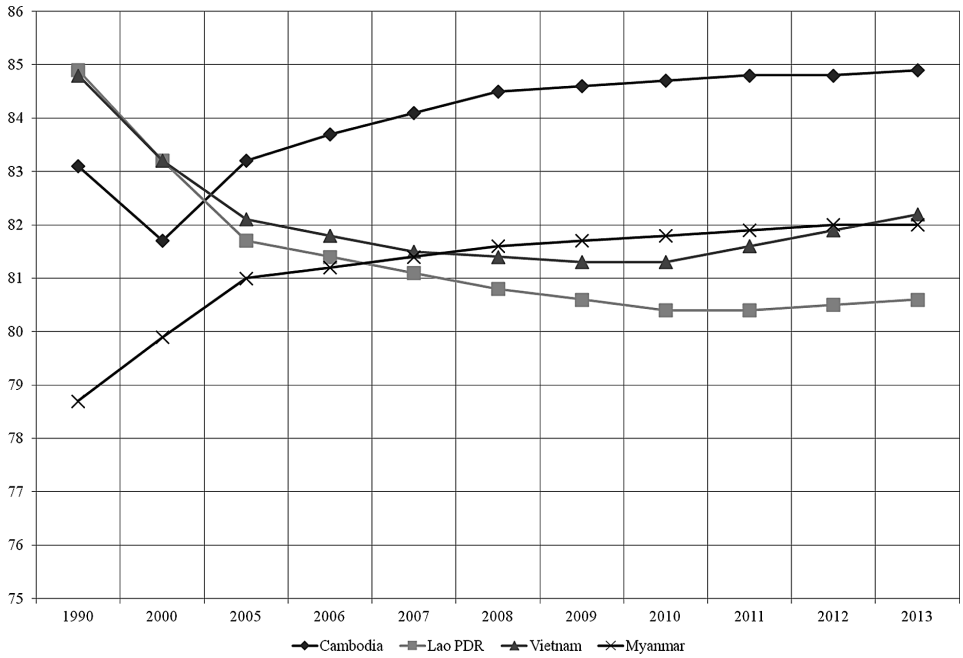



*Figure 6. Labour force participation rate – CLMV countries*
*Source: World Bank, 2015b*






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*Figure 7. Logistics performance index – CLMV countries*
*Source: World Bank, 2015b*

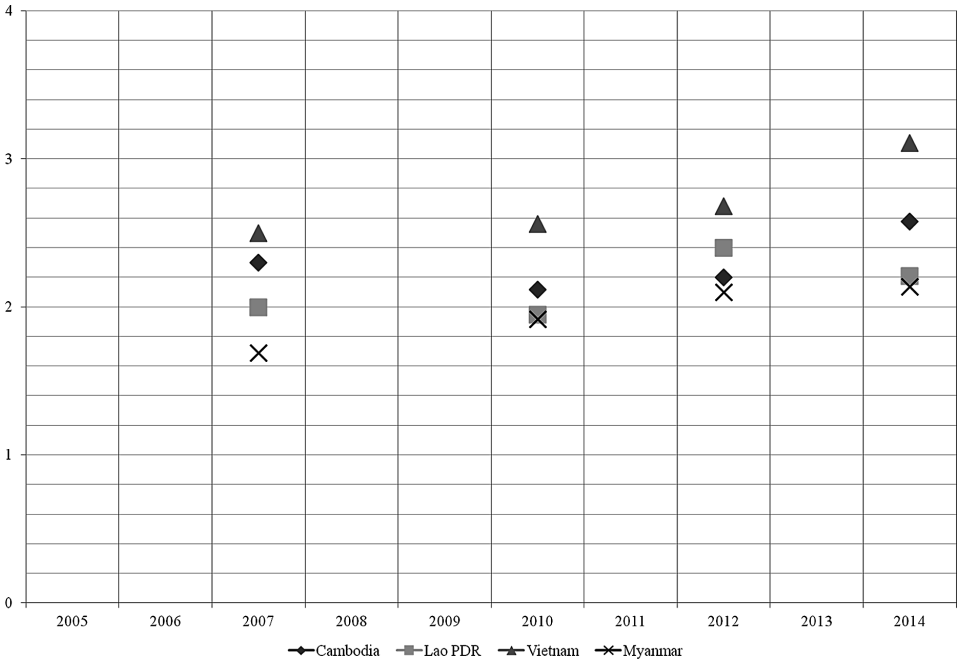
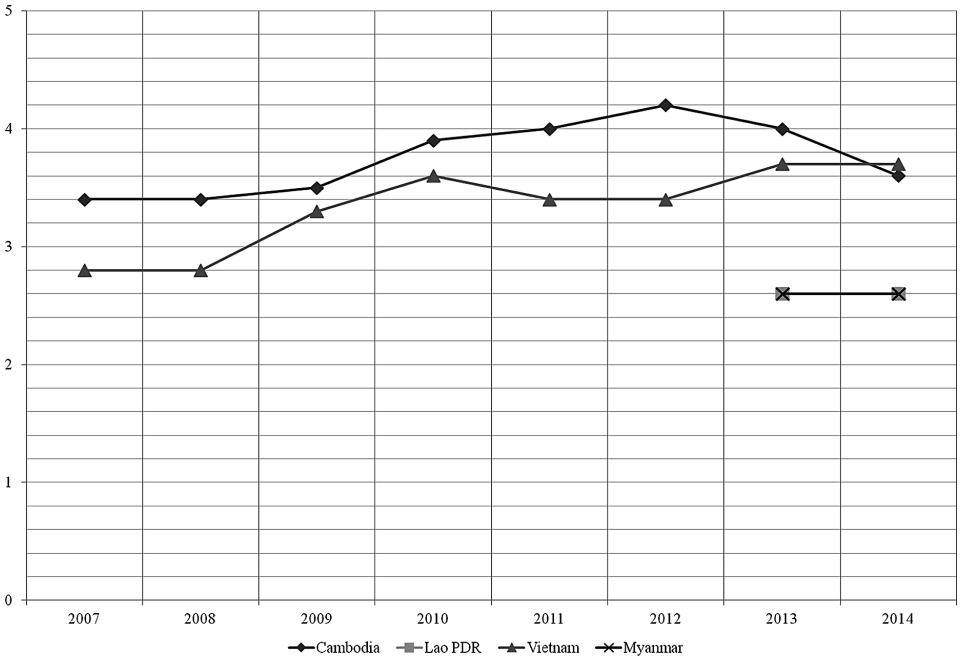



*Figure 8. Quality of port infrastructure – CLMV countries*
*Source: World Bank, 2015b*






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# Chapter 31
# Real Estate Crowdfunding: 2015 and Beyond

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## ABSTRACT

*Like a juggernaut, "crowdfunding" has hit the media, the financial markets and the common narrative by storm. Incipient in many ways, the intermediation of financing transactions online has become a billion-dollar industry. As technology has advanced, even recreated, industries, there seems none more primed than "finance", an inherently information business. By creating improved efficiency, both art and science of finance are enriched. A 21st century vestige of the 1980's syndication business, real estate seems to be enjoying the fruits of the crowd, with $1 billion of property financings conducted online in 2014, with an expected $2.5 billion this year. For sponsors and investors, there appears legitimacy to the online approach, underscored by the level of venture capital now finding home in this burgeoning sector. Yet, like its progenitor, might real estate crowdfinance find legislative, regulatory, and practical headwinds, stunting its progress? Still early, with business models, scalability and sustainability still suspect, the current momentum seems promising.*

## WELCOME THE CROWD

While coined as a term only a few years ago, "crowdfunding" certainly has taken the markets by storm. Now in its pubescent period, the investment and financing methodology of aggregating small amounts of capital through online interactive platforms now accounts for billions of dollars (or Euros or Yen) in capital formation and a breadth of new investment opportunities for global participants. Gaining visibility in non-securities based fundraising, *ala* perquisite platforms such as Kickstarter and IndieGoGo, the power of technology to efficiently expose private investment offerings is creating a changed landscape for existing (and largely analog) financiers and intermediaries. This is particularly the case within the real estate realm. 2014 was a breakout year for real estate crowdfunding, with over $1 billion being infused into property-related investments through a hundred or so platforms, with an expected 250%

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growth this current year (2015) (Massolution, 2015). Whether the growth of real estate crowdfunding is a function of discerning and executing a new and improved way of intermediating capital providers with capital users, or rather taking advantage of an opportune moment as swelling regulatory and legislative oversight hampers the commercial banking mother lode, it does appear that the market, as of now, shall be characterized by exceptional progress. But we do remain judicious in our view of the quality and expanse of such advancement, and core to this view, is the sustainability of the underlying crowdfunding business model, particularly for real estate.

## IF THERE'S A HISTORY, THERE'S NO MYSTERY

As I commented in the 2015 Massolution Real Estate Crowdfunding Industry Report, what we are witnessing is largely a 21st century manifestation of the real estate syndication model heavily utilized during the 1980s, at least for commercial real estate endeavors. Working either as a principal or as an intermediary, groups would raise funds from "syndicates" of accredited investors through the private placement of limited partnership offerings, with proceeds being used to acquire, rehabilitate, construct, or reposition commercial or multi-family real property. In the effort to aggregate such funds, the "syndicator" or say, sponsor, would prepare a placement memorandum, sometimes consisting of hundreds of pages, which it would provide individual investors generally by snail mail, and then "dial for dollars". Participant investment sizes were set at a level to induce broad participation, but not so low to the extent of creating a "herding cats" phenomenon. The verbal exchange between fundraising sponsor and prospective investors tended to be laborious, as many of the questions or comments were redundant from investor to investor, regardless the size of a particular investment commitment, whether $25,000 or $250,000. Telling the same story time and again, was a characteristic of the syndication process. And then there was the monitoring of who received a book, what the nature of the conversation was and finally allocating time to complete the one-on-one sales process. Post fundraise, the communication between sponsor and investors was equally arduous, layering more paper, snail mail, and repetitive repartee.

Enter crowdfunding, or more explicitly, the analog nature of fundraising communication between sponsor and investors going digital. Rather than authoring a paperback tome, crowdfunding platforms expose dozens if not thousands of investors simultaneously to an investment proposition through engaging and informative websites, with customer relationship management (CRM) systems to support both outreach and ongoing investor management. Simply, this has become the process of telling the story singularly to a plurality, underscoring the efficiency of digital communications. Consider the cost and time savings of creating a single digital copy and allowing through invited online access compared to the mailing out 500 individual books, and then following up on each. And yes, pursuant to securities regulations, each of the old style books were to be manually numbered and controlled. Further imagine if such "book" required an amendment or introducing an update in the project. The efforts and costs to distribute what needed to be shared for informed investment decision making drastically have been reduced. This has wide ranging implications: in reducing the cost of intermediation, smaller transactions might be economically "syndicated", as one can only assess so much in intermediation fees so as not to severely impact investable funds, nor gouge the economics in the end for the investor.

Another aspect of online syndication is that a broader audience can be reached. There has been nomenclature applied here, such as the "democratization" of investing, which respectfully has a semblance of truth. Reducing the cost of intermediation, and specifically on a per investor basis, smaller minimum



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investment sizes can be handled, leading to larger syndicates, which allegedly can be managed efficiently. A 1980s syndicator would be glassy eyed with a thousand participants in a million-dollar deal, and probably couldn't charge enough to make it worth his while, let alone spend time on property requirements.

Certainly one key difference from the syndicators of yesteryear is that the motivations on investors' part to invest has changed. Back in the 1970's and 1980's, individual marginal tax rates were elevated to 70% (Taxfoundation, 2015) for incomes over $200,000 and a key selling point of the syndications was that the periodic passive losses from owning real estate (largely through the depreciation expense) could be used to offset an investor's other ordinary income, thereby reducing taxes. Thus real estate syndications were real tax driven, as tax shields, and potentially in the end, if the property materialized a gain on sale, even better. Because of the huge demand for such tax shields, there was an onslaught of demand and syndicators continued to aggressively accumulate investor capital to put to work. What transpired though leading to a compression of this industry were: (i) the excessive level of investment led syndicators to invest in weaker properties and the actual losses ensued; and (ii) the federal government changed the tax laws, so that no longer could passive losses offset ordinary income. In effect, the syndication industry came to a halt.

A key difference between that period and now is the offerings made by the crowdfunding syndicates are investor motivation and the common usage of debt as a financing structure for the underlying properties rather an ownership equity position. Rather than owning the property as an equity holder, and advantaging the passive losses, the typical financing structure is a first lien secured loan, which would get paid back with interest upon the disposition or refinancing of the property. The interest rate on the loan, typically between 8% and 14%, addresses the appetite for yield that current investors maintain. We do recognize that many platforms offer equity type investments, but over 80% of 2014 RECF financings were embodied as secured promissory not

But back to the democratization spin: this is really not a new twist. In 1960, under an act of Congress, the Real Estate Investment Trust Act (Taxfoundation, 2015) was instituted, creating a mutual fund methodology for real estate investing. It was observed that real estate, particularly large commercial buildings and diversified portfolios of income-producing properties were the exclusive province of institutional investors, and legislators developed REITs as means for small investors to aggregate their funds to be deployed into larger real property. And to support the use of REITs as an investing aggregate, they were assigned a favorable tax treatment (namely the REIT itself was non-taxable subject to it distributing 90% of its income). The REIT methodology has proven to be advantageous to income-seeking investors, by offering portfolios of both real property ownership interests (equity REITs) and real property mortgage loans (mortgage REITs). The REIT industry is significant, with over $900 billion (REIT, 2014) of REITs outstanding, ninety percent of which are in equity form. In fact, taking the US lead, there are now REIT genres in over thirty countries.

## APPETITE FOR ALTERNATIVES, REAL ESTATE IN PARTICULAR

Over the last twenty years and in particular the seven years, spurred with the convergence of the financial crisis and a broader quantitative easing from the Federal Reserve and other central banks, there has been dramatic shift in investment portfolios to alternative assets, and in particular real estate. With interest rates resting at an all time low, many investors are not only seeking out higher returns yet are desperate to find them given their own requirements. Think about pensions funds, whether public or



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private, that must address actuarial payout requirements to their respective retirees. Close to half of public pensions in the US are underfunded, so not only are they challenged to meet quotidian payouts, but they have catching up to do for the accruals that continue. Bonds, or debt obligations of private and public sector entities, including the sovereigns, may be less risky than holding real estate, but investors have recognized that spreads between prime commercial real estate assets and high quality bonds have increased significantly over the last ten years, and their risk/return thesis has steamrolled the growing interest into enhanced real estate allocation. Currently we have seen interest rate differentials of close to 300 basis points (3.00%), between prime assets and high rated bonds, thus in a low interest environ, one can understand the move.

In general, alternative assets are increasingly becoming a staple in larger investment portfolios. For decades, traditional or core assets, such as public equities and bonds, represented the bulk of an investment portfolio, whether that is an individual investor or an institution overseeing billions of dollars of investable funds. But certainly over the last ten years, we have seen a demonstrable allocation away from core assets into many things alternative, such as private equity, venture capital, real estate, hedge funds, and even commodities. This has been a function of macroeconomic challenges and conditions, coupled with a growing comfort in what had been heretofore considered illiquid assets. And we are witnessing this practice across investor classes.

From a current macro view, public equities are priced up, elevating to price/earnings (19x-27x for S&P500 based on the analyst, The S&P500 PE Ratio, n.d.) and other performance ratios to levels not reached in since the tech bubble years in the early 2000's. With a historical ten-year average of a P/E of 15, certain analysts believe that the equity market is over priced by 30%. This could continue to propel upward though assuming a return of the retail (small) investor into the market, who has been sitting on the sidelines since the financial crisis of the late 2000s, and the elongation of quantitative easing by the Federal Reserve Bank, keeping interest rates low and liquidity available. But low interest rates have softened the appetite for fixed income investments, like bonds, as investors are seeking higher returns that what is readily available. Further, as analysts suggest equity prices are high, they also anticipate that market interest rates will gradually rise, negatively impacting bond prices. All said, investment capital must find a home and with the challenges of generating targeted and required returns, we are witnessing a marketed shift to alternatives.

But this is not defaulted assertion, one of chasing yield, for the reallocation to alts. Alternative assets provide investors new avenues to manage portfolio risk and return, correspondingly targeting certain outcomes, addressing exogenous factors such as interest rate movement and inflation. In fact, alternatives have become a strategic imperative in most larger portfolios. Many sizable investors whom once allocated a small portion (<5%) in search of pure "alpha" (above market returns), have now developed increased internal capability to pursue alternatives as a fundamental strategy. This is not manifested as a merely an increased allocation to managed venture or private equity funds, which still command expensive costs with management fees and carried interests. This is rather the desire to commit more funds, with better economics, including high levels of direct investing in these asset classes.

For institutional investors, alternatives will account for over 26% of their portfolios, according to a McKinsey & Company 2014 research report (McKinsey Company, 2014), and this escalates to about 30% for those investors with over $10 billion of assets under management. And in respect to such portfolios, nearly ten percent is dedicated to real estate.



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## REAL ESTATE AS AN ASSET CLASS

In assessing asset classes, investors' focus is generally on return, but in the context of other characteristics and criteria, such as liquidity, principal risk, comparability to other classes, interest rate levels, and volatility to name a few. And the basic premise is that the higher return being sought, the higher the risk being taken. With respect to real estate, some of its attributes are as follows:

- Its a tangible asset, i.e., you can see it and touch it.
- It typically generates return in two ways - through current income and capital appreciation
- With the exception of investing through publicly traded REITs, it is generally considered illiquid, meaning it will take some time to monetize the asset into cash, and when it is monetized, there is a high friction cost, such has there are typically selling or brokerage commissions.
- It is generally viewed as a complementary addition to the portfolio as it has low correlation with the core asset groups, i.e., its value moves independent of stocks and bonds, and thus can diversify or reduce overall portfolio risk.
- It is considered a hedge against inflation, as its income may rise through rents as overall price levels increase.
- It is financed with a combination of equity and debt. Debt investors may enjoy a fixed return through interest and principal payments while mitigating their risk with a secured interest in the property. Equity investors capture a variable and hopefully higher overall return, through rents and property price appreciation, which is enhanced by using the "leverage" of the aforementioned debt.
- And lastly, real estate's value tends to be highly localized due to market conditions, credit availability, and the timeliness and breadth of information available on the property.

In terms of investing in real estate, there are various methods, such as investing in pools of properties with others or on an individual property level, and in the financing instrument itself, namely equity or debt. As discussed, there are REITs (Real Estate Investment Trust), which enable investors to pool resources together and purchase a larger property or its underlying debt.

Other mechanisms to invest in real estate are through smaller limited partnerships or other Special Purpose Vehicles (SPVs), which also enable individual investors to pool funds to acquire medium sized properties, generally outside the range of the single investor individually. Sponsored generally by a syndicator, this further allows for diversification as well as passive investing, as sponsors serve as managers, for which they are compensated. Crowdfunding makes use of LP and other SPV structures to hold investment interests on behalf of the small investors providing for some level of bankruptcy or liability remoteness. And as stated, with either REITs or LP structures, real estate crowdfunding is the newest way to aggregate funds, but typically using online communications to facilitate capital raising and ongoing reporting back to the investors.

An additional way to gain real estate exposure is by acquiring property on one's own, be it residential or commercial, which is then rented out to a tenant. The investor, now landlord, bears all the responsibility of being the sole owner, such as being obligated on the mortgage financing, property taxes and insurer, dealing with maintenance and repair issues, and generally managing the relationship with the tenant. Certainly, there is a tradeoff in such active investing with doing something more passively, but there are costs and return limitations in the case of aggregated investing.



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## TYPES

Real estate is not a one size fits all proposition and the crowdfunding industry has been exposing most to its investor communities. There are many subclasses of real estate, each enjoying different attributes, risk elements, and return expectations. Further, depending on the subclass and the purpose of the underlying financing, which investment capital is deployed, time horizons may differ, as well as the nature of return being sought. As earlier described, real estate can offer two means of return – current income and capital appreciation, and based on the structure of the financing program and type of property, returns could emanate from either or both means.

Amongst the various subclasses are (Massolution, 2015):

- **Commercial and Industrial (C&I):** This subclass generally consists of office buildings, warehouse and distribution facilities, and retail space, which are leased out to private and public parties, thereby generating rental income. Such leases can be structured on short-term or long term basis, consist of flat payments or have periodic adjustments, and can even be tied to the operating performance of the lessee, in the case of specialty retailers with "percentage rent" clauses. In recent years, there has been considerable investment in redeveloping existing properties as many of the most active urban areas are gentrifying and repositioning themselves, creating incremental lease rates, and thus yield for investors. This subclass constitutes the largest proportion of the REIT industry.
- **Hospitality:** Think hotels and resorts: these properties generate income from providing lodging paid on a short-term basis, while offering amenities, such as food and beverage services, i.e., restaurants, golf, spa, social function services and business conference facilities. Generally suffering during recessionary times as both business and vacation travel becomes anemic, hospitality participants have enjoyed a substantive upsurge since 2011, with improving economic conditions buoying both business and consumer spending. During 2014, one RECF platform offered a partial equity interest in the Hard Rock Cafe Hotel, combining both economic incentives with patronage elements.
- **Multi-Family Residential:** This subclass refers to those properties deriving rental income for periodic residency, such as apartment buildings, but also cooperatives, duplexes and condominiums, which may be individually owned, and serve as rental property or primary residences. As purchase prices of single family residential have risen over the last three years, the demand for rentals has escalated significantly, which in turn has provided compelling income streams for multi-family investors.
- **Single-Family Residential (SFR):** This represents properties independently owned and detached from other properties, which serve as either primary (or secondary) residences or used for rental purposes. The value of US SFR properties approaches nearly $20 trillion, making it the second largest asset class in the US. Globally, residential real estate has been estimated at over $110 trillion, witnessing a considerable move upward over the last four years, bouncing off the temporal nadir of the crisis years. New means of SFR exposure have been practiced during such time as large real estate private equity firms and sponsors, such as Blackstone, Starwood Waypoint, Colony and others have accumulated large SFR portfolios or have purchased bulk packages, known as "tapes", of SFR properties owned by mortgage lenders, a result of foreclosing on delinquent home loans. Such bulk purchases are generally done at deep discounts, with properties then becoming part of a growing rental home portfolio.



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- **Infrastructure:** Generally, this subclass includes projects funded by either public sector entities or in collaboration with private sector participants and non-governmental organization (NGO). Included projects would be roads, bridges, storage facilities, educational facilities, student housing, agriculture, including vineyards and forest lands. In many cases, municipalities may take the lead by "floating" tax-exempt bonds, or some combination of NGOs and for-profit organization participate with complementary funds. We have categorized this as potential revenues may be derived from such projects to repay the capital provider, such as a bond issuer.
- **Community Projects:** A subset to "infrastructure", there is a growing public sentiment and participation in financing community projects for the purpose of improving the socio-economic condition, rehabilitating dilapidated structures or creating a structure (e.g. fountain) honoring a community leader or organization. These developments are generally not "revenue generating", so no economic return or reimbursement is being sought by capital providers.

## FINANCING AND INVESTMENT STRUCTURES

There are generally two approaches used in the structure of the applicable financing. The first approach is for capital providers to invest as equity participants, wherein they own a contractual percentage of the property being financed. Depending on the legal structure being used (to be discussed herein), such equity investors are "shareholders", much like stockholders are in an operating company, and whose economic return is largely based on the appreciation of such company. Certainly, such property "equity" holders may also participate in the current income that is generated from said property, such as corporate shareholders may enjoy periodic dividends. With the current interest rate environment, many real estate equity investors are primarily attracted to the stream of payments from lease income, and secondarily to the overall appreciation of the property, which would be realized upon its disposition. Net rental income as a percentage of the original investment principal may compare favorably with other fixed income alternatives, such as treasury bills and bonds, and corporate obligations.

The other approach is to serve as a lender on the project, i.e., provide capital in the form of secured debt. This has been the predominant form of finance for projects finance through crowdfunding platforms. From a risk and return perspective, investing in debt is generally lower risk, given that the property as collateral is pledged in support of the loan and such debt ranks senior to the equity in the case of liquidation. But with lower risk comes a lower anticipated return. Such return is generally limited to an interest rate, which in most crowdfunding cases, is fixed during the life of the investment. But given some apparent lack of credit availability from conventional sources, such as commercial banks, various platforms (like Patch of Land) provide high yield short term loans up to 12 to 18 months. Another area of debt financing which we will discuss is in the residential mortgage space, with platforms following the lead of non-bank mortgage originators offering attractive, price-driven, low friction mortgage loans to homebuyers and homeowners.

In either the debt or equity structures, sponsors or the platform will frequently set up an investment entity, a Special Purpose Vehicle (SPV) as earlier referenced, which serves as the aggregator of investor funds and acts as the nominal owner of or lender to the project. For legal, regulatory and management reasons, the SPV will be the single owner of the investment structure and be overseen by the sponsor, who will manage the project on an ongoing basis. The SPV structure has been used in large part to have a single "voice" or vote on select matters, and would represent as a single shareholder for corporate gover-



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*Table 1.*

| Structure | Debt | Equity |
|---|---|---|
| Role of Investor | Lender | Owner (Shareholder) |
| SPV Structure | Limited Liability Company, Limited Partnership, S-, C-, B- Corporation, Delaware Statutory Trust | Same |
| Fundamental Characteristic | Loan collateralized (secured) by real property and assignment of leases | Ownership Interest in the Property |
| Documentation | Promissory Note and Mortgage or Deed of Trust | Title of ownership on Grant Deed or Warranty Deed. Shareholder Agreement |
| Rights and Defaults | Creditor Rights – can pursue foreclosure in the case of default, such as non-payment of interest and/or principal when due | Shareholders Rights – Subject to underlying Investor Rights Agreement |
| Terms and Conditions | Fixed Maturity and Payment timing; Limitation on additional debt; balance sheet and operating covenants | Evergreen Maturity; voting rights; registration rights; and rights of first refusal on subsequent financings |
| Investor takes Property Price Risk | No. Debt is a fixed principal obligation | Yes. If the price rises, the investor enjoys gains. If price drops, investor incurs loss. |
| Economic Return | Periodic payments of interest on outstanding principal balance of loan, plus the return of principal. | Periodic payments of Income or dividends, plus participation in the price movement of the property, either up or down. |
| Liquidation Preference | Priority position over Equity. | Subordinate to Debt. |
| Transferability | Yes, subject to securities laws | Yes, subject to securities laws |
| Legal Recourse to Owner | Possibly, depending on legal structure of investment vehicle and terms of Debt by Lender | No. Generally limited to investment amount. Sometimes Equity Agreement includes capital calls, i.e.., request for additional equity investment. |

nance purposes. While there are many SPV structures, the typical form is a Limited Liability Company/ Corporation (LLC), which blends elements of a corporation and a partnership, providing creditor and liability protection for LLC members, and pass-through tax treatment so that the SPV is not taxed as the entity level, thereby avoiding two layers of taxation – at the corporate level, and when distributions are made, as the member or shareholder level.

Table 1 is a comparison of the two financing approaches (Massolution, 2015).

It is worth noting that with the onslaught of crowdfunding, approximately 80% of the platforms and 90% of the funds raised to date have been in a loan or debt structure. On one hand, firms like Patch of Land, have made a market in providing short-term, high-yield loans to sponsors and developers seeking to renovate and "flip" a property. In 2014, Patch completed approximately sixty-five transactions, with an average transaction size of $350,000 (Massolution, 2015). Since then, both its overall capacity and average transaction size have increased precipitously.

The largest of the RECF platforms in terms of capital deployed, LendInvest, has focused on providing mortgage loans to aspiring homebuyers and homeowners, predominantly in the greater London market. During 2014, it is estimated that over $200 million of mortgage loans were originated by LendInvest, with a global reach continuing.



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## PLATFORM APPROACHES

While we have identified during 2014 nearly 100 platforms engaging in some level of real estate finance intermediation, such platforms take different approaches to how they conduct their activities. This is really a matter of what they do, and for whom, as well as the types of economics they may derive.

We distinguish between "objective" and "subjective" platforms, or in more colloquial terms, "marketplace" facilitators and "direct issuers". In the former case, there are numerous platforms that have constructed their respective platforms to serve as a *utility* for sponsors and other types of fund raisers. They have built the infrastructure for sharing an investment proposition with their online network of investors, and handle most activities through the fundraising process. Simply, their sponsor client is "renting" the platform to enable the fundraise, wherein the platform is compensated in usage fees. From a business model standpoint, these platforms are driven by volume of transactions and increase fee generation.

In the "subjective" category, this is generally sponsor-based, i.e., the platform is directed as an extension of the sponsor, possibly even owned by the sponsor to efficiently raise funds. Relationships with the investor network likely pre-exist, with now such relationships being moved from an analog engagement to one digitally. This is very much the 21st century version of the older syndication model, where technology is used as the means of communication, but the economics of the syndicator remain the same – earning various layers of fees, coupled with a significant profit participation.

There is a third approach, considered a hybrid, which in most ways is a marketplace utility as described above. However, as an added feature to the service offering, certain platforms have arranged for interim financing, via lines of credit, where the platform will pre-fund the investment opportunity, assuring the sponsor has the capital to pursue his effort, and then take it upon themselves to remarket on a fractional basis the project to its investor base. Taking principal risk in terms of pre-funding, such platforms remain confident that their investors will afford the necessary take out. A number of the platforms that have raised venture and operating capital, have used their balance sheet liquidity to enable such warehouse financing to take place, rather than third party credit facilities. Of course for taking such risk, these hybrid platforms earn higher fees and may in fact participate in the overall performance of the financed project.

## THIS IS STILL A FINANCE BUSINESS

While we can wax on about the merits of the internet in capital formation, a most pressing palaver is one that is fundamental within the media industry: what is more crucial - content or distribution – to the success of a platform? Certainly we can default to affirming both, indicating that one needs to develop strong and absorbable content, while cultivating reach. But in the end, finance is an information business, and although the 'net enables investors to be engaged globally at tremendous pace, the quality of the content will determine winners from losers. Democratizing the investment process by introducing more levels of investors, one need take heed that while enabling investors to participate, are they being delivered appropriate information to make an informed investment decision, and further, do they have the acumen to comprehend the content and its caliber? And do the new world intermediaries, in their betrothal to online engagement, actually assess and, as many espouse, "curate" the transactions with the appropriate level of insight and discipline, or shall we see the exposure of deals adversely selected, as fundraising sponsors see this as a new, and maybe only, path to raising funds for their projects?



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As a directed aside, there has been an active, though lengthy, exercise at the Securities and Exchange Commission to reassess the current definition of "accredited investor" (Accredited Investor, n.d.). As of now, nearly every RECF platform exclusively directs its opportunities to the accredited investor. Developed as part of the Securities Act of 1933, the SEC provided an exemption to public registration of securities if issuers were to sell to those investors of means, namely those that had both the financial capacity to lose the capital they invest, but also had the wherewithal to investigate the merits of the opportunity. While earlier amorphous as to what constituted "means", in 1982 in a partial rewrite of the '33 Act, Regulation D was established defining an 'accredited investor' in terms of specific income and net worth levels. Yet since 1982, the absolute levels of income ($200,000 for single natural persons; $300,000 of married couples) and net worth ($1 million) have not been adjusted, with the exception of the personal residence exclusion from net worth. Well, over thirty-three years, one does recognize the value of the dollar has been impacted by time and inflation. Inflation adjusted, income and net worth levels to remain on par with 1982 would see a "bump" in income levels to $600,000 and a net worth threshold of over $3 million. This would in effect "de-democratize" the private investing world, removing nearly 70% of the currently classified "accrediteds" from the market.

In current Commission discussions about the definition, a key proposal deals with the financial acumen of the investor to determine whether or not s/he is capable of assessing the risks, given professional status, academic training, or germane credentials, such as a CPA or CFA. While not promulgated, the concept of credentials and observed acuity to determined accredited status makes tremendous sense, and, as stated, the ability to understand and assess the risk was core to the original definition. It does not go unnoticed that most of the wealth of the US is based in privately held companies and the ownership represented in unregistered securities. The existing exclusion for "insiders" (i.e., directors and officers) is predicated on knowledge of the company and its prospects.

This diversion into how the SEC may reconstitute the definition of accredited investor is apposite to the role of content provided by the crowdfunding platforms. Depending on the platform, and how they consider their role as a procurer of content, it is implied that is a level of responsibility on these screens to investing to provide adequate and comprehensible content for decision review and making, particularly as they are being paid to facilitate

## CUSTOMER PROPOSITIONS

While we recognize that certain platforms are appendages of direct sponsors to supplement their direct fundraising activities, we will really address those platforms that are "fee for service" providers. Specifically, a sponsor of a real estate investment project is engaging a crowdfunding platform to assist in and manage the fund raising process, as would an investment bank or registered intermediary. To wit, the platform is compensated, largely on its success to raise the requisite funds through its online intercession with its installed investor community. Because of securities regulations, this is a 'closed system' where investors need to be registered within the platform and communication on any offering is done within a secured environment. In effect, while the platform gets compensated by the sponsor (user of capital), the sponsor engages the platform given its base of investors, prescreened with a hopeful appetite for the 'product' the platform avails. In essence, as with any intermediary, there are two customers - the buyer and the seller, in other words the sponsor and the investor.



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## LET US REVIEW THE PROPOSITIONS FOR AND TO BOTH

Why would a sponsor engage a platform? Simply, to raise capital on its behalf. The use of intermediaries to drive the fundraising process is an old discipline, but one that typically has scale issues. The time and effort to develop content, package, distribute, engage and close investors is considerable, and sponsors may generally choose to allocate that responsibility to "hired help". Intermediaries, particularly investment banks, are engaged given a demonstrated ability to work with stables of investors, understanding their respective desires and inclinations for investment opportunities.

Sponsors, or users of capital, have a series of motivations for using a real estate crowdfunding (RECF) platform. Fundraising becomes much more efficient, as the financing process is the creation and delivery of information passed on to investors for review. By using an internet-based platform, the reach "horizontally" and "vertically" is tremendously enhanced. From a nomenclature basis, "horizontally" addresses the breadth of reach using online means; in other words, as simple and timely as communication can take place with an investor in San Francisco, the same communication concurrently can take place with investors in New York, Los Angeles, Chicago, even Rome and Hong Kong. Rather than using analog means, simultaneous distribution and reception of content through digital means has altered the landscape measurably. This is about telling a story "singularly to a plurality", as earlier stated.

Additionally, the use of technology allows the investment story to be shared in a more robust way, rather than merely in written format. The ability to depict the story "vertically" can enhance the investor engagement, deepen the knowledge of the project for the investor, which together can improve the likelihood that the investor may participate. Being able to use content beyond that which is "flat", such as script and photographs, sponsors and platforms can utilize videos, 3-dimensional depictions, interactive modeling, and provide online interviews with the principals: all of which creates more resonant story-telling.

Beyond the sharing of the investment to the network, technology also creates efficiency in ongoing investor management. Certainly, pitching the opportunity is key, but the administrative benefits through the fundraising process, say which may require updates, amendments or edits, can be performed with greater efficacy, and including post-transaction reporting. Do note that applied digital technology also addresses the ability to deal with more participants which may have smaller individual investments. Imagining an analog offering of $5 million, with a minimum investment of $5,000. Translating into up to 1,000 investors, this could be an absolute nightmare if dealing solely with analog (paper and phone) communications. This ability to deal with more fragmented networks enables broader reach to more levels of investors as compared to requiring larger minimum investment sizes.

And from the sponsor's standpoint, by having the ability to aggregate smaller sums from a larger contingent of investors, may in fact improve the overall economics of the deal for the sponsor. Many times, when a single large investor, *ala* an "anchor" investor, participates, such investor may desire to improve its own economics as it may view itself as critical to getting the deal done. This may translate into lower management or transaction fees to be earned by the sponsor, or a reduced profit participation. Either way, the "democratization" of investment can avail benefits to both the smaller investor and the sponsor.

Lastly, a growing motivation for sponsors to use such platforms is that financing may be committed up front. Whether a sponsor-driven platform or a hybrid, numerous platforms are taking "principal" risk, wherein they are prefunding the investment, intending to lay off the investment to their investors afterwards. For the sponsor, he receives his targeted funding without the risk of a crowd market's dismissal



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of the opportunity. Quite true that there is a cost for such "bridging", but for the sponsor, his returns are more clearly based on the funded project's performance, so eliminating the risk of the initial step (of funding), it appears to be a worthwhile tradeoff.

## AND FOR THE INVESTORS

We also much consider the motivations from the other side of ledger, namely that of the investors. There are a number of reasons for the growing participation in crowdfunded real estate opportunities. One observation is that investors can have access to incredible numbers of investment alternatives, delivered efficiently and comprehensively in a web environment. Rather than searching out investments through reams of paper prospectuses, an investor can review either on one RECF site or various sites a multitude of investments. Like angel investing and the syndication activities of years gone by, much private placement activity was highly localized, i.e., that investors with relationships with sponsors were generally geographically nearby, and thus the opportunities were also characterized by such local flavor. Now, with the expanse of online communication, investors can be exposed to sponsors and projects from hundreds of locations, which allow for broader opportunity and diversification.

Additionally, within the breadth, investors also gain access to varying structures and return elements. Different platforms may offer short-term debt while others, longer-term debt, or possibly a hybrid of debt and equity to enhance a prospective return. Also, as with syndications, investors can benefit from the active engagement of the sponsor, rather than pursuing real estate investing on their own, dealing with "toilets, tenants and taxes". Sponsors, and hopefully the platforms, conduct significant review of the project, its potential and its risks, disclosing such to enable informed decision making. For many investors, they desire to deploy capital on a passive participation basis, relying on those sponsors to deliver the returns being advocated.

But this is an investment process that is not without challenges for the investors, which must be recognized. In general terms, the investments being facilitated by the platforms are unregistered securities, and as such, have a high degree of illiquidity, in other words, they cannot be resold on a simple and efficient basis. While there are discussions by some platforms of developing secondary markets and trading, this shouldn't be expected in the near term, and thus investors need realize that an indefinite holding period is likely.

And as mentioned above with respect to an "anchor" investor possibly impacting the economics of the sponsor, the lack of one can prove deleteriously expensive for the participatory investor. Whether through egregious fee levels, profit participation, and administrative expenses, investors are subject to the financial whims of the sponsor, which according to certain accounts, sponsor and non-sponsor platforms may enjoy as much as 40% of an investment's economics, at times without any principal exposure. This can serve to dampen the normalized returns to the capital provider.

One other area that has yet been broadly tested has been the role of the platform in a transaction that may not perform as anticipated. While sponsor-directed platforms have an economic motivation to deal with challenges on behalf of their investors through profit participation, other "objective" platforms may find themselves in a conflicted position. For example, while the platform is raising capital for its paying client, the sponsor, it has developed and brought to the table its investor network to participate in the sponsor's project. What happens in the case difficulties ensue with the project, such as cost overruns, financing or marketing issues, or even suspect activities? What if the financing needs to be restructured



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or refinanced or compressed from a loss? Which side of the table does the platform sit on – that of the sponsor, who has compensated the platform or that of the investors, which need to feel that their interests are being addressed in a fiduciary capacity, in hopes of mitigating risk? This to date has not yet been tested, with some of the platforms indicating the "outsourcing" to others for risk-mitigation and restructuring assistance, we do believe the jury is out on how sideways deals may be moderated and remedied.

## SIZE OF THE MARKET

Over the last three years we have seen explosive growth in the real estate crowdfunding industry. Initially buoyed by a mere handful of platforms engaging in short to intermediate term commercial real estate loans or meager equity participation in relatively small rehabilitation or development projects, we have now witnessed a seismic shift in both number of platforms as well as types of financings being conducted. This phenomenon further has global breadth, as markets through Asia and Europe, Latin America and Canada, have developing platforms, particularly in the area of residential mortgage lending. In fact, one of the most notable crowdfunding projects was consummated in Colombia, where Prodigy Networks raised on behalf of the sponsor, approximately $172 million from 3,100 investors. A $240 million, 66 story, mixed-use residential/commercial building, BD Bacatá, is the tallest building in Colombia and certainly marks the power of the crowd.

The real estate crowd funding market continues to accelerate its growth and we anticipate this to continue as key segments, like originating single family mortgages, benefit from continued restrictive behaviors in the commercial banking market. From meager beginnings in 2012, where less than $20 million of financing was intermediated through online platforms, according to Massolution 2015 RECF Industry Report, we witnessed over $1 billion in 2014 volume with 2015 expected to advance by 2.5x that level, achieving about $2.6 billion across real estate asset classes and structures (Massolution, 2015). A snapshot of the market's growth is shown in Table 2 as we look at it from different perspectives.

### Type of Real Estate

Since the beginning, C&I real estate has dominated the RECF product suite, with the exception of the BD Bagata project in Colombia in 2013, a mixed use (retail/residential) property sponsored by Prodigy Networks. Multi-family and single family residential properties continued to find interest within the platforms either in terms of "fix-and-flip" short term financing, or more recently, the growing appetite for first mortgage loans requested by sponsors in longer term rehabilitation and repositioning projects or homeowner/homebuyers in permanently financing their homes. Certainly, LendInvest, to date the most prolific of the platforms in terms of volume, has arranged over $200 million of mortgage financing in the London market.

We do anticipate that the growth in the home mortgage space will continue at a solid pace and to include the RECF players, as alternatives to bank originated mortgage loans have been on the rise since the financial crisis of 2008-2010. Non-bank originators now account for over 40% of US mortgage loans, of which 90% are ultimately being purchased by the government sponsored enterprises, Fannie Mae and Freddie Mac (Light, 2014). Notable US student loan platform, Social Finance (SOFI), expanded its product offering in 2015 by introducing higher loan-to-value, interest only owner-occupied purchase money and refinance loans, and is estimated to close nearly $400 million during this calendar year, with



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*Table 2. RECF growth (in millions)*

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2020 |
|---|---|---|---|---|---|---|
| **Type of Real Estate** | | | | | | |
| C&I | $11.0 | $113.0 | $742.0 | $1,425.0 | $2,870.0 | $35,000.0 |
| Hospitality | $- | $10.2 | $27.0 | $55.0 | $150.0 | $5,800.0 |
| Multi-Family | $5.0 | $170.0 | $53.0 | $254.0 | $450.0 | $18,000.0 |
| Single Family | $2.0 | $77.0 | $175.0 | $825.0 | $2,350.0 | $65,000.0 |
| Other | $1.0 | $7.0 | $18.0 | $55.0 | $125.0 | $3,500.0 |
| **Geography** | | | | | | |
| North America | $12.0 | $184.4 | $530.0 | $1,320.0 | $2,940.0 | $47,000.0 |
| Europe | $6.0 | $32.0 | $426.9 | $1,070.0 | $1,945.0 | $26,500.0 |
| Asia | $0.5 | $2.8 | $21.0 | $150.0 | $850.0 | $43,500.0 |
| Latin America | $0.5 | $157.0 | $35.0 | $70.0 | $155.0 | $8,500.0 |
| Other (inc.Africa, Oceania) | $- | $1.0 | $2.0 | $5.0 | $55.0 | $1,800.0 |
| **Financing Structure** | | | | | | |
| Debt | $7.0 | $159.0 | $768.0 | $1,923.0 | $4,399.0 | $87,000.0 |
| Equity | $4.7 | $218.0 | $187.0 | $570.0 | $1,346.0 | $39,500.0 |
| Royalty | $0.3 | $1.7 | $16.0 | $45.0 | $75.0 | $250.0 |
| Hybrid | $7.0 | $17.0 | $42.0 | $77.0 | $125.0 | $550.0 |
| Total Financing | $19.0 | $377.2 | $1,014.9 | $2,615.0 | $5,945.0 | $127,300.0 |
| YOY Growth | | 1985% | 269% | 258% | 227% | |

institutional investors purchasing the growing pools. Through the European Union, Asia and elsewhere, mortgage originators are still largely the commercial banks, with covered bond programs offering the liquidity for refunding, with the commercial banks participating with many of the platforms as they become new source of originations.

Geographically, the US still dominates with over 90% of the North American volume. Of the 85 platforms identified by Massolution, 70 were domiciled in the US, with close to a dozen new platforms getting ready to launch in 2015. Europe, led by LendInvest, is witnessing additional activity across sub-classes of real estate, and the current year should see more than a doubling of total financing activity. Asia, while slower to develop in the real estate market, notes that dozens of platforms have launched or are soon to launch to hopefully follow the exceptional growth experienced in the peer-to-peer lending environment, which has built a $20 billion annual market with close to 1400 platforms in China alone.

As mentioned, the financing structure of most real estate crowdfunding projects takes the form of debt. Whether by ease of use or capturing the demand for higher yield, debt structures have been used across types of property and geographies. This is not uncommon across other financing segments in the crowd and P2P lending arena. P2P consumer lending, led by stalwarts LendingClub and Prosper, carved a niche for yield hungry investors, while SME (small to medium sized enterprises) platforms, or small business lending, has also attracted yield players as well as small banks, which are asset hungry, but can't originate on the same cost structure. In fact, OnDeck Capital, a leader in SME lending and a 2014 IPO, had disclosed that its average loan interest rate is over 51% per annum in its S-1 filing in



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(now since lowered to 28%). Why with interest rates as stratospheric as that are platform originations steamrollering financing across classes and geographies? Certainly investors are keen, but the overall availability of credit has led many borrowers to trade access to credit over cost of credit.

There is a confluence of factors that we believe account for the tremendous rise in marketplace lending, including of course within real estate. While we believe the marketplace lending is disruptive and providing a new avenue for capital to reach desirous capital users, we believe this is largely a response and opportunity afforded due to the financial crisis of 2008-2010 and the legislative and regulatory oversight placed upon the commercial banking sector. Whether from the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, or the Third Basel Accord of similar year, more stringent capital levels, risk management and compliance requirements, stress testing guidelines, and market liquidity risk assessment have collectively contributed to how commercial banks conduct themselves and practice the art of banking and finance. In simple terms, the banking industry was subjected to a major scolding by the regulatory regime, which viewed the practices and results of the major banks threatening capital markets and amplifying systemic risk within general economies, leading eventually to a pull back on the industry's traditional business line, the extension of credit. From 2009 through 2013, lending fell off tremendously and then began to rebound, but this laid an opening for others to enter the field, drawn largely to areas where the banks had taken a significant hit, such as commercial real estate loans, consumer credit, and single family mortgage loans. This has become a bastion of the crowdfunding contingent.

With blistering penalties, added compliance costs and requisite reserves, coupled with an interest rate environment making it difficult to generate needed loan/deposit spreads, the lending activity of most banks, large and small, witnessed slower growth. Certainly, coming out of the recession period, centered with the financial crisis, there has been growth, but we see non-bank entrants playing increasingly larger roles. Many major banks generated the preponderance of their respective income from activities outside of conventional balance sheet lending, but whether due to the Volcker Rule or other disciplines, such activities have been required to be tempered if not eliminated. What's left is low margined business, that of credit extension, particularly if these lenders do lend and hold the loan. True, there is aggressive loan sales, particularly in the mortgage space (to the GSEs), but for markets that either securitizations or sales cannot take place, it seems like the industry would rather sit on the sidelines, holding (somewhat) gilt-edged sovereign securities, avoiding upped capital and reserve levels if they choose to reenter the lending streams as once they did. It is worth noting that over the last thirty years, the number of commercial banks have been reduced from north of 14,000 to about 5,500 currently (see Figure 1).

This recent retrenching of the banking industry during a period of external capital demand has given increased rise to what's become know as "shadow banking", i.e., the extension of credit outside the regulated commercial banking framework. According to recent reports, credit extension outside the banks now rivals loans on bank balance sheets in the US (59% for banks to 41% for non-banks, per Goldman Sachs) (Nash & Beardsley, 2015). And in fact, total liabilities in the "shadow" are estimated to exceed $120 trillion, including swaps and other derivatives.

But to regress, the changing and challenging banking environment has given rise to new players to address the funding needs of consumers, businesses, sponsors and investors. We do believe this to continue indefinitely and shall assume that in the near term, the buoyant competition between banks and non-banks will assimilate into various partnering efforts (see Table 3).

Table 3 represents the top producing RECF platforms according to the Massolution 2015 RECF Industry Report (2015). Some of the notable findings are:



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*Figure 1. US number of commercial banks graph*

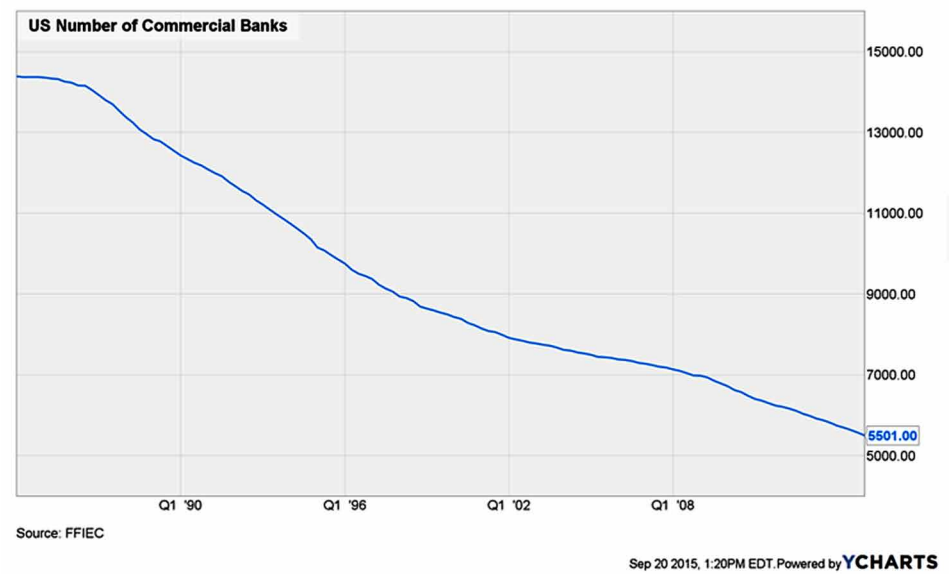



*Table 3. RECFP volume ranking 2014*

| | | Debt | Equity | Hybrid | Volume | Country |
|---|---|---|---|---|---|---|
| 1 | LendInvest | x | | | >$250m | UK |
| 2 | Prodigy Networks | x | x | | >$125m | US |
| 3 | WeAreCrowdfunding (Carlton) | | x | | >$50m | US |
| 4 | Groundbreaker | x | x | x | $25m-<$50m | US |
| 5 | RealCrowd | x | x | | $25m-<$50m | US |
| 6 | RealtyMogul | x | x | | $25m-<$50m | US |
| 7 | SOFI | x | | | $25m-<$50m | US |
| 8 | Money 360 | x | | | $25m-<$50m | US |
| 9 | CrowdMason | x | x | x | $25m-<$50m | US |
| 10 | Wealth Migrate | | x | x | $25m-<$50m | US |
| 11 | DiversyFund | x | x | x | $25m-<$50m | US |
| 12 | Asset Avenue | x | | | $15m-<$20m | US |
| 13 | Early Shares | x | x | | $15m-<$20m | US |
| 14 | Ifunding | x | x | | $15m-<$20m | US |
| 15 | Fundrise | x | | x | $15m-<$20m | US |
| 16 | Patch of Land | x | | | $10m-<$15m | US |
| 17 | CrowdBaron | x | x | | $10m-<$15m | HK |
| 18 | CoAssets | x | x | x | $5m-<$10m | SPORE |
| 19 | CrowdStreet | x | x | x | $5m-<$10m | US |
| 20 | Sindeo | x | | | $5m-<$10m | US |



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- Most platforms indicate a capability to avail both debt and equity finance on behalf of the sponsoring issuer. Ultimately, we have seen that 90% of the financing that has been done by the platforms is in a debt-like structure. The most common is a short term first lien loan, generally being used to finance a rehabilitation project.
- There is a growing movement into the owner-occupied single family residential mortgage space, with SOFI and Sindeo, playing off the success of LendInvest in the UK.
- Volumes continue to increase, particularly for those that have received some form of venture funding. They have had the ability to leverage their balance sheets, and either commit capital to close deals up front, later to syndicate the investment to their investors.

There has been additional movement in the recent year with a number of platforms now funded, beginning to experience some level of scaling. It is still suspect as to the overall revenue generation and sustainability, but we are seeing progress. Some of the RECF platforms (Times Realty News, 2015) that are demonstrating recent growth and deserve some notable profile are:

- *Realty Mogul* is a well-funded RECF platform which recently completed a $35 million Series B financing round, moving its total funding to north of $45 million. It has apparently consummated $80 million of property financings, largely debt, though there is a mix of equity participations in larger deals which it provided a minority tranche of the total equity. The company reports that it has invested in 240 different properties, which have a total project cost of nearly $500 million.
- *Fundrise* garnered quite a bit of visibility when it raised a significant funding round ($40 million) early in its development, from investor social media company RenRen and a series of New York commercial real estate developers. Uniquely, Fundrise has not limited its activities to accredited investors like the rest. It was first (and only) RECF platform to conduct securities offerings under Regulation A, i.e., under $5 million of funds raised, and before the Regulation A+ limits were established. It is estimated that Fundrise has completed $60 million of capital raises.
- *Patch of Land* has carved itself a niche is high-yield short term debt investments. Reducing the size of the participations to $5,000, accredited investors can participate in these short term loans, which yield from single to mid-teen digit returns. To differentiate its efforts, it has been practicing bridging the financing, using its own balance sheet, to fund a loan, later syndicating it to its investor network. Having raised over $24 million in venture financing, it has the capability to warehouse many of the loans it originates. Additionally, it is one of the few firms that is investing as a principal in its transactions. As of this writing, Patch has funded nearly $27 million in over 100 projects.
- *RealtyShares* began its activities in 2013 and has experienced some decent growth by offering both debt and equity participations in commercial and residential projects. Noteworthy, it has even included a bitcoin payment option. Recently, the company raised a $10 million Series A round. Thus far, it is estimated that RealtyShares have raised approximately $10 million for projects this calendar year.
- *iFunding*, another player in the real estate space, further reduces the minimum investment to $1,000 for accredited investors, placing such money into a variety of projects, whether multi-family residential, office or warehouse. It continues to experience growth as it placed just over $15 million in invested capital last year, and has seemingly doubled the volume through 2015.



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- *EarlyShares* is another emerging platform that actually began as a corporate finance platform, raising capital form early stage growth companies. Catching the wave of real estate investing, it began to focus on high-yield real estate investments, marketing average preferred returns of 7% and targeted overall internal rates of return of 18%.
- *Sharestates* is a New York based platform offering one-year senior secured debt investment opportunities, largely along the East Coast. The type of real estate focused on is generally multi-family, but the firm has moved into other subclasses. Of recent note, it inked a partnership with Ranger Capital, a mixed strategy asset manager, that has been increasingly committed to expanding its alternative asset portfolio. Under the partnership, Ranger is planning to invest up to $30 million in Sharestates deals.

## HOW DO THE RECF PLATFORMS MAKE MONEY?

Many platforms have different operating approaches and as such they derive revenues in different ways. It is almost tautological on how the platforms state the benefit to each of their respective constituencies. There have also been certain accounts that the fees charged along the way have been excessive, on a deal by deal basis, where as much as 30% of the economics of a deal may be subsumed by the platform, rather than enhancing investor returns. Table 4 is an overview of the variety of fees or methods of compensation derived by the platforms.

## HAVE THEY DELIVERED?

While we have discussed the growth in the market in terms of the number of operating platforms as well as growing volumes of transactions, can we state that the platforms are really delivering a "new world" of real estate financing and investing? Here are some takeaways from our research over 2014 (Massolution, 2015):

- Total project costs per deal ranges from $300,000 to $10,000,000.

*Table 4.*

| Compensation to RECF Platforms | % of Industry Revs by Fee Type |
|---|---|
| Application/Advisory Fee | 3.0% |
| Construction/Development Fee | 1.0% |
| Platform Usage Fee | 20.0% |
| Transaction/Success Fee | 32.0% |
| Financing Fee | 10.0% |
| Management Fee | 18.0% |
| Administrative Fee | 8.0% |
| Carried Interest/Profit Participation | 8.0% |



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- Funded participation by the crowd ranges from $150,000 to $4 million.
- Average crowd funded deal size in 2014 was $800,000.
- "Crowd" is being redefined – there are more institutional investors.
- Over 500 campaigns were run in 2014.
- Platforms averaged between 4 and 25 campaigns, but this is changing with size of platform and type of financing offered. Certain platforms, such as LendInvest consummated nearly 350 campaigns in two years.
- Success rate of completed funding – 65%, with that number improving with more platforms moving towards prefunding deals.
- Average all-in yield was 11.2% - 7.8% current + 3.4% capital appreciation.
- And – investment results are promising, as most deals are short-term loan, with good performance, yet equity is a longer term hold, which is too early to tell how returns will be.

## DRIVERS TO FURTHER GROWTH

By all accounts, this is a growth space. While we recognized under 90 platforms in 2015 within the US, we now are identifying close to 150. Again, this doesn't address the dozens of international platforms through Asia and Europe. And many of the existing platforms are accelerating their respective growth, given both macro- and micro- conditions in the market. But growth, quantitatively and quantitatively, can be much different based on strategies and resource availability. With an apparent "wind at their backs", here are a number of drivers to continued growth:

- Relatively low interest rate environment leads to higher allocation to real estate investment allocation. The search for yield is being partially satisfied with offerings of high-yield short term secured loans or payouts on attractive lets.
- Many sponsors are developing their own platforms as the ability to connect, control, converse and even cajole investors through online vs. analog communication has proven beneficial. We are also seeing that a number of intermediary platforms are now deciding to take "principal" investment risk, and hopefully add to their company value through portfolio returns.
- Continued regulatory and capital pressure on commercial banks, a fundamental source of commercial real estate (CRE) lending, has created a bit of credit pull back, opening opportunities for crowdfunding and other shadow banking endeavors.
- Improving sophistication of platforms in terms of what they offer to sponsors and investors. Whether that is bridging the financing, or offering solid aftermarket reporting, those differentiators can accelerate preference to certain platforms.
- Capital availability is a huge stimulant to growth. And that is capital in two flavors. A number of platforms have raised internal growth capital from the venture community, which allows them to build capacity in deal review and processing, as well as using their balance sheets to securing bridge loans to pre-fund the crowd offerings. Further, institutional investors, similar to the P2P lending space, are increasingly participating in this space, with dedicated capital commitments to select platforms. In one respect, this negates the "crowdfunding" descript, as one or two larger players taking down an entire issue would not be characterized as a "crowd". So this reverts to the earlier observation of RECF is the digitized version of the 1980 syndication model.



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- With the aforementioned capital, and pre-committed and sizable investor participation, various platforms are doing larger deals. Like the P2P industry, the processing costs of a transaction, independent of size is largely the same. With larger deals, where transaction fees based on size are paid, the economic model improves.
- We anticipate seeing more strategic alliances and alignment between these *avant garde* platforms and their banking brethren, particularly in areas that origination costs for the banks has become unworkable. This is particularly expected in the single family residential mortgage market.
- While the mantra thus far has been about "deal flow" and "upsizing the deal", we do believe that in the end, within the finance world, the primary proposition of value will arise from data production and monetization strategies. With the exception of a mere handful, data monetization has not registered as important. We believe this will change.
- And while real estate is contained within the illiquid alternative asset grouping, as transaction volumes in size of deal and number, we anticipate seeing a return of the securitization market, with private label securities, which may include pools of crowdfunded offerings. SoFi has successfully securitized nearly $1 billion of student loans, and is intent of doing the same with their direct mortgage business.

And in discussing opportunity, we cannot be naïve in assuming clear sailing for unbridled growth. True, there will be obstacles. Some of the concerns to growth emanate around risk management, which in terms may alter the success of any particular crowdfunded investment. Could it be poor underwriting of the risk up front, i.e., adverse selection of deals; or post-funding oversight, i.e., if a deal goes sideways, how is risk mitigated and managed? Here are some of the issues that we believe will arise, which could have a dampening effect on the growth:

- While real estate crowdfinance may facilitate $2.5 billion in fundings for 2015, it is less than 1% of overall real estate financings conducted in the US. With an estimated $1.5 trillion in single family mortgages and just over $1.2 trillion in CRE financing estimated in 2015, the role of the "crowd" is *de minimus*. Nonetheless, the marketplace finance platforms are operating in the domain of a highly regulated commercial banking industry, and as one pundit suggested "If it looks like a bank, it could get regulated like a bank". One of the provisions with the Dodd-Frank Wall Street Reform Act addressed substantive non-bank financial firms, and in its "too big to fail" concerns established oversight on selected "systemically important financial institutions" (SIFIs). Using largely balance sheet tests (e.g., asset size, leverage, debt levels), these SIFIs are subject to the compliance requirements of their commercial banking compatriots. Among the acknowledged SIFIs are Metropolitan Life, Prudential, AIG, and GE Capital (Wikipedia, n.d.). Will any of the marketplace platforms become the size to warrant SIFI oversight? Highly questionable. But the regulatory and legislative tails into those operating in the "shadows" is a possible concern, independent of size.
- Risk management, particularly for problematic transactions, will reveal a needed capability and sustainability of many platforms. As we saw in the 1980s, as capital was abundant, syndicators were deploying funds is less than admirable projects. There compensation structures were premised on getting the deal done, with front end fees, only to see the ultimate project waste away.



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Might we witness the same with the current portfolio of RECF platforms? One mitigating factor is that most transaction structures involve senior secured debt, as opposed to the earlier equity participations. Certainly deploying creditor rights as opposed to being subjected to them offers a risk mitigant this time around.

- Further to the above point, we are currently seeing a weakening in credit performance in P2P and SME lending. Is this due to stretching one's underwriting protocols to "do the deal" and sustain growth, or are broader economic conditions weakening? Finance is as much science as it is art. We incurred the wrath of over-lenient financing from the banks leading to the financial crisis of 2008-2010. Might the quest for growth lead to underwriting leniency?
- Currently, the transaction sizes within RECF are relatively small. The average transaction size in 2014 was under $800,000 with the mean transaction size about half of that (Massolution, 2015). While we know there are platforms that have raised capital, are using their balance sheets, and have institutional commitments for what they offer, most are still undercapitalized and focused on very small transactions. This raises the question of business and revenue models, and their respective sustainability. If a platform successfully consummates a $500,000 senior loan, it may make in total fees up to $35-$40,000. With personnel review, infrastructure, technology and general overhead, dozens if not more transactions need be processed to achieve breakeven if not ongoing profitability. Note that such transactions are generally not review per a simple credit scoring module, as each property, sponsor, risk factors and other variables are different. So we ask, at what point does this become a scalable model? Intermediation in these CRE and other transactions can be laborious, even if you use online connectivity with investors. There is still front end analysis, structuring, and monitoring to be done. How much margin can one derive if one only generates $40,000 in gross revenues?
- And as a subset to the above, how should these platforms be valued by the investment community? Should they be valued off of transaction volume, revenues, earnings, or other self derived metrics, such as size of investor base, possibly ongoing (recurrent?) portfolio management fees? Late last year, as Lending Club and OnDeck Capital prepared to price their respective IPOs, this author questioned the market valuations place on them. In comparative terms, while in the consumer or small business lending businesses, they were being valued at revenue and asset multiples 10-20x other companies with larger dedicated franchises, such as Wells Fargo, Capital One, and JPM Chase. Yes, those are banks, but they have deployed significant technologies to conduct their business, and they are diversified. Should LC or ONDK enjoy what can only appear as "technology multiples" vs. financial institution multiples, even though the fundamental business is lending. Since the IPOs and the immediate aftermarket run up, both have settled at about half their IPO prices, and are doing whatever they can to perform and justify even the current values.

## CAPITAL MARKETS, ENTERPRISE VALUES AND EXIT STRATEGIES

As earlier references, capital access for the platforms has been a key driver to their respective growth. We have witnessed many raising venture capital even some strategic funds to progress. Further, firms like Realty Mogul and Sharestates have, like the top P2P lending platforms, received committed capital for usage within their markets to insure capacity to fund offerings.



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## Dot.com Redux?

During the early 2000's, the investment markets got whisked up in the next generation of commerce, namely the *dot.com* phenom. It appeared that a new value proposition was placed on companies that decided to move their business intercession to the internet for reasons of more efficient and less costly distribution. In fact, many upstarts decided to go directly on line to sell goods and services bypassing conventional distribution and sales channels. In many ways, there seems to be similarity in the growth of online financing platforms. During the dot.com days, there were those that succeeded (and still are) while there were many crash-and-burns. Rather than espousing the digital connection as the driver, the winners knew their basic businesses: Ebay in auctions, PriceLine in travel, Amazon in logistics, and eTrade in brokerage. But then we saw others like Webvan.com, which should have learned better the economics of the grocery business or Pets.com, which seemingly misgauged just how big its market was and its pet owning customer behaviors.

We know that venture capital has found a nice home in crowdfunding, particularly in real estate. But we ask on what basis are models being defined and valued. Recall the dot.com valued "eyeballs" even it there was no way to monetize such. Is investor network size or sponsor relationship bases to value? We have alluded to what the business of these platforms is – namely efficient intermediation for which fees are paid for success. The economics are still suspect with small transaction sizes, level of review and transaction volume.

A question that is raised refers to the potential value creation of such platforms for their investors. Many which have raised operational funds, upwards of $50 million, and at valuations that place post-money values in excess of $130 million. While we know the space is claiming to be "disruptive" to other real estate financing methodologies, such as banks and direct funds, we question whether the business and revenue models support such lofty values, and if so, what supports this. Unlike the P2P space, which is characterized by replicable financings, where some level of credit scoring and actuarial analysis can be performed, thus availing scale, can the RECF platforms be operated with the same mechanisms? Each transaction is seemingly different, requiring certain "laborious" analysis, assuming that the platform is doing some level of review and diligence. So the question is how many transactions can a platform undertake in a given week, a month, a year? As reflected in the mortgage origination business, it used to be that a loan officer could process 8-10 transactions a day. Now, maybe two, with the continued adds of regulatory and compliance requirements. With a cost of labor, and the size of deals which drive revenues per deal, how scalable is the model?

But we ask how should these companies be valued, based on their outlook for revenues and profitability, or on the use of technology to intermediate financial transactions? To expedite the review and processing of transactions, facilitated by technology is a plus, but will the investment results prove out in the end, or will, as some speculate, that adverse selection will creep in. Major financial institutions, all of which deploy technology across their organizations. But yet, they are still valued as financial institutions. For them, technology is a way to reduce costs, thereby providing desired financial services more swiftly and hopefully profitably. But that is their score card - delivering a product or service on a profitable basis. Referring to the platforms, technology too is an enabler, but should not be viewed as the end-all. These companies need to be measured the same way. What do they sell? How do they generate revenues? And can they generate revenues, servicing their clientele, on a profitable basis? We believe the jury is still out.



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Let's ask what does create value for the platforms, all of which will hopefully evolve into revenues and ultimate profitability. We see four main pockets of value, which we believe that platforms should position for:

1. **Differentiation:** While many platforms are offering the same "product" to their respective investor communities, such as short-term high yield notes, we ask what's the difference between one and the other, separating a platform from the pack? A good example of differentiation is SOFI, which began in refinancing student loans, but its recent move into mortgage lending is notable. Rather than offering what thousands of mortgage originators (online or offline) are pushing, it has structured a high loan-to-value (~90%) without the historically required mortgage insurance. Its underwriting process and focus is creating a unique niche, yes, differentiation, that continues to set it apart.
2. **Unique Customer Engagement:** Certainly nicely designed and user friendly websites are a given, but how and what the websites may do to enhance the lifetime value of the customer to the platform is a key. Besides generating fees on completed transactions, how frequently does the investor (and sponsor) return to the site and are there further ways to monetize that relationship. Might this be through "paid" analysis and research, or other products that could be cross-sold? How "sticky" and "monetizable" is the environment that the platforms engage their customer?
3. **Revenue Model and Scalability:** We have discussed this earlier. Do the platforms have a unit economic model that is profitable on a fully-loaded deal by deal basis, using applied technology? Or do they have to reach a certain level of volume, either in total dollar volume or number of transactions? Like the P2P industry, profitability is becoming visible largely with increased loan sizes, not sheer numbers of deals. What must be the volume, transaction size and fee level to have positive unit economics?
4. **Data and Analytics:** Finance is an information business first and foremost. The use of technology can move and refine information much more nimbly than humans, and with higher frequency transactions, ability to track performance, introduce indigenous and exogenous factors into the mix, new insights can be introduced. Improved risk management, pre- and post- deal, as well as improved pricing the risk can be the result. While some platforms understand this in basic terms, few have developed data strategies, including monetization of the fruits of their activities. We do believe this to be the ultimate Holy Grail of technology enabled intermediation.

Through various conferences and articles, platform principals have been queried as to where is the inherent value within their models. The responses are deemed suspect and in fact, we believe that in the end, are just basic business practices, coincident to all platforms, offering limited incremental value. We don't believe they necessarily "create value". Here are some of the typical responses:

1. **"Quality Deal Flow":** Many platforms espouse the nature of their deal flow, i.e., financial opportunities that they have been introduced to for consideration of funding. Building a successful portfolio of deals, proving execution history and ultimate investment performance, like a Goldman Sachs, builds reputation and more outside interest to "shop there". But stating that one sees $10 billion of transaction opportunities to yield $10 million being pursued, becomes a logistic issue as well as tough to place value on. Establishing relationships with highly successful sponsors that become "in house" exclusive clients, has some merit, but in the nascent stage of the industry, it would seem that few platforms have earned the desired reputational capital.



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2. **Diligence:** Being exposed to new transactional opportunities is critical, but more so is the review and analytical process to determine whether an opportunity should be pursued and if so, how to structure it. A challenge is that large intermediaries have teams to assess and deliberate, and ultimately choosing to move forward on its selections, for which they are compensated upon completion. The fees paid to larger intermediaries tend to reflect the relative size of the deal, i.e., bigger fees for bigger deals, which allow for broad upfront effort. When it comes to smaller transactions, fees tend to reflect such size, so is the level of diligence more limited? Or given the structures of the offerings such that diligence can be compressed, e.g., with short term secured loans. And as technology is applied, can the diligence become enhanced with lesser levels of labor, and produce improved decision making?
3. **Investor Network Numbers:** A key benefit of using an intermediary is the breadth of its relationships to funding sources. Rather than a principal who is seeking funds directly "dialing for dollars", using an intermediary with established contacts in the investment community facilitates the fund raising process. Further, it is hoped that the likelihood of successful fundraising is improved, as intermediaries may have a unique sense of their investor sentiments and appetite for a particular issue. When comparing to an online platform, such investor relationships may not be as close knit and generally, the sheer numbers of online investor networks, while impressive, may not be characterized by the same strength of relationship. While the numbers may suggest the law of average in terms of more investors lead to a higher chance of success, one may ask is it better to have 10,000 small investors rather than 1,000 active larger investors to effectuate at deal? And are such networks proprietary to a platform, or do investors, seeking new places to deploy investable funds, sign up to many platforms? Numbers alone seem not to tell the story, rather, how active are the networks to get the job done.
4. **Visibility to Break Even Operations:** This is a little discussed topic, in part as the industry is in development and growth mode. As referenced, small transactions, still requiring a level of analysis and processing, tend to generate smaller fees. Has the economic model, on a deal by deal basis, been assessed and what might have to be achieved to attain breakeven operationally?

## PROGNOSTICATIONS

As an industry in development, with new entries and methodologies, what might we experience in the coming periods? While we have alluded to the significant growth over the last year and forecasting similar rates over the next few years, what may be possible futures for this space? Here are some of the observations that may impact, positively and negatively, for further expanse. To characterize the "what if's", allow us to deploy a couple metaphors, black swans and butterflies. This descriptive we used in the Massolution RECF Industry Report which was released in the Spring 2015 (Massolution, 2015).

A "Black Swan" hails from Nasim Taleb's manuscript on Black Swan theory, which addresses hard-to-predict impactful events that with hindsight could have been expected. And the "butterfly effect", articulated by Edward Lorenz, implies that small changes in conditions in one area can result in huge differences elsewhere.

Some of the black swans we may reflect upon are:



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- The demise of the "2 and 20" partnership model. Much of the institutional capital invested in alternative assets are generally managed through investment funds, where the manager garners a management fee, e.g., an annual 2% fee based on funds being managed, and a profit participation (or carried interest), which generally tracks at twenty percent (20%) of the earnings after return of initial capital. Over time, based on the performance of the funds, this can be a very expensive proposition to institutions, and many have developed internal capabilities to invest directly, thereby bypassing the aforementioned economic costs. With broader access to opportunities availed online, with professional underwriting, disclosures and portfolio management, it is conceivable that institutional investors will see the marketplace platform approach to deploying capital directly as a viable option, rather than through funds.
- While "crowdfunding" has typically been identified as small sponsors, entrepreneurs and other fundraisers using platforms to aggregate disparate capital for diminutive ventures, we have seen large corporate entities jumping into the fray. Not necessarily motivated by capital formation, but rather striving for better connectivity from their end consumer or client. Companies like Nike, Warner Brothers, CocaCola and Proctor & Gamble, have used the power of the "crowd" to facilitate engagement benefiting product development and marketing. As with consumer products, will larger real estate sponsor groups tap into crowd methods, harvesting a larger portion of the market for their own fund raising. Very likely, as we have already experienced
- Unsavory litigation. While most of the crowd platforms are operating under the 'accredited investor' exemption, i.e., offering investments to those that can 'fend for themselves', it is anticipated that eventually some form of Title III of the JOBS Act or Regulation A+ with enable non-accredited investors to participate in private and/or illiquid offerings. As such, might there be an occasion that a small investor, whom loses money in a deal, conclude that disclosures or overall management of a deal were less than adequate, casting a legal pursuit. Have the platforms accounted for such contingency? Or rather, while espousing the broader "crowd", will the platforms just remain affixed under the Regulation D exemption?
- Many platforms have successfully raised capital as referenced, with lofty valuations. With the IPO aftermarket performance of Lending Club and OnDeckCapital, will this put a damper on fundraising and valuations of companies pursuing marketplace finance. Recent exception is SoFi which consummated a $1 billion private financing led by SoftBank, valuing the business well into "unicorn" status. We remain cautious of both the flows and valuation of capital into this space. In fact, we do anticipate that there will be more strategic investment directed here, led by larger financial institutions.
- In the wake of The Dodd-Frank Wall Street Reform Act, financial institutions, large and small, have been subject to increasing levels of regulatory scrutiny as a result of the financial crisis of 2008-2010. Even large non-commercial bank financial institutions, characterized as Systemically Important Financial Institutions (SIFIs), such as Metropolitan Life, Prudential and GE Capital, are now subject additional layers of reporting and review. We have seen recently that the largest players in the P2P lending industry are now in dialogue with regulators about better or best practices, as well as risk management. We assume that as the RECF platforms gain in size, and intruding on the historic landscape of the banks, there will be the prospect of regulatory review, beyond the SEC's oversight of securities issuance. How this effects the practices and viability of the platforms is subject to speculation.



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And now, what about changes that might cause broad ripples, i.e., having a butterfly effect on the industry and its future. Among the "butterflies" we might just see are:

- Changing the definition of Accredited Investor. Having not adjusted the definition since 1982, the SEC has been reviewing what characteristics should define a "natural person" investor to participate in private (unregistered offerings). On one hand, by inflation adjusting the financial requirements (income and net worth) from the 1982 level to levels 2.5x higher would reduce the overall number of possible investors that could participate in such private offerings by almost 70%. In a constructive and historically sound manner, the SEC is reviewing other methods of "accreditation", such as professional and academic acumen as the tests for participation. We mention "historical" as the original exemption provision in the Securities Act of 1933 referred to not just the financial capacity of the investor, i.e., the ability to absorb losses, but also the ability to conduct an intelligent review of the investment opportunity. This "informed decision making" viewpoint is critical, particularly now in the "information age", and the ability to disseminate broadly requisite content to investors. This new approach may open up private markets, while underscoring the responsibility of platforms to articulate offering materials for investor consumption. Ultimately, this could enhance the overall numbers exponentially.
- While Title III of the JOBS Act has not been promulgated as of yet, there have been over twenty US states that have developed intrastate constructs for crowdfunding, thereby allowing unaccredited investors to participate, albeit limitedly, in private offerings. Will the states continue to take this up on their own in wake of the sluggishness at the federal level? We believe so.
- Crowdfunding is a subset of the growing "shadow banking" evolution, namely the extension of credit outside the regulated commercial banking market. We do see that both borrowers and lenders have a growing comfort in transacting outside the banking system. And with improving controls, risk management and accessibility, we see this to continue and accelerate.
- While access to investments through online mechanisms can avail investments to larger investor communities, this is not just about access but about opportunity. While the SEC's mandate has been proffered to mitigate risk through disclosure and reporting requirements in the '33 Act and '34 Exchange Act, crowdfunding should also be viewed as contributing to investment opportunity. Heretofore, venture and other alternative investments have been the province of the "upper class" which has the "qualifications" to participate in such higher-yielding investments, where the common investor could not gain access. In the narrative about income and wealth disparity at venues like the World Economic Forum in Davos, we need to find ways for broader communities to have access to compelling investments in order to build wealth, though the approach need be couched with certain protections and limitations. But of the three million businesses in the US, only 5,000 have public registered stock for investing and trading. Given that the preponderance of wealth has been created in privately held companies, might not a thoughtful approach to availing a more expansive miscellany of investments be constructive and economically elevating? We believe that the SEC, while in its quest to wrestle with risk, should also create frameworks for broader participation.
- Lastly, and in particular to the millennial generation, the crowdfunding phenomena has embellished philanthropic activities. This has been positively felt by small non-profit organizations, as well as community development real estate projects. We expect that this trend will continue at an accelerated pace.



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## FINAL OUTLOOK

The real estate crowdfunding industry will continue with its explosive metric of growth. From new platforms, to expansions of product offerings and improved risk management protocols, and finally, growing investor comfort in the online investing practice: this bodes well for this burgeoning market both in the US and abroad.

We anticipate seeing a phenomenal growth in the residential mortgage market, which has already seen the impact of non-bank originators absorbing over 40% of the market's demand. New US entrants, such as SoFi and Sindeo, will further the competitive landscape in a trillion dollar setting. Already, LendInvest in the UK has demonstrated leadership.

There will be regulatory creep, as more activity is conducted through these platforms, with increasing scrutiny to protect both users and suppliers of capital. As one pundit exclaimed, "if it acts like a bank, it should be regulated like one"

2016 will mark a year of wins and losses. We will witness platforms gaining in size and capabilities, becoming formidable members of the financial markets. We will also see that the current frothiness of value, driven by amorphously described "disruption", see some dampening, and result in numerous platforms being shuttered or consolidating with others. That assumes that they recognize what the value they are creating really is.

Many platforms, and in particular their venture investors, may have had visions of public offerings during the coming 12-24 months at lofty valuations. Early litmus tests (LC and ONDK) and equity market conditions may cause rethinking in monetization strategies. Might we see two step partnerships with larger institutions, desirous of a "fintech" exposure begin to take investment positions, later fully absorbing these platforms: quite possible.

Overall, while playing in the "shadows", there will be much light shining from this industry over the coming years.

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# Chapter 32
# The Effect of International Financial Reporting Standards Adoption on Foreign Direct Investment and the Economy

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## ABSTRACT

*This chapter examines the effect of International Financial Reporting Standards (IFRS) adoption on Foreign Direct Investment (FDI) and Ghanaian economy. It is a cross sectional survey study, with the population consisting of both Preparers and Users of financial statements. Stratified Random sampling method was adopted to gather primary data. Findings showed that IFRS has been adopted in Ghana and it is perceived that IFRS implementation promotes FDI inflows and economic growth. This study recommends all stakeholders to have full implementation to reap benefits of the IFRS and principle - based standards. The implication is that preparers need to work on their skills and expertise gap through training and development and to ensure that these standards are included in the academic and professional curricula. Moreover, regulatory bodies should monitor and enforce these standards but where local content is needed, convergence should be the solution.*

## 1. INTRODUCTION

The importance of international accounting practice studies has grown over the past few years in order to meet economic agent demands and to facilitate international business practices. It is essential to understand that international accounting convergence is an important topic for capital market regulators, investors, markets, governments and all others who deal with financial information of public companies. This brings out the importance of accounting as being an essential fiscal tool for various economic agents. The merit of international accounting convergence lies in its ability to minimize negative effects resulting

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from diversity of accounting practices in different countries (Cordeiro, Couto, & Silva, 2007). In such a scenario, the introduction of International Financial Reporting Standards (IFRS) for listed companies in many countries around the world is viewed as one of the most significant regulatory changes in accounting history (Daske, Hail, Leuz, & Verdi, 2008).

This research constitutes an extension of the study conducted by Zeghal and Mhedhbi (2006) who concentrated on the major factors that influence the adoption of IAS by the developing countries. However seeing the considerable rising number of emerging countries intending to apply the IFRS and with the accelerated processes over the years ranging between 2008 and 2015 this chapters' contribution consists mainly of testing the effect of IFRS on two parameters: FDI and economic growth.

The adaptation of International Financial Reporting Standard has become a hot topic globally after a series of arguments. Although there are still different schools of thought endlessly arguing in favour of individual countries, why and how to adopt IFRS, the academic and business community begin to look further into IFRS empirically today. One of the hot topics is whether countries will benefit economically or not if they adopt IFRS. This problem is being expounded and discussed widely by scholars but failed to reach agreement globally. It is pity that there are few empirical literatures about the relationship between the adoption of IFRS and foreign direct investment and the economy. The aim of this chapter is to investigate the interaction between IFRS, foreign direct investment and the Ghanaian economy. This chapter contributes to the literature on IFRS by answering two questions: (i) is there any significant relationship between the adoption of IFRS and FDI? (ii) how does FDI inflow affect economic growth in Ghana? The remainder of this chapter proceeds as follows. The second section provides literature review and develop hypothesis. Third section describes the research design and the data. Fourth section reports the empirical results and fifth section concludes

## 2. LITERATURE REVIEW

### 2.1 Background

Internationalization of economic trade and globalization of businesses is on the ascendency. Consequently, financial statements prepared according to a nation's local accounting system may hardly meet the needs of investors, business partners, financiers and decision-makers who are conversant with international standards. Meanwhile, developing and emerging markets are the target of the world's leading industries that are operating in the saturated western countries. To better undertake their activities in developing countries; they must adopt international accounting standards that suit needs (Zeghal & Mhedhbi, 2006). Foreign investment is a major boost to the economies of developing countries. An investor may demand vivid and comprehensible financial information from a firm. This underscores the reason why developing countries must adopt International Accounting Standards (Zeghal & Mhedhbi, 2006).

To bridge the gap between accounting standards among countries, the International Accounting Standards Committee (IASC) was founded in 1973 by a group of professional accounting practitioners with an attempt to formulate a uniform and global accounting standards that would aim at reducing the discrepancies in international accounting principles and reporting practices. In this light, the International Accounting Standard (IAS) was proposed which has actively been championing the uniformity and standardization of accounting principles over two decades now. Meanwhile, in April 2001, the International Accounting Standards Board (IASB) took over the setting of International Accounting Standards



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from the International Accounting Standard (IASC). Henceforth, the IASB updated the already existing International Accounting Standard (IAS) and referred to them as the International Financial Reporting Standards (IFRS). This study focuses on how Ghana as a typical case of a developing economy adopted the International Financial Reporting Standards and the possible effect on the economy.

In January, 2007, the Minister of Finance and Economic Planning - Ghana formally launched the adoption of IFRS. By December 2007, listed companies, government business enterprises, banks, insurance companies, securities brokers, pension and investment banks and public utilities have adopted IFRS and prepared their financial statements in accordance with the IFRS. In an address to the participants at the launching, the minister referred to a Report on Observance of Standards and Codes (ROSC) on Ghana that the world bank issued in March 2006, and noted that 'the adoption of IFRS would address certain weaknesses the ROSC of Ghana has identified' (UN, 2007).

There are proponents as well as opponents who have arguments for and against the global adoption of IFRS. According to Barth (2007), the adoption of a common body of international standards is expected to have the following benefits: lower the cost of financial information processing and auditing to capital market participants as users, familiarity with one common set of international accounting standards instead of various local accounting standards by Accountants and Auditors of financial reports, comparability and uniformity of financial statements among companies and countries making the work of investment analysts easy, attraction of foreign investors in addition to general capital market liberalization. Ball (2006) stated that many developing countries where the quality of local governance institutions is low, the decision to adopt IFRS will be beneficial. Lipsey and Chrystal (2003) noted that FDI often generates somewhat higher-paying jobs than might otherwise be available to local citizens, it generates investment that may not be possible with the local resources only, it links the recipient economy into the world economy in manners that would be hard to achieve by new firms of a purely local origin. According to Lipsey and Chrystal (2003) the FDI alters country's comparative advantages and improves its competitiveness through technology transfer and effects myriad externalities, domestic investment which can alter a country's volume and pattern of trade in many income enhancing directions. Countries that suffer from corruption, slow-moving, or ineffectual government are likely to resist the change (La Porta, Lopez-de-Silanes, Shleifer, &Vishny, 1999) but in such countries, the opportunity and switching costs are lower which makes the possibility of adopting IFRS advantageous. Kumar (2007) stated that the foreign capital has the potential to deliver enormous benefits to developing nations. In addition to helping bridge the gap between savings and investment in capital-scarce economies, capital often brings with it modern technology and encourages development of more mature financial sectors. Capital flows have proven effective in promoting growth and productivity in countries that have enough skilled workers and infrastructure. Some economists believe that capital flows also help discipline governments' macroeconomic policies.

Omneya, Abd-Elsalam and Weetman (2003) have examined the language effect on the first introduction of IFRS in Egypt. Through a sample of 72 locally listed companies, the authors have shown that Egyptian companies continue to encounter difficulties in implementing IFRS, given the disparities between the IFRS spirit and philosophy in respect of the local accounting traditions and cultures. This chapter reports evidence that adoption of IFRS has a positive effect on FDI and the economy. Chamisa (2000) has examined the international standards' role in improving the quality of financial information produced for a stock market in the developing countries. He noted that these standards are critically and crucially important for the developing countries with an active financial and capital market and are devoid of such importance regarding the other developing countries. Actually, this observation has been



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confirmed through the study conducted by Zeghal and Mhedhbi (2006) dealing with a sample examination composed of 32 developing countries having adopted the IAS and some other 32 countries which have not adopted them. They show that the developing countries enjoying capital markets, advanced education levels and high economic growth rates are most inclined to adopt the IFRS. Moreover, on examining the development of accounting regulations in Jordan, Al-Akra, Jahangir, and Marashdeh (2009) have analysed the impact of economic, political, legal and cultural factors on promoting the accounting practices. They concluded that the political and economic factors are the elements which contribute most to this development. From all that has been mentioned in the literature review, one can deduce that the research in the field of IFRS adoption determinants with respect with to the developing countries remains limited with somewhat mixed results. In fact, most of the reviewed studies have highlighted the importance of institutional criteria factors (economic growth, education level, capital markets) along with some specific features regarding these countries' operating companies (size, indebtedness levels, the quality of external audit) in deciding to adopt these standards.

## 2.2 Definition of Foreign Direct Investment

Foreign direct investment (FDI) in developing economies has grown rapidly following financial and political transformation. To increase their share of FDI inflows, most countries have eased restrictions on foreign direct investment, strengthened macro stability, privatized state-owned enterprises, instituted domestic financial reforms, capital account liberalization and granted tax incentives and subsidies. Ghana for instance through the Free Zones Act, 1995 and the Ghana Investment Promotion Act 1994 has granted certain tax incentives and investor protection policies to attract foreign investors and also make the environment conducive for their operations. This initiative and policy taken in Ghana have increased the number of foreign direct investment and helped in economic growth.

FDI has been defined by the International Monetary Fund as an investment that is made to acquire a lasting interest in an enterprise operating in an economy other than that of the investor, the investors' purpose being to have an effective voice in the management of the enterprise (IMF, 2012). Denisia (2010) also considers the definition of FDI from a macroeconomic view point, and indicates that FDI is a particular form of capital flows across borders, from countries of origin to host countries, which are found in the balance of payments. The variables of interest according to Denisia (2010, p. 54) are capital flows, stocks and revenues obtained from investments.

### Foreign Direct Investment (FDI) in Ghana

The country of Ghana has the fastest growing economy in Africa with a GDP (US $) close to 42 billion (IMF, 2012). The 25 years of comparatively healthy management, competitive business environment, and sustained reductions in poverty levels has boosted Ghana's economy. Blessed with abundant natural resources, agricultural sector accounts for roughly one-quarter of GDP and employs more than half of the workforce, mainly small landholders. 2013 Index of Economic Freedom shows that Ghana's economic score is 61.3 and is ranked 7$^{th}$ out of 46 in the Sub-Saharan African region making its the overall score rise above the world's average. The Government of Ghana has been taking significant steps to draw FDI into the country, according to the 2013 Investment Climate Statement. To encourage foreign investment, the Government has replaced the previously unfriendly regulations with investor friendly laws. The Ghana Investment Promotion Center (GIPC) Act, 1994 (Act 478) governs investment in all sectors of



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the economy except minerals and mining, oil and gas and the Free Zones. Sector-specific laws further regulate banking, non-banking financial institutions, insurance, fishing, securities, telecommunications, energy, mining, and real estate.

## 2.3 Role and Nature of Foreign Direct Investment in Ghana

Foreign direct investment (FDI) plays an extraordinary and growing role in global business. It acts as agent of economic growth through generating and transplanting of technology, managerial skills and linkages to the world market. It provides Ghanaian firms with new marketing channels, cheaper production facilities, products, skills and financing. It provides an inflow of foreign capital and investment in addition to an increase in job opportunities in Ghana.

Companies who invest abroad are mainly looking to take advantage of cheaper wages, advanced infrastructure and skilled workforce and a less regulated business environment. As countries develop and approach industrialized nation status, inward FDI contributes to their further integration into the global economy by engendering and boosting foreign trade flows. Apparently, several factors come into play. They include the development and strengthening of international networks of related enterprises and an increasing importance of foreign subsidiaries in MNEs' strategies for distribution, sales and marketing (Andre-Pascal, 2002).

### Trend of Foreign Direct Investment

When Rawlings first seized power in 1979, he adopted a radical and anti-business stance; growth fell to -3.2% and an FDI inflow of $2.8 million in 1981. The state of the economy witnessed a further negative growth rate of 3.5% in 1981 to 6.9% in 1982 in the year of his second advent; however, net inflow of FDI remained constant at $16.3 million (Tsikata, Asante, & Gyasi, 2004). In 1983, the Government of Ghana initiated the Economic Recovery Programme (ERP) and later Structural Adjustment Programme (SAP). These policies were adopted primarily to reverse the post-independence economic decline, reduce the impact of the 1980 debt crisis and, facilitate the attraction of value-added FDI inflows to Ghana. The ERP has been described as being generally successful at stimulating more FDI inflow through the lowering of inflation, the removal of tariff barrier which were greater impediments to FDI inflow and the abolishing of exchange rate controls. (Aryeetey, Barthel, Busse, Loehr, & Osei, 2000).

Since the advent of the Economic Recovery Programme (ERP) in 1983, three historical phases of FDI flows in Ghana can be distinguished (Tsikata *et al*., 2000). The first period which spans from1983 to 1988 had a sluggish FDI net inflows, averaging US$4.2 million per annum, and the highest and lowest inflows during the period being US$5.6 million in 1984 and US $2.0 million in 1985 respectively. The high FDI inflow in 1985 was as a result of the establishment of a new investment code (PNDCL 116) that was to serve as the central Investment promotion Agency. Under this investment code were several incentives including tax holidays, exemption for import duties on capital and accelerated depreciation allowances. The second period which starts from 1989 to 1992 also recorded moderate inflows averaging US$18.1 million per annum with the highest and lowest inflows being US$22.5 million in 1992 and US$14.8 million in 1990, respectively. In addition, the period 1993 to 1996 witnessed significant (remaining in three digits) and oscillatory FDI net inflows, which reached a peak of US$233 million in 1994 (with the privatization of Ashanti Goldfields Company AGC), but dropped to US$106.5 million in 1995 before coming back to US$120 million in 1996. The peak inflow in 1944 was due to revision of the



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investment code which ultimately led to the passing of the GIPC Act, 1994 (Act 478). The government also established the Ghana Investment Promotion Council (GIPC) to not only encourage and promote investment in the country but also to coordinate investment in the country. The Gateway project was also initiated, along with all its incentives to make the country attractive to foreign investors. Furthermore, in 1994 the investment code was reviewed to improve the investment climate through:

1. The gradual but effective removal of administrative and some other bottlenecks that hindered the flow of private investment.
2. A review of the tax system to take into consideration the private sector investment by reducing the tax to 45% maximum by 1997 for some enterprises.
3. The establishment of retention accounts and foreign accounts for some companies in order to ensure that part of their profits are retained in the country to finance importation of essential spare parts, raw materials and machinery.
4. The enhancement of credit expansion in 1987 and 1988 to ensure that there was adequate finance to support the priority sectors of the economy.
5. The liberalization of the financial system.

1997-2003 saw flows oscillating, decreasing from US$81.8 million in 1997 to US$56 million in 1998 (the lowest over the 1993-2003 period), then peaking at US$267 million in 1999 before falling to US$115 million the following year. FDI dropped further to US$89 million and US$50 million, respectively, in 2001 and 2002 owing to the effect of the September 2001 attack on the United States and the consequent global FDI drop of 41% in 2001 and 21% in 2002 (UNCTAD, 2005). In 2003, the FDI recovery to US$137 million was due to a massive boost in FDI with the merger of Ashanti Goldfields and AngloGold and the beginning of a US$400 million gold mine investment by the US firm, Newmont. The period 2004 to 2011 also witnessed significant and increasing FDI net inflows, which reached a peak of US$3.2 billion in 2011 with the privatization of Ashanti Goldfields Company.

## 2.4 The Volume of Foreign Direct Investment Flows before and after IFRS Adoption

Ghana is one of the African countries that have attracted the most FDI targeted at the region. Consistently, FDI inflows to the country have been very high compared to most other African countries. In 2002, the country attracted a total FDI inflow amounting to $50.93 million. This increased steadily to $636.01 million in 2006. Ghana adopted IFRS in 2007. The FDI flows into Ghana have persistently increased from $1,383.18 million in 2007 to $3,227 million in 2013. There was a sharp increase of $747.17 million from 2006 to 2007. This can partly be attributed to the adoption of IFRS as foreign investors gain confidence in the Ghanaian market. This trend remained roughly stable until 2013 where FDI increased from $2527.35 million to $3,222.24 million in 2011 (see Table 1).

The economy of Ghana has depended on the following areas:

- **Manufacturing:** Ghana's industrial base is relatively advanced. Import–substitution industries include electronic manufacturing. RLG Communications is the first indigenous African company to assemble laptops, desktops, and mobile phones and is West Africa's biggest information and communications technology and mobile phone manufacturing company. As of 2012 there



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*Table 1. FDI profile in Ghana, 2002-2013*

| Year | Volume of FDI (US$'m) |
|---|---|
| 2002 | 58.93 |
| 2003 | 136.75 |
| 2004 | 139.27 |
| 2005 | 144.97 |
| 2006 | 636.01 |
| 2007 | 1,383.18 |
| 2008 | 2,714.92 |
| 2009 | 2,372.54 |
| 2010 | 2,527.35 |
| 2011 | 3,222.24 |
| 2012 | 3,294.52 |
| 2013 | 3,227.00 |

Source: (GSS, 2015)

were four major companies in the textiles sector: Akosombo Textiles Limited, Tex Style Ghana Limited, Printex Ghana, and Ghana Textile Manufacturing Company.

- **Telecommunications:** Ghana's telecommunications statistics indicated that as of 2013 there are 26,336,000 cell-phone lines in operation. Competition among mobile-phone companies in Ghana is an important part of the telecommunications industry growth of Ghana, with companies obtaining more than 80 per 100 persons as mobile phone and fixed-line phone users. The mass media of Ghana is among the most liberal in Africa, with Ghana ranking as the 3rd freest in Africa and 30th most free in the world on the worldwide press freedom index.
- **Private Banking:** The financial services in Ghana have seen a lot of reforms in the past years. The Banking (Amendment) Act 2007 included the awarding of a general banking license to qualified banks, which allows offshore banks to operate in the country. Barclays Bank, Limited was the first to be awarded the general banking license in Ghana. It has therefore become possible for non-residence individuals and foreign companies to open offshore bank accounts in Ghana.
- **Hydrocarbon and Mining**: Ghana has 5 billion barrels ($790\times10^6$ $m^3$) to 7 billion barrels ($1.1\times10^9$ $m^3$) of petroleum in reserves. A large oilfield which contains up to 3 billion barrels ($480\times10^6$ $m^3$) of sweet crude oil was discovered in 2007 (GSS, 2015). Oil exploration is on-going and the amount of oil continues to increase. Ghana produces crude oil, as of 15 December 2010, and until June 2011, Ghana exploited around 120,000 barrels per day and is expected to increase production up to 2.5 million barrels per day in 2014. Ghana has vast natural gas reserves, which is used by many foreign multinational companies operating in Ghana. The hydrocarbon industry has had major implications for regional and urban development in Ghana and these are likely to substantially increase in the years to come. Mining has gained importance in the Ghanaian economy since the turn of the 21st century, with a growth of around 30% in 2007. The main mining extractions are bauxite and gold.



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- **Tourism:** The Ministry of Tourism has placed great emphasis upon further tourism support and development. Tourism contributed to 4.9% of GDP in 2009, attracting around 500,000 visitors (Ghana Investment Promotion Centre, 2015). Tourist destinations include Ghana's many castles and forts, national parks, beaches, natural reserves, landscapes and World Heritage buildings and sites.
- **Agriculture:** Ghana National Agricultural Export is the government arm that operates, maintains, and oversees the planting of cocoa, cashews, and other crops for export. Since its inception, it has drastically assisted the government in boosting agricultural sales. Agribusiness accounts for a small fraction of the gross domestic product. The main harvested crops are corn, plantain, rice, millet, sorghum, cassava and yam. Unlike the agricultural livestock, forestry, and fishing sectors, the crop sector is key to the Ghanaian agricultural industry.

## 3. RESEARCH HYPOTHESES

### 3.1. Economic Growth

Since the creation of IASB, countries have tried to improve their accounts by applying IAS criteria. Having been developed and prepared by an international standard setting accounting body, these standards are heavily dominated and inspired by certain facts held by the developed countries (Zehr & Abdelbaki, 2013). Indeed, on examining the IASB composition and structure, it clearly appears that the developed countries over predominates as compared to that of the developing countries. This geographical discrepancy manifested itself in terms of topics treated and covered by these elaborated standards. In fact, the latter are generally advanced and proposed by the developed countries' representatives and, thus, raise the problems that are most faced by firms operating in these countries. This confirms the fact that accounting development has never been dissociated from economic development. Arpen and Radebaugh (1985) have considered that economic development is indeed the fundamental variable that deeply influences the development of accounting seeing that it affects other functions in society. On the academic level, the results highlighting the IFRS relationship with economic growth are controversial. Indeed, while the study of Zeghal and Mhedhbi (2006) has demonstrated that the IFRS adoption is more tolerable by the developing countries with high economic growth. Woolley (1998) has observed that, in an Asian context, no significant differences could be noticed in terms of economic growth among IFRS adopting and those applying their local standards. In light of the IFRS literature on adoption (Hove, 1986; Chamisa, 2000; Streets, 2002; Standish, 2003; Zeghal and Mhedhbi, 2006; Al-Akra et al, 2009), a set of hypothesis have been derived that pertains to studying the effect of the developing countries' economy on the adoption of IFRS.

**Hypothesis 1**

**Ho:** There is no significant relation between IFRS adoption and FDI inflows in Ghana.

**$H_1$:** There is significant relation between IFRS adoption and FDI inflows in Ghana.

**Hypothesis 2**

**$H_0$:** The stock of FDI inflow does not lead to economic growth in Ghana.

**$H_1$:** The stock of FDI inflow leads to economic growth in Ghana.



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## 3.2 Adoption and Implementation of IFRS in Ghana

In 2004, the World Bank and the Ministry of Finance and Economic Planning (MOFEP) commissioned a Report on the Observance of Standards and Codes (ROSC) in Ghana (World Bank, 2005). Reporting on the accounting and auditing practices in Ghana, ROSC observed that Ghana suffer from international weaknesses in regulation, compliance and enforcement of standards. Also, various weaknesses were identified in the laws and regulations governing financial reporting.

Although Ghana Accounting and Auditing Standards have been based on International Accounting Standards and International Standards on Auditing, respectively, they were out dated and significant gaps existed in comparison with the international equivalents. More so, full compliance with Ghana National Accounting Standards was not often achieved; some listed companies inappropriately claim compliance with International Accounting Standards. These were as a result of weak capacity and inadequate functioning of the Institute of Chartered Accountants. These also affected the monitoring and control of professional accountants' training and practice.

ROSC therefore recommended that the statutory framework, enforcement mechanisms, professional education and adoption of International Financial Reporting Standards (IFRSs) without any modifications, should replace the existing Ghana National Accounting Standards (World Bank, 2005).The Institute of Chartered Accountants Ghana, the country`s Accounting

Standard Setter joined the International Federation of Accountants (IFAC) in the year 2005. IFAC passed a directive by requesting its member countries to adopt IFRS. Consequently, Ghana put things in place and successfully launched the International Financial Reporting Standards (IFRS) on January 27, 2007. The conformity to the international accounting standards has been a major event championed by all to meet the ever increasing demands in the corporate reporting world. This mandated all public interest entity companies such as banks, listed companies, insurance companies, security brokers, pension funds just to mention but few to publish their financial statements for the periods covering or after 1 January 2007 in accordance with IFRS. But due to challenges of companies fully implementing the IFRS, 2008 was set as the reporting date. However, IFRS for Small and Medium Scale Enterprises (SMEs) were expected to be fully adopted in 2010. Though some opponents were of the view that the Institute of Chartered Accountants Ghana should not hasten the process but should do some consultations, whiles others believed it was a step in the right direction. The adoption was facilitated because, many believed it was not a matter of convenience but convergence and that if it delayed, the world will continue to move ahead (table 2).

Table 2 indicates absence of certain standards in GNAS in areas of accounting for government grants and disclosure of government assistance, borrowing cost, impairment of assets, intangible assets, financial reporting in hyperinflationary economies, first-time adoption of international financial reporting standards, non-current assets held for sale and discontinued operations, accounting and reporting by retirement benefit plan, share based payments, events after reporting date, related party disclosure and accounting for Agriculture. More so, there were differences in the treatments of the disclosure of Capital Surplus and Income Surplus, the effect of certain changes in accounting policies, deferred tax assets and liabilities, accounting for intangibles, dividend declared pending ratification and basis for segment accounting.



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*Table 2. Analysis of IFRS, Ghana National Accounting System (GNAS)*

| No | IFRS | Ghana (GNAS) |
|---|---|---|
| IAS 1 | Detailed framework for the preparation of financial statements | Several aspects of the framework were omitted. Particularly, the qualitative characteristics of financial statements were not visible |
| IAS 1 | Requirements to include statement of Changes in Equity | Not required under GNAS but the Companies code requires the disclosure of Capital Surplus and Income Surplus which could include some of the items to be included in the statement of changes in Equity |
| IAS 8 | Changes in Accounting Policy | GNAS requires that the effect of certain changes in accounting policies should be included in the extraordinary items in the current period |
| IAS 27 | Non-controlling interest is to be separately disclosed for both parent and subsidiary on the face of the income statement and the statement of financial position | GNAS omits the IAS disclosure of minority interest on face of income statement |
| IAS 12 | Recognition of deferred tax assets and liabilities for all temporary differences | GNAS requires deferred tax assets and liabilities to be created only for timing differences relating to depreciation |
| IAS23 | Full disclosure of borrowing costs | Disclosure for borrowing costs and the capitalization rate was absent |
| IAS41 | Provides extensive guidance on account for agriculture and biological related assets. | GNAS does not have a substantive standard on accounting for Agriculture |
| IAS38 | The recognition and measurement of intangible assets differs depending on whether they are purchased individually or acquired through a business combination, or whether they are internally generated | No substantive accounting standard dealing specifically with accounting for intangibles, example, measurement and recognition except goodwill in business combinations, but requires disclosure for Goodwill, patent, trademarks and similar assets |
| IFRS 5 | Requires separate disclosures for discontinued operations | There is no substantive standard that provides detailed guidance on discontinued operations |
| IAS 40 | Treats changes in value on investment property directly in the statement of comprehensive income | No substantive standard specifically for investment property, but accounting for investments in GNAS requires that investment property be accounted for as long term investments or as Property Plant and Equipment |
| | Requires that dividend liability should only be created when dividend is declared and not when it is proposed as these may or may not be ratified | GNAS allows dividend declared pending ratification at Annual General Meeting to be recognized as appropriation of retained earnings and forms a component of liabilities in the statement of financial position |
| IFRS 8 | Leaves it up to management to decide on the definition of operating segment and the financial information provided but should reflect the way the business is managed | GNAS did not identifying primary or secondary segments but did required that industry segments and geographical segments be used as a basis for grouping the operations of an entity |

## 3.3 IFRS, FDI, and the Economy

The harmonization of financial reporting globally through the International Financial Reporting Standards is an accounting response to the integration of world capital markets. The IFRS is a global GAAP, setting principles–based and globally accepted standard published by the IASB to support those who adopted the preparation and presentation of a high quality, transparent and comparable financial statements that will aid easy interpretation. The presence of significant differences among various national accounting systems causes an information asymmetry of local investors at the expense of foreign ones, who do not



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possess detailed knowledge of local economic and political environment. Consequently, prohibitive informational obstacles to cross-country investments occur (Pagano, Röell, & Zechner, 2002); and foreign investors have to pay a 'penalty premium' in transactions with the local investors (Gordon & Bovenberg, 1996). Rossi and Volpin (2004) highlighted the importance of good accounting practice as an important factor for increasing the chance of cross-country investments. The gradual adoption of the IFRS worldwide reduces and eliminates the costs of gaining information for the decision-making, as companies use the same system of financial reporting standards regardless their domicile. In this way, the IFRS as high-quality accounting standards contribute to the smooth functioning of global capital markets and shall promote the flows of foreign capital to adopting countries. Despite this important feature, research analyses the benefits of IFRS implementation only from investors' and microeconomic, perspective.

There are economic consequences of the IFRS adoption and that forms the focus of this chapter. Research about the role of the IFRS adoption on foreign direct investments is relatively new. This chapter extends the literature on the IFRS and its effect on the economy. The first comprehensive analysis of the effects of IFRS on FDI was performed by Ramos (2008) on the sample of EU countries. The author used a gravity model. The results provide evidence that the IFRS adoption has positively influenced FDI. Ramos (2008) assumed that accounting harmonization is a workable strategy to attract foreign investors by reducing their risks for investing abroad. Different approach was adopted by Farooque *et al.* (2009) who studied the interdependence of corporate governance and FDI inflows on the sample of twelve year data of 173 countries. Their research also comprises of the evaluation of IFRS adoption and legal origin on FDI and governance. Their findings show that IFRS have stronger effect on the governance rather on FDI. However, through an increased quality of governance, the IFRS allows free movement of capital around the world. Beneish *et al.* (2010) found that the IFRS adoption in the European Union has significant impact on attracting foreign debt investment. The effect on foreign equity investments is relatively small. However, the results of the study are impaired because only four non- EU countries were used as control factors. Chen, Tang, Jiang, and Lin (2011) investigated the effect of widespread adoption of IFRS on bilateral FDI within the OECD countries. They found that the shift from local accounting standards to IFRS contributed positively to the FDI growth during the period between 2001 and 2005.

According to Kumar (2007) FDI which involves building long-term relationships with enterprises in foreign countries can be made in several ways. First, and most likely, it may involve parent enterprises injecting equity capital by purchasing shares in foreign affiliates. Second, it may take the form of reinvesting the affiliate's earnings. Third, it may entail short- or long-term lending between parents and affiliates. To be categorized as a multinational enterprise for inclusion in FDI data, the parent must hold a minimum equity stake of 10 percent in the affiliate (Kumar, 2007). Garkovic and Lavin (2002), noted that economic rationale for offering special incentive to attract FDI frequently is derives from the belief that foreign investment produces externalities in the form of technology transfer and spill overs. DeGregorio (2003), while contributing to the importance of FDI noted that it allows a country to bring in technologies and knowledge that are not readily available to domestic investors and increases productivity throughout the economy. Jeffrey and Spaulding (2005) also stated that FDI advantage includes; circumventing trade barriers, hidden and otherwise making the move from domestic export sales to a locally-based national sales office and capability to increase total production capacity, opportunities for co-production, joint ventures with local partners, and joint marketing arrangements.

According to Okoye and Akenbor (2012), there are perceived challenges to be presented by IFRS adoption and implementation. The intrinsic problems of aligning with IFRS pointed out that international accounting clearly has a language problem (Ukpai, 2002). Adams (2004) claimed that where an



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accounting standard conflicts with government policy, the standard is revised. For example the LIFO method of stock valuation is not allowable for tax purpose in Nigeria. Another problem inherent with the adoption of IFRS is the universal tendency to resist change. Gambari (2010) noted that the successful adoption of IFRS entails assessing technical accounting, tax implications, internal processes, and statutory reporting, technology infrastructure, and organizational issues.

## 4. METHODOLOGY

Data for the study were obtained from questionnaire on IFRS, foreign direct investment and economy. The population of this study consists of preparers and users of financial reports. The preparers are (31) active quoted companies in Ghana Stock Exchange between 2007 and 2014 represented by Directors / Finance Managers responsible for the preparation of financial statements who are selected as respondents due to their involvement and knowledge of IFRS. The users of financial reports are investors represented by (100) Investment analysts firms and institutional investors identified from the list of capital market operators compiled by the Ghana Stock Exchange. Investment Analyst are selected as respondents for the fact that they are principal users of financial reports (Clement & Tse, 2003; Mangena, 2004), they have good investment knowledge which aids analysis of financial reports and decision making (Baker, 1998). They also provide analytical information that meets the needs of their clients (Gebhardt, Reichadt &Wittenbrink, 2004). The Analyst's financial report usage rate is higher than that of all other users. A sample of 100 persons was selected at random, representing 76% of the total population. The survey questionnaire instrument consisted of seven question with a - 5 Likert scale response options divided into two sections. The options available Very Relevant (VR), Relevant (R), No Effect (NE) Irrelevant (I), and Very Irrelevant (VI). Various methods were employed to test the reliability and validity of the survey design. For structured problems described by Likert 5-scale table, Cronbach's alpha values was used to evaluate the internal consistency, reflecting the reliability of survey design. Pilot survey was adopted for the reliability test and it yielded correlation coefficient of 0.88. It was structured in line with the research questions and hypothesis of the study. To establish the relationship between IFRS and FDI Pearson Product Moment Correlation Coefficient was used. This is calculated as:

$$r = \frac{n\Sigma xy - \left(\Sigma x\right)\left(\Sigma y\right)}{\sqrt{[n\Sigma x^2 - (\Sigma x)^2][n\Sigma y^2 - (\Sigma y)^2]}}$$

## 5. EMPIRICAL RESULTS (TABLES 3-8)

### Hypothesis 1

**Ho:** There is no significant relation between IFRS adoption and FDI inflows in Ghana.
**$H_1$:** There is a significant relation between IFRS adoption and FDI inflows in Ghana.



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$$r = \frac{n\Sigma xy - \left(\Sigma x\right)\left(\Sigma y\right)}{\sqrt{[n\ \Sigma x^2 - \left(\Sigma x\right)^2][n\Sigma y^2 - \left(\Sigma y\right)^2]}}$$

where

n = 5, Σx = 15, Σy = 65, Σxy = 314.50, $\Sigma x^2 = 55$, $\Sigma y^2 = 3{,}390.5$

$$r = \frac{5\left(275.5\right) - \left(15\right)\left(61.5\right)}{\sqrt{[5\left(55\right) - \left(15\right)^2][5\left(3,390.5\right) - \left(65\right)^2]}}$$

r = **0.57 (57%)**

*Decision:* The r calculated of 0.57 is greater than 0.5 level of significance. The alternate hypothesis is accepted. There is significant relation between IFRS adoption and implementation and FDI inflows in Ghana.

## Hypothesis 2

**$H_0$:** The stock of FDI inflow does not lead to economic growth in Ghana.
**$H_1$:** The stock of FDI inflow leads to economic growth in Ghana.

$$r = \frac{n\Sigma xy - \left(\Sigma x\right)\left(\Sigma y\right)}{\sqrt{[n\ \Sigma x^2 - \left(\Sigma x\right)^2][n\Sigma y^2 - \left(\Sigma y\right)^2]}}$$

where:

n = 5, Σx = 15, Σy = 65, Σxy = 279, $\Sigma x^2 = 55$, $\Sigma y^2 = 1{,}824.5$

$$r = \frac{5\left(275.5\right) - \left(15\right)\left(61.5\right)}{\sqrt{[5\left(55\right) - \left(15\right)^2][5\left(1,824.5\right) - \left(65\right)^2]}}$$

r = **0.92 (82%)**

*Decision:* The r calculated of 0.92 is greater than 0.5 level of significance. The alternate hypothesis is accepted. The stock of FDI inflow leads to economic growth in Ghana



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*Table 3. Responses on key issues relating to the relationship between IFRS adoption and FDI inflow into Ghana*

| S/N | Variables (Responses (in %) | Preparers of Financial Statements (Finance Managers) | | | | | Users of Financial Statement (Investment Analyst) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | VR | R | NE | I | VI | VR | R | NE | I | VI |
| 1 | IFRS improves the quality of Financial statements and increase access to global capital market | 40<br>67% | 13<br>22% | 2<br>3% | 3<br>5% | 2<br>3% | 51<br>73% | 14<br>20% | 3<br>5% | 1<br>1% | 1<br>1% |
| 2 | IFRS adoption ensures the use of one standard for parent and subsidiary companies | 55<br>92% | 5 8% | 0<br>0% | 0<br>0% | 0<br>0% | 45<br>64% | 20<br>29% | 0<br>0% | 5<br>7% | 0<br>0% |
| 3 | IFRS has positive effect on the information for control and decision making by investors | 33<br>55% | 5 8% | 10<br>17% | 10<br>17% | 2<br>3% | 40<br>57% | 22<br>31% | 5<br>7% | 3<br>5% | 0<br>0% |
| 4 | IFRS adoption has significant effect on FDI in flows | 55<br>92% | 4 6% | 1<br>2% | 0<br>0% | 0<br>0% | 61<br>88% | 6 9% | 1<br>1% | 1<br>1% | 1<br>1% |

Source: Field survey, March 2015

*Table 4. Calculation of correlation. Question 4 of questionnaire administered: IFRS adoption has significant effect on FDI inflows in Ghana.*

| Options | Preparers of Financial Reports (PFR) | | | | | Users of Financial Reports (UFR) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Point (x) | Response (y) | xy | $x^2$ | $y^2$ | Point (x) | Response (y) | $x^2$ | $y^2$ |
| VR | 5 | 55 | 275 | 25 | 3025 | 5 | 61 | 25 | 3721 |
| R | 4 | 4 | 16 | 16 | 16 | 4 | 6 | 16 | 36 |
| NE | 3 | 1 | 3 | 9 | 1 | 3 | 1 | 9 | 1 |
| I | 2 | 0 | 0 | 4 | 0 | 2 | 1 | 4 | 1 |
| VI | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |
| **∑** | **15** | **60** | **294** | **55** | **3042** | **15** | **70** | **55** | **3760** |

Source: Author's computation, March 2015

*Table 5. Calculation of Correlation*

| Options | AA Point (x) | AA Response (y) | AA (xy) | AA ($x^2$) | AA ($y^2$) |
|---|---|---|---|---|---|
| VR | 5 | 58 | 290 | 25 | 3364 |
| R | 4 | 5 | 20 | 16 | 25 |
| NE | 3 | 1 | 3 | 9 | 1 |
| I | 2 | 0.5 | 1 | 4 | 0.25 |
| VI | 1 | 0.5 | 0.5 | 1 | 0.25 |
| ∑ | 15 | 65 | 314.5 | 55 | 3,390.5 |

Source: Author's Computation, March 2015 (Note: AA = Average aggregate)



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*Table 6. Response on key issues relating to the relationship between FDI inflows and economic growth the Ghana*

| S/N | Variables Responses (in %) | Preparers of Financial Statements (Finance Managers) | | | | | Users of Financial Statement (Investment Analyst) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | VR % | R % | NR % | I % | VI % | VR % | R % | NR % | I % | VI % |
| 1 | FDI inflows ensures that technologies and funds are available to the local industry | 40 67% | 13 22% | 2 4% | 3 3% | 2 4% | 52 75% | 12 17% | 4 6% | 1 1% | 1 1% |
| 2 | FDI inflows lead to the mobilization of more input resources and improve GDP | 55 92% | 5 8% | 0 0% | 0 0% | 0 0% | 44 63% | 20 29% | 1 1% | 5 7% | 0 0% |
| 3 | Economic growth depend on FDI inflows | 38 63% | 5 8% | 5 8% | 10 17% | 2 4% | 42 60% | 20 29% | 5 7% | 3 4% | 0 0% |

*Table 7. Calculation of correlation*

| Options | Preparers of Financial Reports (PFR) | | | | | Users of Financial Reports (UFR) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Point (x) | Response (y) | xy | $x^2$ | $y^2$ | Point (x) | Response (y) | $x^2$ | $y^2$ |
| VR | 5 | 38 | 190 | 25 | 1444 | 5 | 42 | 25 | 1764 |
| R | 4 | 5 | 20 | 16 | 25 | 4 | 20 | 16 | 400 |
| NE | 3 | 5 | 15 | 9 | 25 | 3 | 5 | 9 | 25 |
| I | 2 | 10 | 20 | 4 | 100 | 2 | 3 | 4 | 9 |
| VI | 1 | 2 | 2 | 1 | 4 | 1 | 0 | 1 | 0 |
| **∑** | **15** | **60** | **247** | **55** | **1598** | | **70** | **55** | **2,198** |

*Table 8. Calculation of correlation*

| Options | AA Point (x) | AA Response (y) | AA (xy) | AA ($x^2$) | AA ($y^2$) |
|---|---|---|---|---|---|
| VR | 5 | 40 | 200 | 25 | 1600 |
| R | 4 | 12.5 | 50 | 16 | 156.25 |
| NE | 3 | 5 | 15 | 9 | 25 |
| I | 2 | 6.5 | 13 | 4 | 42.25 |
| VI | 1 | 1 | 1 | 1 | 1 |
| **∑** | **15** | **65** | **279** | **55** | **1,824.50** |

Source: Author's Computation, March 2015 (Note: AA = Average aggregate)



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## 6. DISCUSSION OF RESULT

The research work centres on determining the relationship between IFRS adoption and foreign direct investment inflow as basis for economic growth in Ghana. The results of hypothesis tested revealed that there is a significant relationship between IFRS adoption and FDI in Ghana. This is in conformity with previous studies (Zeghal & Mhedhbi, 2006; Al-Akra et al., 2009). It is clearly discovered that the economic growth including FDI constitutes a major determinant for adopting the international accounting standards. Actually, this result confirms not only the hypothesis 1of this study but also the assertions of the strong association of economic growth and the accounting standards.

The rigorous process of conversion of existing records to IFRS involved training and employment of appropriate manpower. Government and policy makers have to put adequate infrastructure and regulatory framework in place to address those issues hindering its full implementation. The implication of IFRS on the economy is the fact that financial reporting among the countries that have adopted IFRS is uniform and comparability becomes easier as well as the ease of interpretation of financial statements. This will in many ways boost global investors' confidence and lead to cross border financial transaction. The IFRS adoption will definitely enhance international accounting as a sub discipline within the field of accountancy (Glautier & Underdown, 2001). The survey also revealed that the adoption of IFRS will promote companies' access to global capital markets thereby exposing them to cross-border investments. This agrees with Zeghal and Mhedhbi (2006) findings. However, the responses revealed that IFRS adoption has neither made much impact in making timely and accurate reports available nor has it made the financial statements more reliable. Quoted companies which have adopted IFRS are able to generate more funds from foreign sources through the capital market.

## 7. RECOMMENDATIONS

From the findings of this study, the researcher hereby recommends the following steps to ensure a successful adoption and implementation of IFRS in Ghana. Government and the regulators should ensure that there is availability of training facilities and materials for professional accountants on the concept of IFRS and issues relating to its implementation and conversion. Compliance with IFRS should be mandatory for both listed and unlisted companies and failure should be marched with appropriate sanctions. Government need to release more funds to educate all stakeholders with special reference to the academics, staff and accounting students who will uphold the future IFRS in the country and develop plan to help properly equip the company for upcoming changes (Lewis & Pendril, 1996). Professional accounting bodies in Ghana need to make IFRS training a part of their training programme at a reduce cost. While monitoring the IFRS implementation timetable, both government and regulators should ensure that ethical environment and corporate transparency are observed.



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## 8. FUTURE RESEARCH

The findings of this research raise concerns on a number of important issues and may provide avenues for further research. For instance, one economic development indicator was employed in this chapter. One can construct other indices following the literature which may require more data or effort to be assembled. In cases of impact of IFRS, a dynamic analysis could be employed such as multiple regression and the extension of sample size to include other African countries.

## 9. CONCLUSION

In this study, attempts were made to assess the relationship between IFRS adoption and FDI and the effect on the Ghanaian economy. Based on the findings, it was concluded that the adoption of IFRS is a right step in the right direction. Although there are many issues and challenges facing the implementation, the benefits outweigh the challenge. With adoption, Ghana companies will produce a more credible financial statements that will not only be uniformed but also provide a basis for better interpretation. This invariably will boost investors' confidence and attract cross border financial transactions which is the basis for economic growth.

The empirical analysis results have shown that developing countries most favourable to the adoption of IFRS are those having a high economic growth rate, a high level of education and a common law based on a legal system. Available statistics about international flows in the form of investment in recent years have raised the interest of economic research. The traditional neoclassical model using the assumption of pure substitution effect between labour and capital has been replaced by models, which work with social networks. Therefore, FDI are supposed to flow to countries adopting IFRS in the long-term perspective. In addition, the adoption of the IFRS is only the first step. Because of cultural differences, the discrepancies in the actual quality of their implementation in financial statements of companies from different countries exist. The IFRS adoption is only one factor influencing the decision, where to allocate investments.

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## KEY TERMS AND DEFINITIONS

**Consolidated Financial Statements:** The financial statements of a group in which the assets, liabilities, equity, income, expenses and cash flows of the parent and its subsidiaries are presented as those of a single economic entity.

**Economic Growth:** It is an increase in the capacity of an economy to produce goods and services, compared from one period of time to another. It can be measured in nominal terms, which include inflation, or in real terms, which are adjusted for inflation.

**Financial Statement:** It is a formal record of the financial activities of a business, person, or other entity. Relevant financial information is presented in a structured manner and in a form easy to understand.

**Foreign Direct Investment (FDI):** It is defined classically as a company from one country making a physical investment into building a factory in another country. The direct investment in buildings, machinery and equipment is in contrast with making a portfolio investment, which is considered an indirect investment. In recent years, given rapid growth and change in global investment patterns, the definition has been broadened to include the acquisition of a lasting management interest in a company or enterprise outside the investing firm's home country.

**International Accounting Standards (IAS):** These are accounting standards issued by the International Accounting Standards Board (IASB) and its predecessor, the International Accounting Standards Committee (IASC).

**International Financial Reporting Standards (IFRS):** It is a single set of accounting standards, developed and maintained by the IASB with the intention of those standards being capable of being applied on a globally consistent basis by developed, emerging and developing economies. This provides investors and other users of financial statements with the ability to compare the financial performance of publicly listed companies on a like-for-like basis with their international peers.



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**Pearson Product-Moment Correlation Coefficient (r):** It is a measure of the strength of a linear association between two variables and is denoted by r. It represents a measure of the linear correlation (dependence) between two variables such as IFRS adoption and FDI or X and Y, giving a value between $+1$ and $-1$ inclusive, where 1 is total positive correlation, 0 is no correlation, and $-1$ is total negative correlation.

**The International Accounting Standards Committee (IASC):** It is an independent private-sector organization that in its own words is a 'body working to achieve uniformity in the accounting principles that are used by businesses and other organizations for financial reporting around the world.'

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# Chapter 33
# Economic and Political Factors Affecting Foreign Direct Investment in the MENA Region

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## ABSTRACT

*This study examines the relationship between variables thought to have an effect on foreign trade investment (FDI) including volume of trade, GDP growth rate, trade credit risk and political stability. Specifically, this study is concerned with the 1981-2012 period in the MENA region, made up of the Middle East and North African countries of Algeria, Bahrain, Egypt, Jordan, Morocco and Tunisia. Another objective of the study is to determine whether economic factors are more impactful than political factors on the FDI flow to MENA countries. In order to investigate long-term relationships between the variables, three cointegration analyses were used including Pedroni, Kao and Johansen, and Fisher. Coefficients were interpreted using the FMOLS and the DOLS methods. The Holtz-Eakin Causality Test was also applied. As a result of the analysis, volume of trade was found to be the most important factor determining FDI. Economic factors were found to be more influential for FDI than political factors.*

## INTRODUCTION

Changes in the world economy and politics in the last quarter of the twentieth century have brought new geographies to the fore. This study examines the Middle East and North Africa (MENA), where world politics and economy have been continuously shaped from the past to the present. In this region where changes are occurring and new balances are being sought, the main determinants of foreign direct investment (FDI) are analyzed. In addition, the hypothesis that economic factors are more impactful on the FDI flow to MENA countries than political factors is tested.

This empirical analysis explores the FDI flow to the MENA countries of Algeria, Bahrain, Egypt, Jordan, Morocco and Tunisia during the period 1981-2012. It investigates the effects of economic variables in conjunction with political stability, on FDI in these countries. Volume of trade, growth in gross

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domestic product (GDP) per capita, and trade credit risk are the economic variables in the study. In the framework of the results gathered from the analysis, the study gives solutions and recommendations and makes future assessments.

Importantly, the impact of trade credit risk on FDI is analyzed as an economic indicator for the first time in this discussion. A further contribution to the extant literature is that this is the first empirical study which considers the effects of the political stability factor on FDI inflows to the MENA countries together with political developments such as the Arab Spring. Against the backdrop of the MENA region, this study defines FDI and introduces its importance. The major factors that determine FDI inflows into a country are discussed accompanied by a thorough literature review. Information about the empirical methodology and data are given and the empirical analysis results are evaluated. Finally, solutions, recommendations, future trends and conclusions are mentioned.

## BACKGROUND

FDI involves the establishment of a new company, the acquisition of an existing company, or the increase of one's capital in foreign countries. Foreign capital intends to achieve high profits. In making investment decisions, it considers the country's growth performance together with economic and political risks. Therefore, low risk countries with high growth rate or potential are expected to attract more foreign capital (Ağayev, 2010).

There are factors related to the economic, political, and investment climate which influence FDI: market size, openness index, tax burden, labor costs, skilled labor, natural resource stocks, technology level, exchange rate, inflation rate, population growth rate, unemployment, rate of growth, macroeconomic stability, trade risks, political stability, bureaucratic structure, institutional and social structures, transparency, transportation costs, and infrastructure are some of these factors.

Many studies point to the host country's market size as an important factor in FDI decisions. Alam and Shah (2013) investigate potential determinants for FDI in their panel data analysis of 10 OECD countries. They conclude that investors are influenced by variables such as market size, labor costs, and the quality of infrastructure, and that policies should be implemented to improve infrastructure and reduce labor costs. In the short term, there is a bi-directional relationship between market size and labor costs. Quality of infrastructure affects labor costs and market size in the short term. Zang and Markusen (1999) also conclude that market size and labor force are influential factors in FDI.

High population and a high population growth rate can be considered as factors encouraging FDI since they influence consumer demand in the domestic market and reflect the size of the market. However, they may have a weak effect on FDI depending upon purchasing power and GDP per capita. Resmini (2000) concludes that Central and Eastern European countries with a high population are able to attract more FDI flows than those with low population. According to Erçakar (2004), demographic factors of the countries are closely related to the degree of FDI that is likely to enter the country. It is generally accepted that FDI providers seek countries with a high rate of population growth, high unemployment, and low domestic investment, as labor costs tend to be cheaper.

According to Carr, Maskusen, and Maskus (2004), FDI providers from the United States choose countries with skilled labor while FDI providers from other countries choose developing countries with less skilled labor. This choice made by countries other than the United States shows that investment in other countries follows an approach based on low level of wages. Açıkalın, Gül, and Yaşar (2006),



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in their study of the Turkish economy in the period 1980-2002, analyze the relationship between real wages and FDI with a cointegration test and identify a long-term relationship. Schneider and Frey (1985) suggest that high wages deter FDI.

Sawalha, Mazouzi, and Pellet (2013) also suggest the development of human capital in the host country has a positive impact on FDI flows. De Mello (1997) concludes in his study consisting of 32 OECD members that FDI has a positive influence on a country's economic growth by complementing domestic investment. This influence reveals itself by contributing to labor qualification and the acquisition of new management skills. In their study of 69 developing nations during the period 1970-1989, Borensztein, De Gregorio, and Lee (1998) found that FDI inflows have a marginal role in growth, which is also connected to the host country's level of human capital. In short, a powerful and positive interaction was found between educational indicators that were used to represent the human capital and the FDI. They concluded that in developing countries with low levels of human capital FDI inflows have negative impacts.

Transnational corporations account for the world's most important resource in research and development (R&D) activities. Their level of technology is much higher than the current level of technology in developing countries. Therefore, the potential these companies have in introducing important technological developments is very strong (OECD, 2002). Nunnenkamp (2004) states that FDI is not only a tool that allows the transfer of capital to developing countries. Technology not only increases productivity in developing countries, but also is a powerful mechanism for know-how transfer. Thus, foreign investment can lead to increased productivity not only in sectors where foreign capital is found, but also throughout the economy (Carkovic & Levine, 2002; Nunnenkamp, 2004).

There is a significant amount of competition among developing countries to attract FDI. Çak and Karakaş (2009) state the total tax burden that includes corporate tax as well as the burden composed of wages, profit distribution, and foreign trade taxes is an important variable for FDI. Both the corporate tax rate and the total tax burden can be said to have a negative impact on FDI. Egger & Raff (2011), in their panel data analysis on 43 countries spanning the years from 1982 to 2005, have found a significant relationship between tax rates and FDI. Erçakar (2004) also reaches a similar result. The effects of tax incentives on FDI in MENA countries were investigated in an OECD research project in 2007. The results put forward that the impact of taxation and investment incentives on FDI is limited. Political stability, economic stability, legal framework, and bureaucracy are seen as strategically more important for FDI.

In Edwards' (1990) study on developing countries, it is suggested there is a strong positive relationship between FDI and exchange rates. According to Froot and Stein (1991), there is a negative relationship between exchange rate and FDI. Real devaluation in the host country's national currency will increase welfare for foreign investors. Froot and Stein conclude that depreciation of the dollar increases FDI levels in the host country. Dabour (2000) concludes that FDI in oil exporting countries contributes to their economic growth. Moura and Forte (2010) suggest that FDI will contribute to the host country's economic growth economically, politically, and socially.

In his study of 25 transitional economies, Ağayev (2010) has found a strong causality from FDI to economic growth and also a weak one in the opposite direction. Accordingly, FDI inflows to transition economies support economic growth. Similarly, an increase in growth rate attracts more FDI to the country. The existence of causality from economic growth to foreign capital investment supports the idea of system-endogenous growth dynamics proposed by growth theories. In the Chakraborty and Nunnenkamp (2008) study on India, FDI in the long-term has a positive effect on the amount of production in the host country. Nath's (2005) study on 10 Central and Eastern European transition economies



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covering 1990-2000 and Emmanuel's (2013) study on Nigeria from 1986 to 2011 both demonstrate that FDI has a positive effect on economic growth.

However, the host country may not always receive the expected benefits from FDI as funds generated in the host country by a branch company are transferred to the foreign parent company. Such a transfer can be considered a negative condition which prevents the accumulation of resources in the host country. What is important is to prevent local firms from failing against FDI-generated competition and being completely excluded from the market (Gedikli, 2011). In contrast to the neo-liberal economists, Keynesians argue that the benefits of FDI will not be the same for all host countries. How much the host country will benefit from FDI depends on several factors.

First, it is important that there is complete information flow in the market. Inadequate and inaccurate information can lead to wrong investments. Sometimes the interests of foreign investors and of the host country do not coincide. In this case, the government of the host country makes a variety of regulations (Zilinske, 2010). When foreign investors in the host country become a monopoly in the domestic market, this leads to a "crowding out effect". In Kumar and Pradhan's (2002) study spanning the years 1980-1999, while no FDI effect was observed in 31 host countries, a crowding out effect was observed in 29 countries and a crowding in effect was observed in 23 countries.

In Agosin & Mayer's (2000) study on 39 Asian, African, and Latin American countries spanning the years 1970-1996, a crowding out effect was observed in Latin American countries. Alagöz, Erdoğan, and Topallı (2008) put forth that there was not any bi-directional significant relationship between FDI and economic growth in Turkey during the period 1992-2007. Similarly, Lipsey's (2006) study on Central and Eastern European countries and Carkovic and Levine (2002) in their study covering 72 countries in the years 1960-1995 suggest there is a negative relationship between economic growth and FDI.

## FOREIGN DIRECT INVESTMENT IN THE MENA REGION

In the last 30 years, one of the most important indicators of globalization has been the marked increase in FDI flows. Since the 1980s, markets have started to become globalized with the gradual removal of trade barriers. Countries have faced serious competition to obtain a larger share of international investment by transnational corporations. From the perspective of increasing FDI flows, changes have been observed both for the investor and the host countries. Disadvantaged regions which have until recently been regarded as marginal zones today draw FDI flows. Developing countries such as Brazil, Russia, India, and China (BRIC), and others such as South Africa and Malaysia have started to make and host FDI at the same time (Chauvin, 2013).

FDI in the world generally flows to developed countries since they do not have infrastructure problems, do not incur extra costs, and have economic and political stability. However, in 2004 before the Global Financial Crisis of 2008, a total of 5,800 of 9,800 new investment projects went to developing and transition countries. China had the largest share of these new projects with a total of 1,529 investments. There were 685 new projects in India, a total of 377 in Russia, a total of 258 in Brazil, a total of 173 in Singapore, a total of 156 in the United Arab Emirates (UAE), some 154 in Mexico, a total of 125 Malaysia, a total of 122 in Hong Kong, a total of 121 in Thailand, and 100 in Korea. Among the developing countries, China attracted the largest amount of FDI totaling US$70 billion.



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Inflows of foreign capital experienced the greatest increase in Australia, Switzerland, Luxembourg, and Sweden. Worldwide FDI, which experienced a limited contraction of 14% in 2008, was more deeply affected by the Global Crisis in 2009. A 39% decrease in global FDI inflow of around US$1 trillion occurred in 2009. In 2008, FDI inflow to developing and transition countries did not fall but instead increased by around 35%. However, following six years of uninterrupted growth, FDI flow to developing countries fell by 39% in 2009. Among developed countries, England, Sweden, Spain, Japan, and the United States experienced over 50% decrease in FDI inflows (Erçakar & Karagöl, 2011).

According to the 2013 World Investment Report by the United Nations Conference on Trade and Development (UNCTAD), global FDI flows declined immediately after the Global Financial Crisis due to the debt crisis and recession in Europe. However, this led to a shift of capital to developing countries. The share of FDI inflows to developing countries rose for the first time to above 50% in 2010 and reached 50.9% in 2011. In 2012, the share of FDI inflows to developing countries was 58.5%. Again in 2012, the United States attracted the most FDI with US$167.6 billion. China ranked second with US$121.1 billion followed by Hong Kong with US$74.6 billion.

Among developing countries, China, Hong Kong, Brazil, Singapore, the British Virgin Islands, Russia, Chile, India, Indonesia, Colombia, Kazakhstan, Mexico, and Argentina attracted the most FDI. According to the report, in recent years the course of FDI has shifted from European Union (EU) countries to South and East Asia due to the current crisis in Europe. FDI inflows ranking to the MENA countries are shown in Table 1. According to the UNCTAD's 2014 World Investment Report, global FDI flows in 2013 increased by 9% and reached US$1.45 trillion. This trend of growth of FDI flows is expected to reach US$1.6 trillion in 2014, some US$1.7 trillion in 2015, and approximately US$1.8 trillion in 2016.

According to the Report (UNCTAD, 2014), developing countries represent half of the top 20 countries in FDI flow. Developed countries make up for 39% of total FDI, whereas developing countries account for 54%. The Asian region, including China, which attracts the most foreign investment reached a figure higher than US$420 billion. Middle Eastern and North African countries, known as the MENA region, did not have their fair share of the FDI flows. In 2013, there were only two MENA countries among the most FDI attracting 20 countries. These countries are the UAE which ranked 16th and Saudi Arabia which ranked 19th. In the first quarter of 2014, international investors were largely cautious with their FDI spending due to low growth rates made permanent in the Eurozone, China's slowing economic growth, heated political instability in the MENA region and the rising political and military tensions in the east of Ukraine (OECD, 2014).

MENA countries can be divided into some sub-groups in terms of their levels of development. The Arab Republic of Egypt, Jordan, Morocco, Tunisia, Lebanon, and Djibouti are labor-abundant and resource-poor countries. Algeria, the Islamic Republic of Iran, Iraq, the Syrian Arab Republic, and the Republic of Yemen are both labor- and resource-rich. Saudi Arabia, the UAE, Kuwait, Libya, Qatar, Oman, and Bahrain have insufficient labor; however, they are nations with rich natural resources (World Bank, 2007). Among these countries, Malta, Sudan, as well as the West Bank and Gaza are also in the data bank of World Development Indicators. Israel is the only developed country among the countries of the MENA region. The MENA region owns 60% of world oil reserves and 45% of world natural gas reserves. Eight of the twelve members of OPEC are in the MENA region. Therefore, when analyzing the FDI flows into the MENA region, both political factors and economic factors need to be taken into consideration (Turkishtime, 2013).



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*Table 1. FDI inflows ranking to the MENA countries in 2013*

| 2013 Ranking | Country | 2013 (millions of dollars) |
|---|---|---|
| 1 | China | 123.911 |
| 2 | British Virgin Island | 92.300 |
| 3 | Russia | 79.262 |
| 4 | Hong Kong | 76.633 |
| 5 | Brazil | 64.045 |
| 6 | Singapore | 63.772 |
| 7 | Mexico | 38.286 |
| 8 | India | 28.199 |
| 9 | Chili | 20.258 |
| 10 | Indonesia | 18.444 |
| 11 | Colombia | 16.772 |
| 12 | Thailand | 12.946 |
| 13 | Turkey | 12.866 |
| 14 | Malaysia | 12.306 |
| 15 | Korea | 12.221 |
| 16 | United Arab Emirates (UAE) | 10.488 |
| 17 | Peru | 10.172 |
| 18 | Kazakhstan | 9.739 |
| 19 | Saudi Arabia | 9.298 |
| 20 | Argentine | 9.082 |
| **Source:** UNCTAD, 2014. | | |

*Table 2. Stock of FDI in MENA countries (millions of dollars)*

| Country | 1990 | 2000 | 2013 |
|---|---|---|---|
| Saudi Arabia | 15.193 | 17.577 | 208.330 |
| United Arab Emirates | 751 | 1.069 | 105.496 |
| Israel | 4.476 | 20.426 | 88.179 |
| Egypt | 11.043 | 19.955 | 85.046 |
| Lebanon | 53 | 14.233 | 55.604 |
| Iran, Islamic Republic of | 2.039 | 2.539 | 40.941 |
| Tunisia | 7.615 | 11.545 | 33.557 |
| Sudan | 55 | 1.398 | 29.148 |
| Qatar | 63 | 1.912 | 29.964 |
| Jordon | 1.368 | 3.135 | 26.668 |
| Algeria | 1.561 | 3.379 | 25.298 |
| Kuwait | 37 | 608 | 21.242 |
| Oman | 1.723 | 2.577 | 19.756 |
| Libya | 678 | 471 | 18.461 |
| Bahrain | 552 | 5.906 | 17.815 |
| Iraq | .. | -- | 15.295 |
| Syrian Arab Republic | 154 | 1.244 | 10.743 |
| Morocco | 3.011 | 8.842 | 5.028 |
| Yemen | 180 | 843 | 3.675 |
| State of Palestine | .. | 647 | 2.750 |
| **Source:** UNCTAD, 2014. | | | |

Oil-rich countries Saudi Arabia and the United Arab Emirates demonstrate the greatest growth in terms of FDI over time. Since 1990, FDI in the MENA countries has increased steadily (see Table2). FDI to the MENA region increased the six-fold between 1990 and 2000 and 12-fold between 2000 and 2010. Despite the increasing dynamism of economies in the countries of the MENA region during the last 10 years, only a 5.5% increase was experienced. This figure is very low compared with the 20% FDI inflow at the beginning of the 1980s (Chauvin, 2013).

The FDI inflows to the MENA region in 2001 exceeded US$95 billion by 2008. This figure corresponded to 14.4% of the total FDI to developing countries. The significant increase in FDI was mainly caused by positive economic developments in the oil-rich countries, business environments, legal regulations, and privatizations in various countries. However, this positive trend deteriorated due to the global crisis, and FDI inflows decreased by 25% in 2009 and 12% in 2010. The political instability in the region which began in 2010 together with regime changes can be interpreted to have had a negative impact on FDI inflows to the MENA region (see Table 3).



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*Table 3. FDI inflow to the MENA countries (millions of dollars)*

| Country | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|
| Israel | 5.510 | 10.766 | 9.481 | 11.804 |
| United Arab Emirates | 5.500 | 7.679 | 9.602 | 10.488 |
| Saudi Arabia | 29.233 | 16.308 | 12.182 | 9.298 |
| Egypt | 6.386 | 483 | 6.881 | 5.553 |
| Morocco | 1.574 | 2.568 | 2.728 | 3.358 |
| Sudan | 2.894 | 2.692 | 2.488 | 3.094 |
| Iran, Islamic Republic of | 3.649 | 4.277 | 4.662 | 3.050 |
| Iraq | 1.396 | 2.082 | 2.376 | 2.852 |
| Lebanon | 4.280 | 3.485 | 3.674 | 2.833 |
| Kuwait | 1.304 | 3.260 | 3.931 | 2.329 |
| Jordon | 1.651 | 1.474 | 1.497 | 1.798 |
| Algeria | 2.301 | 2.581 | 1.499 | 1.691 |
| Oman | 1.782 | 1.563 | 1.040 | 1.626 |
| Tunisia | 1.513 | 1.148 | 1.603 | 1.096 |
| Bahrain | 156 | 781 | 891 | 989 |
| Libya | 1.909 | .. | 1.425 | 702 |
| State of Palestine | 180 | 214 | 244 | 177 |
| Yemen | 189 | -518 | -531 | -134 |
| Qatar | 4.670 | -87 | 327 | -840 |
| Syrian Arab Republic | 1.469 | 804 | .. | .. |
| **Source:** UNCTAD, 2014. | | | | |

Consequently, a region that is perceived as rich in oil revenues received almost no share of global economic development inflows. During the early years of globalization, 1981-1990, the region's annual growth rate was 0.7%, and in the 2000s it equaled 3.4%. Through 2015, the region's average annual growth performance is expected to be 4.3%. The MENA countries' unstable political structures and security issues that have now become permanent, make it necessary to take political factors into consideration when analyzing FDI inflows to these countries (Turkishtime, 2013).

Additionally, in these oil-rich countries about 90% of imports and 50% of national income are dependent on oil revenues. Such a monolithic economic structure has an adverse effect on the region. Fluctuations in oil demand and prices in global markets disproportionally affect the MENA region countries. The fact that countries in the region that are not dependent upon oil revenues have faster and higher growth rates than those that are dependent upon oil revenues illustrates the negative effects of fluctuations in oil prices (Turkishtime, 2013).

## Data, Methodology and Empirical Results

This study spanning the 1981-2012 period examined the major factors affecting FDI inflows to the MENA countries of Algeria, Bahrain, Egypt, Jordan, Morocco, and Tunisia. These are countries for



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which relevant data is available compared to other MENA countries. In addition, political stability is also analyzed in the study as one of the factors affecting FDI inflow. Countries which have experienced political instability in recent years are selected. In addition, the study tests the hypothesis that economic factors are more influential than political factors on the FDI flow to MENA countries.

The research method makes use of three different cointegration analyses to determine whether there is are relationships among the variables in the long term. These include the Pedroni, Kao, and Fisher Johansen cointegration tests. Coefficients are interpreted using the Full Modified Ordinary Least Square (FMOLS) and the Dynamic Ordinary Least Square (DOLS) methods. In addition, the Holtz-Eakin Causality Test is applied. The variables were gathered from the World Bank World Development Indicators Database and Oxford Economics Databank. As previously stated, there are many factors that affect FDI flows to a country. In this study on FDI inflows to MENA countries, the volume of trade, GDP per capita growth rate, trade credit risk and political stability, and their effects are analyzed in Table 4.

Trade volume, GDP per capita growth, and trade credit risk, show the economic factors affecting FDI inflow into a country. These indicators refer to the country's economic stability, openness index and degree of integration with the world economy. An increase in the share of foreign trade in a country's GDP indicates its openness to foreign markets and its integration with the world economy. Çak and Karakaş (2009) note there is a positive relationship between total trade volume and FDI.

Gao (2005) states that as openness and integration increase, FDI and economic growth also increase. Reduction of trade barriers and development of transportation and communication technologies help innovation and technology shift from developed countries to developing host countries. According to Dabour (2000), the degree of openness of the host country has a impact on FDI. Chakrabarti (2001) emphasizes trade deficit is a determinant of FDI.

Trade surplus is seen as an indicator of a dynamic and healthy economy and encourages FDI. Schneider and Frey (1985) refer to the presence of a strong positive relationship between trade surplus and FDI. According to Sadni-Jallab, Gbakou, and Sandretto (2008), there is no significant independent impact of FDI on economic growth in MENA countries. The lack of growth effect of FDI does not depend on the degree of trade openness or GDP per capita. Furthermore, FDI has a positive impact on the economic and macroeconomic environment of stability.

Shirazi, Rodrigues, and Karnik (2008) made use of panel data analysis in their study of 15 MENA countries over the 1980-2003 period. The analysis results were significant in that openness, inflation and service sector were determined to be crucial for FDI inflows to the MENA region. Openness and the service sector have a positive effect while inflation has a negative effect on FDI. El Sayed (2011), in his work spanning the 1995-2009 period for 19 MENA countries, concluded that economic factors such as openness in commerce and market size are decisive in attracting FDI flows. Jabri, Guesmi, and

*Table 4. Variable definitions*

| Variables | Definition |
|---|---|
| Foreign direct investment, net inflows (% of GDP) | FDI |
| Trade (% of GDP) | TRA |
| GDP per capita growth (annual %) | GDP |
| Trade credit risk rating (7=lowest risk) | TCR |
| Political stability risk rating (7=lowest risk) | PSR |



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Abid (2013) in their panel analysis spanning the 1970-2010 period for the MENA countries reached the conclusion that openness of the economy and increases in growth rate attract more FDI flows to the MENA countries. Together with economic instability, the exchange rate negatively influences foreign investment inflows.

According to Chakrabarti (2001), GDP per capita growth in the host country is an indication of its market size. Market size is considered one of the most important determinants of FDI. GDP per capita growth refers to purchasing power and level of economic development. Shirazi et al. (2008) highlight the importance of the level of economic development in different sectors to FDI inflows to a region. If FDI flows into a country for its high purchasing power, then there is a positive relationship between GDP per capita and FDI. However, if it is targeting sales to third countries, high GDP per capita means high labor costs, and a negative relationship can be said to exist between FDI and GDP per capita (Çak & Karakaş, 2009). The assumption that foreign investors invest in emerging markets for the sake of exports is also supported by Carr et al. (2004). Accordingly, in developing countries, more than 60% of total sales are made in the domestic market of the host country.

In this study, in order to measure the impact of trade credit risk on FDI flows, the trade credit risk rating from Oxford Economics data bank is used as a variable. Zero refers to the highest risk and seven refers to the lowest risk. A trade risk occurs when bank counterparties, in any way, do not fulfill their obligations. The most extensive source of credit risk is the credit allocated to bank customers (Ayanoğlu & Ertürk, 2007). According to Lewandowski (1997), trade credit risk refers to access to bank loans, short-term financing, access to capital markets, credit rating, and debt in default or debt rescheduling.

In accordance with the credit agreement, credit customers are obliged to pay interest and principal payments by a certain date, and credit risk is created when they have a tendency to fail to do so. While there is always such risk, an economic crisis environment increases the risk. When sales revenues decline and funding opportunities become limited due to tightened credit conditions and increased financing costs, the private sector may experience degradation in its repayment capacity, have difficulties in cost-effective re-sourcing, and slip into default. The increasing rate of default by companies whose financial structures have weakened and whose sales revenues and profitability are declining, may have an adverse effect on banks' profitability and capital structure due to non-performing loans (Güngör, 2012).

In this regard, trade credit risk is not just an economic crisis indicator. It creates a bottleneck both in the banking system and the real sector leading to a deepening of the existing crisis. Therefore, as one of the indicators expressing the economic stability, trade credit risk is expected to encourage FDI inflows when reduced.

According to Ianchovichina et al. (2013), resource-intensive and nontradable sectors are insensitive to political risk. However, political instability has a negative effect on foreign investments in tradable sectors.Onyeiwu (2004) uses the Freedom House's Index of Political Freedom to identify a negative relationship between political rights and FDI. In this study, the effect of political instability on FDI flows is measured using the political risk rating taken from the Oxford Economics data bank. Again, zero refers to the highest risk and seven refers to the lowest risk.

When the subject of study is the MENA region, one cannot ignore the effects of political risks on FDI. Political risk is comprised of many elements such as government stability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, military influence in politics, religious tensions, law and order, ethnic tensions, democratic accountability, and bureaucracy quality (The PRS Group, nd). In his study on the relationship between FDI and political instability in 58 developing countries, Edwards (1990) makes use of the CET index developed by Cukierman, Edwards, and



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Tabellini to measure political instability. As a result, the study finds that reduction in political instability and polarization increases FDI flows to the country.

In a similar study, Schneider and Frey (1985) revealed that political instability has a significant effect on FDI. Other things being constant, FDI flows to more democratic and politically stable countries. Chakrabarti's (2001) study in 1994 on 135 countries including many MENA countries is based on the BERI political risk index (Business Environment Risk Intelligence). This index measures political instability within a framework of internal factors such as rallies and street events (ethnic and religious fractionalization, fractionalization of the political spectrum, etc.) and external factors (dependence on and/or importance to a hostile power, etc.).

The study results show there is a strong relationship between FDI and variables including per capita national income, taxes, wages, trade balance, external openness, and the exchange rate. According to Chakrabarti, many factors such as strikes, riots, civil wars, and coups together with change or deterioration in economic management are closely related to political stability. However, it is more difficult to measure political stability than economic indicators. He asserts that the indicators available in the extant literature are not adequate enough to measure political stability thoroughly and comprehensively. There are yet no academic studies in the literature that examine whether or not the decrease in FDI inflows to the MENA countries after 2011 is caused by political instability. While some are of the opinion that public order and democratic accountability are influential on FDI inflows, others believe these two are not influential at all (Ianchovichina et al., 2013).

## Panel Unit Root Test Results

As in all-time series analyses, the panel data methodology used in conducting both time and cross sectional analyses requires that variables be stationary in order to show the real relationships between them. This study investigates common unit root processes with panel unit root tests according to Levin, Lin, and Chu (2002). It also examines the unit root process for each unit (firm) in parallel with Im, Pesaran, and Shin (1997). The stationarity in individual invariant series is analyzed using the Augmented Dickey Fuller (ADF) (1979) test. The results of the stationarity analyses of the data used in the panel regression are given in Table 5.

As seen in Table 5, the results of unit root tests applied to variable levels show that the series are not stationary at [I(0)] level. Series are shown to include unit root problems. Therefore, the first differences of the series are calculated revealing that the series are [I(1)] stationary. Thus, the first difference of the series is used in the analysis.

## Panel Cointegration Test Results and Evaluation

In order to investigate whether there is a long-term relationship between variables, three different cointegration analysis methods – Pedroni, Kao, and Johansen Fisher – were used. In 1999, 2000, and 2004, Pedroni presented tests which allow for heterogeneity in cointegration analysis. This test allows for heterogeneity in cointegration vectors. It not only enables dynamic and fixed effects to vary between panel sections, but also allows the cointegrated vector to differ between sections under the alternative hypothesis. Pedroni's approach is different from McCoskey and Kao's approach in its cross-section assumption trend and in the context of null hypotheses with no cointegration.



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*Table 5. Panel unit root test results*

| Variables | Levin, Lin & Chu Test Results | | Im, Pesaran & Shin Test Results | | ADF-Fisher Chi-square | |
|---|---|---|---|---|---|---|
| | Level | First Difference | Level | First Difference | Level | First Difference |
| | Trend and Constant | Constant | Trend and Constant | Constant | Trend and Constant | Constant |
| FDI | 0.0886 | 0.0033* | 0.0932 | 0.0238* | 0.0736 | 0.0017* |
| TRA | 0.0972 | 0.0000* | 0.1174 | 0.0013* | 0.1053 | 0.0000* |
| GDP | 0.3245 | 0.0000* | 0.3449 | 0.0000* | 0.0911 | 0.0000* |
| TCR | 0.1285 | 0.0037* | 0.1437 | 0.0175* | 0.1203 | 0.0000* |
| PSR | 0.2264 | 0.0032* | 0.2165 | 0.0000* | 0.2344 | 0.0289* |
| When making stationarity analyses for the variables, series were adjusted for seasonality (using tramo/seats), crisis and political change periods were taken in with statistical significance in mind, and only significant trend and stationarity components were added to the model in model selection. | | | | | | |
| * Significant at the 0.05 and 0.01 level, lags for ADF Test are selected automatically based on Schwarz information criterion, Bandwith for Phillips-Perron Test are selected automatically based on Newey-West Bandwith. | | | | | | |
| Cusum path lies within the confidence interval bounds at %5, It is not observed structural breakpoint. | | | | | | |

Positive features of the Pedroni tests include the ability to allow for more than one explanatory regressor, enable cointegration vector diversification across different parts of the panel, and facilitate heterogeneity of errors in cross-sectional units. In order to cover within and between effects, seven different cointegration tests were presented which are divided into two different categories. The first category contains four tests pooled in the "within" dimension. The second category contains the other three tests in the "between" dimension. The first three of the four tests in the first category are non-parametric tests. The first tests variance ratio type statistics. The second is similar to the Phillips-Peron (PP) (rho) statistics, and the third is similar to the PP (t) statistics. The fourth one deals with parametric statistics similar to ADF (t) statistics. In the second category, the first one of the three tests is similar to the PP (rho) statistics while the other two are similar to PP (t) and ADF (t) statistics.

Before the panel cointegration analysis, different criteria were assessed to set the suitable lag length and the results are provided in Table 6. Analyzing the criteria reveals that that different lag lengths were obtained. As the error correction model complied with the AIC, HQ, and SC criteria in diagnostic tests and many studies in the literature are based on these criteria, analyses were made for lag 2.

Cointegration test results are presented in Table 7. According to the results of all the tests, a long-term relationship or cointegration exists except in the case of the group rho and group ADF tests. According to the majority of the test results, except for the two tests, a long-term relationship and co-movement was detected among the variables tested for the long-term. After determining the existence of the relationship, FMOLS and DOLS were applied to find the coefficients (the degree and the direction) of the long-term relationship.



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*Table 6. Lag length criteria*

| VAR Lag Order Selection Criteria | | | | | | |
|---|---|---|---|---|---|---|
| **Endogenous variables:** FFFCR FMFCR FSPFCR FER FIR | | | | | | |
| **Exogenous variables:** C | | | | | | |
| **Sample:** [1981-2012] | | | | | | |
| **Included observations:155** | | | | | | |
| **Lag** | **LogL** | **LR** | **FPE** | **AIC** | **SC** | **HQ** |
| **0** | -2.339.207 | NA | 2549576. | 28.94082 | 29.03612 | 28.97951 |
| **1** | -1.792.752 | 1052.431 | 4080.166 | 22.50311 | 23.07489 | 22.73526 |
| **2** | -1.775.100 | 32.90583 | 4471.559 | 22.09383* | 23.04209* | 22.01944* |
| **3** | -1.741.551 | 60.47123 | 4032.459 | 22.48829 | 24.01303 | 23.10735 |
| **4** | -1.707.245 | 59.71896* | 3609.555* | 22.37339 | 24.37461 | 23.18592 |
| * indicates lag order selected by the criterion. | | | | | | |
| **LR:** Sequential Modified LR test Statistic (each test at 5% level) | | | | | | |
| **FPE:** Final Prediction Error | | | | | | |
| **AIC:** Akaike Information Criterion | | | | | | |
| **SC:** Schwarz Information Criterion | | | | | | |
| **HQ:** Hannan-Quinn Information Criterion | | | | | | |

## FMOLS and DOLS Coefficient Cointegration Results

In the literature for model estimation in panel cointegration, FMOLS by Pedroni (2000), DOLS by Kao & Chiang (2000), and the vector error correction method by Breitung (2002) are used. These are employed to identify the relationship among the cointegrated panel data variables. The DOLS method is a parametric approach that adjusts autocorrelation by adding to the model lagged values of the first difference. FMOLS is a non-parametric approach in autocorrelation correction. The FMOLS method is quite biased in small estimator results. As the DOLS method can be applied to small samples and allows for the combining different variables in the analysis, it has a number of advantages in estimating cointegrated vectors (Esteve & Martinez-Zahonero, 2007).

After the cointegration tests, in order to estimate the ultimate refraction coefficient of this relationship, two different methods (the FMOLS method developed by Pedroni [2000, 2001] and the DOLS method) were used to test for consistency between estimators and expectations. Panel FMOLS and DOLS estimation results are given in Table 8.

While the FMOLS method is used in correction refractions in standard fixed effect estimators (which are caused by problems, such as autocorrelation and heteroscedasticity), the DOLS method includes dynamic elements in the model and may resolve refractions in static regression (particularly ones arising from endogeneity problems).The FMOLS method, which allows for a significant amount of heterogeneity between individual sections, takes into account the possible presence of a correlation among the constant term, the error term and the difference among independent variables.

The FMOLS results show FDI increases by 21% when the TRA variable is increased by 1 unit and by 18% when the GDP variable is increased by 1 unit. According to the DOLS results, FDI increases



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*Table 7. Cointegration test results*

| **Pedroni Panel Cointegration Test Results** | | | | |
|---|---|---|---|---|
| **(Within-Dimension)** | | | | |
| | **t-Statistic** | **Prob.** | **Weighted t-Statistic** | **Prob.** |
| **Panel v-Statistic** | 338.854 | 0.0208* | 397.336 | 0.0013* |
| **Panel rho-Statistic** | -282.339 | 0.0124* | -187.334 | 0.0026* |
| **Panel PP-Statistic** | -275.343 | 0.0000* | -267.002 | 0.0000* |
| **Panel ADF-Statistic** | -397.721 | 0.0000* | -264.588 | 0.0000* |
| **(Between-Dimension)** | | | | |
| | **t Statistic** | | **Prob.** | |
| **Group rho-Statistic** | -0.00699 | | 0.1631 | |
| **Group PP-Statistic** | -283.664 | | 0.0000* | |
| **Group ADF-Statistic** | -0.21135 | | 0.0844 | |
| **Kao Panel Cointegration Test Results** | | | | |
| | **t- Statistic** | | | **Prob.** |
| **ADF** | -26.442 | | | 0.0109* |
| **Residualvariance** | 30887.43 | | | |
| **HAC variance** | 56225.09 | | | |
| **Johansen Fisher Panel Cointegration Test Results** | | | | |
| **Hypothesized** | **Fisher Stat.** | | **Fisher Stat.** | |
| **No. Of CE(s)** | **(from trace test)** | **Prob.** | **(from max-eigen test)** | **Prob.** |
| **None** | 334.5 | 0.0000 | 158.9 | 0.0000* |
| **At most 1** | 99.18 | 0.0000 | 65.06 | 0.0001* |
| *Statistically significant on levels 0.01 and 0.05 | | | | |

by 19% when the TRA variable is increased by 1 unit and by 16% when the GDP variable is increased by 1 unit. A positive correlation is seen between the explanatory variables of TRA and GDP and FDI. The idea that an increase in the share of trade volume within GDP has a positive effect on FDI flows to one country is widely accepted in the literature and supported in this research. Similarly, the idea that an increase in GDP per capita growth positively influences the flow of FDI is supported within the framework of the research results. This positive relationship reveals itself both in the panel general and in the results for each individual country. In all of the countries surveyed, the most important variable affecting FDI inflows is the TRA variable indicating volume of trade. GDP per capita for all countries ranks second in influencing FDI.

The FMOLS results indicate FDI decreases by 13% when the TCR variable is increased by 1 unit and by 9% when the PSR variable is increased by 1 unit. The DOLS results show FDI decreases by 14% when the TCR variable is increased by 1 unit and by 10% when the PSR variable is increased by 1 unit. A negative relationship is seen between the explanatory variables of TCR and PSR and FDI. Increasing trade credit risk adversely affects FDI flows. Similarly, elevated political risk in the country adversely affects FDI flows. This negative relationship is obtained both in the panel general and in the results for



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*Table 8. Panel FMOLS and DOLS estimation results*

| Countries | | FMOLS | | DOLS | |
|---|---|---|---|---|---|
| | | t-statistics | Coefficient | t-statistics | Coefficient |
| **Panel General** | **TRA** | **4.767** | **0.215*** | **5.007** | **0.193*** |
| | **GDP** | **3.998** | **0.186*** | **4.752** | **0.165*** |
| | **TCR** | **-6.231** | **-0.131*** | **-4.629** | **-0.146*** |
| | **PSR** | **-5.641** | **-0.097*** | **-6.423** | **-0.106*** |
| Algeria | **TRA** | 3.887 | 0.198* | 4.822 | 0.201* |
| | **GDP** | 4.202 | 0.197* | 4.702 | 0.152* |
| | **TCR** | 0.773 | 0.153 | 0.983 | 0.126 |
| | **PSR** | -1.223 | -0.134 | -0.882 | -0.127 |
| Bahrain | **TRA** | 4.323 | 0.230* | 4.652 | 0.173* |
| | **GDP** | 4.894 | 0.209* | 4.371 | 0.164* |
| | **TCR** | -5.803 | -0.122* | -5.288 | -0.163* |
| | **PSR** | -6.451 | -0.083 | -8.420 | -0.113 |
| Egypt | **TRA** | 4.869 | 0.207* | 5.113 | 0.195* |
| | **GDP** | 5.112 | 0.158* | 4.899 | 0.138* |
| | **TCR** | -4.682 | -0.147* | -4.690 | -0.151* |
| | **PSR** | -6.044 | -0.129* | -6.224 | -0.106* |
| Jordan | **TRA** | 4.365 | 0.193* | 5.066 | 0.212* |
| | **GDP** | 3.780 | 0.175* | 4.532 | 0.181* |
| | **TCR** | -4.991 | -0.129* | -4.103 | -0.120* |
| | **PSR** | -8.332 | -0.087 | -8.005 | -0.112 |
| Morocco | **TRA** | 5.008 | 0.225* | 4.831 | 0.187* |
| | **GDP** | 3.442 | 0.192* | 5.006 | 0.139* |
| | **TCR** | -6.781 | -0.116* | -4.365 | -0.155* |
| | **PSR** | -9.271 | -0.094 | -7.562 | -0.086 |
| Tunisia | **TRA** | 4.303 | 0.219* | 5.187 | 0.163* |
| | **GDP** | 6.447 | 0.191* | 5.039 | 0.172* |
| | **TCR** | -3.118 | -0.172* | -4.280 | -0.149* |
| | **PSR** | -6.221 | -0.137* | -4.754 | -0.124* |
| *significant for 0.05 | | | | | |
| | | | | | |

each individual country. In all the countries surveyed, the TCR variable indicating trade credit risk ranks the second in affecting FDI inflow, whereas the PSR variable indicating political risk ranks the last.

The results of the analyses reveal there is no statistically significant relationship between the PSR variable and FDI for Algeria, Bahrain, Jordan, and Morocco. This can be explained by the fact that these countries are politically more stable than Egypt and Tunisia. In addition, not only PSR but also the TCR variable is not statistically significant for Algeria. In particular, volume of trade and GDP per capita



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growth variables are influential in determining the FDI inflows to the country. High trade credit risk negatively affects foreign investors who make direct investments in the country. Consequently, there is no relationship between FDI inflows to Algeria and trade credit risk and political stability. As Algeria is among the oil-rich MENA countries, foreign investors ignore trade credit risk and political instability.

In light of these results, variables considered for their long-term relationships point to a minimum of one directional causality. Therefore, in the next step examining the long term relationship between the variables, the causal hypothesis was tested.

## Panel Causality Test Results and Evaluation

Pedroni's heterogeneous panel cointegration test shows if there is a long-term relationship between variables, but does not provide information about the direction of causality. Causality is traditionally tested with the standard two-step Engle-Granger causality test. However, in this study, due to measurement errors and problems about parameter estimation arising from variables that are not included in the model, the traditional causality test was not considered optimal. In this context, Holtz-Eakin, Newey & Rosen (1988) causality test was used. Holtz-Eakin causality test results in Table 9.

Before the results of the panel causality analysis are reviewed, system GMM estimation consistency should be considered. To accomplish this, three basic tests were conducted: (1) the Wald test, which indicates whether the variables in the model variables are significant as a whole; (2) the Arellano-Bond (AB) test which reveals whether there is a model autocorrelation problem in the model; and (3) the Sargan test which indicates whether the instrumental variables are valid. Wald $\chi 2$ test showed that each model is significant as a whole. The validity of instrumental variables used in system GMM estimation, (in other words, whether there are over identification constraints in panel estimations), is analyzed with the Sargan test.

The validity of instrumental variables was tested with the null hypothesis, which displays the relationship between instrumental variables and error terms, and it was concluded that instrumental variables are valid. The AR(1) test developed by Arellano & Bond (1991) tests the null hypothesis that "there is no first order autocorrelation", while the AR(2) tests the null hypothesis that "there is no second order autocorrelation is not". AB test shows that there is no problem of autocorrelation in the AR(2) process. The analysis reveals there is bidirectional causality from FDI to TRA and GDP variables and from GDP to TRA and FDI variables. Conversely, there is no causality between FDI and PSR or FDI and TCR. PSR and TCR variables are the cause of FDI; however, FDI is not the cause of TCR and PSR variables (Table 9).

## Solutions and Recommendations

This study examines factors affecting FDI inflows to the major MENA region countries whose economies are largely dependent on oil. Because the MENA countries are constantly experiencing political instability resulting from the international sharing of their oil resources, the study also discusses economic and political factors and determines which has more impact on FDI inflow. Since the majority of the countries' revenues are supplied from a single source such as oil, there is labor and capital flow from agriculture and service sectors towards natural resources sectors. As a result, costs in the production and agriculture sectors increase and the country's growth rate falls. In addition, due to the increasing volume of exports, the real exchange rate also increases in value.



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*Table 9. Holtz-Eakin causality test results*

| Causulty | Wald $\chi^2$ | Causulty | Wald $\chi^2$ | Causulty | Wald $\chi^2$ |
|---|---|---|---|---|---|
| **FDI→TRA** | 15.309(0.00) | **FDI→TRA$_{t-1}$** | 16.62(0.02) | **FDI→TRA$_{t-2}$** | 14.23(0.00) |
| **TRA→FDI** | 12.64(0.00) | **TRA$_{t-1}$→FDI** | 13.82(0.03) | **TRA$_{t-2}$→FDI** | 19.02(0.02) |
| **FDI→GDP** | 12.80 (0.02) | **FDI→GDP$_{t-1}$** | 18.09(0.00) | **FDI→GDP$_{t-2}$** | 14.52(0.03) |
| **GDP→FDI** | 17.33(0.01) | **GDP$_{t-1}$→FDI** | 13.21(0.02) | **GDP$_{t-2}$→FDI** | 16.33(0.00) |
| **FDI→TCR** | 46.72(0.13) | **FDI→TCR$_{t-1}$** | 52.04(0.23) | **FDI→TCR$_{t-2}$** | 41.74(0.11) |
| **TCR→FDI** | 19.02(0.00) | **TCR$_{t-1}$→FDI** | 29.04(0.00) | **TCR$_{t-2}$→FDI** | 14.08(0.01) |
| **FDI→PSR** | 37.56(0.11) | **FDI→PSR$_{t-1}$** | 13.92(0.09) | **FDI→PSR$_{t-2}$** | 18.22(0.07) |
| **PSR→FDI** | 18.09(0.00) | **PSR$_{t-1}$→FDI** | 12.31(0.01) | **PSR$_{t-2}$→FDI** | 12.91(0.02) |
| **Arellano-Bond** | | | | | |
| **AR(1) Statistics** | -3.665(0.12) | -5.737(0.01) | | -4.226(0.02) | |
| **Arellano-Bond** | | | | | |
| **AR(2) Statistics** | 0.968 (0.14) | -1.103(0.13) | | -1.310(0.14) | |
| **Sargan Statistics** | | | | | |
| | 22.45 (0.14) | 12.09(0.11) | | 24.97(0.10) | |
| **Wald Causulity Test** | There is no linear causality from independent variables to FDI. | There is no linear causality from independent variables values lagged one period to FDI. | | There is no linear causality from independent variables values lagged two periods to FDI. | |
| | | | | | |
| **Null Hypothesis** | 12.56(0.02) | 18.21(0.01) | | 21.62(0.00) | |
| | | | | | |

Because the increasing value of real exchange reduces competition, the share of production cannot stabilize and export diversity is lost. Unemployment increases due to the reduced production because the natural resources sector is not employment intensive. For these two reasons, natural resources cannot be seen as a blessing for the country in the long term. In 2010, dependence on natural resource exports was 96% in Algeria and 58% in Bahrain, respectively. It was 35% in the non-oil-rich country Morocco, 33% in Jordan, 19% in Egypt, and 18% in Tunisia. Fluctuations in growth rate are less severe in the MENA countries which are less dependent on natural resource revenues. However, these countries have limited sectoral diversity, trade volume and global integration due to their autocratic regimes and socioeconomic problems (Sözen, Uslu, & Öngel, 2011).

As the results of the analysis illustrate, these problems have an adverse effect on FDI inflows. With new developments in the world, and new important countries and regions, FDI flow is shifting more towards countries called transition economies or emerging markets. For the MENA countries covered in this study, it is concluded that trade volume representing market size and GDP per capita growth representing economic growth are the two most important variables positively affecting FDI inflows. The countries in the study are countries that are not rich in oil and natural gas reserves compared to other MENA countries. Therefore, their share of FDI is limited. To compensate, they must be oriented towards other industries to attract FDI input.



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Sectoral diversity in economic activity and foreign trade should be guaranteed, and market size should be increased. And for the market size to be increased, the market should be liberalized and the economies of these countries should be more integrated with international markets. The results of this analysis show that the political risk factor is considered less important than economic factors by foreign investors when making investments in MENA countries. Although the countries discussed in this study are not oil-rich compared to other MENA countries, their economies depend heavily on oil revenues. Before providing more FDI, foreign investors expect these countries to increase economic growth, market liberalization, and market size.

## FUTURE TRENDS

The MENA region can be expected to hold an important place in global economic competition and in shaping international economic policies and politics. In today's changing political and social environment, the region's integration into the liberal world will increase. However, the focus will likely be on the competition that will occur in different sectors other than oil resources. The region has already started to draw attention with remarkable new projects in alternative energy resource development. Although the solar resources of the regions are highly abundant, a large proportion of renewable energy sources are not currently being utilized.

European Union member countries which are aware of this potential have developed perhaps the biggest and most prominent project in the region's history – the DESERTEC Project – designed to harness solar, wind, hydro, bio, and geothermal energy in the MENA region and transfer it to Europe through high-voltage direct current transmission. The European Commission announced that 9.1 billion Euros would be included in the 2014-2020 EU budget to further develop plans for a transmission network of energy from the MENA region to the EU. It is safe to say that the competition that has been going on solely for oil in the region may turn to different energy investments in the future (Turkishtimes, 2013).

Not only energy investments but also industrial investments should be diversified. Trade volume should be increased with countries such as Turkey where it is easy to meet on common ground. In this context, FDI inflow opportunities from Turkey to the region should be considered. Additionally, longer-term reforms should be implemented to ensure socioeconomic development and current reform efforts should be continued. Investment policies and tax policies should be updated, entrepreneurship should be supported, and competition should be increased. Trade policy should be revised and integrated with the global value chain.

In recent years, corporate governance reforms and regulatory reforms have been launched in order to improve economic growth (OECD, 2013a). OECD (2013b) published a report titled Regulatory Reform in the Middle East and North Africa: Implementation of Regulatory Policies to Boost Economic Growth. According to the report, the countries have been making effort to implement regulatory reforms for some time. The report highlights economic growth and social welfare reform policies, since they play a significant role in creating employment opportunities and reducing unemployment. In addition, the report also deems it necessary for the whole civil society to be included in the process of creating and implementing regulatory policies. It is also underlined that each country should follow policies specific to its own needs and demands.



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In other words, there is no single policy proposal that would work for all of the countries. The findings of the report and the problems for regulatory reform policies can be summarized as follows:

- MENA countries have started various regulatory reforms. However, these reform policies are still very new for these countries
- MENA countries do not have a holistic approach to regulations and policies
- The regulatory reform policies are aimed at simplifying the existing arrangements
- The regulatory reform policies in the MENA countries differ in terms of institutional mechanisms when it comes to practice. Actors, institutions and capacities are dependent on the political-economic structures of the countries concerned
- Rather than the arbitrary and isolated regulatory reform programs in some areas identified by the OECD, an inclusive and systematic approach will enhance the anticipated benefits of these policies
- It has been a few years since the MENA countries began their regulatory reform programs. However, speaking from OECD experience, it may take many years before the public could start seeing the benefits of these reforms

## CONCLUSION

Lack of domestic savings in developing countries pushes these countries to seek external sources. It is possible to find external sources in two ways: external borrowing or FDI. There are different opinions in the extant literature regarding he effects of FDI on economic growth. However, host countries with quantitative and qualitative improvements and developments are in serious competition to receive a share from global FDI flows.

Faced with increasing competition among countries for FDI, foreign investors have a number of key factors to consider when making investment decisions. These factors are economic, political and investment related. They include: the size of the market, level of integration with the global economy, total tax burden, human capital, natural resources stocks, exchange rate, inflation rate, population growth rate, unemployment, rate of growth, macro-economic stability, economic risks, political risks, bureaucratic structure, institutional structures, social structures, transparency, transportation costs, and infrastructure.

FDI flows, growing rapidly since the 1980s, go mainly from developed countries to developing countries. However with the speeding up of liberalization and integration, new actors in the world economy began to emerge. Today, countries such as Brazil, Russia, India, China, South Africa, and Malaysia attract FDI flows the most. It can be seen that in the countries of the MENA region the FDI stock has increased in recent years. However, despite increasing dynamism in the MENA region over the last decade, FDI flows are still at low levels when compared with other transition economies.

The subject of this study is the analysis of the main economic and political factors that affect FDI flows to the MENA region during 1981-2012. Among the factors that affect FDI flows, trade volume, GDP per capita, trade credit risk and political risk factors were investigated. Trade volume and GDP per capita are the key variables that indicate a country's degree of openness to foreign markets and economic stability. For the first time in the literature, this study analyses the effects of trade credit risk on FDI inflow. Oil, natural gas and other natural resources found in the MENA countries turn the region into a stage where international politics and economy have been shaped throughout history. As a result, the



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region has always experienced internal turmoil, wars, and political conflicts. Therefore, political risk factor is another key variable discussed in this study.

As political risk indicators are more abstract and difficult to quantify compared to economic indicators, only a small number of studies on political instability were found when reviewing the literature for the factors affecting FDI flows. MENA countries with recent political instability were chosen as a part of the study. In addition, whether or not countries provided the necessary data was taken into consideration during the selection process. Algeria, Bahrain, Egypt, Jordan, Morocco, and Tunisia were selected. This study contributes to the academic literature as it is the first empirical study to examine the effect of not only trade credit risk but also of political risk on FDI inflow in the light of current political developments such as the Arab Spring.

After unit roots were examined, three different cointegration analyses developed by Pedroni, Kao and Johansen, and Fisher were made in order to investigate whether there was a long-term mutual relationship between the series. These tests revealed that although the variables are not stationary themselves, they demonstrate a long-term relationship when their linear combinations are stationary. Cointegration tests show that the variables have a cointegrated relationship in the long term.

In order to estimate the ultimate refraction coefficient of this relationship and to test for the consistency between estimators and expectations, two different methods were employed – the FMOLS method developed by Pedroni (2000, 2001) and the DOLS method. Across the panel, TRA and GDP were found to have a powerful influence on FDI. TCR and PSR variables have less effect. Pedroni's heterogeneous panel cointegration test shows whether there is a long-term relationship between variables, but does not provide information about the direction of causality. Causality is traditionally tested with the standard two-step Engle-Granger causality procedure.

However, in this study, due to measurement errors and problems about parameter estimation arising from variables that are not included in the model, the traditional causality procedure was not considered appropriate. In this context, this study makes use of dynamic panel data models estimated with generalized method of moments (GMM) developed by Holtz-Eakin et al. (1988) and Arellano & Bond (1991). A causality was identified from FDI to GDP and TRA. At the same time a linear causality, in other words a bidirectional causality, was obtained from GDP and TRA to FDI. In contrast, FDI is not the cause for TCR and PSR while PSR and TCR are the cause for FDI.

The analysis from this study permitted the following conclusions to be reached:

- The increase in the volume of trade in the MENA countries increases FDI flow. In all of the countries surveyed, the most important variable affecting FDI inflow is the volume of trade
- The increase in GDP per capita growth in the MENA countries increases the flow of FDI. This variable ranks the second in affecting FDI for all countries
- Increased trade credit risk adversely affects FDI inflows to the countries in question. In all of the countries examined, trade credit risk takes third place as the variable affecting FDI inflow
- Similarly, an increase in political risk adversely affects FDI inflow. The GDP variable ranks last in affecting FDI for all countries
- In the countries surveyed, economic factors are more influential on FDI than political factors
- Among economic factors, the volume of trade is more important than the GDP per capita growth rate. Not all of the countries in the study are oil-rich but their economies are largely dependent on exports of oil, natural gas, other natural resources or agricultural raw materials. This causes



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these countries to experience instability in economic growth, which in turn affects FDI inflow negatively

- GDP per capita in these countries is affected by fluctuations in oil prices. Therefore, in developing countries, especially in the MENA region, it is not a true indicator of economic stability. In this case, it can be seen as normal when foreign investors in the region do not take it as an indicator in the first place
- Political instability in these countries appears to be the factor least affecting FDI. This may be due the fact that the instability in the region is considered continuous and endemic
- FDI in the region is the biggest in oil-rich countries of Saudi Arabia and the United Arab Emirates. The share other MENA countries receive from FDI is limited and is proportionate to their oil and other natural resources. Therefore, the expected benefits from FDI in these countries cannot be enough for their economic growth
- In order to achieve sustainable and steady economic growth, politicians, and administrators have to promote strong and open economic performance by increasing sectoral diversity instead of oil dependency. They need to create a competitive environment which would allow FDI inflows to these sectors
- Historically, the transfer of oil, natural gas, other natural resources, agricultural raw materials and agricultural products found in the MENA region to world markets, has been the main issue for international politics and economic relationships. Foreign investors started to invest in the region in the form of FDI in the 1980s with increasing liberalization trends. In this regard, it can be said that these countries' economic growth and GDP per capita growth remain in second place in determining FDI inflow. In fact, even the political instability in the region has less effect on FDI flow. Political instability in the region swings the balance and shapes foreign investors' future investment plans
- It is necessary for the MENA region to become a part of the globalization process to receive a greater share of FDI. Its energy-dependent revenues should be reduced, political stability should be guaranteed, economic and social reforms should be implemented, and economic growth should be more private sector-oriented. Therefore, it can be seen that the MENA region in recent years has been trying to reduce its energy dependency and diversify its economy. Investments in different sectors in recent years have accelerated; however, the economic diversification of the region's countries is not yet sufficient

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## KEY TERMS AND DEFINITIONS

**Cointegration Analysis:** An analysis is investigates whether there is a long-term mutual relationship between the variables.

**Foreign Direct Investment (FDI):** Investing in another country by establishing a new company, acquiring a company or increasing a company's capital.

**GDP Per Capita Growth:** Growth in per individual share from GDP (gross domestic product) which represents the monetary value of all final goods and services produced in a country within a year.

**Holtz-Eakin Causality Test:** An improved version of the Granger causality test.

**MENA Countries:** Middle East and North Africa countries (Algeria, Arab Republic of Egypt, Bahrain, Djibouti, Iraq, Islamic Republic of Iran, Israel, Jordon, Kuwait, Lebanon, Libya, Malta, Morocco, Qatar, Oman,Republic of Yemen, Saudi Arabia,Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, West Bank and Gaza).

**Political Stability Risk Rating:** Rating of a country's risks in terms of government stability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, military in politics, religious tensions, law and order, ethnic tensions, democratic accountability, bureaucracy quality, etc.

**Trade Credit Risk:** When a party which is considered a counter party by a bank does not fulfill its obligations to the bank in any way.

**Trade Percentage of GDP:** The share of a country's imports and exports in nominal gross domestic product.

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# Chapter 34
# Financial Market in Nepal: Challenges of the Financial Sector Development in Nepal

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## ABSTRACT

*The Nepalese financial sector is attributed of banking sector and non-banking sector. There is exponential growth in the number of financial institutions in Nepal in the last decade. The existing legal framework and institutional setup in Nepal is not conducive to the overall financial sector and private sector development and thus there is an urgent need for reformation in these sectors. The major impediments to private sector involvement in infrastructure development projects include the political and administrative instability; lack of consistent planning; lack of effective institutional support in designing and development of private sector infrastructure projects. Talking about the capital market and capital gains In Nepal, capital gains on securities transactions are taxed as ordinary income to corporations and individual investors while in most of the emerging markets capital gains on investments in stocks and bonds are not taxed, which need to be reformed as per the international practices.*

## BACKGROUND

The major obstacle to the private sector capital formation and economic development in Nepal is the high cost of capital which is associated with the lack of competition in the financial sector and the poor performance of government owned-banks. In this regard, it can be observed that gap between lending and borrowing rates has widened in recent years while the overall performance of the banking system has showed little improvement despite the growth of private banks in the 1990s. In line with above reference The Nepal Bank Limited (NBL) retrenched its operations, consequently, the market share of private banks doubled more than 37 percent, while the market share of the Rastriya Banijya Bank (RBB) remained unchanged at about 32 percent. Nevertheless, some members of the business community believe that the private joint venture banks have not contributed sufficiently to the economic well-being

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of the nation. Instead, these institutions are sometimes viewed as benefited from the inefficiency in the financial sector (i.e., wide-loan deposit spreads). If this is the case, the Nepalese economy could benefit from the added competition that would be provided from the development of a money-and-bond market for private issues of securities. In Nepal, universal banking is permitted whereby commercial banks and quasi-banks (i.e., deposit-taking finance companies) may perform investment banking services within the same organization. Commercial banks, however, are not actively involved in capital markets. While authorized to act as underwriters they ordinarily do not participate in this line of business as extensively as finance companies. Commercial banks do not act as money managers or instead, sponsor mutual funds. They do not serve as brokers or market-makers on the floor of the stock exchange either. Commercial banks, however, are active participants in the markets for treasury bills and government bonds. Since the secondary market is relatively inactive, their role is largely limited to primary market transactions.

Over the past 20 years Nepal's financial system has become wider and consequently the number and the type of financial intermediaries have grown rapidly. In addition, recent reforms have made banks more stable, yet the access to financial services remains limited for many people in many parts of Nepal and in recent years it has been declining. During the last 40 years, Government of Nepal has tried much to increase access to formal financial services for small business and low-income households.

The government has introduced directed lending programs for small businesses and low-income households and it has required/encouraged banks to open branches outside Kathmandu Valley. Also it has created specialized wholesale and retail institutions, and lowered market entry to foster the development of different types of financial institutions.

The Nepalese financial sector is composed of banking sector and non-banking sector. The banking sector comprises Nepal Rastra Bank (NRB) and commercial banks. The non-banking sector includes development banks, micro-credit development banks, finance companies, cooperatives and non-government organizations (NGOs) that regulate limited banking activities and other financial institutions such as insurance companies, employee's provident fund, citizen investment trust, postal saving offices and Nepal stock exchange.

There is tremendous growth in the number of financial institutions in Nepal in the last decade. In the beginning of the 1980s, when financial sector was not liberalized, there were only two commercial banks, and two development banks performing banking activities. There were no micro-credit development banks, finance companies, cooperatives and NGOs. After the liberalization of the financial sector, it has made a hall-mark of progress both in terms of number of services. After 1984, there was rapid entry of joint venture commercial banks in to the Nepalese financial market. In the first phase, the Nepal Arab Bank (presently known as NABIL) (1984), the Nepal Indo-Suez Bank (1985) and the Nepal Grindlays Bank (1987) entered the market. In the second phase these banks were followed by the Himalayan Bank, the Nepal SBI Bank, the Nepal Bangladesh Bank, the Everest Bank, the Bank of Kathmandu and the Kumari Bank. In the third phase many development banks have emerged in the market.

In Nepal, the banking sector is one of the sectors which have been able to sustain by facing the test of time due to political instability in the country and it has established itself as the most profitable sector. Currently, with the increased rate of various problems in the country, banking sector is able to prosper with less difficulty. But the growth of financial institutions seems to be slowing down due to the entry of new players leading to a harsh competition. One of the signs of such problems has been the credit crunch faced by financial institutions in recent months. As a result, banks are looking for new geographic locations in order to diversify the portfolio of customers.



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Despite government efforts, the access to formal financial services is declining in Nepal. Financial intermediation is stagnating, the number of bank deposits and loan accounts per citizen is falling, and lending targets for low income households have generated excess liquidity among microfinance institutions without significantly increasing their outreach.

The use of bank services in Nepal is limited. Therefore, financial NGOs and cooperatives play a vital role in providing both deposit accounts and loans, and informal borrowing has exceeded formal borrowing to a greater extent.

About 26 percent of Nepalese households have their bank accounts. To assists this job, financial NGOs and cooperatives run as close as the second largest provider of deposit accounts, serving about 18 percent of households. These institutions are the preferred providers for low-income households. Also, they are close to banks even for wealthier households. Microfinance and regional rural development banks are distant third providers for deposit accounts, serving only 4 percent of households– mainly the poor in the rural areas.

Increasing financial access to small business and low-income households requires that financial institutions be able to serve these segments in a financially sustainable manner. Lending profitably to small businesses requires a high level of efficiency, while operating microfinance institutions with large outreach requires a high level of professionalism and technical skills. Nepalese financial institutions are struggling to meet these requirements.

To serve small business profitably, banks need to minimize transaction costs and generate a large number of high-quality loans. But Nepal's financial sector finds it difficult to serve small and micro businesses profitably due to the following reasons:

1. Banking procedures for small business loans are too complex because such a lending process is unnecessarily long and expensive for business and bank both.
2. The most popular bank product, i.e. overdraft, (line of credit) is inappropriate for many small businesses, which do not deposit their revenues in banks.
3. The interest rates that banks charge on loans to the small business do not adequately reflect the cost of serving them.
4. Banks require a high level of immovable collateral, while small businesses tend to have only movable assets.
5. Although Nepalese banks have sophisticated management information system, they generally do not use it to measure staff and loan performance; which is crucial for profitable small business lending. Since the legal and regulatory framework is not a binding constraint on bank lending to small businesses, it could be improved to facilitate such loans.

## Challenges of the Financial Sector Development in Nepal

The prudential regulations and supervision laws; process for foreclosure and bankruptcy, credit information on borrowers, valuation of collateral, and recovery of loan payment system constitute the basic financial infrastructure for any country. But in Nepal's case there are many problems.

The following points indicate the existing problems of the financial sector development in Nepal, (GMA, 2000):



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1. The inefficient and in-competitive commercial banking system has been pointed out as the main cause for high interest rates in Nepal. The governmental protection granted to the dominant but inefficient government owned/managed banks that maintain a large spread by charging a high rate of interest to meet their high cost of operation, and bad debt provisions has been pointed as the main reason for the in-competitiveness of the banking system. This has resulted in the borrower's paying high rate of interest to maintain inefficient government banks. It has an adverse impact on investment and growth.
2. The financial infrastructure is weak. It has contributed to financial sector inefficiency in Nepal. Prudential regulations for commercial banks are lax compared to the international standards in some crucial aspect. The lack of basic financial infrastructure, the unequal supervisory enforcement of the existing regulation, and the undue protection given to government owned banks are regarded as the major impediment to the investment and economic growth of Nepal.
3. Nepal's legal framework is inadequate in regard to the land record, bailment and bankruptcy. Moreover, court procedures for payment defaults or collateral recoveries tend to be excessively slow, unpredictable and inefficient. Banking activities are regulated by at least six different Acts, while a number of small savings and credit cooperatives are not licensed by the central bank to conduct banking operations. They are not compelled to fulfill prudential regulations, including "fit and proper" assessment.
4. Banking supervision practices in Nepal do not comply with Core Principles defined by the Basle Committee. Regulations on banking activities, in many cases, are inadequate, too lenient and inconsistent. Enforcement is particularly weak. Most of the regulations allow for long delays in correcting non-compliance. They do not set mandatory financial or legal penalties nor do they prescribe actions to be taken by banking authorities
5. Regulations relating to the internal control and audit, interest rate risks and foreign exchange transactions, concentration of credit exposure, capital definition, liquidity, loan classification and provisions, single borrower limit, and accounting policies need to be revised and harmonized with international standards.
6. The Nepal Rastra Bank (the Central Bank of Nepal) has no statutory independence from the Ministry of Finance. Being on the board and as a shareholder of various commercial and development banks, the government of Nepal faces a conflict of interest which it has been unable to resolve.
7. The banking supervision system does not provide legal protection for supervisors, nor operational independence and adequate resources.

## Some of the Critical Problems of Financial Sector Development in Nepal

The critical problems of financial sector development in Nepal include the following:

A. In-competitive commercial banking system;
B. Weak financial infrastructure,
C. Weak and inadequate legal framework;
D. Undue protection given to government owned commercial banks;
E. High rate of interest to maintain the inefficient government banks;
F. Weak supervision and enforcement of financial regulations;



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G. Lack of independency of the Nepal Rastra Bank and the lack of statutory protection to supervisors responsible for the enforcement of existing financial regulations.

The existing legal framework and institutional setup is not conducive to the overall private sector development and thus there is an urgent need for reformation. There is lack of effective and appropriate institutional arrangement for the enforcement of existing legislation dealing with regulatory, disciplining, disclosure and corporate governance mechanism. The status of the enforcement of legislation relating to the redress of grievances of investing public in the matter of financial irregularities, malpractices and capital market operation is very poor. The mechanism for settlement of commercial and business disputes, and the issues relating to privatization and liberalization in general is inefficient. The following are the additional major impediments to private sector development:

- Lack of legal framework meeting the international standard,
- Lack of forward-looking attitudes on the part of the government,
- The political instability, political interference,
- Lack of commitment to develop the system of governance,
- Lack of trained professionals in civil service, judiciary (legal, account) and audit professional to deal with issues related to commercial and business matters.
- The slow process of liberalization,

Furthermore, the lack of trained manpower, and physical facilities in the institutions and authorities responsible for surveillance and enforcement of financial, corporate and securities regulations such as the Nepal Rastra Bank, the Office of Company Registrar, the Securities Board, and NEPSE etc. can also be taken as an a serious impediment to private sector development.

## Prospective Measures of Financial Sector Development in Nepal

The financial sector is the backbone of the economy. It works as a facilitator for achieving sustained economic growth by providing efficient financial intermediation. The Modern financial system is important in the economy in order to pool and utilize financial resources, to reduce costs and risks, to expand and diversify opportunities, to increase the allocative efficiency of resources and to promote the productivity and facilitate economic growth. While a sound and healthy financial system contributes to the growth of the real sector on a sustainable basis, uncertainty and fragility in the financial system adversely affect the targeted objectives of economic development.

The following points signify the possible measures of financial sector development in Nepal:

A. Empowerment of the Nepal Rastra Bank (NRB) by removing the control of the Ministry of Finance;
B. Removal of the undue protection given to government banks by eliminating branching and other restriction on private banks;
C. Enforcement of prudent regulation on all banks equally;
D. Enhancement of the supervision capacity and modernization of NRB;
E. Treatment all financial institutions equally;
F. Improvement in the accounting and audit standards;
G. Establishment of an effective and efficient credit information bureau;



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H. Enactment of new legislation to strengthen financial infrastructure.

## Role of Private Sector in Financial Sector Development in Nepal

The establishment of parliamentary democracy in 1990 opened the way for sweeping economic reforms, and a program of great scope was carried out, between 1991 and 1994. This embraced policies on finance; foreign and domestic trade and investment, industry and foreign exchange; and a start to privatization. A change of government, then, led to a hiatus in privatization and a setback in macro-economic stabilization, but the governments which have ruled since September 1995 have re-launched both.

The government which took office in April 1998 did not have a majority of seats in the Parliament but, significantly, it apparently had the necessary support to move forward with privatization and stabilization. The Prime Minister said his party aimed at winning the confidence of the other parties in the Parliament "and move ahead with a common agenda".

The approach paper drafted by the National Planning Commission for the Ninth Plan, whose implementation reaffirms very clearly the strategy of transition to a more market-oriented and private sector-led economy pursued since the early 1990s. It also offers support for privatization through wide share-issuance to public investors.

Nepal's own liberalization has been greatly reinforced by that of India, with which its economy is very closely linked.

## Problems and Prospects of Private Sector Investment

Regarding the investment environment in the sectors of electricity, telecommunication, transportation and water supply, the major impediments to attract private investment are the absences of stronger private sector involvement in infrastructure. The major impediments to private sector involvement in infrastructure development are: the political and administrative instability; lack of consistent planning; lack of effective institutional support in designing and development of private sector infrastructure projects; reliance on unsolicited proposals; difficulty in obtaining commercial lending and the lack of government support arrangements.

## Problems Relating to the Private Sector Development

A. Lack of matching procedural and institutional structure designed to attract as many interested investors as possible. The present passive approach by the government carries the danger of not making the use of the private financing option to the extent possible.
B. Lack of a proactive and strategic approach to the involvement of private investment in infrastructure. The government is treating private sector development participation as the last resort means of financing a project.

## Ways for Effective Development of the Private Sector in Nepal

The following could be the possible measures for effective development of the private sector in Nepal:



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A. Reformation of existing legal framework conducive to the private sector development which matches the international standards.
B. Establishment of some new institutions and strengthening the capability of the existing institutions to ensure effective enforcement and supervision of the regulatory measures under various legislation for the efficient operation of the capital market, financial system, implementation of the infrastructure projects and smooth operation of private sector development activities in general.
C. The government should follow the competitive tendering system while awarding the infrastructure project in the private sector and to accept direct or contingent financial responsibility to support commercial credibility of a specific infrastructure project which is not otherwise commercially viable.
D. Appropriate training for the staffs of different regulatory institutions and for professionals involved in the dispute settlement process such as judges, lawyers etc.

The appropriate legal framework required for efficient functioning and the operation of the International Finance Services Centre should be developed as domestic legislation. While developing such legislative incorporation, internationally accepted standards and practices should be taken into consideration.

There are important areas of the private sector development suffering due to the lack of appropriate legislation. New legislation is required to cater the need of the private sector development which requires the legal framework to come at par with the international standards for the purpose of: (i) building the confidence of the investing public including foreign investors, (ii) for the establishment of new institutions providing effective mechanisms for the enforcement of the capital market legislation and effective regulation of financial transactions and (iii) for providing an effective mechanism for the settlement of disputes relating to various commercial and financial transactions, issues relating to privatization and matters relating to, or arising in course of formulation and implementation of infrastructure development projects. In addition to new legislation, some of the related existing legislation requires reformation. Some of these may be amended and some should be replaced by new legislation.

## Issues for the Private Sector Development in Nepal

The tax system can be reformed to encourage disclosure and stimulate capital formation. The government can accelerate the sale of the shares of the National Insurance Company which remain in the hands of the state. With this in view, the government should review the adequacy of existing regulations. In the interim, period, the government should also review existing insurance procurement practices in order to create a level playing field between the state-owned company and the private sector.

Private sector support measures should be taken to strengthen certain agencies and organizations which play a key role in the enabling environment for private sector development.

It can be noticed that the Improvement is essential for the following fields:

1. A careful consideration should be given in creating a Small Business Executive Agency to handle licensing and registration requirements for small businesses as a self-regulatory organization under Federation of Nepalese Chambers of Commerce and Industry (FNCCI).
2. NRB should publish guidelines granting greater flexibility to joint venture banks and finance companies in staffing headquarters office in Nepal, in order to encourage continuity in management and the transfer of state-of-the-art technical and operational skills.



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3. Foreign lawyers and accountants (individual and companies) should be permitted to practice in Nepal. It will be necessary to abolish current restrictions on the right of foreign lawyers and chartered accountants to practice in Nepal, amending relevant legislation.
4. It is necessary to review the adequacy of the regulatory framework for various industries (insurance, banking, airlines, energy, communications, etc.) as the process of privatization moves forward.
5. There is a need to develop a competition policy. It will be necessary to review current policies, laws, regulations and practices to eliminate privileges for state owned enterprises as compared with the private sector. The government should consider the institutional arrangements for the regulation and enforcement of a competition policy.

## Practical Problems of the Private Sector in Nepal

The high cost of capital to private business enterprises can be attributed as a major constraint on the private sector development. While there are many impediments to be overcome, it was widely believed that the further development of the capital market in Nepal could contribute to a more efficient allocation of savings, expansion of the private sector, and economic growth. Thus, several studies noted that the development of the Nepalese capital market is important for several reasons:

First, the primary or the newly issued market has the potential to provide a source of urgently needed long-term funding for the private sector. In order to avoid a mismatch in assets and liabilities, the Nepalese banking sector should most appropriately concentrate on short-term funding for business.

Second, the creation of an efficient secondary market with prices determined in a fair and transparent manner would instill public confidence and facilitate the allocation of capital to its most productive uses. This requires that investors have access to the accurate and timely information, improvement in the capital market infrastructure, and a more competitive environment in the delivery of financial services to issuers and investors.

Third, capital markets can facilitate the privatization of state-owned enterprises in a manner that allows broad public participation and provides an ownership structure that will support the long-term goals of the privatization program, including greater efficiency, transparency, sound corporate governance, good management practices, and increased revenues to the government. Finally, strengthening the capital market could help reduce the current dependence on external finance supplied by international lending agencies.

Asian Development Bank (ADB) estimates that the external financing for Nepal's development will account for 8.0 percent of GDP in 2008 while internally generated financing by bank and non-bank sources will account for 1.1 percent of GDP. In order to reduce the over-dependence on foreign assistance for Nepal's development requirements, ADB recommends further efforts to mobilize domestic resources more efficiently, including "major tax reforms and further measures to improve efficiency in the financial sector as well as to revitalize the capital market".

Under the primary securities market, macroeconomic conditions, political uncertainty, and the policy environment toward privatization have not been conducive to the expansion of the share market through public offerings.

## Private Sector and Strategic Opportunities in Nepal

Nepal's greatest opportunities for private sector development include (GMA, 2000) hydro-power sector and tourism sector, both derive principally from the Himalayas. The potential supply of hydroelectricity



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far exceeds Nepal's own present and projected future demand. Schemes that would have a total capacity as great as 40,000MW have been economically and environmentally judged feasible. This compares with some 600MW of hydropower generating capacity now installed in Nepal, another 280MW under construction and projected demand in the country of 4000MW in the year 2014. But, by the same year, India's northern grid is expected to face a power deficit of around 20,000MW.

However, the Indian market for Nepalese power is more theoretical than actual at present. The Nepalese government understands this well and has taken a major step forward by concluding a Power Trade Agreement with India. This provides a legal framework which permits private parties in the two countries to enter into cross-border power sale/purchase agreements with each other. The conclusion of an agreement with India on the integrated use of the waters of the Mahakali river has established another landmark in relations between the two countries; and will open the way to a project which combines hydropower, irrigation and flood control once the arrangements for implementation have been finalized.

The Nepalese authorities are well aware that a constraint on Indian purchases at present is the financial weakness of the State Electricity Boards in India. But restructuring of these has begun, in some states, and the problem should prove to be one of transitions as India moves to a more market-oriented system.

The cost of eight schemes that account for half of the 40,000MW of potential installed capacity has been estimated at US$11,500 million, of which the vast majority would have to come from abroad because Nepal's total gross fixed capital formation in the year 2007 was less than US$2,000 million.

The government has enacted legislation to permit private investment, including foreign, in this sector and private investors are already playing an essential role in both large and small schemes.

Public and private sector investors from Norway, the US and Australia played a leading role in three hydropower projects at varying stages of development, the most advanced being Khimti-I (Norway), Bhote Kosi (Harza Engineering of the US), and the third being West Seti (the Snowy Mountain Corporation of Australia). The cost of these projects estimated at US$138, US$98million and US$ 1,000 million, and their generating capacity at 60MW, 36MW and 750MW respectively.

After pursuing a proposal to the government of Nepal for two years, the Enron Corporation of the US withdrew its application for a survey license for the 10,800MW Karnali-Chisapani project, in which it had calculated that it would have to invest US$6-9,000 million. According to the company, its investment alone would have added 43 percent to Nepal's GNP. In 1995, the World Bank withdrew from the 402MW Arun III project. These two decisions, and the intense political controversy which has been aroused by the Mahakali project, as mentioned above, have demonstrated that the difficulties and risks inherent in projects of such magnitude in Nepal are many and great. They are financial, commercial, economic, environmental, social, administrative and political ones. Indeed, the mismatch between the size of these projects and Nepal's own economy and the financial and administrative capacity are so great that it may be more realistic for Nepal to pursue a program of lesser projects, and develop a record of success in that before attempting mega-projects.

Feasibility studies for some seven medium-sized schemes selected for expansion of the domestic power system were due for completion by the end of year 2001. Their total cost was estimated to be worth US$1,039 million, with individual costs ranging from US$ 39 to 65 million. If they could be partly financed through the Nepalese capital market, this would provide a powerful dynamic to the development of that market, much as railway building helped drive the growth of capital markets in Europe and America in the 19$^{th}$ century.

Electricity generation was a state monopoly managed by the Nepal Electricity Authority until 1992. Since then a considerable legislative effort has been made by the government to open the sector to



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private ownership and investment, both domestic and foreign. An Electricity Development Centre has been established to facilitate foreign investment. Foreign lawyers have paid tribute to the quality and pragmatic responsiveness of the Nepalese officials with whom they have dealt on the Khimti project, which demanded creative solutions to legal problems not encountered in Nepal before.

The government has asked the Foreign Investment Advisory Service (FIAS) of the World Bank group to review the institutional, legal and regulatory environment for the private sector investment in infrastructure (including electricity, airports, dry ports, roads, telecommunications, water and waste disposal) and to provide recommendations on how to make these sectors more attractive to foreign investors. The FIAS report is likely to contain important indicators for follow-up work, including technical assistance requirements.

The strengthening of Nepal's regulatory regime for electricity and other utilities deserves high priority as a target for technical assistance.

The potential of the Himalayas for the growth of tourism has only begun to be exploited. Tourism itself is in private hands, and foreign investment is permitted, except in activities which lend themselves most readily to small-scale enterprise. The strengthening of this sector was the objective of a tourism infrastructure development project financed by the Asian Development Bank approved in July 1996.

## Economic Reforms

Conducting an event study is the most direct and transparent way of assessing the impact of stock market liberalization on emerging market equity prices. However, unlike the typical event study in finance where an econometrician can be reasonably certain that the event in question is isolated from other influential events, the shift from closed to open capital markets usually coincides with four equally important changes in an economic policy: macroeconomic stabilization, trade liberalization, privatization, and the easing of exchange controls.

The theory used to explain the stock price effects of capital market liberalization assumes that everything else is held constant when this change is made. To construct an estimate that we can use to test the theory, it is necessary to hold constant the other reform measures and isolate a pure capital market effect.

To the extent that stock market performance depends on economic conditions, the decision to liberalize depends on the economy's current and expected future performance.

## Prospects of Financial Service Centre in Nepal

The study report prepared by Professor Howell E. Jackson of Harvard Law School and Professor William W. Park of Boston University contains two components. The study report begins with the two premises. Firstly, in order to provide a viable legal structure, Nepal must develop not only the substantive legal standard and regulation but also the enforcement mechanism to ensure compliance with those regulations; and secondly, that Nepal presently lacks the legal and regulatory infrastructure required to become an attractive and successful financial centre. It is supportive to the cause for setting up an International Financial Services Centre in Nepal as proposed by Ms. Collins & Associates Inc. of Boston, USA.

Professor Jackson has suggested three options for overcoming the deficiency of Nepal's legal system required for the establishment of an attractive and successful International Centre. The first option is to establish a unique Nepalese legal and regulatory structure (the indigenous model), the second is to adopt an existing foreign legal and regulatory structure for application in Nepal (the domesticated foreign



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model) and the third, and the most preferred option by him, is the selection of one or more established laws and regulatory systems and incorporate those systems by reference directly into Nepali law. He calls this third option the Selective Incorporation of Foreign Legal System.

Three ways of incorporating foreign regulations into domestic laws have been suggested: (i) the incorporation of foreign regulation as a screening device, (ii) the incorporation of foreign regulation into domestic laws as a complete or near-complete substitute for domestic regulation and (iii) the incorporation of foreign regulatory structure through the contractual choice of the legal provision.

## Investment Environment in Nepal

The Foreign Investment Advisory Services (FIAS) has analyzed the environment for investment in the sectors of electricity, telecommunication, transportation and water supply based on the Nepal government's intention to attract private investment in these sectors. The report prepared by the FIAS team is based on the review of the legal and institutional arrangements in the various infrastructure sectors and the response received from the key government representatives, senior executives of the major infrastructure projects as well as private investors interested in infrastructure projects.

The FIAS report examines the present environment for private sector investors in infrastructure, pointing out the major impediments to the stronger private sector involvement. The political and administrative instability, lack of consistent planning, lack of effective institutional support in designing and developing of private sector infrastructure projects, reliance on unsolicited proposals, difficulty in obtaining commercial lending the lack of government support arrangements, etc. have been identified as major impediments to private sector involvement in infrastructure development.

Three major problems can be pointed out as impediments to private sector involvement in infrastructure development, (Paudel, 2010).

1. The government's heavy reliance on investors' initiation to develop projects except in the telecommunication sector in which the new regulation prescribes a competitive tendering process among the interested parties,
2. Lack of an appropriate strategy that establishes private sector investment as the preferred option for the development of infrastructure project; and lack of matching a procedural and institutional structure designed to attract as many interested investors as possible. The present passive approach by the government carries the danger of not making the use of the private financing option to the extent possible, and
3. Lack of a proactive and strategic approach to the involvement of private investment in infrastructure. The government is treating private sector development participation as the last resort means of financing a project.

The Foreign Investment Advisory Services (FIAS) has advised the government to give up the present practice of introducing tax benefit as a strategy for attracting foreign investment in infrastructure projects. Since the private infrastructure projects seem to be more location independent, the general availability of benefits such as tax holding will generally not create attraction to investors. Instead of tax incentive, the government should focus on providing support to alleviate the specific risk element burdening the individual project.



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FIAS recommends that the government should develop a more comprehensive strategy across all infrastructure sectors integrating the private financing option into the government's overall development efforts to make better use of private financing, and specially foreign direct investment. More specifically the following course of action has been suggested: (i) the government should adopt a comprehensive capital expenditure planning procedure in which private financing is explicitly considered and analyzed. The process should be driven by the potential for commercial viability. Such projects should be taken off from the public sector priority list. Different alternatives should be explored to make the project commercially viable, which do not seem otherwise commercially viable; (ii) the model of the Electricity Development Centre (EDC) may be adopted with required modification to strengthen institutional capacity to handle a private infrastructure project. The process of developing the private sector project could be strengthened if EDC were to be formally involved in all major steps of the process, including the project identification, the preparation of feasibility study and tender documentation; and the negotiation of crucial element such as power purchase agreements. In establishing EDC as a key authority responsible for the implementation of private infrastructure projects across all sectors, while its focus should remain on electricity sector given its tremendous potential. Other sectors could benefit in this way from the skills and expertise available. A key requirement is that such an agency should be politically independent to function as an effective and neutral advisory body to the government as a whole. It needs to enhance its capacity by hiring financial and legal experts; (iii) the government should make much more use of competitive tendering techniques. It would limit the danger of corruption allegations by challenging the awards of a project and improve the number of structure of private infrastructure projects. In some cases when the specific project structure is less clear or in which indigenous proposals by private sector experts are required, unsolicited proposals might still remain the most appropriate approach. Ultimately, these proposals may be converted into competitive tenders by paying the proponent in case he could not win in the competitive award process; (iv) the government should develop a more proactive approach to support the private infrastructure project. The support may take the form of the service/product guarantee and/or a specific support to individual projects to enhance their commercial viability. Possibly, even minor contribution from budget or donor sources might be sufficient to structure a project in such a way that it becomes commercially viable.

Recently, Investment Board Nepal has been established to initiate the bigger projects. Through the Investment Board Nepal Detail Project Report, of the few of the bigger project including Upper Karnali Hydropowr Project with the participation of Indian GMR Company has been finalized and signed.

Despite of above development and investment opportunities, the existing legal framework and institutional set-up in Nepal is not conducive to the overall private sector development and thus there is an urgent need for reformation. The following are the major observations in this area.

1. The legal framework required for the overall private sector development is inadequate. In some areas the existing legislation is redundant, while in some important areas there are no appropriate statutes and regulations, in some areas there is a hiatus between different types of legislation, whereas in some areas the existing legislation is not up to the international standards;
2. There is a lack of effective and appropriate institutional arrangement for the enforcement of existing legislation dealing with regulatory, disciplining, disclosure and corporate governance mechanism**;**
3. The status of the enforcement of legislation relating to the redress for grievances of the investing public in the matter of financial irregularities, malpractices and capital market operation is very poor; and



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4. The mechanism for the settlement of commercial and business disputes and the issues relating to privatization and liberalization in general is inefficient, outdated, dilatory and highly unpredictable.

## Way Forward for the Overall Private Sector Development and Investment in Nepal

The remedial measures for the above problems can be classified into the following major categories:

A. Reformation of the existing legal framework conducive to private sector development which matches the international standards.
B. Establishment of some new institutions and strengthening the capability of the existing institutions to ensure effective enforcement; and supervision of the regulatory measures under the legislation for the efficient operation of the capital market, financial system, implementation of the infrastructure projects; and smooth operation of private sector development activities in general.
C. The government initiation of the competitive tendering system while awarding infrastructure projects in the private sector; and the accept once of the direct or contingent financial responsibility to support commercial credibility of a specific infrastructure project which is not otherwise commercially viable.
D. Appropriate training for staffs of different regulatory institutions and for professionals– such as judges, lawyers etc involved in the dispute settlement process.

## Institutional Mechanism for Private Sector Development

The institutional mechanism for the effective enforcement of law is more important than the enactment of new law. Lack of an appropriate and effective institutional mechanism for enforcement of existing laws and regulations has been identified as one of the major impediments to private sector development in Nepal. It has two aspects. Firstly, in some areas there are institutions but these are not effective due to the lack of required legal authority, trained manpower and physical facilities. Secondly, in some areas there is no appropriate and effective institutional mechanism in place to enforce certain legislation. For example, there is no effective institutional mechanism to develop infrastructure projects to be financed by private sector fund; and to supervise the enforcement of regulation applicable to non-banking financial transactions. For the purpose of remedying this deficiency, there is an urgent need to establish some institutions at the same time. The One-Window Committee within the Department of Industries should also be given equal importance in strengthening the capabilities of the existing institutions such as the Securities Board, NEPSE, the Nepal Rastra Bank, the Office of the Company Registrar, (Paudel, 2007).

### a) One Window Committee

The existing Industrial Enterprises Act 2049 has the provision of a One Window Committee. But the way it is functioning shows that it is not serving its purpose. There is an urgent need for its strengthening, clear-cut definition of its authority and the bindingness of its decisions on other government offices. The Committee may be developed into an Investment Centre having its final legal authority in the matter of granting all types of concessions, benefits and facilities under the Foreign Investment and Technology



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Transfer Act 2049 and the Industrial Enterprise Act 2049. Its decision should be binding on the rest of the government offices for the aforementioned purposes.

## b) Company Registrar/Company Law Board

1. The Office of Company Registrar at present registers the companies, receives annual reports from companies and grants permission to increase capital; and related amendments to articles and memorandum of association of the companies registered with it. It does not keep the follow-up of whether the company has filed the annual reports; held on annual general meeting or conducted proper accounting and auditing of the company's books and accounts. Due to this, the investors are left to the mercy of majority shareholders controlling the management.
2. The role of the Company Registrar requires massive restructuring. Its responsibility and accountability need to be clearly defined. The authority to register the charges of all types of movable assets should be given to the Office of Company Registrar. The Registrar should be vested with the clear cut authority to prosecute all types of defaulters under the Company Act; and the authority to adjudicate the matter of imposition penalty should be vested in the Commercial Court. The present system of the registration of mortgage of immovable assets in the respective District Revenue Office should continue.

## c) Nepal Securities Exchange Limited (NEPSE)

1. As an strategy for providing the foundation for building of public confidence in the stock exchange, the ownership and the governance, the pattern of the existing NEPSE should be changed. A highly desirable option would be to privatize it at an early stage of market development. It can be done in two stages. Privatize the Board of Directors as the first step towards the gradual privatization of NEPSE. The new Board of Directors of NEPSE should develop, for the submission to the government, a plan for the proposed ownership, operation, funding and management of NEPSE under the proposed private ownership. The plan should also contain appropriate organizational structure of NEPSE. Such a privatized Board of Director would be constituted by the majority of members representing the private sector (non-member users of the exchange facility such as issuers and investors). The representation of the public should also be ensured in the Board. Such public representation could be drawn from a broad range of professionals and organizations, academics, associations of financial analysts, institutional investors, etc.
2. NEPSE should be developed as a self-regulatory body. Its authority vis a vis the Securities Board should be clearly defined to remove duplication of authority. The effective self- regulation of NEPSE requires vesting some specific authorities with it, such as (i) the authority to enforce members' compliance with laws and regulations and NEPSE's own rules, (ii) governing structure that reflects the public interest and provides fair representation to its members, (iii) the access to membership based on competency and financial responsibility, (iv) the authority to frame by-laws that are adequate to protect investors and facilitate the efficient execution of securities transactions, (v) the authority to fix fees, dues and other charges that are reasonable and allocated equitably among members, issuers and other users of its facilities, (vi) the authority to impose sanctions on violations of the rules and regulations it is charged to enforce subject to a fair disciplinary procedure,



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(vii) the authority and resources for staff training in both regulation and operational matters and to design and implement investor education programs.

### d) Securities Board

1. The Securities Board should, in general, have full and final regulating, supervisory and enforcement authority over the capital market operation under the new Securities Exchange Act. The existing physical facilities and human resources capabilities should be enhanced to commensurate to its responsibilities and authorities.
2. The authority of the Securities Board should include among others: (i) anticipatory power for the protection of investors, (ii) power to step in on the insolvency of a registered person and take over the business, to close up operations and to transfer remaining business to another registered person, (iii) sufficient and detailed investigatory powers, (iv) power to establish an inquiry and disciplinary process in respect of contravention by registered persons and to prosecute the violation of securities law before the court of competent jurisdiction, (v) power to impose conditions on the certificate of any registered person after initial registration, (vi) power to enter into the memorandum of understanding with the Nepal Rastra Bank to determine their respective supervisory responsibilities over commercial banks and finance companies registered to conduct any form of services business.

## Empowering the Corporate Governance

The problems of corporate governance in Nepal is directly related to factors such as the lack of proper accounting and auditing standards; inadequate legal provision requiring disclosure and transparency in corporate governance; lack of effective remedy against the defaulting directors and auditors responsible for non-disclose and false-certification etc. This problem can be solved to a large extent if directors of a registered or listed company are made personally liable for non-compliance with its continuing disclosure obligations; and subjected to a financial penalty which should be paid by the directors personally. Similarly, accountants and auditors not fulfilling their statutory obligation of reporting the true and fair picture of the corporate governance and disclosure should be subjected to a penalty. This requires amendment in the Company Act. Similarly, accountants and auditors should be made personally liable for their negligence in performing audits and keeping account as per the existing law. The accounting and audit standards for public companies need to be strengthened through the effective implementation of provisions of the existing Chartered Accountants Act, 1997. This may also require amendment in the Company Act.

## BANKING AND FINANCIAL SYSTEM IN NEPAL

Over the past 20 years Nepal's financial system has become deeper and the number and the type of financial intermediaries have grown rapidly. In addition, recent reforms have made banks more stable. Still, access to financial services remains limited for many people in many parts of Nepal and it has been declining in recent years. Much of the past 40 years the Government of Nepal has tried to increase access to formal financial services for small business and low-income households.



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The government has introduced directed lending programs for small businesses and low-income households. It has required banks to open branches outside the Kathmandu valley, created specialized wholesale and retail institutions, and lowered market entry to foster the development of different types of financial institutions.

The Nepalese financial sector is composed of banking sector and non-banking sector. The banking sector comprises the Nepal Rastra Bank (NRB) and commercial banks. The non-banking sector includes development banks, micro-credit development banks, finance companies, co-operatives and non-government organizations (NGOs) performing limited banking activities and other financial institutions such as insurance companies, employee's provident fund, citizen investment trust, postal saving offices and the Nepal stock exchange.

In Nepal the banking sector is one of the sectors which have been able to stand up the test of time amid the political instability in the country, and yet be able to be a most profitable sector in the economy. With the increasing problem in the nation, this sector has been able to prosper with less difficulty till now. But the growth of financial institutions seems to be slowing down due to the entry of new players leading to stiff competition. One of the signs of problems has been the credit crunch faced by the financial institution in recent months, so banks are looking for new geographic locations and diversifying the portfolio of customers.

## Competitiveness of the Banking Industry in Nepal

Due to the growing economic competition worldwide, Nepal's banking industry is sharpening its tools to face it. The Nepalese banking industry has opened the doors of modernization. It is striving hard to increase its market share, attract more customers, and to diversify deposits and loans portfolio to capitalize the untapped opportunities. As we can see from the recent trends of the growing number of commercial banks, there is a significant increase in competition. This is due to the banks present in the same market catering to the same target group. Not only is the number of commercial banks increasing but also there is a significant rise in the number of financial intermediaries such as development banks etc. Due to the untapped opportunities in the financial market of Nepal, the government is looking forward for deregulation of few rules and regulations due to which banks are trying to be more efficient in managing their interest rate ceiling, capital adequacy and loan rates.

The new Act has enabled other financial institutions to operate the services that were limited to commercial banks provided they meet the capital requirements as stipulated in the directives making competition even more intense in the small market. Similarly, the development banks have also started providing the remittance service which is assumed to be the major source of foreign currency inflow in the country. Some of the mergers and acquisitions that have taken place in the past few years have also increased the competitive intensity of the banks. NRB has been emphasizing the increase in the number of mergers and acquisitions among the banks in the few years ahead so as to slowly regulate the flow of money in the economy. The increased use of technology by the general public has compelled the bank today to move towards internet banking.

With the focus on globalization, these trends have increased competition in the banking industry in terms of the opening of number of branches and becoming customer centric. Besides competition, these trends have led to the economic growth of the country by enabling the simple and specialized banking services to reach the sector-wise population of the country. However, the competitiveness in the market has given rise to the concept of market leaders, followers and challengers.



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The banking industry is one of the vital parts of the Nepalese financial sector. The banking industry has stood as the most vulnerable yet most profitable sector in the economy in the Nepalese context. Despite increasing problems in the nation, this sector has yet been prospering with much lesser difficulty. As mentioned earlier, there are 25 commercial banks, which cater to the society with banking services. Commercial banks have gained vital trust from the public side. With the wide reach and wide diversity of services, it has become one of the most important sectors of the economy.

Nowadays people seem to be getting much more attracted to the facilities provided by the banks compared to the past. The demand for banking services has also been increasing, which can be observed through the escalating numbers of branches of every bank. Despite the weak economy, with continuity of effort, formulating plans and selecting projects, the banking sector has been growing for past many years. Hence, despite the unfavorable economic environment, tremendous growth could be seen in the banking sector.

## Regulatory Influences

NRB is the apex body for all the financial institutions to imply the regulatory influences. NRB has formulated different laws, rules, regulations, policies, etc. that have an impact on every financial institution established in the country. For example, NRB has formulated a banking regulation to address the institutions interested in opening offices in Nepal. They are required to submit applications to NRB. NRB then reviews the existing competition in the banking sector, likely contribution to the development of banking and its status in international banking and then only grants the permission for opening offices for foreign banks.

## Legal Requirement for the Establishment and Operation of Commercial Banks in Nepal

NRB has made the rules and procedures for establishing commercial banks in Nepal. The existing legal framework of NRB establishing a commercial bank in Nepal states that:

Only on the recommendation of NRB, a bank shall be established as a company with limited liability under the Company Act. For obtaining such recommendation an application should be filled along with the particulars as specified by NRB. Only after receiving the recommendation of NRB, commercial banks can be registered according to the Company Act to functioning under the Act.

According to the Nepal Rastra Bank (NRB Act, 2002), financial institutions in Nepal can be classified into the following categories (table 1):

All commercial banks fall under ‘Class A’ category, requiring minimum paid-up capital of Rs. 1000 million. In the present Nepalese context, banking regulations have been formulated and regulated by the following Acts:

- NRB Act, 2002
- Banking & Financial Institutions Act, 2006
- Directives/Circulars issued by NRB (for prudential regulations)



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*Table 1. Categories of financial institutions in Nepal*

| Class | Minimum Required Paid-Up Capital |
|---|---|
| A | Rs.1000 Million |
| B | Rs.320 Million |
| C | Rs.200 Million |
| D | Rs.100 Million |

## Classification of Bank

Ever since the first bank was established, the financial needs of people have been growing. There have been many changes around the world in regard to the banking sector. With every instant change in people's need, technological advancement, and changing world economy, there are many functions that bank needs to perform. A single bank is not able to perform with all the functions. So in the course of time many types of banks came into existence catering to the different needs of the public.

## The Central Bank

The Nepal Rastra Bank (NRB), the Central Bank of Nepal, was established in 1956 under the Nepal Rastra Bank Act, 1955, to discharge the central banking responsibilities including guiding the development of the embryonic domestic financial sector. Since their inception, there has been a significant growth in both the number and the activities of the domestic financial institutions.

To reflect this dynamic environment, the functions and objectives of the bank have been recast by the new NRB Act of 2002. Its preamble lays down the primary functions of the bank as:

A. to formulate necessary monetary and foreign exchange policies to maintain the stability in price, and consolidate the balance of payments for sustainable development of the economy of Nepal;
B. to develop a secure, healthy and efficient system of payments;
C. to make an appropriate supervision of the banking and financial system in order to maintain its stability, and foster its healthy development; and
D. to further enhance the public confidence in Nepal's entire banking and financial system.

NRB is eminently aware that, for the achievement of the above objectives in the present dynamic environment, sustained progress and continued reform of the financial sector is of utmost importance. Continuously aware of this great responsibility, NRB is seriously pursuing various policies, strategies and actions, all of which are conveyed in the annual report on the monetary policy.

## The Development Bank

After the enactment of the Development Bank Act 2052, many development banks were established in different places of Nepal. They are performing under the Development Bank Act 2052, the Nepal Rastra Bank Act 2058 and the Company Act 2053. These banks are helping the people as well as the nation



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in economic development directly or indirectly. The major functions of the development banks are to finance and support for the development of the country rather than personal use.

## The Agricultural Development Bank

Developing the agricultural sector of the economy is the main motive or rationale behind establishment of these banks. With the motive the Agricultural Development Bank was established in 2013 B.S. under the Agricultural Development Act 2024. These banks were initiated to improve economic welfare of people and provide loans and capital for the agricultural sector. This bank provides agricultural production loan, agricultural facility loan, small and cottage industry loan, agro-profession loan, loan to buy land and loan for agricultural graduate. Usually, there are two types of banks prevailing under the Agricultural Development Banks. They are the land mortgage bank and the cooperative bank.

## The Exchange Bank

The exchange bank provides financial assistance for conducting international trade. It buys and sells the foreign exchange bills. This type of bank exchanges different foreign and indigenous currencies and transfers the fund to foreign countries. It provides facility to send money to foreign lands. It has branches and sub branches in the country and abroad. In Nepal, the functions of this bank are performed by the Nepal Rastra Bank and the commercial banks.

## The Industrial Bank

A bank, which is opened to support the industrial field of a country and it's all round development and expansion is an industrial bank. In the context of Nepal, the Industrial Development Corporation can be considered as the industrial bank. Its major functions are: to open new industries; to expand the present industries; to provide loan and technical assistances for small industries opened in the industrial areas; to encourage the possible investors to buy and sell shares, bonds or debentures; and to support the overall economic structure of a company.

## The Rural Development Bank

A rural development bank is established with the objective of uplifting the living standard of the people of rural areas by encouraging them to start the possible income generating occupation; by providing loan without security; and by providing necessary training and bank service. The rural development banks opened in Nepal have adopted and followed the system of the Rural Bank Bangladesh, in order to provide loans to the people who were deprived of institutional loan facility in the lack of security and guarantee. Hence the banks that are established to improve the economic condition of the farmers, laborers, masons, etc. are called rural development banks. Some of the rural development banks are the Eastern Rural Development Bank Ltd, the Far Western Rural Development Bank Ltd, and the Western Rural Development Bank Ltd. These banks are established with some fundamental goals for the equal distribution of the resources to all people and all regions.



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## The Savings Bank

A saving bank is established with the objective of managing a huge amount of capital by collecting the small amount of money saved by the people in urban and rural areas. The main purpose of this type of bank is to encourage people to save more and develop lifelong saving habit. Thus, by collecting the fragmented small amount throughout the country a savings bank collectively invests it in the sectors which are productive and will yield good returns for the investors.

## Rural Development Banks (RDBs) and Microfinance Activities in Nepal

In 1992, Nepal Government, closely based on the Grameen Banking Model of Bangladesh, established two regional level rural micro finance development banks with the major share participation of NRB (66.75 percent and 58.5 percent), one each in the Eastern and Far-Western development regions. By June 1996, other three RDBs, one each in the other three development regions were established. NRB altogether has invested Rs. 195.0 million as equity into these five development regions. Establishment of RDBs is a major breakthrough in the microfinance sector development in Nepal. The main objective of RDBs was to provide credit to poorer households, mainly to women. The RDBs credit is provided for micro level income generating activities on group guarantee basis, (www.bwtp.org).

## Problems and Challenges

NRB has always been playing a crucial role in following resources to the deprived and poorer sector of the economy through development finance policy. It has undertaken various policies on development finance including rural and microfinance to generate employment and increase production and income of the poorer people.

The rural credit survey of 1991/92 has revealed that only 20 percent households have access to formal financial institutions and 80 percent had access to the services of the informal sector. This shows two important policy failures of the organized sector: one is the insufficient infrastructure and another is the insufficiency of the existing financial institutions to deliver rural credit.

In this background, at least two immediate policy measures are needed to implement in order to make microfinance institutions viable, competent and microfinance-friendly. Firstly, a policy is required for continued support from the government in social mobilization and group formation, as the primary objective of the microfinance institutions is to help alleviate poverty. Secondly, it is important to create a wholesale fund for financing microfinance in the longer term possibly at the minimum interest rate. Reaching out to remote places and motivating the rural people are other challenges to microfinance institutions in Nepal because the country has a diverse topography and thin population density.

The efforts of creating the regulatory environment in the microfinance sector are an advanced step towards remedying policy on microfinance operation. This policy correction has established Nepal as a pioneer in the microfinance sector development in the world.

The major challenge to microfinance is how to make this industry viable, sustainable and profitable. Reaching out to the majority of people with micro and rural finance, and making the financing institutions viable, sustainable and profitable are two different aspects of microfinance.



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## The Reform Program for Regional Rural Development Banks

In 2001 the Government of Nepal and the Nepal Rastra Bank committed to a five-year restructuring program for regional rural development banks. This program included recapitalization of four of the five banks (equivalent to NRs. 163 million), reforms of the banks' operating practice, and progressive privatization of profitable ones. Reforms include introducing productivity measures for each bank, appointing executive directors through open competition, and implementing cost reduction schemes, such as for voluntary retirement. Under the restructuring program, 40-50 percent of shares of profitable regional rural development banks are to be sold to bank clients, while the Nepal Rastra Bank keeps up to 10 percent and the government up to 20 percent. The remaining shares are to be split among employees, other banks, and other investors.

As a result of the recapitalization and reforms, Western Regional Rural Development Bank and Eastern Regional Rural Development Bank generated profits in 2005. Improvements have also been seen in the 3 other regional rural development banks.

As per the restructuring program, privatization was completed for Western Regional Rural Development Bank in 2005. The bank is now owned by its clients (40 percent) and employees (1 percent), five commercial banks (23 percent), the government (17 percent), the Nepal Rastra Bank (10 percent). Although the privatization was successful, the performance of the privatized bank has not been very good. In 2005, it made a profit only due to the income generated by depositing its share of the deprived sector lending in other financial institutions.

The other profitable regional rural development bank, covering the Eastern Region, started its privatization program in December 2004. Under the program, the Nepal Rastra Bank divested all but 10 percent of its 67 percent share in the bank. Of that 57 percent, 42 percent is allocated to the bank's clients, 5 percent to its employees, and 10 percent to the public. It is not known when the program will be completed.

Divestment of shares from the regional rural development bank is an important step toward increasing private sector involvement in the microfinance sector. Still, as a token of its commitment to the sector, the Nepal Rastra Bank continued to hold 10 percent equity in all five banks, even after their privatization.

Between 1999 and 2005, the average number of inhabitants per branch rose from 36100 to 54000. Although every district has at least one bank branch, access is skewed toward the Central Region, where there is one branch for roughly every 50000 inhabitants compared with one for every 111000 in the Mid-Western Region. This regional disparity is mainly due to the fact that private commercial banks are concentrated in the Central Region, which contains 46 percent of their branches.

Private banks offer far better services than public banks. Many branches of public banks cannot offer the same range of products as their private counterparts due to lack of computerization. They also have very long delivery times. Moreover, none of the public bank branches offers electronic payment facilities.

## Microfinance and Services to Low Income Households

Nepal's formal microfinance institutions can play a key role in delivering financial services to low-income households. Yet many potential clients of microfinance institutions prefer to save with and borrow from informal sources. The microfinance sector's limited ability to serve low-income households is reflected in its narrow outreach, sluggish growth, high liquidity and low profitability.

The following points explain the unsatisfactory state of Nepal's microfinance sector:



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A. A complicated geopolitical environment.
B. Weak technical capacity in key areas, such as accounting and auditing, strategic planning, financial analysis, and human resource management.
C. Lack of commercial orientation and slow professionalization– mainly because microfinance is often considered a charitable activity.
D. Distortion arising from the government's deprived sector lending program that generates high liquidity among many microfinance institutions, as these institutions are encouraged to borrow beyond their needs and invest these low-cost funds in other financial institutions.

Although often cited as an obstacle, Nepal's legal and regulatory framework is not a binding constraint on the growth of the microfinance sector.

## Microfinance Institutions and Financial Services in Nepal

Microfinance institutions play a key role in providing financial services for low income households. Yet many microfinance clients prefer to save with and borrow from the informal sector. Financial NGOs and cooperatives, followed by microfinance development banks and regional rural development banks, are the largest providers of financial services for low income households. Still, many microfinance clients prefer to use the informal sector for deposit accounts and loans.

The reason is that informal providers offer products and services better suited to the needs of low-income households, that is, with quick availability and no requirement for immovable collateral. Low income households are much more likely than wealthier ones to have irregular incomes. In addition, many of their non-routine expenditures are for health care. Thus, they often require quick access to financial resources. Moreover, half of Nepal's low-income households cannot use their homes as collateral because they do not have required documents and because their dwellings are in a bad area, in poor condition, or both. Informal providers better serve the needs of such clients by offering faster services and requiring no collateral.

The limited ability of formal microfinance institutions to adequately serve low-income households is reflected in their poor outreach, sluggish growth, high liquidity, and low profitability. Although regulated microfinance institutions represent only the tip of the iceberg of Nepal's microfinance sector, they are broadly the representative of the sector, if not better performing.

Several factors explain the poor state of the formal microfinance sector in Nepal, including the complicated geo-political environment, weak technical capacity, lack of commercial orientation, and distortions arising from deprived sector lending policies. These factors affect the sector's profitability, which can be discussed under the following headings:

1. **Complicated Geo-Political Environment:** The geo-political environment of Nepal-- a mountainous country that has been experiencing conflict in past few years--poses significant challenges. The performance of many small farmers' cooperatives and financial NGOs and cooperatives has been severely affected by the political conflict and turmoil. The conflict has affected all formal microfinance providers, though to different degrees, depending on their location and ownership structure.
2. **Weak Technical Capacity:** Formal microfinance institutions suffer from limited capacity in key technical areas such as accounting and auditing, strategic planning, financial analysis, and human



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resources management. This weak technical capacity clearly shows the sector's growth. Most microfinance providers face similar challenges: lack of professionally trained staff in technical areas, weak internal control systems, no internal or external audit mechanisms, inadequate management information systems, and low capacity for product development. In this regard, Rural Microfinance Development Center (RMDC) has provided crucial capacity building and "hand holding" support for its borrowers. It has limited resources for such activities. Significant additional efforts are required to build capacity in the sector– both for providers of_technical assistance to microfinance providers and for the sector itself.

3. **Lack of Professional and Commercial Orientation:** Lack of professional and commercial orientation of the sector hampers its profitability, and many stakeholders still recognize microfinance a charitable activity. By design, NGOs do not have profit motives. In addition, they tend to have weak governance structures due to lack of a clear ownership structure.
4. **Distortion arising from deprived sector lending policies:** Priority and deprived sector lending has led to high liquidity and distorted capital adequacy ratios among formal microfinance institutions. The balance sheets of Nepal's licensed microfinance providers have extremely high levels of liquidity with investments and liquid funds accounting for more than 20 percent of assets in all these institutions. This situation is particularly striking for microfinance and regional rural development banks and financial NGOs.

Such a high level of liquidity and loans is the result of the deprived sector lending window. In some cases, because commercial banks are uncertain about the capacity of some microfinance providers they lend to, they ask the providers to invest these low-cost funds in fixed deposits. The microfinance providers earn a profit on these investments; the interest rate margin is usually 2-3 percent.

5. **Low Profitability:** These various obstacles translate into low profitability in the formal microfinance sector. During the period of 2005, 8 of 20 financial cooperatives and 4 of 47 financial NGOs recorded profits over NRs 1 million. Despite central bank's reform program, just two of the five regional rural development banks recorded profits that year.

Overall microfinance development banks perform better than other microfinance providers. But they also have weaknesses that hamper their growth. Their management systems have not improved in line with their outreach and experience, and their accounting and internal controls should be strengthened. Accordingly, microfinance development banks have not been able to keep pace with international best practices in microfinance.

Moreover, supervision of the microfinance sector is not robust: institutions that pose no systematic risk are supervised while large ones are not, and supervisory capacity is very weak. Out of 76 microfinance institutions that the Nepal Rastra Bank currently supervises, 47 are financial NGOs, which account for only 3 percent of the deposits of regulated institutions. Some of these NGOs have fewer than 200 clients. Moreover, as noted, the regulated microfinance sector only represents the tip of the iceberg: there are a lot more microfinance players about which little is known. In addition, the institutions currently regulated are not adequately supervised.



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## Microfinance Institutions (MFIs)

A microfinance institution is an organization that offers financial services to the low-income population. Almost all of them offer microcredit and only take back small amounts of savings from their own borrowers, not from the general public. Within the microfinance industry, the term 'microfinance institution' is used to refer to a wide range of organizations dedicated to providing these financial services. Such organizations include NGOs, credit unions, cooperatives, private commercial banks and non-bank financial institutions (some that have transformed from NGOs into regulated institutions) and parts of state-owned banks.

## Clients of Microfinance

The typical microfinance clients are low-income persons that do not have access to formal financial institutions. Microfinance clients are typically self-employed, often household-based entrepreneurs. In rural areas, they are usually small farmers and others who are engaged in small income-generating activities such as food processing and petty trade. In urban areas, microfinance activities are more diverse and include shopkeepers, service providers, artisans, street vendors, etc. Microfinance clients are poor and vulnerable non-poor who have a relatively stable source of income.

## Exposure of Microfinance in Nepal

Nepal is one of the poorest countries in the world, and the poorest in the South Asia region. Its poverty reduction rate is low. The main reasons for this low poverty reduction rate are: (i) low per capita income, (ii) concentrated urban growth, and (iii) high population growth rate. Out of a population of 29 million, 25% are in below the poverty line. Most of the poor people live in rural areas and have little opportunity. Microfinance can help poor people who have no collateral, but willingness to work and a desire to do some business activities from which they will acquire employment as well as income. Although many programs have been implemented for poverty alleviation in Nepal, only microfinance programs are seen as poor targeted and rural based.

In Nepal agro-based co-operatives were initiated in the 1950s as a first step in microfinance. Poverty alleviation rural based programs were initiated through the Small Farmers Development Program (SFDP) on a pilot test basis in 1975 by ADB/N. The success of the pilot tests in Dhanusa and Nuwakot districts encouraged policy makers to expand formal rural based microfinance programs.

SFDP is now being transformed into several autonomous, self-help organizations called Small Farmers Cooperatives Limited (SFCL) and these organizations are managed by farmers themselves. Other microfinance development programs, such as Priority Sector Lending Program (PSLP), Intensive Banking Programme (IBP), Production Credit for Rural Woman (MCPW) and Rural Self-Reliant Fund (RSF) have been implemented. After studying the pros and cons of various microfinance development programs the government began to rethink the delivery mechanisms of microfinance.

In 1992, the government set up two Grameen Bikash Banks as a replication of the Bangladesh Grameen model of microfinance delivery. The government also created a situation to encourage participation in the microfinance by the private sector. Subsequently, the organizations such as Nirdhan*, Centre for Self-help Development (CSD), Chhimek came into existence. Rural Microfinance Development Centre Ltd. (RMDC) was also established to support microfinance institutions by giving wholesale credit, ini-



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tiating training and other necessary support to MFIs. MFIs are dependent on small savings from group members. As a part of development finance microfinance is targeted at specific groups of people, falling in the lower bracket of society. Financial services include savings, credit and other services such as micromoney transfer and microinsurance. These services were differentiated by types of service employment and income orientated objectives, target group, target community, target area and credit at home.

In the past decade, microfinance has been recognized as a particularly effective development intervention for three basic reasons:

1. The services provided can be targeted specifically at the poor and the poorest of the poor.
2. These services can make a significant contribution to the socio-economic status of the targeted community.
3. The institutions that deliver these services can develop, within a few years, into sustainable organizations with steadily growing outreach. In this context, it is important to make a couple of distinctions:
    a. Microfinance is more than the provision of credit. It involves the provision of other financial services (most usually savings and insurance) and recognizing that even the poor have a variety of needs, not just credit.
    b. Securing sustainable access to microfinance for low-income communities involves building (or reforming) microfinance institutions- not just the delivery of time-bound microfinance programs (such as offering short-term revolving funds).

In Nepal there are a wide range of institutions active in the microfinance sector, each with its own way of going about the task of making financial services accessible to the poor. Some writers distinguish between the so-called informal and formal sectors, but given that many of the informal organizations are in fact registered societies, the preferred terms to use are community-based sector and institutional sector.

## The Regulatory Status of Microcredit Institutions

Microcredit institutions are regulated by various laws, such as the Nepal Rastra Bank Act (2002), the Agriculture Development Act (1967), the Cooperative Act (1972), the Finance Company Act (1985), the Development Bank Act 1996, the Social Welfare Act (1991), the Company Act (1947), the Financial Intermediary Act (1998) and the Insurance Act. It appears to be over regulated but in reality the situation is just the opposite. There is some difficulty to regulate all microcredit institutions because there are many MFIs established under different acts doing microfinance activities. The ultimate responsibility to develop, regulate, monitor and supervise is of NRB. NRB had issued regulations for the development banks which were engaged in microfinance, as a guideline to develop MFIs activities on 24th February, 2003.

NRB is going to issue an Umbrella Microfinance Act very shortly to streamline the regulation of microfinance. The issues were also discussed in the second National Microfinance Summit 2010. (Second National Microfinance Summit Declaration Feb 16, 2010)

## Regulation of Microfinance in Nepal

The microfinance sector in Nepal is regulated by the Priority Sector Lending Program, Financial Intermediary Act 1998, Development Banks Act 1995 and Cooperative Act (1972).



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1. **Priority Sector Lending Program:** The central bank (NRB) imposes 'priority sector' lending on commercial banks, which entails lending a certain percentage of their deposit liability to the deprived population. The ratio of priority sector lending has increased from 5% to 12%, of which, 0.25 to 3% must be invested in the 'deprived' sector, targeting at the poorest of the poor.
2. **Financial Intermediary Act 1998:** The NGOs providing microfinance services are registered under the Financial Intermediary Act 1998, which provides a limited banking license to NGOs. To date, fourty seven NGOs are registered under this Act and providing financial services.
3. **Development Banks Act 1995:** The two apex organizations as well as five Regional Micro finance Rural Development Banks (RRDBs) and four private rural microfinance banks are registered under Development Bank Act 1995. This Act was merged under Bank and Financial Institution Ordinance (BAFIO)-2004.
4. **Cooperative Act:** Cooperatives are regulated by the Cooperative Act and supervised by the Ministry of Agriculture, Department of Cooperatives. Out of various types of cooperatives, savings and credit cooperatives are providing microfinance services. There are 8000 registered Cooperatives of which 2700 are savings and credit cooperatives.

## Regulation of Microfinance Institutions

Bangladesh is the first country in South Asia to start a modern microfinance revolution. Bangladesh and Sri Lanka made impressive results in reaching out to poor borrowers, mainly women. Even in the socially conservative country like Afghanistan, association and involvement of women in credit programs are accepted. The Indian progress in microfinance is based on the Self-Help Group Model. In Nepal and Pakistan, microfinance institutions are more aggressively regulated.

## Challenges in Micro Credit Delivery in Nepal

Nepal has a varied topography at varied development stages, a mix of different cultures and different ethnic groups, which challenges the successful delivery of microfinance. The major challenges are:

1. Formulating a microcredit delivery mechanism that is better suited to the people in hills and mountains.
2. Successfully extending the outreach to the hills and mountains.
3. Redesigning existing programs of the formal MFIs to better target the poorest.
4. Unsustainable delivery mechanisms of government initiated MFIs and programs

## Improving Access to Financial Services in Nepal

Stable, privately owned financial sectors do not necessarily create inclusive financial systems as evidenced by international experience. Hence, governments have a reason to be concerned about expanding access.

Although this is a relatively new area of economic development, general consensus has been reached on the following issues:



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A. Every government is better placed to function as a facilitator rather than a direct provider of financial services. Facilitation involves creating an enabling environment and, if needed, supporting initiatives that can help private institutions increase access.
B. Any effort to expand access should address sustainability issues among providers of financial services -that is, help them profitably reach their desired market segments, rather than require them to lend to specific sectors or open branches in specific areas.

These principles have already been proven true in Nepal. Despite government efforts, regional rural development banks are the worst-performing microfinance institutions, and their branches remain concentrated in the Central Region. Meanwhile, as priority sector lending requirements have been reduced, banks have withdrawn from the sector,_and despite its high liquidity, the microfinance sector's loan portfolio is stagnating.

Priority sector lending, which seeks to increase access to credit by small business, is considered a burden by banks. Almost 40 years after such lending was introduced, banks are reducing it, as the Nepal Rastra Bank lowers requirements for it. Banks perceive priority sector lending as a sort of annual tax that they must pay to do business, as they are not equipped with the right products, procedures, and lending technologies to serve small business profitably.

Public banks are struggling with negative equity, and profitable private banks have few incentives to seek out new markets or develop product for new market segments. If left to their own devices, banks would probably develop appropriate lending methods for small business, but only after a few years as competition increases in the corporate and consumer segments.

## Capital Market and Regulation in Nepal

The main regulators of capital markets and intermediaries providing broker and dealer services for primary and secondary markets are the Securities Board, Nepal Rastra Bank (NRB), and Nepal Stock Exchange (NEPSE), a self-regulatory organization under the Securities Exchange Act, as amended. NRB is responsible for the supervision of securities market intermediaries (other than brokers) while the Securities Board is responsible for the supervision of NEPSE, the registration and supervision of stock brokers, and the granting of licenses to finance companies and others acting as issue managers, underwriters, market-makers, or portfolio managers. The Registrar of Companies, in conjunction with the Securities Board, is responsible for the supervision of prospectus and periodic disclosure documents filed by listed public companies. It should also be noted that the Insurance Board regulates the investment activities of insurance companies. Also, in many countries insurance companies have established subsidiaries to provide money management services or to engage in capital market activities normally provided by a securities broker-dealer. In Nepal, there is a need to establish a regulatory body to supervise private provident funds. It would appear advisable to establish an independent, self-funded, Financial Services Commission to regulate all non-bank financial services.

Under BAFIA, the Finance Company Act and the Banking Act; NRB supervises and regulates finance companies and commercial banks. In Nepal, these organizations are also permitted to provide investment banking type services (acting as underwriter and/or issue manager). In this regard, it is noteworthy that the risks associated with investment banking activities are quite different from those associated with commercial banking or the quasi-banking functions performed by deposit-taking finance companies. While such entities must also obtain a business license from the Securities Board to conduct capital



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market activities, the Securities Board is not directly involved in off-site supervision, or the on-site inspections program which is administered by NRB. In obtaining a license from the Securities Board, however, certain minimum capital requirements must be met by anyone proposing to act as an issue manager, underwriter, market-maker, portfolio manager or stock broker.

## Barrier of Capital Market Development in Nepal

The development of the Nepalese capital market is important for several reasons. First, the primary or new issues market has the potential to provide a source of urgently needed long-term funding for the private sector. In order to avoid a mismatch in assets and liabilities, the banking sector should appropriately concentrate on short-term funding for business. Second, the creation of an efficient secondary market with prices determined in a fair and transparent manner would instill public confidence and facilitate the allocation of capital to its most productive uses. This requires that investors have access to accurate and timely information, improvement in the capital market infrastructure, and a more competitive environment in the delivery of financial services to issuers and investors. Third, capital markets can facilitate the privatization of state-owned enterprises in a manner that allows broad public participation and provides an ownership structure that will support long-term goals of the privatization program, including greater efficiency, transparency, sound corporate governance, good management practices, and increased revenues to the Government. Finally, strengthening the capital market could help reduce the current dependence on external finance supplied by international lending agencies. During the Inception Mission, the high cost of capital to private business enterprises was identified as a major constraint on private sector development. While there are many impediments to be overcome, it was widely believed that the further development of the capital market in Nepal could contribute to a more efficient allocation of savings, expansion of the private sector, and economic growth. This is in keeping with the findings of a recent IMF Country Report on Nepal. Thus, the IMF study noted that a well functioning capital market is important for Nepal to support the efficient channeling of private savings to investment, and facilitate the transition to indirect monetary control. While headway has been made through various reforms since the late 1980s, the capital market is still in an early stage of development with many structural weaknesses. At the very beginning of an emerging market economy, it is important that the Government create the right policy environment to facilitate the creation of a critical mass of financial instruments, issuers, and investors. The government can also create incentives for capital mobilization, remove impediments to private sector development, educate investors, and provide basic legal and regulatory reforms. Legal reforms must provide a securities law with adequate regulatory and enforcement powers to the government regulator. In Nepal, legal reforms are also necessary in order to harmonize the Securities Exchange Act with the Companies Act, the Banking Act and the Finance Company Act. Collectively, each of these acts, as well as the Provident Fund Act and the Insurance Act, has a significant impact on the development of the capital market, the securities industry, and institutional investment.

The following facts indicate hindrances to capital market development in Nepal:

A. Obstruction in relation to attracting foreign direct investment, mobilization of foreign as well as domestic capital, lack of investor confidence, restriction on foreigners to purchase shares in the local market, the non-liberal tax policy; shortcomings in accounting and auditing of non-financial companies.



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B. Inconsistencies in and overlapping of securities related legislation related to public issue of securities and continuing disclosure obligations of public issuers and collective investment funds and the inadequacy of some key provisions in securities legislation.
C. Inadequate and unstructured existing Nepalese securities legislation to meet the international standard. There are provisions in the Act which should be relegated to the Regulations, and there are important provisions of substance in the Regulations which should have been contained in the Act. There are also provisions that are duplicated in both the Company Act and Stock Exchange and the regulation which can create confusion and conflict.
D. The inadequate regulatory framework for non banking financial institutions (NBFIs), capital market activities including private pension funds, insurance companies, and bank trust services and venture capitals.
E. The inadequate legal provision to ensure prompt and complete disclosure on the part of directors and penal provisions for defaulters.
F. Absence of the securities investor protection fund for the protection of the investor.

For the capital market development, the followings actions need to be taken by the Government of Nepal and the private sector so that a critical mass of instruments, issuers and investors can be achieved.

Strengthen the legal and regulatory framework; encourage the development of full service investment banks and securities firms; link capital market development to privatization of state-owned enterprises; rationalization of tax policies towards capital formation and secondary market transactions; increase the quality and timeliness of information available to investors; improve governance requirements and minority shareholder rights; strengthen the capital market infrastructure; establish an efficient secondary market in government debt to provide a benchmark for the money and bond market; eliminate restrictions on foreign portfolio investment gradually; launch a country-wide investor education and awareness programs; and train regulator and market professionals.

## Role of Non-Bank Financial Institutions in the Capital Market

There are two types of non-bank financial institutions (NBFIs) that are important to the proper functioning of the capital market. The first are securities market intermediaries such as broker-dealers, investment banks or merchant banks which are involved in the mobilization of financial resources through the capital market to meet the financing needs of business enterprises and the Government. They are in direct competition with the traditional commercial banking function of taking deposits and providing loans. In Nepal, these functions are currently performed by deposit-taking finance companies and commercial banks. At the present time, there are no full service securities broker-dealers or investment banks in Nepal. The second type of NBFI acts in the capacity of a fiduciary in managing the money of clients, usually by investing in financial market instruments. These include contractual savings and institutional investors such as provident funds, insurance companies and collective investment funds.

There are a number of NBFIs and market practitioners that are essential to the operation of a capital market. These include brokers, dealers, and underwriters of securities, investment advisors, credit rating agencies and institutional investors in the form of investment companies, pension funds, and bank trust departments. The functions of a broker, dealer, or underwriter may be performed by specialised securities firms, investment banks, or by diversified financial firms offering a wide array of financial products (i.e., universal banks or merchant banks). Depending upon the legal framework, regulatory considerations,



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and institutional arrangements, individual financial institutions (i.e., finance companies and commercial banks) are able to offer both bank and non-bank financial services. From a public policy standpoint, it is important to keep in mind that there are different risk factors and potential for conflicts of interest that must be taken into consideration in the regulation of such diverse financial entities.

One of the obstacles to private sector capital formation is the failure to mobilize the extensive savings already available for investment in the capital market. This pent-up demand could be released if legal and institutional obstacles to investment in the capital market were removed. Resource misallocation has been encouraged by practices in the insurance industry and in the administration of the Employee Provident Fund, which has contributed to excess liquidity in the banking sector and a shortage of long-term funds to finance private business expansion through the capital market. Also, private provident funds operate without the benefit of a Private Pension Fund Act, which would encourage investment diversification to meet fiduciary obligations and avoid conflicts of interest. In an appropriate legal and regulatory environment, private pension funds could be expected to experience rapid growth over the next decade. This has been the experience in both emerging and developed markets.

Structural changes and regulatory reforms in the Nepalese capital market would promote increased capital mobilization and demand for securities through contractual savings and institutional investment.

## Information Disclosure Practices in the Nepalese Capital Market

In order to make effective, accurate and informed decisions, investors must have access to accurate and timely information. This is often not the case in Nepal. While banks, finance companies and insurance companies are perceived to provide meaningful information for investors on a timely basis, disclosure to investors is not adequate for many non-financial listed companies. It has been argued by some financial market analysts, leaders of private industry and independent authorities that a major reason why financial information is not presented correctly in disclosure documents is that the system of tax collection works against it. There are good grounds for believing this to be the case.

The lack of accurate and timely information is forwarded as an important reason why investors to a considerable extent have lost confidence in the stock market. In some cases, companies listed on the exchange may have ceased operations or at least are in non-compliance with reporting requirements to the Nepal stock exchange, Nepal Rastra Bank (NRB), the Registrar of Companies and the Securities Board.

In general, the quality of information available to investors in listed companies, or to financial institutions making loans to private limited companies or public limited companies is not adequate by international standards. Financial and investment professionals do not believe that they have access to timely and reliable information for the purpose of making investment or lending decisions.

The Nepal Stock Exchange should adopt appropriate policies, membership and fee structure to attract members outside Kathmandu, including introducing brokers that need not be present on the floor or carry customers' accounts. All types of securities firms, including broker-dealers, issue managers and full service securities firms should be eligible for membership. Following the enactment of the new Securities Law, listing rules should be amended to ensure that an adequate number of shares are available to public investors. Inactive securities should be de-listed or traded on the second section of NEPSE. Listed companies not meeting periodic disclosure requirements or holding annual meetings should be de-listed. Under the new Securities Law, over-the-counter trading in securities should be permitted. Also, the private placement of securities should be clearly defined. The tax system should be simplified



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and rationalised (i.e., equal tax treatment for dividends and interest on private and the government debt securities and bank deposits) to encourage private sector capital formation.

There should be no capital gains tax on securities transactions to encourage long-term investment through the capital market. Listed companies displaying good corporate governance practices should receive a lower corporate tax rate (i.e. 5 or 10 percent lower) than other companies. The Ministry of Finance (MOF) and NRB should prepare a paper considering options for the establishment of a secondary market in government debt instruments to enhance pricing efficiency and provide a benchmark for private issuers of debt securities. The government should foster the development of money and bond market for private issuers of securities. In order to prepare for privatisation, a level playing field in the conduct of the insurance business should provided for. Restrictions on foreign direct and portfolio investment should be reviewed with a view to the elimination of unnecessary impediments. The government should review existing restrictions on foreign portfolio investment to determine the speed at which such restriction can be liberalized. The time table for opening a local capital market to foreign investment should be established. In order to foster international best practices in securities regulation and enforcement, the Securities Board should join the International Organization of Securities Commissions (IOSCO). This should be done prior to the opening-up of the Nepalese stock market to foreign portfolio investment in order to facilitate international co-operation in enforcement.

Improve corporate disclosure and transparency. Strengthening public company disclosure by streamlining a regulatory process and granting clear authority to the Securities Board to administer a disclosure program and suspend listed companies for non-compliance. Amend securities law and companies act, as appropriate, to eliminate duplication of work effort and to transfer initial and periodic disclosure supervision to the Securities Board.

Amend the securities law to grant Securities Board clear enforcement power regarding disclosure by public companies and compliance with listing standards.

At the current level of development of Nepal's financial sector, banks and finance companies do not have sufficient power to demand high quality financial information from potential borrowers. At the same time, investors in the capital market in some instances do not have access to accurate and timely information. This has resulted in a high cost of capital to the private sector in the form of bank loans where spreads are traditionally wide. Also, the capital market has not been able to achieve its full potential in mobilizing capital for the private sector development or in the privatization of state-owned enterprises.

Furthermore, the accounting and information systems at many state-owned enterprises have hindered effective management of those enterprises and has slowed the process of privatization. In order to correct this problem, it is essential to improve the quality of information available to investors, lenders, and the government. In order to do this effectively, it will be necessary to have comparable disclosure, accounting, and audit standards for (i) listed companies, (ii) private limited companies and public limited companies seeking credit from banks and finance companies, and (iii) state-enterprises owned by the government. In the short run, improving information and disclosure may increase the cost of doing business but in the long run it can be expected to reduce the cost of capital to the private business sector and the Government. Indeed, the urgent need to approve accounting and audit standards was recognized by the Government with the enactment of the Chartered Accountants Act of 1997.

There is a perception that private commercial banks, finance companies, and insurance companies have a better track record concerning disclosure to investors than those enterprises operating in the non-financial sector. This may be due at least in part to the fact that the financial institutions are required to produce higher quality financial reports in order to adhere to the prudential and reporting standards of



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the regulatory authorities. Also, deposit-taking financial institutions are subject to on-site inspections by NRB on a periodic basis and on-going off-site monitoring. Furthermore, many of the finance companies and all private commercial banks are joint venture firms that are accustomed to the discipline of meeting international accounting standards. Finally, the financial regulators require that audited reports be produced on an annual basis by a qualified auditor. Failure to comply with this requirement could result in the loss of their business license.

## Transparency in Corporate Reporting

Today the minority of shareholders and other stakeholders are demanding a much higher level of transparency and are no longer easily satisfied. The Securities Board must therefore recognize that transparency is necessary to create and protect share value.

Investors must bear the responsibility for understanding and analyzing the information they use while making judgments about risk and return. Should they not find the full information required they should refrain from such investments or hold only themselves accountable for their decisions? The answer to this question is yet to be identified.

## Legal Framework on Dividend and Share Prices in Nepal

The consistent declaration of dividend exhibits the profitability and financial strength of the company. The dividend policy followed in between is vital for the company, especially those planning to be listed on the stock exchange. The steady dividend definitely assists the company to penetrate the stock market and generate cash through public issues. Dividend, to the companies already listed, is the foremost tool to measure the value of its share. It is not important whether the dividend is paid or not, but the declaration of dividend is the key word of whole gambit. The payment or nonpayment of dividend does not affect the creditworthiness of firm. The timely payment of dividend increases the attraction of investors affecting positively in the capital market, whereas the non-payment of dividend means the indirect reinvestment of the retained earning which ultimately is beneficial to investors.

## Present Regulation on Dividend Policy in Nepal

Following are the relevant provisions made by various regulations and directives regarding dividend:

Nepal Rastra Bank Act, 2012, section 32 (1) (a)

The section authorizes the bank to put ceiling in the payment of dividend by commercial banks and finance companies. This we can take as authoritative provisions.

Nepal Rastra Bank Directive No. 13:

This directive requires certain conditions to be complied with by finance companies before the distribution of dividend as under:

1. that shares taken by the promoters are fully paid



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2. That the share capital as stated in the memorandum and articles of association is issued to the public and listed in the Stock Exchange Market.

## Finance Company Act, 2042

As per the Section 29 of the Act, a finance company, before declaring dividend, is required to transfer to the reserve fund, out of its net profit a sum not less than the amount as stated under:

Where the amount in the reserve fund is less than 50% of its paid up capital, then the amount to be transferred to reserve fund is not less than 50% of the net profit, and

Where the amount in the reserve fund is more than 50% of its paid up capital, then the amount to be transferred to the reserve fund is not less than 25% of the net profit.

## Commercial Bank Act, 2031, Section 18

The section requires compliance with before the declaration and distribution of the dividend by the commercial bank as under:

- That adequate provision is made for the preliminary expenses not yet written off and accumulated losses of the previous years,
- That, provisions of loan loss, capital adequacy ratio, transfer of profit to reserve fund etc. are complied with the first.

## Companies Act 2063, Section 140

This section contains the provision regarding the post declaration of the dividend as under:

Excluding the cases stated as under, a company is required to pay the dividend to its shareholder within forty days of declaration of dividend.

- Where any law prohibits for the payment of the dividend.
- Where the right to receive the dividend is disputed.
- Where the dividend could not be paid because of a natural cause.

If the dividend is not paid within forty days of declaration of same, it is to be paid with interest as prescribed.

## Banks and Financial Institutions Act 2063

Banks and Financial Institutions Act (2063) has replaced the Agriculture Development Bank Act, 2024; the Banijya Bank Act, 2031; the Finance Company Act, 2042; the Nepal Industrial Development Corporation Act 2046 and the Development Bank Act, 2052. The section 46 of the Act requires the compliance with the following provisions before banks or finance institutions declare or pay the dividend to shareholders:

- That provisions for all preliminary expenses, accumulated previous years losses, risk assets are made.



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- That the minimum capital fund as prescribed is maintained.
- That the statutory transfer to general reserve fund complied and
- That the shares appropriated for issues to the general public is issued and fully paid up.

Apart from the compliance with above provisions, banks or financial institutions are required to obtain prior approval from the Nepal Rastra Bank before the dividend is declared. The dividend should be paid only out of the realized profit. The notional profit, revaluation reserve should not be taken in account of the dividend purpose. Most importantly, the dividend should be paid only on the fully paid shares.

## Government's Long Term Plan Regarding Capital Market Development in Nepal

The Tenth Plan (2002) document of the Government of Nepal has mentioned that the long-term approach of the capital market in Nepal is to avail financial resources for infrastructure development in the area including roads, electricity, communication, water management etc. by granting the opportunities to the general people in the share ownership of such developmental activities and institutions. The plan has further expressed its hope that the Nepalese Stock Exchange Market would be widened and broadened in such a way that at least five percent of the total population would be counted as real investors. The plan has also added that total transactions in the market share of institutional investors would be raised to a minimum of 25 percent of GDP.

1. In the Tenth Plan it has been clearly stated that the government is committed to create opportunity for a number of people to reap benefits from the return obtained by directing investment in income generating portfolio of assets.
2. The Plan has pursued some objectives to develop the capital market in the country. This include the following:
    a. The participation of the general public would be raised through the medium of the stock exchange in projects with the private sector involvement and the rate of return would be made available to them.
3. The quantitative targets set by the plan in terms of the capital market can be expressed as: The number of people investing in the share capital of organized institutions would be raised at least to three percent of the total population of the country.
    a. Organized institution to raise Rs.7 billion through primary issues.
    b. The amount of transactions in the secondary market to reach Rs.12 billion.
    c. The value of capitalization in the stock market to reach 15 percent of GDP.
    d. Additional 40 companies to be listed in the stock exchange market.
4. The Government of Nepal has stated that the following strategies would be adopted to accomplish the stated objectives of the capital market:
    a. The security exchange market would be modernized
    b. The regulatory system of the security exchange market would be made effective.
5. The policy adopted by the Tenth plan relating to the capital market:
    a. It has been stated that effective regulatory norms related to the organized sector and the capital market would be established as a measure to protect the interest of investors.
    b. Allocative and operational efficiency of the capital market would be enhanced.
    c. The stock market would be made transparent and reliable.



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6. The Tenth Plan of GON has emphasized the following framework of the program and the implementation mechanism:
   a. One window system would be established for the public issue through the Security Board.
   b. Ownership change would be made instantaneously just after the dealing of security.
   c. A simple method would be developed for the share issuance and dealings of the public enterprises which have been privatized.
   d. A permanent committee would be constituted encompassing the agencies i.e. the Ministry of Finance, The Nepal Rastra Bank, The Security Board, and the Insurance Board, for developing a healthy and competitive financial market in a coordinated way. This would ensure the development of regulatory agencies for future. The secretariat of the Committee would be in the Security Board.
   e. Based on feasibility studies, stock exchange facilities would be expanded into other regions enabling savers of those regions to deal in such markets.
   f. The regulatory benchmark would be established for the Security Board and the Nepal Stock Exchange.
   g. Arrangement would be made to publicize procedures in different aspects relating to stock exchange activities.
   h. A code of conduct would be in place for the employees of security market and also for the director, manger, auditor, advisor of organized enterprises and security dealers.
   i. Institutional arrangement would be in place to impart training on several aspects of the capital market including regular study and research.
   j. In order to check persons to take undue advantage out of dealing of securities and having access on unpublished sensitive information a sever penalty clauses would be enacted.
   k. While privatizing, government enterprises shares would be sold through the Security Market to the maximum possible extent.
   l. The Nepal Security Exchange Market would be privatized in the process of modernization and would be developed as a self-regulatory agency adopting the good governance practices.
   m. The security deposit system would be established to save investors from possible forgery and fraud in security dealing and for the immediate ownership transfer system of the securities dealing.
   n. In this issue, some provisions have been made in the Securities Act.
   o. The investor's security fund would be established to save the investors against the possible loss through the security brokers or to minimize the loss and risk.
   p. A legal system would be made to enable the dealings of government debenture and the collective saving program suitable for various investing groups.
   q. Arrangement would be made to enable the dealings of government debentures through the security market thereby presenting the benchmark for returns and increasing liquidation.
   r. Legal reformation and the development of an investment regulatory system, having security regulatory sectoral-right, would be pursued to encourage the incoming of contractual savings in the capital market.
   s. Arrangement would be made for annually submitting 'compliance report' to confirm whether the securities issuing organized security dealings have complied with the act, law, rules or not.



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t. The process of entrance and exit of security dealers would be made simple through the adoption of prudential norms.
u. The Necessary regulation of the capital market, market conduction, manpower development as well as educational training and information for investors would be provided.
v. The gradual automation of the dealings of the security exchange market would be carried on, on the basis of feasibility.
w. Developing procedures would be developed having the facility to conduct dealings from the local level and the OTC market would be established through the expansion of floor trading existing centrally.
x. The central deposit system would be instituted and applied to make the clearance of security account transparent and prompt as well as for the settlement, (Tenth Plan of the Government of Nepal, 2003-2007).

## Financial Markets and Institutions in Nepal

A financial market is a market in which financial assets (securities) such as stocks and bonds can be purchased or sold. Financial markets facilitate financing and investing by households, firms, and government agencies. The main participants in financial market transactions are households, business (including financial institutions), and governments that purchase or sell financial assets. Financial markets facilitate the flow of funds from surplus units and to deficit units. Those financial markets that facilitate the flow of short-term funds (with maturities of less than one year) are known as money markets, while those that facilitate the flow of long-term funds are known as capital markets. Securities with a maturity of one year or less are called money market securities, whereas securities with the maturity of more than one year are called capital market securities. Money market securities generally have a higher degree of liquidity (can be liquidated easily without a loss of value). However, capital market securities are typically expected to generate a higher annualized return to investors.

The Securities Board, NRB, and NEPSE are the main institutions regulating capital markets and intermediaries. Under the Finance Company Act and the Banking Act, frequent supervision of finance companies and commercial banks is performed by NRB. While the responsibility of Securities Board is to supervise the activities of NEPSE, the registration and supervision of stockbrokers, and the granting of licenses to finance companies and others acting as an issue manager, underwriter, market-maker, or portfolio manager. Under the Securities Investment Trust Act of 1997, the Securities Board is also responsible for the registration and supervision of investment funds. The Registrar of companies, in conjunction with the Securities Board, is responsible for the supervision of prospectus and periodic disclosure documents filed by listed public companies. The Insurance Board of Nepal regulates the investment activities of insurance companies.

## Nepal Rastra Bank (NRB) as a Capital Market Regulator

Under the current regulatory scheme, the supervision of finance companies and commercial banks acting as a underwriter, issue manager, market-maker or portfolio manager are supervised by NRB, which includes the administration of prudential standards, financial reporting, off-site monitoring, and on-site inspections for compliance with applicable rules and regulations. NRB is also responsible for the overall supervision of commercial banks and finance companies, including their activities in the markets for



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treasury bills and government securities. Since, finance companies and banks are permitted to underwrite the securities of private issuers, the central bank plays a significant role in the supervision of the establishment of prudential standards, intermediaries engaged in investment banking (issue managers and underwriters) and other capital market activities. At the present time, the Securities Board does not participate in the NRB's program to inspect and monitor the financial conditions of finance companies and commercial banks that are licensed to conduct capital market activities (GMA Capital Market Ltd., 2000) .

## Securities Board Nepal as a Regulator of the Capital Market

The Securities Board of Nepal (SEBON) was established on 26 May 1993 under the provision of the Securities Exchange Act 1983 (first amended). It was established with the objective of promoting and protecting investors by regulating the securities market. Besides the regulatory role, it is also responsible for the development of securities market in the country. The main objectives of the Securities Board Nepal is to promote and protect the interest of general investors, to supervise and monitor the activities of the Nepal Stock Exchange and other related firms carrying on securities business and to render contribution to the development of the capital market by making securities transactions fair, efficient, healthy, and responsible.

Currently, SEBON is focusing on improving corporate governance, improving policy and procedures to make securities markets more attractive to private and closely-held corporate houses, enhancing professionalism of securities businesspersons, and developing a clear regulation for merchant banking business. The other prioritized works of SEBON include increasing market access to investors by upgrading market services, promoting debt markets by developing a clear regulation for a debenture trustee, introducing necessary provisions for the transferability of rights, and developing required regulations for mutual funds, (Annual Report SEBON, 2007/08).

## Major functions of the Securities Board, Nepal

- To advise the government on the issues related to the development of the capital market and the protection of investors' interest.
- To approve the stock exchange for the operation and oversee them for healthy trading of securities.
- To regulate and register market intermediaries involved in the primary issue as well as in the secondary trading of securities.
- To regulate public issues of securities including the mutual and trust funds.
- To monitor and supervise the securities transactions.
- To conduct research and studies in the areas of capital market.

## Financial Institutions in Nepalese Securities Market

Commercial banks are the important financial institutions in the economy. They are the vital medium for monetary policy transmission. The stability and profitability of commercial banks depend on the sound management of their assets and liabilities. Thus, the aim of every commercial banks management is to optimize the portfolio of assets and liabilities with regard to its specific business policy, (NRB Economic Report, 2003/04). Commercial banks are performing the key role in the Nepalese securities market.



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'Among the 56 companies classified under group 'A', commercial banks hold 19.64% of 'A' group, which is, 11 in number. In the FY 2005/06, out of the total paid up capital Rs.20008.55 million recorded in NEPSE, commercial banks hold 42.60% weight. Regarding the annual turnover, out of total annual turnover Rs.3451.43 million transacted in NEPSE, commercial banks weight has been recorded 78.12%. Similarly commercial banks have contributed 70.96% of total market capitalization value of Rs.96813.74 million recorded in NEPSE transaction, in the FY 2005/06, (Annual Report SEBON, 2005/06).

Finance companies are mushrooming in Kathmandu Valley, whereas, their presence out of the Valley is very thin, (NRB Economic Report, 2003/04). Among the 56 companies classified under group 'A', finance companies hold 57.14% of 'A' group, which are, 32 in number. In the FY 2005/06, out of the total paid up capital Rs.20008.55 million recorded in NEPSE finance companies hold 12.82% weight. Regarding the annual turnover, out of total annual turnover Rs.3451.43 million transacted in NEPSE the weight of finance company has been recorded 8.86%. Similarly, finance companies have contributed 5.17% of total market capitalization value of Rs.96813.74 million recorded in NEPSE transaction in the FY 2005/06.

As of February 2014 as per the report prescribed on (nepalstocks.blogspot.com), Nepal Stock Exchange has classified altogether 130 companies as ´A´ class companies at the country´s sole bourse. NEPSE has been classifying listed companies since fiscal year 1996/97 as per the Securities Listing Bylaws 1996. At present there are 230 listed companies in NEPSE. In the last fiscal year, 120 companies were categorized as class ´A´ companies. As per the bylaws, only the companies having minimum paid-up capital of Rs 20 million and at least 1,000 ordinary shareholders can be categorized as class ´A´ companies. Likewise, they should have posted profit for three straight years. Also, the book value of their share should not be less than the paid-up value. Similarly, only those companies submitting their particulars of business and statements of income and expenditure of the concerned financial year within six months of the completion of the fiscal year can be categorized as class ´A´ companies. Like past year, banking and financial institutions have dominated the list of the ´A´ class companies. Twenty-five commercial banks, 58 development banks and 27 financial institutions have made it to the elite list. Similarly, 14 insurance companies and three hydropower companies have been categorized as class ´A´ companies. The list also includes one company each from Manufacturing and Production, Others and Hotel sectors. Thou the categorization of the companies are done on the basis of analysis and performance of the company, some stock investors and analysts does not fully agree to this categorization method.

## The Primary Securities Market and Legal Arrangement

The primary market allows issuance of new securities helping the issuer companies to raise funds for starting new enterprise or for expansion and diversification of the existing ones. Normally, securities once issued get listed in the Stock Exchange enabling securities holders to dispose them at their convenience. Attraction for investing in new securities is interlinked with the liquidity provided by the stock exchange. The primary market is characterized by the overwhelming presence of retail investors and a very small role of institutional investors. This may be attributed to the limited size of the new issue market and non-availability of risk financing and merchant banking type of intermediary institutions to support the growth of the market, (Kafle, 2004).

The public issue activities through the primary market are regulated by the "Securities Exchange Act, 1983" and the regulation and guidelines made under the act as well as the Companies Act 1997". The related regulations and guidelines are "Securities Exchange Regulation, 1993", Securities Regis-



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tration and Issue Approval Guidelines, 2000", "Issue Management Guidelines, 1997", "Bonus Share Issue Guidelines, 2002" and "Securities Allotment Guidelines, 1997". Similarly with the objective of providing the public issuance related services to the issuing companies in a professional manner, a mandatory provision has been made that the issuing company must take the services of issue manager registered in SEBON.

## The Impact of the Changing Capital Market Structure

The changing structure of a capital market has had some positive impact on the volatility, liquidity, and transaction cost.

## Volatility

Volatility plays a key role in assessing the risk/return trade-offs and forms an important input in asset allocation decisions. It is widely accepted that large fluctuations in market returns carry important negative effects on risk-averse investors. Besides, they have important economic implications, especially for the overall domestic investment, and for the flow of funds from abroad. Volatility is caused by a number of factors ranging from technical or short-term to fundamentals. Several macroeconomic variables like inflation, money supply, interest rates etc. also affect the movements in share prices directly or indirectly. The market microstructure too wields influence on volatility.

## Liquidity

One of the most important outcomes on the equity market, particularly from the viewpoint of economic policy, is stock market liquidity. The term 'liquidity' is related to transactions costs. A liquid market is one where transactions can be done with low transactions costs.

## Transaction Costs

Transaction costs have a significant bearing on returns as they can substantially affect the national gains from investments. Transaction costs also impact volumes and volatility and reduction in trading cost could induce the investor to trade more frequently leading to increased volumes. The empirical evidence suggests that increased trading volumes by increasing liquidity results in reduction in volatility. Transaction costs apart from including explicit cost, such as brokerage fees, etc. also include some implicit components, such as market impact cost, clearing and settlement cost arising due to counter party risk, paper work cost and bad delivery, etc. despite the growing popularity of stock markets during the eighties and the first half of the nineties, the transaction costs were high due to physical movement of papers, bad deliveries due to existence of securities in physical form, less transparent method of trading, etc. Changes in the market microstructure, such as automated trading, dematerialization. Increased liquidity, guarantee of trades and increased competition in the supply of brokerage services and resultant reduction on brokerage fees have brought about a significant reduction in transaction cost. The transaction cost in India now compares well with that in the best markets of the world. Reduction in the transaction cost is an excellent signal of improvement in the overall market efficiency and capital market growth.



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## The Nepalese Securities Market: Regulations, Trends and Challenges

The development of the securities markets is part of the development process of the overall economy. All countries with effective securities markets have the opportunities of attracting foreign players thereby increasing the level of foreign investment. It is a pathway to increased foreign investment. It would not be surprising if we came to find out that the investment of German-based companies listed in the New York Stock Exchange (NYSE) is higher than that of the American companies themselves.

When we look at the security market of Nepal, the only security we can think of its stocks. Our security market is still at a primitive stage and has to be improved in order to develop the capital market of the country. Publicly traded companies do not only run efficiently with higher economies of scale but also provide a framework for healthy and disciplined corporate governance. This further enhances the need for development of the security market and strengthening of the capital market.

It has already been explained that the Nepalese securities market mostly consists of publicly traded stocks. Therefore we can analyze the security market by looking at the trend in the Nepal Stock Exchange. It is disappointing to know that the NEPSE index has been showing a downward trend for quite a long period now. Due to the lack of corporate discipline, many companies have also been de-listed from the stock exchange. The stock trade volume also decreased which implies that the investors' confidence in the security market is decreasing.

Security exchange regulations were initiated in Nepal a decade after implementing the Security Exchange Act, 1983. In the same year, The Security Exchange Board Nepal (SEBON) was also established to promote and protect investors by regulating the security market. Apart from that, SEBON is also responsible for the development of the security market. To get the investors' confidence it is necessary to make the securities market healthy, transparent and efficient and with this view the government has provided SEBON with various authoritative powers. To make SEBON's operations more effective, the second amendment of the Security Exchange Act has brought the security market intermediaries under the jurisdiction of SEBON. This has made it mandatory for the security traders (brokers) to register with SEBON before starting security business and to submit their statements of financial and trading activities.

SEBON has been supervising the stock market since its establishment in 1993. Its supervisory role has wider scope and extends from the maintenance of company transparency to the monitoring of brokerage firms. A company that does not fulfill the requirements placed by SEBON is delisted from the stock exchange due to the failure to comply with the rules and regulations of the governing body.

Actions taken against companies that do not comply with the guidelines are some of the measures taken to protect investors. In the same manner, SEBON has also rated the listed shares in order to provide investor with more insight of the stock market. Though in other countries, private companies do the ratings after a detailed analysis, SEBON has been doing this under the provision of the Securities Listing Bylaws, 1996. Under this law, stocks are rated "A" if the company:

1. Has been profitable for the past three years,
2. Has a book value of shares more than the paid up value,
3. Has submitted financial reports within six months of the closing of the fiscal year,
4. Has paid-up capital worth Rs. 20.00 million,
5. Has at least 1000 shareholders, and
6. Has floated shares to the public as per the Security Listing Bylaws, 1996. If any of these provisions are not met with, the shares are rated B.



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Why has the security market not flourished despite these measures? The current law and order situation of the country, economic slackness, inadequate private sector development, and low level of internal savings have adversely affected the security market. Apart from this, there are many other factors creating hurdles in the expansion and development of the security market. Implementation of the corporate and financial governance project has also been delayed. The governance system would enhance the institutional capability of SEBON. Another important factor is the limited size of the market due to the lack of policies regarding the promotion of public issues. The modern sectors of the country such as telecom, airlines, roads, hotels etc. are also under the government and private ownership, which has further limited the market. Public issues of such sectors would create wider choice for investors. Lack of infrastructure, the backbone of a well functioning capital market, is another prime reason. Unless necessary measures are taken to develop the existing unutilized resources (like standard audit systems, investment advisors etc.) and to introduce unavailable resources (like credit rating agencies, e-trading facilities etc.), we cannot intensify the development of the capital market. Lack of institutional investors, and professionalism, concentration only in stock markets security trading only in the capital city etc. have also laid back the development process. Lack of coordination between SEBON and other regulatory authorities while formulating policies that affect the security market is further hindering this market.

A good capital market is an essential requirement to give a better shape to our economy. Thus it is necessary to take various measures that can enhance the development process of the capital market. All the above mentioned drawbacks have to be looked upon and settled to create a strong capital market. Stability in the political situation and a good law and order situation are essential for the growth of the capital market. The infrastructures to promote the stock market and other securities have to be improved. Market expansion to other cities to accumulate the savings from investors in different regions is also essential to promote the security market. Creating regulatory jurisdiction for public issues from various regulatory authorities to a single authority will also promote the security market. Membership in the International Organization of Securities Commission (IOSCO) could help in getting information and new development practices. Collecting sufficient resources and getting the membership in IOSCO are urgent needs for developing the security market in Nepal.

## The Primary Securities Market in Nepal

Securities available for the first time are offered through the primary securities markets. The issuer may be a brand-new company or one that has been in business for many years, whereas in the secondary market, existing securities are simply being transferred between parties, and the issuer is not receiving any new fund. After their purchase in the primary market, securities are traded subsequently in the secondary market.

The primary market for securities is the new issues market which brings together the supply and demand or sources and uses for new capital funds. In this market the principal source of funds is the domestic savings of individuals and business; other suppliers include foreign investors and governments.

The principal uses of funds are: the long term financing of the investment in housing, the long term investment of corporations and other business, and the long-term borrowing of the government.

In a highly developed capital market by far the largest proportion of individual's savings reaches the new issues market indirectly via a financial intermediary. Moreover, most individual investors are unfamiliar with the new issues market and its institutions, such as underwriters and selling syndicates which serve as middlemen between the corporate demanders of funds and the individual investors and



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financial institutions which supply the funds. To most investors the term securities market is synonymous with the stock exchange.

## Investment Banking and Broker-Dealer Services

The functions of a broker, dealer, and underwriter are essential to the efficient operation of the money and capital market. In Nepal, there are no full service securities firms or investment banks. Stock brokers are small in size. There are not many branch offices outside Kathmandu Valley. Investment banking services are provided as an adjunct to other financial services provided by finance companies and to a more limited extent by commercial banks.

In Nepal, the functions of a broker and dealer have traditionally been separated in order to avoid the potential for conflicts of interest. While well intentioned, this approach to regulation has resulted in a highly segmented financial services industry. Under the securities law, broker, market-makers, dealers, issue managers, and underwriting services are defined. Furthermore, the Securities Board requires a separate license for each of the five types of broker-dealer activities. Under the current regulatory framework, a broker may only perform the function of a broker and firms engaged in the other four defined categories of securities activities may not act as a broker on the stock exchange. As a result, Nepalese finance companies are able to perform the relatively risky functions of a market-maker and underwriter but they are precluded from taking on the less risky function of acting purely as a broker, buying and selling stock on behalf of customers. This is because the functions of broker and dealer may not be combined. As a result, finance companies have chosen to perform the function of underwriter rather than act as broker on the floor of the stock exchange. At the present time, the broker can only participate in the new issues market by collecting application forms from potential investors on behalf of issue managers in return for a commission.

The complete separation of the functions of a broker and dealer has not allowed for the development of diversified securities firms which can offer a full range of broker, dealer, and investment banking services to meet the needs of issuers and investors. Furthermore, the brokerage business is not economically viable as a standalone business at the present time due to the low transactions volume of recent years. Since a stock brokerage firm may not perform the economic function of an issue manager or underwriter, this has limited the ability of brokers to participate in the distribution of securities in the new issues market and has resulted in the artificial separation of the primary (i.e., new issues market) and secondary market in securities. As a result, the stock market is deprived of additional potential sources of liquidity. While full service securities companies should be encouraged to develop in Nepal, individual brokers should not be permitted to perform the function of both broker and dealer in the same security. This is necessary in order to avoid potential conflicts of interest and possible attempts at market manipulation. Thus only securities companies with adequate capital and appropriate regulatory safeguards in place (i.e., compliance officers and adequate accounting and information systems) should be permitted to perform the functions of both broker and dealer. The Securities Board should also require that NEPSE develop appropriate guidelines for securities companies performing the dual function of broker and dealer.

The mobilization of savings for investment in productive sectors requires a more competitive and innovative financial sector. Government policy actions should encourage the development of financial service firms such as investment banks or full service securities firms that will perform the essential economic functions of broker, dealers, investment bankers, money managers, and related capital market services. It is essential to consider the role of existing institutions in the financial sector along with the



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possible need for new business entities such as diversified securities firms that might provide a full range of capital market services for the Nepalese economy. Also there is a need to allow for the creation and licensing of introducing brokers to service areas outside Kathmandu.

## Roles of Investment Bankers in the Securities Market

Billions of dollars worth of new securities reach the market every year. The traditional middleman in the primary market is called an investment banker. The investment banker's principal activity is to bring sellers and buyers together, thus creating a market. He normally buys the new issue from the issuer at an agreed upon price and hopes to resell it to the investing public at a higher price. Usually a group of investment bankers join to underwrite a security offering and form what is called an underwriting syndicate. The commission received by the investment banker in this case is the differential or spread between his purchase and resale price. The risk to the underwriter is that the issue may not attract buyers at a positive differential.

## Stock Market Liquidity

Turnover to market capitalization and turnover to the GDP ratio are two main indicators of market liquidity. Increased transaction costs are believed to make the market illiquid. In developing countries capital markets are not competitive comparable to goods market. This is mainly due to market imperfection resulting from government intervention in the financial market, a limited number of market participants, mismatch of demand and supply of securities, etc, as a consequences stock market fluctuation is a common feature in Nepal. The frequently changing price effect is fully-reflected in the turnover and market capitalization value. The term 'liquidity' in the stock market is quite different than financial liquidity or economic liquidity. It says that not only the adequacy of capital denotes the market in state of liquidity but also the willingness and ability to purchase the securities is equally required. Furthermore, the promptness of changing hands of securities or converting them in terms of cash denotes the degree of liquidity. The stock market also imparts liquidity to securities holders. (Paudel,2010).

Liquidity is one of the important factors to investors. This offers an opportunity for investors to invest in long-term ventures, while the market also enables them to convert their securities into liquid cash before the maturity of the project. The liquid stock market makes the investment less risky and more attractive. It encourages savers to invest in long-term projects, because they can sell the security quickly and easily if they want to get back their savings before the project matures. Stock market liquidity is positively and robustly correlated with contemporaneous and future rates of economic growth, capital accumulation and productivity growth.

In terms of securities, liquidity may be measured by the size of the spread between the bid and asked prices, with smaller spreads suggesting greater liquidity. Furthermore, it is reasonable to assume that many investors would find more liquid securities to be more attractive, keeping everything else the same.

An efficient capital market is a market that channels liquid capital quickly to where ever it will do the best. In a general term liquidity is defined as funds or money available for investment or an asset is said to be liquid that can be converted into cash readily. The term liquid asset is used to describe money and assets that are readily convertible into money. Different assets may be said to exhibit different degrees of liquidity. Money itself, by definition, is the most liquid of assets; other assets have varying degrees of



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liquidity. Depending on the ease with which they can be turned into cash. For assets other than money, liquidity has two dimensions: (a) the time necessary to convert the asset into money and (b) the degree of certainty associated with the conversion ratio, or price realized for the asset. It refers to those assets that can be converted into cash immediately like banks deposits, treasury bills, national saving certificate, shares, bonds, debentures, gold, foreign currencies. The safeguard and the fair return on investment define the size of liquidity. According to various researchers and studies the money market is in the state of excess liquidity and the main challenge is to the utilization of available resources or liquid funds in a productive sector. When the fund freezes, opportunities for investment are minimum and limited, and it supports to promote liquidity. However, in Nepal there are opportunities and likelihood but no effective steps are taken. As a result, such capital is being more and more passive on the one hand and losing the hope of economic development on the other. As a result investors are in "wait and see" position. For example, the Taragoan Regency Hotel Ltd. issued primary shares of Rs. 160 million and Rs. 260 million was collected within a week. Likewise, the Hotel Raddision issued primary shares of Rs. 125 million while there was a collection of Rs. 710 million, which is nearly six times more than required. In April 2010, the Agricultural Development Bank Nepal has issued primary shares nearly of Rs 1 billion, and about 3 times has been collected. The aforementioned examples demonstrate that the huge amount of capital is seeking better investment opportunities. Furthermore, as a result of deduction in the interest rate by commercial banks, the public hesitate to make deposits. Since no better alternatives are available other than the stock market, the public shifted towards stock market. The price of stocks as well as the mobilization of capital started to increase. It attracted the general public to invest in the stocks that pushed the price further. Consequently, the prices of some stocks were overvalued due to some imperfect practices and market rumors. But, as time passed by, the outcome was the drastic fall in stock prices and investors hesitated to invest in stocks of companies by reason of such movement of the price.

However, a change in the interest rate on deposits alone cannot affect the price of securities. There may have various reasons behind. The market capitalization is increasing continuously along with the fall in the average rate of interest. It was due to the increase in the number of enlisted companies in the stock exchange. At present, commercial banks occupy the topmost position in the market. Investors are investing mostly in the banking sector because most of them are performing very well and distributing handsome rates of dividend to shareholders. The capital gain due to the increase in share values is another reason.

Stock market sectors systematically react to different stage of the financial and business cycles, as measured by shifts in the liquidity environment. The response of the liquidity of money market is negative with stock trading. The fall in the prices of stock facilitates liquidity. There is a relationship between interest rates and liquidity. The change in the interest rate affects the supply of money. If the rate of interest is high, the demand for money is less than the supply. There is surplus liquidity. If the stock market is well developed and the corporate environment is brighter, individuals shift from the money market to the stock market. Interest rates act as an important factor in making investment decisions. Liquidity is deeply affected by the interest rate. As the interest rate goes up, the market price of existing securities falls, and vice versa. This happens because the buyers of securities are attracted towards bank deposits.

Though liquidity is identified as one of the major economic problems in the country but no effective steps have been taken to manage it.

The huge amount of funds is being inactive due to lack of investment opportunities. A numbers of factor are responsible for mounting liquidity. The major points are:



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1. Failure to mobilize the funds in productive sectors
2. The unavailability of physical infrastructure
3. Fail to achieve investors' faith
4. No effective demand of capital for the long-term investment
5. Scarcity of a favorable environment for both national and foreign investors
6. Unable to develop the sense of safety and security in the mind of investors
7. Political uncertainty
8. Ineffective rules and regulations in order to support long-term investment policies
9. No strong vision of government and concerned bodies

The well-developed and organized stock market plays a vital role in the mobilization of savings. The more liquid stock market encourages savings mobilization in long run profitable projects. First, liquid stock markets make investment less risky and more attractive because they allow savers to acquire an asset (equity shares) and to sell it quickly and cheaply if they need to access to their savings or want to change their portfolios. Many profitable investments require a long-term commitment of capital, and investors are often reluctant to relinquish the control of their savings for a long period. This problem is solved by the stock market due to the freedom of entry and exit. Second, liquidity in the stock also improves the allocation of capital and increase prospects for long term economic growth by facilitating long-term, more profitable investment. Therefore, companies have permanent access to capital raised through equity issues. Third, liquid stock markets also lead to more savings and investments by making investment less risky and more profitable.

## Process to Obtain Membership of the Stock Exchange

The corporate bodies wishing to be a member has to submit an application in a prescribed format within the time specified along with the certificate of incorporation, tax certificate, Memorandum of Association, Articles of Association and the concerned Act, rules and regulations in the case of a corporate body other than a company after the incorporation and the projected B/S and PL A/C for the next three years, last three years' audited financial statements, if the year of incorporation is less than three years, the B/S and A/C of investment in shares of subsidiary company or investment made in its parent company's share capital, details of share investment in any other company other than subsidiary, the name, address, number of shares subscribed and the amount invested by shareholders having more than 5% of the share capital need to be submitted, (www.nepalstock.com).

## Board of Directors

The Board of Directors of NEPSE consists 6 directors in accordance with the Securities Exchange Act, 1983. Six directors are nominated by the Government of Nepal and different institutional investors. Two from among the licensed members, and the General Manager of NEPSE is the Ex-Officio Director of the Board.



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## Capital Structure

The authorized and issued capital of the exchange is Rs.50 million. Of this Rs.30.41 millions was subscribed by Government of Nepal, the rest by Nepal Rastra Bank, Nepal Industrial Development Corporation and licensed members.

## Listing

Trading on the floor of NEPSE is restricted to listed corporate securities and government bonds. At present, 159 companies have listed their securities to make them eligible for trading. Besides this, the NCM Mutual Fund enlisted its units to make them eligible to trade on the floor.

## Listing Fee

The listing annual fee to be paid by the listed company is based on the capital of the company.

## Review of Studies on Nepalese Capital Market

Bhatta, G.P (1995) has concluded that many listed companies in Nepal have high unsystematic risk or specific risk. He realizes the need of an expert institution to provide consultancy services for the investors to maximize their wealth through rational investment decision. Bhatta's major findings were that investors expect higher returns from those stocks which associate higher risk. The Nepalese capital market is not efficient, so the stock price does not contain all the information relating to the market and the company itself. He again highlights that, neither investors analyze the overall relevant information of the stocks nor the members of stock exchange try to disseminate the information. So the market return and risk both may not represent the reality. He further asserts that investors in Nepal have not yet practiced to invest in the portfolio of securities. His analysis of two securities portfolios shows that the risk can be totally minimized if the correlation is perfectly negative. In this situation, the risk can be totally diversified but when there is perfectly positive correlation between the returns of the two securities, the risk is un-diversifiable. Finally, Bhatta concluded that the negative correlation between securities return is preferred for the diversification of risk. Bhatta D. (2003) found that without proper analysis of individual security, portfolio security, the industry and overall market, it is almost impossible to beat the stock market. Generally knowledge about political, economic and technological trends are more advantageous. He further found that stocks had greater volatility risk than other investments. Stocks take a random and unpredictable path. Obviously the stock market is risky in the short term. In most of cases, portfolio management of listed finance companies in Nepal is not systematically organized. He further asserts that for the effectiveness of portfolio management in Nepal, the stock market should be developed, computer-based technology and information systems should be adopted, training and development program about portfolio management should be conducted. Bhatta further concluded that the most of the finance companies had enough unsystematic risk that means there is no effective portfolio management of listed finance companies. One of the major problems to manage the portfolio is volatility of different securities in the capital market. Finally he concluded that, for the portfolio securities selection in Nepal, technical analysis does not work effectively but fundamental analysis can make difference.



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Shrestha, S.C (1999) concluded that, the stock market liquidity is positively and robustly correlated with contemporaneous and future rates of economic growth, capital accumulation and productivity growth.

Tuladhar, P. (2002) reported that, most of the listed companies in her sample were quite risky and the return on stocks was fluctuating every year. She had further documented that some companies' common stocks were experiencing a higher rate of return at relatively lower risk. Shrestha, A. (2004) concluded that there is a positive relationship between portfolio return and risk (in most of the cases). Adhikari, R. H. (2005) reported that all the commercial banks' stocks were under- priced, so all the banks had stocks with good investment opportunities. He further claimed that investors could be benefited by purchasing such under-priced stocks of a banking group.

## CONCLUSION

The access of formal financial services is declining in Nepal. To increase the financial access to small business and low income households Nepalese financial institutions start serving them in a financial sustainable manner and hence must exhibit the high level of financial and professional efficiency. Despite of severe problems in financial sector development in Nepal, government and regulators need to think about enforcement of prudent regulations and enhance the supervisory role. Government of Nepal needs to think of reforming prevailing legal framework so that Nepalese private sector can evolve and grow at par with international standards. The capital market in Nepal forms a significant part of infrastructure development. Legal framework of capital market development in Nepal requires reformation in major important aspects. The efficient capital market can only facilitate the privatization of state-owned enterprises in a manner that allows broad public participation and provides an ownership structure that will support long-term goals of the privatization program, including greater efficiency, transparency, and sound corporate governance. One of the obstacles to private sector capital formation is the failure to mobilize the extensive savings already available for investment in the capital market. Structural changes and regulatory reforms in the Nepalese capital market would promote increased capital mobilization and demand for securities through contractual savings and institutional investment. Perception of the common people in Nepal is that private commercial banks, finance companies, and insurance companies have a better track record concerning disclosure to investors than those enterprises operating in the non-financial sector. Hence, non-financial sector in Nepal need to exhibit greater operational efficiency and professionalism to make existing and potential investors aware and happy.

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## KEY WORDS AND DEFINITIONS

**Banking:** Any task related to bank.
**Capital:** Investment made in any project.
**Challenges:** Possible future threat and opportunities.
**Companies:** Any institutions registered under the company act 2063.
**Development:** Infrastructural and human progress.
**Disclosure:** Making public.
**Exchange:** Place where commodities and product change the ownership.
**Financial:** Related to finance.
**Government:** That governs the state.
**Institutions:** Any types of organized entities.
**Market:** Place where the buyer and seller can make exchange of agreement and products.
**Nepal:** Developing country.
**Plan:** Road map to accomplish any goal.
**Problems:** Prospective challenges that need deep care and address.
**Regulation:** Mechanism of ensuring good governance.
**Securities:** Long term or short term instrument of investment.
**Stock:** Investment made in securities.

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# Chapter 35
# Home Country-Specific Determinants of Outward Foreign Direct Investment in Developing Economies

**Rıfat Karakuş**
*Çankırı Karatekin University, Turkey*

## ABSTRACT

*The outward foreign direct investments of developing economies have showed significant increase in recent years. Rising outward foreign direct investment stock of developing economies makes its determinants and consequences crucial. The aim of this study is to determine the home country specific determinants of outward FDI. For this purpose, a panel data analysis is performed with the data of BRICS and Next Eleven countries for the period from 1994 to 2014. The analysis results reveal that inward foreign direct investment, interest rates and technological capability of home country have positive influence and total labor force of home country has negative effect on outward FDI of developing economies.*

## INTRODUCTION

Foreign direct investment (FDI) is defined as "a category of cross-border investment made by a resident entity in one economy (the direct investor) with the objective of establishing a lasting interest in an enterprise (the direct investment enterprise) that is resident in an economy other than that of the direct investor" (OECD, 2008). The lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence by the direct investor on the management of the enterprise. Ownership of at least 10% of the voting power is generally accepted that the investor has enough influence on management of the enterprise although in some examples less than 10% of the voting power can provide active management ability or more than this voting power cannot be enough for creating a direct management authorization.

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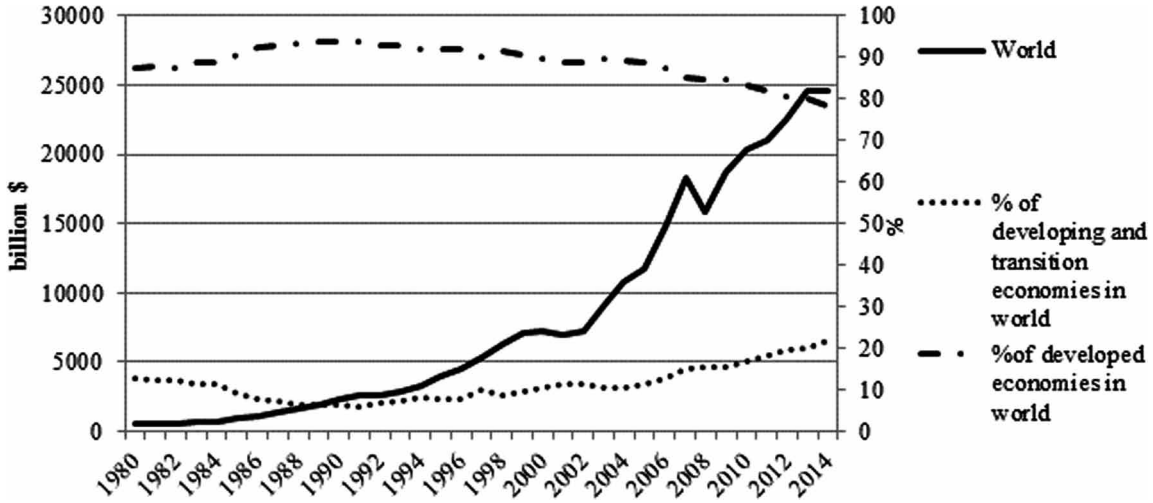
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FDI can be classified in two forms from point of a reporting economy. Inward FDI indicates the all direct investments by the non-residents in the reporting economy and outward FDI refers to investments which made to another economy by reporting economy residents. When FDI of whole world economy is handled, superiority of developed countries attracts the attention as expected. Naturally FDI flows from more industrialized to less-industrialized countries, or from capital-rich to capital-scarce developing countries. However, in recent years reverse flow of FDI from developing economies to other economies have showed increase with the effect of globalization process. (Bano & Tabbada, 2015) As shown in the Figure 1, total outward FDI stock of world economy has had a tendency to increase from 1980 to 2014 except the years 2001 and 2008. Also percentage of developing and transition economies outward FDI has been ever-growing from 2003 to 2014 although the percentage of developed economies has revealed a downward spiral. Besides when outward FDI stock growth rate of economies is observed, developing and transition economies have given an outstanding performance from 2004 to 2014 except the year 2009.

Developed economies have nearly 80 percent of world outward FDI stocks. Their existing operations support this weight on total of FDI thanks to reinvested earnings. Developed-economy multinational enterprises (MNEs) have operated in other countries for long time and they have advantage of these operations profits. They can invest with the profit of existing operations as outward FDI, so their dominance on outward FDI of world proceeds. When the top 20 home economy of outward FDI is observed, the density of the developed economies is perceived. Respectively, United States, Hong Kong, China, Japan, Germany, Russian Federation, Canada, France, Netherlands, Singapore, Ireland, Spain, Republic of Korea, Italy, Norway, Switzerland, Malaysia, Kuwait, Chile, Taiwan Province of China are the top 20 economy which have outward FDI around the world. 11 economies in top 20 and 10 economies in top 15 are the developed economies. (UNCTAD, 2015) Although the dominance of developed economies is shown in total, capacity of the developing economies is non-negligible. Developed-economy MNEs make their invested in other economies with reinvested earnings ever-increasingly, however the developing-economy MNEs mostly use equity for outward FDI and with these equity investments they

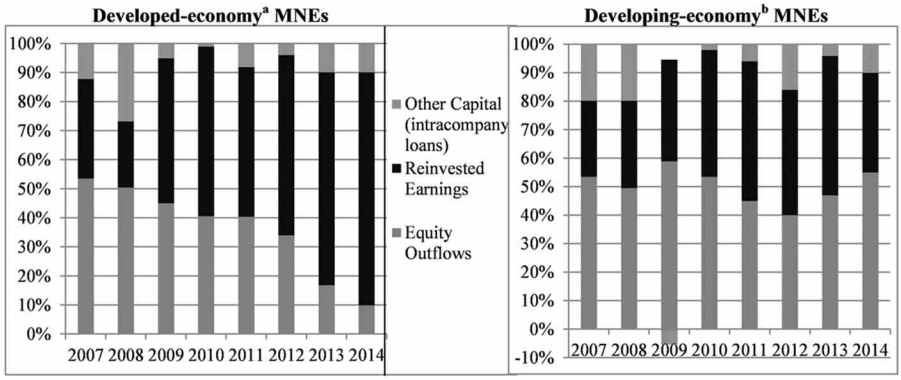
*Figure 1. Outward FDI of whole world economy: 1980-2014*
*UNCTAD, 2015.*






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*Figure 2. Capital source of outward FDI from developed and developing economies*
*UNCTAD, 2015.*




[a] Economies included are Australia, Belgium, Bulgaria, Canada, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Iceland, Ireland, Israel, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, the United Kingdom and the United States.
[b] Economies included are Algeria, Anguilla, Antigua and Barbuda, Aruba, the Bahamas, Bahrain, Bangladesh, Barbados, Belize, the Plurinational State of Bolivia, Botswana, Brazil, Cambodia, Cabo Verde, Chile, Costa Rica, Curaçao, Dominica, El Salvador, Fiji, Grenada, Guatemala, Honduras, Hong Kong (China), India, Indonesia, the Republic of Korea, Kuwait, Lesotho, Malawi, Mexico, Mongolia, Montserrat, Morocco, Namibia, Nicaragua, Nigeria, Pakistan, Panama, the Philippines, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Sao Tome and Principe, Seychelles, Singapore, Sint Maarten, South Africa, Sri Lanka, the State of Palestine, Suriname, Swaziland, Taiwan Province of China, Thailand, Trinidad and Tobago, Turkey, Uganda, Uruguay, the Bolivarian Republic of Venezuela and Viet Nam.

increase share on world outward FDI stocks. Also future expectations about the outward FDI predicts that developing MNEs investments in other countries will gradually increase with the effect of investments that is currently made and will create reinvested earnings in the future.

The outward FDI stock of developing economies and their share versus developed economies is growing. Also developing-economy MNEs are hot prospect for the future. Hence the affecting factors and consequences of developing-economy FDI outflows become significant. For this reason, this study aims to determine the relationship between FDI outflow of developing economies and selected home country specific determinants namely income, trade openness, exchange rate, interest rate, technological capability and labor force. By using data of BRICS and Next Eleven countries between 1994 and 2014, a panel data analysis will be performed and effects of home country specific factors on outward FDI of developing economies will be analyzed. In the chapter, firstly the outward FDI from developing economies will be investigated, and then related literature will be reviewed. Finally to determine the effects of home country specific factors on outflow FDI, a panel data analysis will be performed and the results will be discussed.

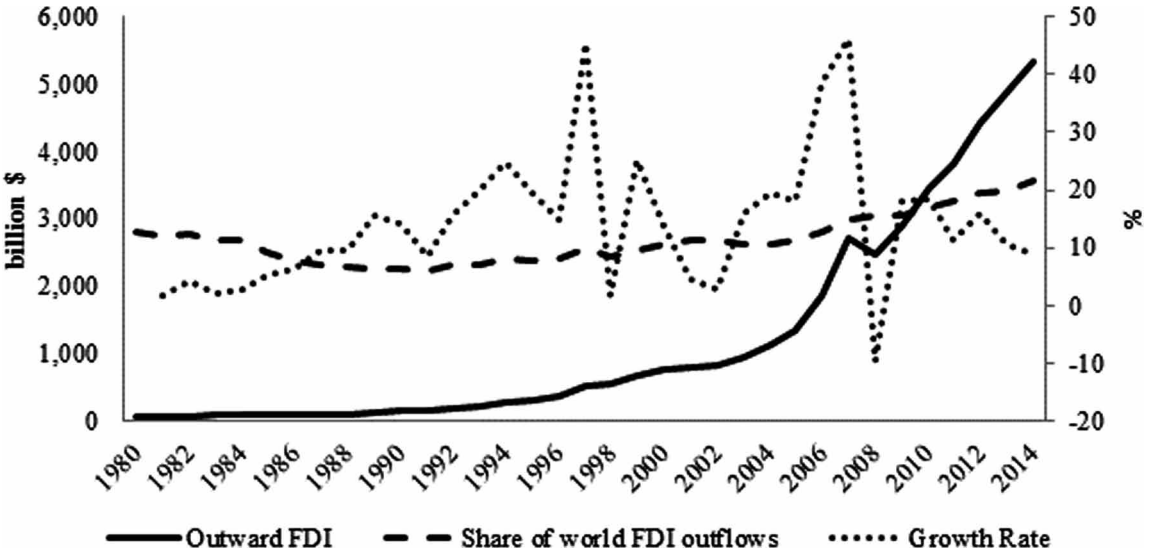
## BACKGROUND

Although developed economies keep the leading position for outward FDI around the world, cross-border investment activities from developing economies have continued to rise from 1980s until today. Outward FDI of developing economies which was only about 70 billion $ in 1980 had reached to 5.320 billion $ in 2014. Cross-border investment activities of the developing economies have delivered great performance in comparison with developed economies. Parallel to increasing volume of outward FDI,



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*Figure 3. Outward FDI from developing economies: 1980-2014*
*UNCTAD, 2015.*




share of developing economies on world FDI outflows have improved perpetually during the recent years. While the developing economies FDI outflows in world economy is only 6 percent in 1991, their share approximated to 22 percent in 2014. Also the growth rate reveals the performance of developing-country MNEs according to cross-border investments. Although there is a fluctuant growth rate in recent years, it is almost always positive and implies that the outward FDI stock of the developing economies continues to rise.

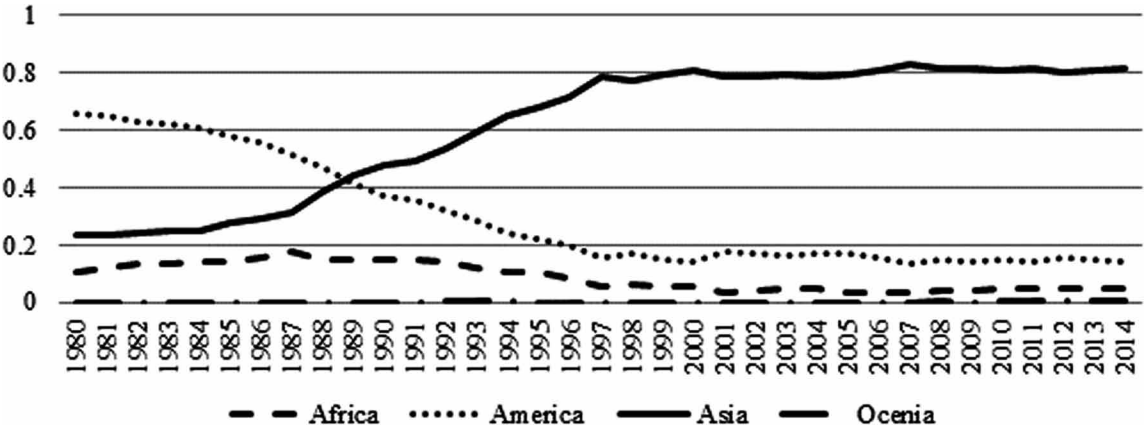
When FDI outflows of developing countries are examined regionally, the impact of the Asia economies is felt during the recent years. In 2014, nearly 82 percent of the developing economies outward FDI belonged to Asia economies. In developing Asian economies, Eastern Asia economies have the biggest portion of the outward FDI with a nearly 69 percent of whole Asia. Countries such as China, Hong Kong, South Korea, Taiwan become prominent the Eastern Asia. Other big part of the Asia outward FDI (about 21 percent) belongs to South-Eastern Asia economies which contain Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam as developing countries. Subsequent to Asia economies, American economies have the second big part of the developing economies outward FDI. Although in 1980s outward FDI of American economies have had the three times more than Asia economies, in recent years their investments have become only one fifth of Asian economies. In America region, developing economies of South America (Brazil, Chile, Uruguay, Bolivia, Venezuela, etc.) step forward with about 78 percent of outward FDI of whole America. Another region that outward FDI share in developing economies have declined is Africa and the large part of this little share appertains to Southern Africa developing economies.

The developing country MNEs can make cross-border investments in not only developing countries but also developed countries. As shown in Graph 5, some of the developing economies have investments in developed economies more than developing or transition economies. For example, in 2012, outward FDI stock of Republic of Korea is mostly presence in the developed countries by 75, 4 percent. On the other hand, some developing economies FDI stocks abroad are mostly presence in developing econo-



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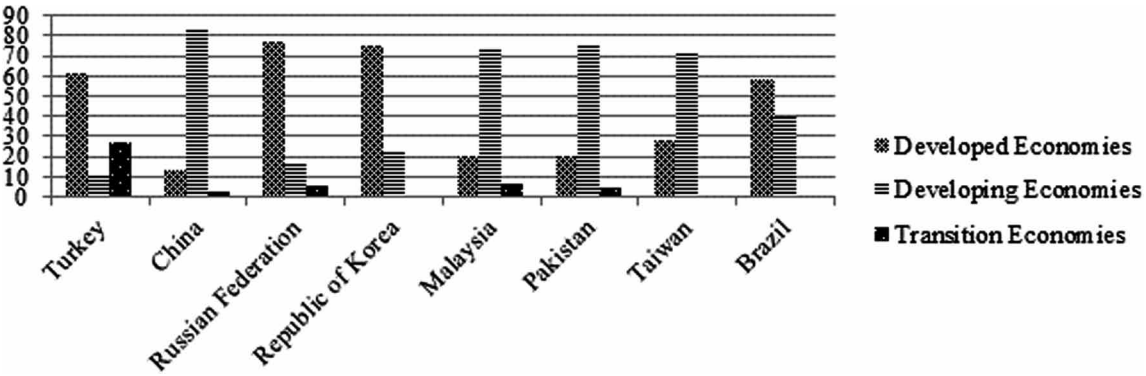
*Figure 4. Regional FDI outflows as a share of developing country outflows*
*UNCTAD, 2015.*




mies such as China, Malaysia, Pakistan and Taiwan. As a conclusion, it is easily seen that developing-economy MNEs can attempt to new investments around the world regardless of where. They are able to make cross-border investments as well as in developing countries, as long as they find opportunity for high-yield investments.

Developing-economy MNEs make cross-border investments in the form of both merger and acquisitions (M&As) and greenfield projects. MNEs from developing and transition economies are consolidating their role as investors in cross-border M&A operations. The share of these MNEs in the total (net) value of cross-border M&As rose from about 10 per cent in 2003 to almost 40 per cent in 2012 and has remained stable since then. Also developing economies have gained 10 percentage points in the global value of announced greenfield FDI projects, from 20 per cent in 2005 to 30 per cent in 2014. Developing-economy MNEs make investments abroad in three main sectors: primary, manufacturing and services. In recent years, services sector especially finance and construction investments are remarkable. (UNCTAD, 2015)

*Figure 5. Outward FDI stock of selected developing countries by host economy development class: 2012*
*UNCTAD, 2014.*






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There are several home country specific factors which may affect the outward FDI of a country. Mainly income level, openness to trade, exchange rate, interest rate, inflation rate, human capital and technological capability are discussed with their effects on outward FDI.

Income level of countries may be evaluated as one of the main factors that can affect FDI outflows. Investment Development Path (IDP) theory, that was originally introduced by Dunning in 1981 and improved by this author and others (Dunning 1986, 1988, 1993, 1997; Dunning & Narula 1996; Narula 1996; Duran & Ubeda 2001, 2005) is well-known theory about the economic development and FDI outflows of the countries. According to IDP theory, net outward investment position (the difference between outward direct investment stock and inward direct investment stock of a country) follows a five stage path in relation to level of economic development which is denoted by the Gross Domestic Product (GDP) or GDP per capita. In the first two and last stages of the path net outward investment of the countries decline while GDP or GDP per capita increase. However, in the third and fourth stage of the path net outward investment and GDP or GDP per capita of countries rise concurrently. So income level of countries is decisive on FDI outflows. There are also other reasons to predict the effect of income level on FDI outflows. Developed economies can create available financial markets that lead to entrepreneurial development. (Alfaro et al., 2004) In addition increasing GDP or GDP per capita has a significant effect on savings (Gersovitz, 1988). More entrepreneurs can reach required financial resources easily when economic development is achieved. This situation makes companies more capital intensive and so more competitive. Consequently more entrepreneurs become multinational and FDI outflows increase with the effect of increasing income level.

Trade openness is another important factor that can affect the FDI outflows of countries. Imports and exports of countries are the core indicator of trade openness. More liberalized economies gain knowledge about foreign markets and this valuable knowledge provide opportunity to operate or manage production abroad (Kueh et al., 2010). Also importing economy multinationals become market-favorable when they make investments in the home markets of the import producing companies (Kyrkilis & Pantelidis, 2003). For this reasons, a higher degree of openness is expected to provide a higher level of outward FDI activity.

Exchange rate influences the import and export of countries as well as inward and outward FDI. Appreciation of currencies support import and hinder export. In a similar way, appreciation of currencies encourages the FDI outflows and depreciation of currencies discourages the FDI outflows because capital requirement of foreign investment in domestic currency is pushed up (Aliber, 1970). Theoretically a positive relationship between exchange rate and FDI outflows is expected.

Interest rates create opportunity cost for investments. In the same time, higher interest rates affect the cost of capital. So lower interest rates reduce opportunity cost of foreign investment and enable capital abundance to investment (Kueh et al., 2010; Kyrkilis & Pantelidis, 2003). Likewise increasing inflation has negative effects on outward FDI because it results increase in interest rates and depreciation in currency (Buckley et al., 2007). The excepted influence of interest and inflation rates is similar and negatively correlated with outward FDI.

Quality, delivery time and production costs of goods and services are critical factors for companies that want to remain competitive. These factors become more significant with competitive pressure in the world. The technological knowledge of companies allows improvement in quality, decreasing in delivery time and production costs (Giardini & Ceretti, 2005). The technological capability of whole economy can be measured by patent applications and high technology exports and a positive relationship is expected between these variables and FDI outflows of countries.



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The countries' ability to create, acquire and organize human skills adds value MNEs as well as technological capability. This ability attracts inward FDI and encourages outward FDI. Knowledge capital in other words skilled labor force of countries can contribute FDI outflows (Narula, 1996). On the other hand companies direct their investments abroad to minimize their production costs. Labor costs are one big part of the production costs and lower labor cost becomes attractive for MNEs (Svetlicic, 2007). When considered from this point of view increasing labor force keeps labor cost lower in home country and companies do not need to invest abroad. So effect of human capital on FDI outflows can differ by countries.

Also the question of what affect the outward FDI of economies have been subject to many empirical studies. Parallel to volume of outward FDI, the studies mainly focused on developed countries. However, in recent years along with the popularity of developing-economy MNEs empirical studies for these economies stand in the literature. Studies that analyze the effect of home country specific factors on outward FDI of developing economies are summarized below.

Williams (2009) examined the effect of GDP per capita, GDP per capita growth rate, interest rate, literacy rate, level of corruption, current account balance on outward FDI of 15 small island developing economies. A five year panel data for the years 1998-2002 was used to estimate the model. The results reveal that per capita income, per capita income growth rate (i.e., economic growth) and the level of corruption in the home market are the factors that influence local firms to invest in foreign market through foreign direct investment. Per capita income has a negative effect on outward FDI, however per capita income growth rate and level of corruption influences the outward FDI positively. Converse effects of per income capita and its growth rate are remarkable. Increase in per income capita is evaluated as consumer richness and consumers in home market become richer, there is no need to go abroad. So a negative relationship between per income capita and FDI outflows occurs. However increase in per income capita growth rate is expressed as growing of home economy. When home economy becomes larger, but market size is small, firms will seek customers in other markets and this leads to more FDI outflows.

Verma and Brennan (2013) investigated the selected macroeconomic determinants of Indian outward FDI. By using data between 1981 and 2009, time series analysis was applied. Analysis results revealed that GDP, human capital (approximated by the number of enrollments of students in tertiary education) and openness of the economy (approximated by the ratio of exports plus imports to GDP) had a positive influence on FDI outflows. The positive effect of human capital is also seen in type of outward FDI of India. There has been a tremendous increase in service outward FDI from India in recent years. In addition, export activities of the country enable MNEs to obtain information regarding foreign markets and knowledge as well as skills in establishing operations abroad. So export level makes positive contribution to FDI outflows. On the other hand, contrary to expectations any statistical effect of exchange rate, interest rate and technology capability on outward FDI could not be detected.

Saad et al. (2014) to determine the push factors of Malaysia outward FDI performed a multiple regression analysis by using data between 1981 and 2011. In the study, exchange rate, exports, GDP, inward FDI, natural resources availability, patent numbers and labor productivity of home country were used as independent variables and their effect on outward FDI was researched. Results of the analysis revealed that there is a statistically significant and positive relationship between export level, GDP, inward FDI and outward FDI, and also negative relationship between exchange rate, labor productivity, patent numbers and outward FDI. The result on labor productivity level indicates the requirements of technical capabilities cannot be met thus pushing MNEs to involve in overseas production.



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In recent years, Asian developing economies have gained importance on world FDI outflows. Bano and Tabbada (2015) tried to answer the question that what drives outward FDI in developing countries and more specifically, what are the home-country determinants of outward FDI? By using data of China, India, Indonesia, Malaysia, the Philippines and Thailand between 1990 and 2010, the effect of savings rate (as percent of GDP), GDP, foreign reserves, exports and FDI inflow on FDI outflows was researched. According to analysis results, there is a statistically significant and positive relationship between GDP, foreign reserves and outward FDI and negative relationship between savings and FDI outflows for these six economies. The findings suggest that for a developing country to aspire to be a capital exporter through FDI, it must possess all or most of the high domestic savings rate, an export-oriented economy, a GDP that is growing rapidly and substantial international reserves.

Determinants and motives of outward foreign direct investment from China's provincial firms are investigated by Chen (2015). Data of 30 provinces for the period from 2003 to 2012 are used to determine the relationship between OFDI and the home-side variables of China's provinces. Per capita GDP, patent numbers, FDI inflows, export to GDP ratio, import the GDP ratio and GDP are selected as home country specific independent variables. The results of the study reveals that provincial economic development (GDP per capita), innovation and technology (patent numbers), and export to GDP ratio are statistically significant determinants and positively affect the outward FDI, while FDI inflows, import to GDP ratio and provincial market size (GDP) are not statistically significant.

## EFFECTS OF HOME COUNTRY SPECIFIC FACTORS ON OUTWARD FDI

### Data Set

To determine the relationship between outward FDI and home country specific factors, BRICS (Brazil, Russia, India, China and South Africa) and Next Eleven countries (Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, the Philippines, Turkey, South Korea and Vietnam) selected as the sample that represents the developing countries. Yearly data for the period of 1994-2014 is used in the study. Outward FDI stock US Dollars at current prices and current exchange rates in millions (OFDI) is the dependent variable of the analysis and used as logarithm. The data source for outward FDI is data center of UNCTAD. The effect of home-country specific factors on outward FDI is determined with the model that is formulated as Equation 1:

$$\log OFDI_{i,t} = \beta_1 + \beta_2 \log IFDI_{i,t} + \beta_3 \log GNI_{i,t} + \beta_4 \log CPI_{i,t} + \beta_5 \log ECXR_{i,t} + \beta_6 \log_{i,t} TLF + \beta_7 \log_{i,t} TIE + \beta_8 \log IR_{i,t} + \beta_9 \log PN_{i,t} + \beta_{10} \log HTE_{i,t} + u_{i,t} \quad (1)$$

In the equation, "i" refers to the countries; "t" represents the period t; "log" reveals the logarithm of related variable and $OFDI_{i,t}$ expresses the outward FDI of i country for t period. Independent variables being located in the equation are explained in Table 1.

For all-time series variables, the stationary of the series is essential. When the variables in a regression are nonstationary, correct R-square values and t-statistics cannot be generated by the analysis. (Greene, 2012) For preventing spurious relations between the variables, unit root tests are applied and nonstationary series are included the model with first or second differences which provides stationary series. For



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*Table 1. The explanation of the independent variables*

| Independent Variable | Description | Source |
|---|---|---|
| $logIFDI_{i,t}$ | The logarithm of the inward FDI stock (US Dollars at current prices and current exchange rates in millions) of home country i for period t. This variable is selected to express foreign investments made by non-residents in country i. | UNCTAD |
| logGNI | The logarithm of GNI (current international $) of home country i for period t. GNI variable refers to economic size of the countries for related period. | WORLDBANK |
| logCPI | The logarithm of annual consumer price indices Index Base 2005 of home country i for period t. Consumer price index is added to equation as inflation measurement. | UNCTAD |
| logEXCR | The logarithm of the annual currency exchange rate (1.00 USD) of home country i for the period t. | UNCTAD |
| logTLF | The logarithm of the total labour force annually (absolute value in thousands) of home country i for the period t. This variable represents the workforce of the home countries. | UNCTAD |
| logTIE | The logarithm of the total export and import of goods and services (current US$) of home country i for the period t. Total of the export and import is added to model to exhibit the openness of home country to global economy. | WORLDBANK |
| logIR | The logarithm of the lending interest rate (%) of home country i for the period t. Lending rate is the bank rate that usually meets the short- and medium-term financing needs of the private sector. | WORLDBANK |
| logPN | The logarithm of the patent applications that are worldwide patent applications filed through the Patent Cooperation Treaty procedure or with a national patent office for exclusive rights for an invention of home country i for the period t. This variable refers to the technological capacity of the countries. | WORLDBANK |
| logHTE | The logarithm of the high-technology exports (current US$) of home country i for the period t. This variable also refers to the technological capacity of the countries. | WORLDBANK |

the variables of this analysis, Levin, Lin and Chu (2002) unit root test is performed and stationary of the series is determined. (Table 2) According to unit root test results, only logEXCR and logHTE series are stationary at the I(0) level. However all of the other variables are stationary at the I(0) level and series generated by first difference of these variables are included to analysis.

*Table 2. Unit root test results*

| Variables | I(0) Level | | I(1) Level | |
|---|---|---|---|---|
| | Statistic | Probability | Statistic | Probability |
| logOFDI | 4.1960 | 1.00 | -4.2912 | 0.00 |
| logIFDI | 2.4084 | 0.9920 | -4.3468 | 0.00 |
| logGNI | 5.2407 | 1.00 | -3.3223 | 0.0004 |
| logCPI | 0.5268 | 0.7008 | -3.1115 | 0.0009 |
| logEXCR | -2.3292 | 0.0099 | | |
| logTLF | 1.4416 | 0.9253 | -5.4586 | 0.00 |
| logTIE | 3.2975 | 0.9995 | -7.4347 | 0.00 |
| logIR | 0.7456 | 0.7720 | -8.2907 | 0.00 |
| logPN | 2.2535 | 0.9879 | -7.2716 | 0.00 |
| logHTE | -2.6284 | 0.0043 | | |



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## Panel Data Analysis

By using 16 countries data for the period 1994-2014, to identify home-country specific determinants of outward FDI of developing countries is aim of this study. Using a panel data regression analysis for these aim and data set is appropriate. With panel data, it is possible to bring together the regression data and time-series data. With panel data, observation of subjects over time unlike regression data and observation of many subjects unlike time-series data are possible. (Frees, 2004) For the data set of this analysis, 16 cross-section and 20 time-series for each cross section, using panel regression analysis is necessary and brings along the advantages of panel data.

In this analysis, it is endeavoured to determine the effect of nine independent variables (logIFDI, logGNI, logCPI, logEXCR, logTLF, logTIE, logIR, logPN, logHTE) on dependent variable (logOFDI). However, there may exist exogenous variables, excluded due to data availability or difficulty of measuring, which should be included for obvious effects on the outcomes. The existence of correlation between these excluded variables and explaining variables cause the correlation between the error term of the regression model and independent variables and induce biased results and estimation. To avoid biased results and estimation in other words to create precise analysis results identification of individual and/or time effects in the model is crucial. After identifying individual and/or time effects in the model best suitable panel model will be selected. (Bozkurt & Akman, 2016)

Individual and/or time effects in the model may be investigated with different tests. If related test results reveal that there is individual and/or time effects in the model, type of the effects should be specified. By using Hausman (1978) tests, it is decided that fixed or random effects model is more appropriate for the panel data analysis. However, if according to tests results there is no individual and/or time effects in the model, pooled ordinary least square should be used as the most suitable model.

## Panel Data Model Selection

As mentioned above, determination of individual and/or time effects in the model is crucial to select precise panel data model. To determine the individual and/or time effects, seven tests are used and their results are reported in Table 3.

LR Test (1) examines $H_o$ which argues that standard errors of the individual and time effects are zero. According to this test result there is no individual or time effects. LR Test (7) also retests the time effect in the model and reveals that there is no time effect identically. So it is concluded that the model is free from time effect.

$H_0$ of F Test (2) examines that all individual effects are zero, $H_0$ of LR Test (3) and Score Test (6) examines that standard errors of individual effects are zero and $H_o$ of LM Test (4) and ALM Test (5) examines that variances of individual effects are zero. According to LR Test (3) and LM Test (4) there is no individual effects and pooled OLS is appropriate model for this analysis. However F Test (2), ALM Test (5) and Score Test (6) results reveal that individual effects exist in the model. When all test results are discussed together, whether individual effects in the model exist or not is irresolute. For this reason, panel data analysis will be performed by pooled OLS model, also according to Hausman Test results fixed or random effects model is used as an alternative.

If there is individual and/or time effects are in the model, fixed or random effect models will be used. To determine the appropriate model, Hausman (1978) Test should be performed. $H_o$ of Hausman Test is that difference in coefficients is not systematic. If null hypothesis of Hausman Test is accepted, random



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*Table 3. Individual and/or time effects test results*

| Tests | (1) LR Test | (2) F Test | (3) LR Test | (4) LM Test | (5) ALM Test | (6) Score Test | (7) LR Test |
|---|---|---|---|---|---|---|---|
| **Regression Models** | **Random Individual and Period Effects.** | **Fixed Effects Model** | **Random-Effects ML Model** | **Random Effects GLS Model** | **Random Effects GLS Model** | **Random Effects ML Model** | **Random Period Effects ML Model.** |
| **Test Statistics** | | | | | | | |
| F or $Chi^2$ Sat. | 1.40 | 1.84 | 1.40 | 0.00 | 10.07 | 3.68 | 0.00 |
| Probability | 0.4967 | 0.0441 | 0.118 | 1.00 | 0.00 | 0.055 | 1.00 |
| $H_0$: | Accept | Reject | Accept | Accept | Reject | Reject | Accept |
| **Results** | | | | | | | |
| Individual Effect | NO | YES | NO | NO | YES | YES | - |
| Time Effect | NO | - | - | - | - | - | NO |
| Pooled OLS | YES | NO | YES | YES | NO | NO | YES |

effect model should be chosen. If null hypothesis of this test is rejected, fixed effect model is suitable for the analysis. Hausman Test result for this study is shown in Table 4. According to test results, null hypothesis is accepted and so random effect model is suitable fır the analysis. After this results panel data analysis is performed with both pooled OLS and random effect models.

## Heteroscedasticity and Autocorrelation Tests

If the error terms in a regression equation do not have a constant variance, the heteroscedasticity occurs. When heteroscedasticity problem is current in an equation, the OLS estimator remains unbiased. However, the estimated standard errors are biased, so the usual t statistics or F statistics cannot be used properly. Even if standard errors could be correctly measured, the OLS estimator is no longer BLUE (unbiased and efficient). Also if the error terms in a regression are serially dependent, there is autocorrelation which cause same problems with heteroscedasticity.

To determine whether heteroscedasticity and autocorrelation problems exist in panel regression models, varied tests are applied and their results are represented in Table 5. According to test results heteroscedasticity and autocorrelation problems occur for pooled OLS model. Random effect model is free from autocorrelation, but heteroscedasticity is also in effect. To avoid the consequences of heteroscedasticity and autocorrelation, robust standard error estimators of Newey and West (1987; 1994) and Driscoll and Kraay (1998) are employed for pooled OLS model. To present the effect of heteroscedasticity on results in random effect model robust standard error estimators of Huber, Eicker and White (1967; 1967; 1980) and Rogers (1993) are preferred.

*Table 4. Hausman test result*

| Chi2 Sat. | Probability |
|---|---|
| 1.45 | 0.9193 |



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*Table 5. Heteroscedasticity and autocorrelation tests results*

| Tests | For Pooled OLS | | | For Random Effect Model | |
|---|---|---|---|---|---|
| | (1) Breusch-Pagan and Cook-Weisberg Test | (2) White Test | (3) Wooldridge Test | (4) Levene and Brown-Forsythe Test | (5) aLM Test for Autocorrelation |
| **Test Statistics** | | | | | |
| F stat. | - | - | 11.199 | 7.935 | 1.35 |
| $Chi^2$ Sat. | 8.56 | 114.42 | - | | |
| Probability | 0.0034 | 0.0002 | 0.0065 | 0.00 | 0.2445 |
| $H_0$: | Reject | Reject | Reject | Reject | Accept |
| **Results** | | | | | |
| Heteroscedasticity | YES | YES | - | YES | - |
| Autocorrelation | - | - | YES | - | NO |

**Note:** For (1) Breusch-Pagan (1979) and Cook-Weisberg (1983) Test, (2) White (1980) test and (4) Levene (1960) and Brown-Forsythe (1974)Test $H_0$: No heteroscedasticity and for (3) Wooldridge (2002) test and (5) aLM test for autocorrelation $H_0$: No autocorrelation.

## Estimation Results

The results of the correlation matrix between dependent variable (OFDI) and all variables used in the model are revealed in Table 6. The highest positive correlation (0.79) occurs between outward FDI and inward FDI. Besides, the lowest positive correlation (0.09) appears between outward FDI and total labor force. The highest negative correlation (0.13) is attained between outward FDI and currency exchange rates and the lowest negative correlation (0.01) occurs between outward FDI and interest rates. Although there is high correlation between some independent variables, variance inflation factors (VIF) for these variables are smaller than 10, so there is no question about collinearity in regressions.

Table 7 presents the main results of panel data analyses. Firstly, all of the models (F and $Chi^2$ statistics) are statistically significant at 1% level which means that the set of independent variables have the ability of explaining dependent variable logOFDI. Explanatory power of the models is 71%. In other words $R^2$ statistics reveal that the independent variables used in the model can explain the 71% of the movements in dependent variable.

According to pooled OLS regression with Newey-West standard errors, there is a statistically significant relationship between outward FDI and inward FDI, total labor force (TLF), patent numbers (PN) and high technology exports (HTE) for developing economies. Any effect of other variables on outward FDI cannot be proven. Except HTE, other three independent variables (IFDI, TLF and PN) have statistically significant effect on outward FDI according to pooled OLS regression with Driscoll-Kraay standard errors. Both random effect models show that there is a statistically significant relationship between outward FDI and inward FDI, interest rates, patent numbers and high technology exports for countries creating the model sample. However, effect of other variables on outward FDI is found as insignificant.

Firstly, both pooled OLS and random effect models indicate that inward FDI of developing economies has a positive influence on outward FDI of these countries. Too close coefficients of the models point that 1% increase in inward FDI creates respectively 0.37-0.38% increase in outward FDI. Patent numbers



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*Table 6. Correlation matrix*

| | logOFDI | logIFDI | logGNI | logCPI | logTLF | logTIE | logIR | logPN | logEXCR | logHTE |
|---|---|---|---|---|---|---|---|---|---|---|
| **logOFDI** | 1 | | | | | | | | | |
| **logIFDI** | 0.7897 | 1 | | | | | | | | |
| **logGNI** | 0.4865 | 0.3469 | 1 | | | | | | | |
| **logCPI** | -0.0839 | -0.0774 | -0.0971 | 1 | | | | | | |
| **logTLF** | 0.0926 | 0.1046 | 0.5288 | -0.1124 | 1 | | | | | |
| **logTIE** | 0.3069 | 0.1828 | 0.6783 | -0.0842 | 0.2798 | 1 | | | | |
| **logIR** | -0.0092 | -0.0198 | 0.0007 | 0.0294 | 0.0486 | 0.0153 | 1 | | | |
| **logPN** | 0.5529 | 0.3771 | 0.783 | -0.0911 | 0.2469 | 0.5491 | 0.0014 | 1 | | |
| **logEXCR** | -0.1311 | -0.1207 | -0.1648 | 0.2206 | -0.0826 | -0.0931 | 0.0372 | -0.0925 | 1 | |
| **logHTE** | 0.3165 | 0.23 | 0.4338 | -0.0867 | 0.2374 | 0.338 | -0.0174 | 0.3141 | -0.0789 | 1 |

*Table 7. Estimation results*

| | Pooled OLS | | Random Effect Model | |
|---|---|---|---|---|
| | **Regression with Newey-West Standard Errors (1)** | **Regression with Driscoll-Kraay Standard Errors (2)** | **Regression with Heteroskedasticity-Robust Standard Errors (Eicker-Huber-White) (3)** | **Regression with Robust Std. Error (Rogers) (4)** |
| logIFDI | 0.378213<br>(0.001)* | 0.378213<br>(0.00)* | 0.377728<br>(0.007)* | 0.377728<br>(0.007)* |
| logGNI | 1.01E-08<br>(0.318) | 1.01E-08<br>(0.179) | 8.84E-09<br>(0.493) | 8.84E-09<br>(0.493) |
| logCPI | -10.4539<br>(0.719) | -10.4539<br>(0.636) | -19.219<br>(0.405) | -19.219<br>(0.405) |
| logEXCR | -116.009<br>(0.581) | -116.009<br>(0.554) | -70.9396<br>(0.786) | -70.9396<br>(0.786) |
| logTLF | -0.97268<br>(0.015)** | -0.97268<br>(0.004)* | -0.90615<br>(0.127) | -0.90615<br>(0.127) |
| logTIE | -1.77E-09<br>(0.888) | -1.77E-09<br>(0.88) | -2.59E-09<br>(0.731) | -2.59E-09<br>(0.731) |
| logIR | 13.65217<br>(0.202) | 13.65217<br>(0.236) | 17.98413<br>(0.00)* | 17.98413<br>(0.00)* |
| logPN | 0.313046<br>(0.014)** | 0.313046<br>(0.022)** | 0.334541<br>(0.007)* | 0.334541<br>(0.007)* |
| logHTE | 479.7446<br>(0.019)** | 479.7446<br>(0.179) | 489.6148<br>(0.078)*** | 489.6148<br>(0.078)*** |
| Constant | -7450.83<br>(0.032)** | -7450.83<br>(0.16) | -7767.28<br>(0.136) | -7767.28<br>(0.136) |
| F-Statistic | 49.48* | 385.33* | | |
| Wald $Chi^2$ | | | 51175.38* | 51175.38* |
| $R^2$ | | 0.71 | 0.71 | 0.71 |
| Number of observation: 320 Number of Groups:16 | | | | |

*, ** and *** indicates that the coefficient estimations are statistically significant at 1%, 5% and 10% level, respectively.



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is another independent variable that its influence on outward FDI is found as significant. Outward FDI of developing economies is positively associated with patent numbers, with a 1% increase in the patent numbers increasing outward FDI by 0.31% and 0.33% according to pooled OLS and random effect models respectively. Effect of high technology exports on outward FDI is determined as significant by three methods. Its effect on outward FDI is the highest in all. 1% increasing in high technology exports results 479.74% and 489.61% increase in outward FDI in other of different methods. Total labor force variable is detected by pooled OLS model and interest rate is determined by random effect model as significant. Although the total labor force has a negative influence on outward FDI, interest rate has a positive impact on outward FDI. If total labor force increases 1%, outward FDI will decrease 0.97% and if interest rate increases 1%, outward FDI will increase 17.98%.

## SOLUTIONS AND RECOMMENDATIONS

The results of the analysis reveal that inward FDI, interest rate and technological capability (approximated by patent applications and high technology exports) of home countries have positive influence on outward FDI of developing economies. Influence of inward FDI and technological capability is coherent with theoretical expectations. Inward FDI supports economic level, know-how and liberalization of countries and positive effect of inward FDI on FDI outflows makes sense. Similarly technological capability by creating competitive advantages is anticipated to contribute MNEs. On the other hand, positive relationship between interest rates and outward FDI is surprising. Increasing interest rates creates higher opportunity cost and cost of capital and discourages companies from investments. However empirical results exhibit a reverse situation. Companies can reach lower cost financial instruments in countries where they invest and they may invest abroad when interest rates increase in home country. This alternative is compatible with the analysis results. The negative effect of total labor force on outward FDI is another result of the study. More labor force in home country dissuades companies from investing abroad.

The findings of this analysis may have some practical implications for developing country policy makers. After evaluating the consequences of FDI outflows, policy makers may use related factors as a tool to support FDI outflows or discourage from FDI outflows. To support the outward FDI, countries can promote technological capability and encourage inward FDI by support packages. On the other hand the effect of interest rates on outward FDI is not ignored. Mainly rising interest rates is a useful tool to attract foreign funds to country. However analysis results reveal that interest rates have a positive effect on FDI outflows and rising interest rates results to increase in FDI outflows. This contradictious effect of interest rates on fund inflow and outflow should be examined closely by policy makers.

This study contributes to general understanding of the determinants of developing economies' outward FDI. By using a wide country set and a large current data period respectable results for companies and policy makers are generated. However there are some limitations. Firstly effect human capital is measured only from the point of total labor force because the data representing the skills of labor force is not available for whole data set. Future studies can use more independent variables such as corporate tax rate and investment policy of the home countries. Also host country and firm level determinants of the outward FDI can be added to analysis in future studies and limitations of this study will be eliminated.



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## FUTURE RESEARCH DIRECTIONS

This study contributes to general understanding of the determinants of developing economies' outward FDI. By using a wide country set and a large current data period respectable results for companies and policy makers are generated. However there are some limitations. Firstly effect human capital is measured only from the point of total labor force because the data representing the skills of labor force is not available for whole data set. Future studies can use more independent variables such as corporate tax rate and investment policy of the home countries. Also host country and firm level determinants of the outward FDI can be added to analysis in future studies and limitations of this study will be eliminated.

## CONCLUSION

In this chapter, the effects of home country specific factors on outward FDI of developing countries are discussed. Cross-border investment activities from developing economies have continued to rise from 1980s until today and outward FDI stocks of developing countries reach a significant volume as of today. So the factors affecting the outward FDI of these countries have importance. In accordance with this purpose, panel data analysis is performed with the data of BRICS and Next Eleven countries for the period from 1994 to 2014. Inward FDI, GNI, consumer price indices, currency exchange rate, total labour force, total export and import of goods and services, lending interest rate, patent applications and high-technology exports are used as independent variables of the analysis. The results of the analysis reveal that inward FDI, interest rate and technological capability (approximated by patent applications and high technology exports) of home countries have positive influence on outward FDI of developing economies.

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## KEY TERMS AND DEFINITIONS

**BRICS:** An acronym for the combined economies of Brazil, Russia, India, China and South Africa.

**Greenfield Investment:** A form of foreign direct investment where a parent company builds its operations in a foreign market from the ground up.

**Human Capital:** A collection of resources—all the knowledge, talents, skills, abilities, experience, intelligence, training, judgment, and wisdom possessed individually and collectively by individuals in a population.

**Investment Development Path:** A theory that was originally introduced by Dunning in 1981 and explains the relationship between national income and net outward foreign direct investment in a five stage path.

**Next Eleven:** A term to represent eleven countries - Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, the Philippines, Turkey, South Korea and Vietnam.

**Panel Data Analysis:** A statistical model which enables the data sets containing cross section and time series together.

**Trade Openness:** A measure of economic policies that either restrict or invite trade between countries.

**UNCTAD:** The United Nations body responsible for dealing with development issues, particularly international trade – the main driver of development by its 194 member States.

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# Chapter 36
# Proactive Law as Competitive Advantage in Crowdfunding

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## ABSTRACT

*This chapter explains how the paradigm of proactive law as competitive advantage can help entrepreneurs succeed in crowdfunding campaigns. Business law scholars have developed theories of "proactive law" and "law as competitive advantage" to show how law can be transformed from an obstacle into a strategic business advantage. This chapter analyzes the evolving crowdfunding landscape through the lens of proactive law as competitive advantage. The chapter proposes several types of innovative securities designed to create competitive advantages in crowdfunding offerings. For example, one type would give crowdfunding investors long-term equity interests while simultaneously eliminating short-term corporate governance challenges for small crowdfunded companies. Apart from securities, the chapter also describes how a proactive approach to law can enhance crowdfunding campaigns in multiple areas, from intellectual property to tax efficiency. To conclude, the chapter suggests expanding the theory of proactive law as competitive advantage to additional areas of entrepreneurship, beyond crowdfunding.*

## INTRODUCTION

Despite encountering regulatory obstacles, crowdfunding continues to emerge as a viable business model for funding early-stage entrepreneurial ideas. This chapter proposes a theoretical construct to aid entrepreneurs in carrying out crowdfunding offerings in the face of legal uncertainty. Specifically, this chapter investigates a concrete research question: How can the legal theory of proactive law as competitive advantage help entrepreneurs succeed in crowdfunding campaigns?

The chapter is organized as follows. It first briefly explains the legal landscape that different types of crowdfunding offerings confront. Then Part I develops a conceptual framework of viewing law proactively as a competitive advantage in crowdfunding campaigns. Part II applies the framework to provide specific examples of how entrepreneurs can leverage law to succeed in crowdfunding offerings.

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To conclude, the chapter moves beyond crowdfunding to suggest how further research should develop the theory of proactive law as competitive advantage in the broader context of the disruptive innovation that entrepreneurship breeds. The chapter focuses on US law, though the principles of proactive law as competitive advantage are broadly applicable anywhere.

## BACKGROUND: REGULATORY LANDSCAPE OF CROWDFUNDING OFFERINGS

The origins of online crowdfunding were not auspicious. Initially, crowdfunding resulted in more cease-and-desist letters than business success stories. But over time, the creative force of entrepreneurship continues to propel crowdfunding models to break free from the antiquated legal shackles that have restrained crowdfunding's development. Accordingly, today's legal panorama for strategic management of crowdfunding campaigns is vastly improved—and significantly more complex—than just a few years ago.

From a legal perspective, entrepreneurs must choose one of two types of crowdfunding offerings: the fork in the regulatory road is whether the crowdfunding campaign will offer securities (e.g., stock, interest-bearing loans, or another form of profit-sharing interests) or something other than securities (e.g., a pre-purchased product, token rewards, or donative support of a nonprofit enterprise, including non-interest bearing loans). Laws treat crowdfunding offerings of *securities* differently from *non-securities* (Fallone, 2014). Of course, entrepreneurs may also develop hybrid crowdfunding campaigns that offer a combination of a security and a non-security.

The evolution of laws on crowdfunding of *securities* has differed markedly from that of *non-securities*. Both paths, though, epitomize the disruptive interplay between law and entrepreneurship. Innovative entrepreneurship can be a two-edged sword that both creates new business opportunities and simultaneously challenges, and even destroys, stagnant legal regimes. In crowdfunding, the unique paths that *securities* and *non-securities* forms of crowdfunding have traversed can be likened metaphorically to tree roots in both their power and resourcefulness.

### Laws on Crowdfunding of Securities

The history of crowdfunded securities exemplifies how the disruptive force of entrepreneurship can topple regulatory obstacles to build new industries—like tree roots that undermine the foundation of a cement wall, causing the wall to collapse. At crowdfunding's inception, a regulatory wall prevented entrepreneurs from offering equity securities through crowdfunding in the US (Hazen, 2012; Heminway & Hoffman, 2011; Pope, 2011). In 2010, for instance, a US crowdfunding company named ProFounder Financial invited entrepreneurs to sell stock in start-up companies to the general public over the Internet. Such a seemingly innocuous business model was in fact a direct assault on the regulatory wall that barred crowdfunding offerings of securities. As a result, ProFounder was forced to shut down its website and cease all crowdfunding activities (Bradford, 2012).

Another prominent challenge to the regulatory wall in the US occurred in 2011 through the online BuyaBeerCompany crowdfunding campaign. The crowdfunding initiative to buy Pabst Brewing Company enjoyed phenomenal viral success in social media. In six months it attracted over $200 million in online pledges from more than five million people. But the BuyaBeerCompany campaign offered an "investment certificate" to crowdfunding contributors in a way that violated US securities laws, so gov-



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ernment regulators shut down the illegal campaign before the company could collect investment funds and purchase the target beer company (Bradford, 2012).

In view of these legal setbacks to crowdfunding offerings of equity securities in the US, a broad coalition of social media activists, business leaders, scholars, and politicians banded together to advocate legal reform (Wroldsen, 2012). And by 2012, the crowdfunding seeds planted by entrepreneurs and watered through social media had spawned invasive tree roots. The roots burrowed under the cement wall of legal obstacles that outlawed crowdfunding offerings of securities, causing the wall to crumble. The CROWDFUND Act was signed into law in the US on April 5, 2012. The Act creates, and directs the Securities and Exchange Commission (SEC) to implement, a limited channel for small or start-up companies to sell up to $1 million of securities per year to the general public through crowdfunding (Bradford, 2012).

The entrepreneurial victory is tempered, though, because the Act has yet to become operational, as the SEC has not yet published final regulations. In addition, the Act is fraught with legal requirements that may add excessive costs that limit the Act's usefulness for start-up companies (Bradford, 2012; Hurt, 2015). Nonetheless, the Act represents an important step forward in efforts to legalize US crowdfunding campaigns that offer securities to investors.

As discussed in Part II below, by creating the possibility of online crowdfunding for securities, the CROWDFUND Act lays the groundwork for entrepreneurs to seize competitive advantages in crowdfunding offerings. And though this chapter addresses US crowdfunding laws specifically, laws in other countries (e.g., the U.K., Nordic countries, France, Italy, Germany, Hong Kong, Australia, Egypt) are moving in a similar direction (Weinstein, 2013). Thus, all over the world opportunities are opening up for entrepreneurs to create competitive advantages through crowdfunding.

## Quasi-Crowdfunding Offerings to Wealthy Investors

Before proceeding to a more detailed discussion of how entrepreneurs can use law proactively in crowdfunding campaigns, it is helpful to sketch briefly two other emerging trends in online securities offerings. The first is online stock sales made exclusively to wealthy investors. The second is online peer-to-peer lending.

Apart from the CROWDFUND Act, securities in start-up companies can also be sold online in quasi-crowdfunding offerings to wealthy investors, known in the US as Rule 506 offerings. The JOBS Act of 2012 made it legal in the US for start-up companies to advertise stock sales to the general public over the Internet, so long as the companies only sell stock to so-called accredited investors. In brief, accredited investors are investment companies (e.g., private equity firms) and wealthy individual investors (e.g., people having over $1 million in net worth or $200,000 in annual income) (Parsont, 2014).

Hence, the tree roots that toppled the regulatory wall barring crowdfunding offerings also destroyed the barrier that prevented entrepreneurs from openly advertising their stock offerings to wealthy investors. Though selling securities only to accredited investors can hardly be characterized as true *crowd*funding—a group of wealthy investors is not the same as the diverse crowd that makes up the general public—the regulatory barriers are significantly fewer than those guarding crowdfunding offerings. Predictably, online stock offerings that are only available to wealthy investors are a common business strategy of private companies in the US and many other countries (Parsont, 2014; Pollman, 2012).



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## Peer-to-Peer Lending in Crowdfunding

Another form of securities crowdfunding that has thrived even before passage of the CROWDFUND Act is peer-to-peer lending of interest-bearing notes. Under US securities laws, interest-bearing crowdfunded loans typically qualify as securities subject to regulation. But where crowdfunding of equity securities required a new law (the CROWDFUND Act), the crowdfunding business model of interest-bearing peer-to-peer lending managed to fit within the existing regulatory framework. In short, crowdfunding websites that facilitate interest-bearing peer-to-peer loans (such as Prosper and Lending Club) register the loans with the SEC to avoid violating securities laws (Chaffee & Rapp, 2012; Verstein, 2011).

## Laws on Crowdfunding of Non-Securities

Beyond *securities* offerings, entrepreneurial creativity also triumphed with respect to crowdfunding of *non-securities*. The triumph, though, was of a dramatically different character than the development of legal opportunities for crowdfunding of *securities*. The development of the crowdfunding market for non-securities shows how entrepreneurs exploit small cracks in the regulatory minefield to grow thriving new industries—like a tree sprouting from amidst the rocky, arid terrain on a rugged mountain top.

Some of the first green shoots were websites that deftly avoided the heavily-regulated world of securities offerings. These websites prohibited crowdfunding offerings of stock, or any other security (such as interest-bearing loans). Instead, the sites sought to nurture innovative crowdfunding business models in the regulatory fissures where securities laws do not apply. For instance, several sites facilitated crowdfunding campaigns that offered online contributors a variety of rewards (like a collector's edition T-shirt, or insider access to a movie production) or the opportunity to pre-purchase innovative products (like a smartwatch, or a new video game). Other sites avoided securities laws by soliciting donations or offering non-interest bearing loans (such as micro-lending to small-business owners in developing countries). In these ways, the non-securities form of crowdfunding capitalized on an unregulated market niche and quickly expanded into a multi-billion dollar industry. Hundreds of websites have proliferated under the non-securities crowdfunding model, including sites like Kiva, Kickstarter, IndieGoGo, and SellaBand.

# PART I: PROACTIVE LAW AND COMPETITIVE ADVANTAGE

Progressing from this brief background of the entrepreneurial emergence of both securities and non-securities crowdfunding models, the remainder of the chapter explains how crowdfunding laws can be leveraged as an opportunity rather than lamented as a hindrance. The chapter's research method is a strategic review of business law scholarship on "proactive law" and "law as competitive advantage." The former stems primarily from European scholars and the latter from US researchers.

Methodologically, Part I provides a conceptual overview of the two theories. Previous research has developed the theories in the broad context of business management and executive decision making generally. But the theories have not been tested specifically in the entrepreneurial context of strategic management of crowdfunding campaigns. Accordingly, Part II applies the theories to the emerging regulatory schemes covering crowdfunding campaigns to assess their viability in the crowdfunding environment.

Then, the conclusion interprets Part II as a first step in a larger project. Crowdfunding can be viewed as an example of disruptive innovation where new technologies (aided by new laws) give rise to new



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business models that can threaten traditional businesses. If theories of proactive law as competitive advantage yield insights for crowdfunding entrepreneurship, as Part II contends, then future research should expand the theories to encapsulate disruptive innovation in all of entrepreneurship, not solely entrepreneurship expressed through crowdfunding.

## Conceptual Framework: Proactive Law

In Europe, the Nordic School of Proactive Law (2015) has advanced the perspective that law should be embraced as an asset, not avoided as a liability. Instead of reacting to legal problems that are forced upon a company, often in the form of *ex post* litigation, a proactive law approach considers *ex ante* how to use laws and structure business decisions to avoid legal disputes altogether. Proactive law is thus preventive rather than reactionary, analogous to healthcare treatment that aims to avoid disease (e.g., vaccinations) and foster well-being (e.g., exercise and nutritious diet) instead of cure sickness after the patient is already ill (Siedel & Haapio, 2010).

Beyond simple prevention of legal problems, proactive law also promotes legal strategy as a core component of business strategy. Proactive law invites insights from other business disciplines in order to guide legal decisions towards accomplishing business goals, not merely avoiding negative outcomes. For example, from its inception the proactive law movement has found natural synergies with information technology (Siedel & Haapio, 2010). And synergies abound in many other business disciplines, such as marketing, sales, finance, management, and accounting. Proactive law is a forward-looking approach to law, integrating legal strategy into business goals before any legal problems arise.

## Conceptual Framework: Law as Competitive Advantage

In the US, a similar theoretical approach to proactive law has developed, but with different terminology. Viewing law as a competitive advantage in business, US scholars apply to the legal field the competitive advantage paradigms from strategic management research (Bagley, 2010; Bird, 2008, 2011; Siedel 2002; Siedel & Haapio, 2010, 2011). One prominent strand of this research defines a firm's sustainable competitive advantages vis-à-vis the firm's rivals as including only those resources of the firm that meet four criteria (Barney, 1991). First, a resource must provide value. Second, it must be rare or unique. Third, the resource must be difficult for competitors to copy. And fourth, there must not be equivalent substitutes for the resource.

Applying the four-pronged strategic management paradigm, legal scholars have demonstrated that a firm's legal environment is an intangible resource that can function as a sustainable competitive advantage (Bagley, 2010; Bird, 2011). The four attributes that strategic management research mines for competitive advantage can be applied to law as follows. First, strategic management of a firm's legal environment undoubtedly creates value for the firm. Whether the value springs from mere avoidance of costly legal violations or arises from revenue-generating activities such as patent protection, a firm's legal strategy (or lack thereof) has the unambiguous potential to contribute positively or negatively to the firm's bottom line. Especially in the Internet age, where social media can impact a firm's public image so quickly and powerfully, crafting a legal strategy that leads to a favorable public reputation can be vital to maintaining goodwill and promoting business opportunities.

Second, though laws themselves are obviously not rare, a firm's own particular mix of legal issues is often unique. The uniqueness arises from a host of different decisions that firm management makes to



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position the company to confront certain laws and not others. For example, a firm incorporated in one jurisdiction (say, France) faces different corporate laws than a firm in another jurisdiction (say, Delaware). Further, a firm that relies on many part-time or contract workers encounters different employment laws than a firm with a predominantly full-time workforce, and in either case the labor laws vary greatly if workers unionize. Similarly, if a firm defends its intellectual property through closely-guarded trade secrets (such as Coca-Cola's renowned but confidential recipe), then its legal concerns vary enormously from a company that pursues an active patent portfolio (such as Apple or Samsung). In sum, through a multitude of small and large managerial decisions, a firm positions itself to confront its own unique, or rare, blend of legal and regulatory issues.

Third, a firm's strategic decisions with regard to certain legal issues can be difficult for competitors to copy. In the first place, imitating a competitor's legal strategy requires knowing what the competitor's legal strategy is. But legal advice is usually confidential and privileged. And to the extent legal advice is discerned through a company's observable actions, the cause and effect relationship can be ambiguous. Legal strategy can also be difficult to imitate when it is embedded in company relationships, whether relationships with regulators, employees, customers, or suppliers. For example, legal contracts form the basis of commercial relationships, but the relationships are more complex than what can be reduced to contractual provisions. Therefore, even if a firm could copy a competitor's contract verbatim, the contract's words stand for a much more nuanced social relationship that is not easily cloned. Relational aspects such as trust, shared plans and goals, cooperation, and opportunism—though represented and memorialized through legal contracts—in practice transcend the documents themselves. Legal contracting strategy, then, can only be mimicked through complex interpersonal behavior and performance, not mere reproduction of words on a page (Bird, 2011; DiMatteo, 2010).

The fourth component of resources that offer sustainable competitive advantages—lack of substitutes—is also true of a firm's legal environment. In the modern economy, there are no complete substitutes for the rule of law. Companies cannot opt out of the legal regimes that mandatorily apply in their jurisdictions. Even though some firms and individuals operate at the margins of the mainstream economic and legal system (e.g., the informal or extralegal economy) or establish alternate means of transacting business (e.g., close-knit communities that engender trust among members), ultimately the activities are still subject to laws that apply in the location where the activities take place. Furthermore, in the long term, commercial activities that seek independence from the formal legal system are difficult to scale into the mainstream economy without also integrating into the formal legal system.

Firms do have flexibility in determining which substantive laws apply to them most directly (as discussed above with respect to the rarity component of the competitive advantage analysis), but a company would be hard-pressed to develop a substitute legal environment to govern its affairs in place of the existing legal system. Accordingly, if a firm achieves a competitive advantage through use of laws and the legal system, a rival firm will not easily erode that competitive advantage by substituting an equivalent legal system, notwithstanding marginal competitive threats from extralegal transactions or close-knit communities.

In sum, law can function as a sustainable competitive advantage. A firm can leverage law to create value and cultivate its own unique mix of legal issues. And a firm's creative use of law can be difficult for competitors to copy or design around with equivalent substitutes.



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## Conceptual Framework: Crowdfunding Offerings

So, strategic management of a firm's legal environment can be conceptualized through the related theories of proactive law and law as competitive advantage. Next, the theories can be deployed to further the purpose of this chapter: how can entrepreneurs use crowdfunding laws proactively to foster competitive advantage in crowdfunding offerings? As an initial step, a proactive law approach integrates legal strategy with business strategy from the outset. In crowdfunding, failing to involve legal strategy can be disastrous because an otherwise successful crowdfunding effort could be entirely derailed by regulatory violations. For instance, had the organizers of the BuyaBeerCompany crowdfunding campaign consulted legal counsel before launching the campaign, they could have structured the offering to comply with securities laws. The difference could have meant going down in history as one of the most successful crowdfunding efforts ever ($200 million from five million participants!) instead of being remembered as a vivid illustration of failed legal (and thus failed business) strategy.

Beyond avoiding calamity, a proactive law approach is driven by affirmatively achieving business goals. To apply proactive law in the crowdfunding context, then, it is a necessary first step to identify the business priorities that the crowdfunding offering is designed to achieve. Once the company's priorities are identified, legal requirements can be brought to bear on deciding how best to achieve the business goals.

For example, is the primary objective of the crowdfunding offering to deepen the public's awareness of a company through social media (a marketing objective), or simply to raise money (a finance objective)? If marketing goals are preeminent, then what kinds of incentives are most effective at attracting attention in the online, social media environment? For example, would the target market be more interested in buying shares of stock, pre-purchasing a creative product, lending money to the company, engaging in a creative contest, or participating in an online dialogue within a select community? Perhaps the business goals would coalesce around a desire to increase social media exposure, create an online community of like-minded people, and invite ideas for future product development, for example. In that case, a proactive approach to crowdfunding laws might suggest a non-securities crowdfunding offering in order to lessen legal hurdles without sacrificing company objectives.

In contrast, say the business goals of the crowdfunding offering were primarily to raise money, with less emphasis on the marketing objective of broad public exposure through a wide crowdfunding campaign. In that situation, a proactive legal approach might develop a legal strategy involving a securities offering to wealthy investors in order to most effectively achieve business goals. There would be no legally-imposed limit on the amount of money the company could raise, so long as only accredited investors purchased stock in the offering. The legal strategy would therefore achieve the business goal of raising as much investment capital as possible. But such an approach is not without business risk: if the offering appealed to the general public, then a company could squander potential goodwill because non-wealthy investors would be legally barred from participating. For this reason, legal strategy should follow business priorities in designing crowdfunding campaigns that target essential business objectives.

## PART II: CROWDFUNDING LAWS AND COMPETITIVE ADVANTAGE

Entrepreneurs are well served by proactively uniting legal strategy with business objectives at the beginning of a crowdfunding offering. Doing so not only helps prevent future legal problems but also works to



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achieve business goals. Part II deepens the analysis and describes more specifically how entrepreneurs can cultivate competitive advantages by using law proactively in crowdfunding offerings.

The first suggestions are made with respect to crowdfunding campaigns that offer *securities*: entrepreneurial companies should offer innovative crowdfunding securities that cater to the strengths of crowdfunding investors while simultaneously eliminating corporate governance problems associated with crowdfunding offerings of securities. Afterwards, the chapter highlights how entrepreneurs can use law proactively in crowdfunding offerings that include *securities* or *non-securities* in order to prevent future legal problems and maximize the value of crowdfunding efforts.

## Corporate Governance and Crowdfunded Securities

As described above, a resource that functions as an enduring competitive advantage creates value, is unique (or rare), is difficult to imitate, and lacks substitutes. Especially because laws related to crowdfunding of securities are so new and remain in flux, substantial opportunities exist to develop competitive advantages. But the opportunities to seize competitive advantage in crowdfunding offerings of securities are often masked by the challenges that crowdfunding poses for traditional stock offerings. Typically, start-up companies seek a small number of investors who each invest a relatively large amount of money, often either angel investors or venture capitalists. Start-up companies have limited resources and therefore justifiably want to avoid the logistical difficulties and corporate governance concerns involved with managing relationships with many investors. In addition, start-up companies value the advice and connections that sophisticated investors (like experienced angel investors and venture capitalists) provide to fledgling operations.

For the most part, crowdfunding of equity securities runs completely counter to all of these natural impulses of start-up company founders. Understandably, then, there are multiple reasons why entrepreneurs might hesitate to embrace stock offerings through crowdfunding. Traditionally, company founders would be crazy to accept hundreds, or thousands, of small investors, yet in a crowdfunding offering a company would seek exactly that. Furthermore, many crowdfunding investors would likely not have extensive investment experience with start-up companies. Coupling a lack of investment experience with the inherent uncertainty of start-up businesses is a combustible recipe for crowds of disgruntled shareholders.

And many disgruntled shareholders in a start-up company presents numerous corporate governance concerns for management. For instance, shareholders have the right to vote, whether for directors on the board, amendments to the company's governing documents, or fundamental changes to the company's business, such as a merger or large acquisition. For a small company, managing shareholder votes when hundreds or thousands of investors are involved can be an excessive cost and intrusive distraction. In addition, shareholders, as partial owners of the company, can demand to see the company's books and records, which can be not only time-consuming and inconvenient but also the impetus behind shareholder lawsuits (Schwartz, 2013).

Apart from voting rights and requests to inspect books and records, shareholders can also propose shareholder resolutions for management's consideration. Resolutions can be a powerful tool for shareholders to spread complaints or bad press about the company, especially in crowdfunding's social media environment. More aggressively, and depending on a variety of factors, shareholders can launch proxy contests and tender offers in an effort to oust company management and take control of the company (Schwartz, 2013).



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Finally, the company's directors and officers can have personal liability to shareholders for breach of fiduciary duties. Potential personal liability for entrepreneurs can be a huge disincentive to offering stock to the general public, especially in view of the high uncertainty and unpredictability of start-up companies. Companies may purchase directors' and officers' (D&O) insurance to protect management against personal liability, but it would be yet another cost and distraction for a small company to deal with as a result of having shareholders. In sum, the costs, logistical complications, and legal risks associated with having hundreds or thousands of small shareholders could be enough to scare an entrepreneur away from selling stock through crowdfunding (Schwartz, 2013).

## Transforming Concerns into Opportunities

With so many potential negatives, it is fair to ask why any rational start-up entrepreneur would dare to offer securities through crowdfunding (Dorff, 2014). And precisely in that question lies the opportunity for entrepreneurs to use crowdfunding laws proactively to develop competitive advantages. The unsettled landscape of securities crowdfunding affords the opportunity to create value through a differentiated, unique stock offering that would be difficult for rival firms to imitate. And a value-creating, unique, and inimitable resource without clear substitutes is the essence of a competitive advantage.

To accomplish such a feat, a proactive approach to law must transform obstacles into opportunities. The primary obstacles to a crowdfunding securities offering, beyond the potential costs of preparing the offering, are ongoing corporate governance obligations owed to a large number of shareholders, and the concomitant risks that arise from such obligations. A proactive approach must ameliorate the corporate governance concerns without sacrificing the reasons investors would want to participate in a crowdfunding offering of securities. Those reasons might vary in some situations, but in large part rational investors would be motivated to invest in crowdfunded equity securities offerings in order to be ground-floor owners of a company that could grow and produce a sizeable return on investment.

Surely the motivations of backers of *non-security* crowdfunding offerings might differ. In that situation, backers often have motivations that are not purely financial. Maybe they believe in the social mission of the crowdfunding initiative. Perhaps they are fans of the creative work that the crowdfunding sponsor is developing. Or they are simply pre-purchasing a product they find appealing.

But the primary reason for offering securities through crowdfunding is to give backers a share in the upside potential of the business idea. When developing a proactive approach to a securities crowdfunding offering, then, it is important to keep investors' interests in focus. At the same time, entrepreneurs must avoid the numerous downsides of a start-up company having hundreds or thousands of small investors, especially in relation to corporate governance complications.

## Securities Designed for Crowdfunding

One creative solution is to design unique securities that are specifically tailored to crowdfunding. And scholars have put forth at least three proposals that entrepreneurs could fine tune and implement to create a competitive advantage. The three possibilities relate to using the flexibility of contracts to avoid the burden of shareholder rights, including 1) future rights to own stock, with no short-term shareholder rights (O'Connor, 2014; Wroldsen, 2012), 2) short-term profit sharing, known as "unequity," instead of long-term stock ownership (Heminway, 2012), and 3) debt securities instead of equity securities (Schwartz, 2013). If crowdfunding is to evolve as a new form of investing in start-up companies, en-



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trepreneurs should not shy away from experimenting with novel forms of securities that are uniquely tailored to crowdfunding's strengths and weaknesses.

First, entrepreneurs could design securities that give investors a share of any long-term stock appreciation but remove shareholder rights in the short-term. A similar approach would be to sell initially only the *right* to purchase a future security—with the actual security to be issued at a later date—so as to ensure that crowdfunding investors do not have shareholder rights unless and until the start-up company becomes a success. Either way, the goal would be to give investors what they want (i.e., a chance to share in the long-term upside potential of a promising start-up venture) while also letting small companies avoid the corporate governance downsides of having excessive numbers of small shareholders. Crowdfunding investors would lose the voice associated with shareholder rights, but many crowdfunding investors might view the sacrifice of formal shareholder rights as an acceptable trade-off because crowdfunding investors could be more focused on expressing their voice through social media than through exercise of traditional shareholder rights.

## Non-Voting Convertible Preferred Stock

More specifically, one way to structure the securities would be similar to non-voting convertible preferred stock that early-stage investors already frequently purchase, outside of the crowdfunding context. The approach is born out of the venture capital community where non-voting convertible preferred stock has become a complex investment instrument that reflects the requirements of venture capital investors. In brief, preferred stock is a flexible contractual instrument that allows investors to specify particular rights that are appropriate for particular investments. When investing in start-up companies, for example, venture capitalists typically negotiate control rights and representation on a start-up company's board of directors, along with numerous other investor protections contained within the preferred stock instrument, such as preemptive rights, anti-dilution protection, and registration rights (Gilson, 2003; Smith, 2005).

To work effectively in crowdfunding, non-voting convertible preferred stock would likely need to be modified from the form used in venture capital investment transactions (Wroldsen, 2013). An innovative entrepreneur could offer crowdfunding investors a simplified version of non-voting convertible preferred stock. The stock could be sold without any voting or other corporate governance rights. Then, upon a future triggering event, such as an acquisition of the company or an initial public offering (IPO), the non-voting preferred stock would convert into common stock, giving the investor an equity ownership position in the company (see example below under "Competitive Advantage: The Case of Oculus Rift").

From the investors' perspective, the key components of the preferred stock must ensure that investors are protected against dilution of the value of the shares and have the right to continue investing in future crowdfunding offerings. From the company's perspective, the key component would be that the crowdfunding shares cannot convert to common stock until the company is large enough, and successful enough, to manage the logistics of a large stock conversion and the corresponding rise in corporate governance obligations. For an enterprising entrepreneur, the field is ripe for offering crowdfunding investors a simple equity instrument that provides upside potential for investors while simultaneously not overwhelming the start-up company with corporate governance headaches.



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## Future Rights to Equity Ownership

Another way to accomplish a similar goal would be to crowdfund solely a *right* to purchase securities in the future instead of selling the securities themselves in the crowdfunding campaign. This approach provides more certainty that crowdfunders do not have any shareholder rights because initially they do not even own non-voting preferred stock. Instead, they own a contractual right to either a future number of shares or a future percentage ownership of the company. But that future ownership would only spring into existence if the company reached certain milestones, such as specified revenue figures, an acquisition event, or an IPO. In addition, granting future rights to equity avoids the notoriously acrimonious haggling over the speculative valuation of an early-stage venture because the valuation need not be fixed until a later stage in the company's development.

For instance, the company could set aside a certain number of shares, or a certain total ownership percentage (e.g., up to 10 percent of the equity interests of the company, on a fully diluted basis), as a pool that would be available to crowdfunding investors only if a future qualifying event occurred. Akin to pools of shares available only to employees, this approach would provide certainty as to the company's total commitment to crowdfunding investors (e.g., up to 10 percent, or some other percentage, of the company's total shares would be earmarked for crowdfunding investors). The company could then engage in multiple rounds of crowdfunding offerings as the value of the company increased, while still retaining the cap on total equity available to crowdfunding investors. And past crowdfunding investors could hold pre-emptive rights to participate in subsequent crowdfunding offerings. Pre-emptive rights would allow crowdfunding investors to continue to invest in the company's crowdfunding offerings, thereby avoiding substantial dilution of their positions when additional crowdfunding offerings occur.

Compared to specifying the contractual terms of non-voting convertible preferred stock in advance of the crowdfunding offering—when uncertainty about the company is at its highest and firm resources are at their lowest—selling rights to future ownership holds the advantage of greater simplicity. Of course, complexities would inevitably arise if the company reached its growth milestones and issued the shares that were previously promised to crowdfunding investors. But at that point the company would have more resources to address a complex stock offering. The approach would allow crowdfunding investors to realize long-term profits if the start-up company turned out to be successful. Simultaneously, the approach would postpone the corporate governance problems that arise when a small company has many shareholders until after the company became successful, if ever.

Outside of crowdfunding, the venture capital community has recognized the need for simplified early-stage investment contracts (Coyle & Green, 2014; Janofsky & Loten, 2015). For instance, the influential Silicon Valley business accelerator, Y Combinator, developed a Simple Agreement for Future Equity (or "SAFE") in December 2013 (Graham, 2013). The SAFE is a "deferred equity investment" that avoids the inherent difficulties of establishing a valuation of an early-stage venture and "prioritize[s] accessibility over comprehensiveness" (Coyle & Green, 2014). The creator of the SAFE, Carolynn Levy, stressed that she developed the innovative contracts "for a community rather than for a client," which fits crowdfunding's social and interconnected ethos perfectly (Coyle & Green, 2014). Conceptually, then, the SAFE could be a harbinger of what crowdfunding investment contracts that promise future equity ownership may look like someday.



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## Competitive Advantage: The Case of Oculus Rift

Beyond the specifics of how the crowdfunding offering is structured, in principle entrepreneurs can achieve competitive advantage by offering crowdfunding investors a long-term profit-sharing interest that is decoupled from traditional shareholder rights. In place of shareholder rights, the company could encourage frequent social media interaction and be transparent about its operations in order to authentically involve investors in the company, even though the investors have no formal shareholder rights to enforce against the company. Such a strategy grows out of crowdfunding's native social media character and celebration of the wisdom of the crowd.

To date, though, crowdfunding communities lack access to an investment interest in the company's long-term prospects, particularly in the US. A company that seized the opportunity to provide such a long-term profit-sharing interest (once legally permitted), along with the existing community aspects of crowdfunding, would immediately distinguish itself from the hordes of firms clamoring for social media followings based solely on crowdfunders' affinity for the company, its product, or its mission. The strategy would be an ideal application of proactive law's emphasis on designing a legal solution (i.e., long-term ownership interests for crowdfunders but without short-term shareholder rights) to further a business goal (i.e., a more cohesive social media community unified through mutual profit incentives).

For example, the Oculus Rift crowdfunding campaign and subsequent sale to Facebook is illustrative. In 2012, the US virtual reality company Oculus VR raised approximately $2.4 million from over 9,500 people through a rewards-based crowdfunding campaign on Kickstarter to further its development of a virtual reality gaming headset known as the Oculus Rift. Then, in 2013, Oculus raised $91 million in traditional venture capital equity financing. In 2014, less than two years after the Kickstarter campaign, Facebook purchased Oculus for $2 billion—before Oculus had even shipped a retail product (Mitchell, 2014; Gara & Kolodny, 2014).

Though the Oculus founders and the venture capitalist investors hit the jackpot financially, many of the crowdfunders who had supported Oculus in the Kickstarter campaign were livid. The Kickstarter supporters received nothing when Oculus was acquired, and some viewed the transaction as a betrayal. They were not shy about voicing their displeasure on social media, "raging" against the Facebook sale and "flooding the Kickstarter page with negative comments" (Makuch, 2014). A statement summing up much of the frustration was, "I backed Oculus Rift on Kickstarter and all I got was this lousy T-shirt" (Berman, 2014). Had Kickstarter backers received equity for their contributions, estimates for the return on investment ranged from 145x to 200x (Barnett, 2014; Jeffries, 2014).

If a start-up company sold long-term equity interests to crowdfunding investors—instead of merely providing rewards, like T-shirts—then crowdfunders could share in celebrating an exit event for $2 billion as a tremendous success. Social media would buzz with glowing testimonials about the company. Instead, the exit event for Oculus embittered some of the company's own supporters and ignited a firestorm of criticism on social media. Learning from the Oculus example, entrepreneurs should proactively create long-term equity interests for crowdfunding investors, even while eliminating shareholder rights prior to an exit event. This approach can cultivate a mutually-beneficial relationship in which crowdfunders do not feel used but instead are welcomed as long-term participants in the company's success.



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## Competitive Advantage: Equity Ownership for Crowdfunders

The strategy of providing crowdfunders with long-term equity interests without shareholder rights in the short term could meet the four criteria for turning a company resource into a lasting competitive advantage. First, it has the potential to create value in the form of cash investments that the company receives from crowdfunders in exchange for long-term equity interests in the company. Presumably, the company could raise more funds by selling equity interests than it could by using a non-securities form of crowdfunding. Even more importantly, the company could avoid alienating the crowdfunding backers who supported the company in its start-up phase. By sharing a portion of the upside potential in the company with crowdfunding supporters, the company could build value by crafting a long-term relationship of trust and mutual benefit.

Second, the strategy would be unique, at least initially, because crowdfunding laws have historically prevented such an approach. Once legal, though, the strategy would still require rare executive foresight, combining marketing acumen, financial creativity, operational dexterity, and legal complementarity. Third, in part due to the rarity of the offering, the strategy would be difficult to imitate. It would be an organic strategy that would define the organization itself rather than a simple contract that could be copied. All departments of the company would need to focus on the crowdfunding community, so competitors would need to emulate an entire organizational form in order to imitate the strategy.

Fourth, there are not any simple substitutes. One of the main reasons equity crowdfunding is in a nascent stage is that laws historically prohibit the practice. Apart from new crowdfunding laws (such as the CROWDFUND Act), there are no other legal methods for small, non-public companies to sell profit-sharing interests to the general public (registered stock offerings typically only make sense for large companies).

## Short-Term Profit-Sharing

An additional method for using law proactively to create innovative securities that capture competitive advantages in crowdfunding include "unequity" interests. Unequity interests are short-term profit-sharing securities stripped of corporate governance rights (Heminway, 2012). They are securities because they have a profit-sharing (or revenue-sharing) component, but they do not give investors any shareholder rights or long-term ownership interests. A start-up company might find unequity interests attractive for a time-bound sales opportunity: in exchange for crowdfunding contributions that the company would use to manufacture its innovative product, crowdfunding contributors would receive a percentage of the revenue from sales of the product, through a pre-determined date.

For instance, in exchange for a contribution of $50, a crowdfunding backer could receive $.10 for each product sold prior to the end of the year. The crowdfunding backer would break even once 500 items were sold (500 x $.10 = $50). Any additional items sold during that year would result in profit for the crowdfunding backer who helped facilitate the company's creation of the product. At the end of the year, though, the crowdfunding backer with an unequity interest would have no ongoing rights to the company's business or revenues.

Advantages of unequity interests begin with their simplicity. Crowdfunders do not obtain shareholder rights or even enter into a long-term contractual relationship with the company. Instead, crowdfunders participate only in the risk that a new product might not sell as well as anticipated. But if the product succeeds, then crowdfunders share in the immediate benefit of the product's sales, through a certain



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date or until a certain amount of the product is sold. The company avoids any long-term entanglements and complications with crowds of investors, but at the same time the crowdfunding contributors do not receive any of the future upside if the company goes on to great success. Unequity interests also offer attractive marketing and branding opportunities to build goodwill because supporters of the product receive a tangible reward (cash) in exchange for their support of the company's product, all within a short period of time.

## Crowdfunding Debt Securities

A third option for entrepreneurs to consider is crowdfunding of debt securities instead of equity securities (Schwartz, 2013). Debt securities typically do not grant shareholder rights. Crowdfunding lenders would receive only the contractual rights specified in a loan agreement, such as the right to collect unpaid debts.

From the company's perspective, the benefits include avoiding any corporate governance obligations to shareholders and retaining all of the company's equity ownership. But the company must repay the debt; whereas, when *equity* interests are sold, the company has no repayment obligation to meet, and when *unequity* interests are sold, the company simply pays a portion of its sales revenue to the crowdfunding supporter for a limited period of time. From the crowdfunding investor's perspective, a debt security offers a return in a specified amount over a defined time period, but the crowdfunding investor does not share in any upside potential of the company beyond repayment of the debt at the specified interest rate. Where securities laws already accommodate crowdfunded offerings of debt securities more readily than in the US (in the UK, for instance), small companies have already begun offering so-called "mini bonds" through crowdfunding (Espinoza, 2015).

## Competitive Advantage: Unequity and Debt

With respect to both crowdfunded unequity interests and debt securities, entrepreneurs have the opportunity to capture competitive advantages by using law proactively. Both types of offerings create value for the start-up company and would be unique crowdfunding campaigns in today's market (especially in the US). Both approaches offer a financial return to crowdfunding investors, so they go beyond current crowdfunding models that only provide a social media community, a reward, a donation opportunity, or a product pre-purchase.

As for inimitability, unequity interests, despite their short-term character, can be transformative of an organization's structure and thus difficult to replicate, especially if an organization carries out multiple short-term unequity campaigns over a long-period of time. Crowdfunding offerings of debt securities, though, would likely be easier for competitors to copy simply because debt is a well-understood, traditional form of financing. Neither type of campaign has an easy substitute because securities laws make it difficult for small companies to sell unequity or debt securities to the general public in ways other than crowdfunding.

## Crowdfunding Securities or Non-Securities

Apart from how a company might design innovative securities for crowdfunding, entrepreneurs can also use law proactively to enhance other aspects of crowdfunding offerings. Companies that offer a product or a reward (or nonprofits that solicit donations or facilitate non-interest bearing loans) through



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crowdfunding confront fewer direct regulations than when crowdfunded securities are offered. But as non-securities forms of crowdfunding mature, best-practices and downside risks are emerging; hence, the remainder of the chapter alerts entrepreneurs to particular issues in crowdfunding where a proactive approach to law is vital. The recommendations below focus on *non-securities* crowdfunding campaigns, but most of the recommendations apply to *securities* crowdfunding, too. Seven potential concerns are highlighted, in the areas of intellectual property, litigation risk, corporate formation, and tax law.

## Intellectual Property: Making Ideas Public

A proactive approach to intellectual property laws can mitigate at least three legal risks. First, disclosing an innovative idea online without proper patent protection can diminish or destroy the value of the idea (O'Connor, 2014). A similar dynamic exists under trademark law with respect to company and product names and logos. Before launching a crowdfunding campaign, therefore, entrepreneurs should determine whether filing for patent and trademark protection are worthwhile for their inventions, names, and logos.

For example, if the company has patentable ideas, filing for patent protection in advance of public disclosure can be important. In the US, a patent application must be filed within one year after an idea is made public. After one year, the idea enters the public domain and ceases to be patentable. Furthermore, the US is a first-to-file jurisdiction, so during the one-year period after public disclosure, others can file a patent application on the idea, potentially before the original inventor. At a minimum, filing a provisional patent application before public disclosure of the idea can be a low-cost way to set a pre-disclosure filing date and reserve a one-year period to decide whether to file a full patent application.

Outside the US, the timing of patent filings is often an even more pressing matter: many countries require patent filings to precede public disclosure of the idea. In those jurisdictions, ideas that are made public before a patent filing is submitted cease to be patentable at all. Accordingly, start-up companies with patentable inventions (or valuable trademarks) are wise to move proactively to protect intellectual property rights before publicizing a crowdfunding campaign.

## Intellectual Property: Infringing the Rights of Others

A second risk under intellectual property laws that can be proactively managed relates to lawsuits alleging that a crowdfunding campaign infringes the intellectual property rights of others. Publicizing an idea online through a crowdfunding campaign can expose a start-up firm to trademark-, copyright-, and patent-infringement lawsuits from more established competitors before the start-up is equipped to defend itself. For example, trademark infringement would involve using a company or product name or logo that is too similar to another company's trademark-protected name or logo. Vetting proposed names and logos before launching a crowdfunding campaign is a simple proactive step that entrepreneurs can take to avoid unnecessary legal conflicts and expensive rebranding efforts.

Copyright infringement can arise if the crowdfunding campaign uses third-party images, videos, music, or other content without first obtaining permission (usually in the form of a license). If a company fails to take the proactive step of obtaining a license to use third-party content, or creating its own proprietary content, then the company's crowdfunding campaign can be stopped in its tracks, even before the company collects any of the crowdfunding contributions that were pledged. Crowdfunding sites typically disable campaigns immediately after receiving a simple notice that alleges copyright infringement. Under the Digital Millennium Copyright Act (DMCA), failing to disable the campaign can



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subject the crowdfunding site itself to liability for permitting alleged copyright infringement to continue. Entrepreneurs, therefore, should use copyright laws proactively to prevent having an otherwise successful crowdfunding campaign abruptly shut down for an entirely avoidable reason.

Patent infringement lawsuits can be even more detrimental to crowdfunding success. Patent infringement allegations can distract management for extended periods of time and potentially cripple a company's business model. For example, FormLabs, a start-up company in the US that makes three dimensional printers, raised nearly $3 million from over 2,000 backers through a 30-day crowdfunding campaign on Kickstarter in 2012. The campaign allowed FormLabs to successfully create its first product, but the campaign also attracted the attention of an established competitor, 3D Systems, which sued FormLabs for patent infringement. The lawsuit alleged that FormLabs' product infringed the designs 3D Systems had previously patented (Woodward, 2014).

In December 2014, after two years of legal filings and negotiations, the parties reached a settlement. Fortunately for FormLabs, despite the two-year distraction for company management, its business was profitable enough to allow it to defend against the patent infringement lawsuit and continue to grow (Brewster, 2014). But the same cannot be said for many cash-hungry start-ups. The best bet for entrepreneurs is to proactively examine the potential for patent infringement before exposing promising inventions to the world through a crowdfunding campaign.

## Intellectual Property: Incorporating the Wisdom of the Crowd

A third intellectual property risk in crowdfunding campaigns can arise when companies incorporate product suggestions from crowdfunding backers. Without proper legal protections, incorporating the ideas of others into a product can lead to legal disputes over ownership rights. For example, if a crowdfunding contributor suggests a new product feature on the company's crowdfunding message board, and the company integrates the feature, is the crowdfunding contributor entitled to any compensation or ownership? From a legal perspective, it would be helpful to draft, in advance, clear terms that definitively assign to the company all ownership rights in any suggested features or modifications posted in connection with the crowdfunding campaign.

And from a marketing and public relations perspective, it would be wise to integrate legal strategy into business goals by proactively communicating with crowdfunding backers and expressing gratitude for the crowd's suggestions. After all, crowdfunding backers who feel appreciated and included as part of a community are less likely to spread bad press or pursue legal claims. Consequently, entrepreneurs should plan proactively to use intellectual property laws to their advantage by integrating crowdfunding marketing strategy with legal objectives to ensure company ownership of products that incorporate suggestions from the crowd.

## Crowdfunding Litigation

Beyond intellectual property risks, a proactive approach to law is also central to avoiding two primary litigation risks in crowdfunding. If the crowdfunding campaign fails to deliver what is promised, disgruntled contributors can potentially band together to file a class-action lawsuit. Alternatively, as at least one state attorney general has already done, government regulators can sue the sponsors of crowdfunding campaigns for violating consumer-protection laws (Gross, 2014). In the business planning phase, therefore, entrepreneurs should realistically assess the company's capabilities, including product specifications



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and supply chain flexibility to meet demand spikes that can result in the wake of popular crowdfunding campaigns. Bold innovation that overcomes seemingly insurmountable obstacles is a hallmark of the entrepreneurial spirit. But in crowdfunding, overpromising and failing to deliver not only alienates backers and customers, it is a recipe for fraudulent misrepresentation lawsuits or other unsavory allegations.

### Corporate and Tax Laws

Finally, entrepreneurs who take a proactive approach to crowdfunding laws should not overlook two straightforward legal issues in crowdfunding that relate to basic corporate and tax law. Raising capital as an entity instead of as an individual can shield crowdfunding entrepreneurs from personal liability. Launching a crowdfunding campaign may be a personal decision to give creative voice to a dream. But raising money is a business activity, so establishing a business form for the business activities is usually a wise decision. Establishing a limited liability company or corporation is typically a simple and inexpensive task to complete online. Once the company is created, it is a good idea to obtain an employer identification number (EIN), open a bank account in the company's name, and conduct business in the company's name, while following applicable corporate formalities.

Lastly, strategic tax planning can help mitigate the effects of receiving significant crowdfunding income before incurring offsetting expenses. When raising money through a non-securities form of crowdfunding, such as Kickstarter's reward or pre-purchase model, the contributions a company receives are typically treated as income (not capital contributions, as in equity crowdfunding for securities) (Dietz, 2014). So, for example, if a start-up company with minimal income or expenses raises $1 million in a 60-day crowdfunding campaign, the cash influx can change the company's tax situation dramatically. If the company's tax year closes soon after receiving the income, there might be little opportunity to incur expenses to deduct against the $1 million crowdfunding income. Treating tax laws that apply to crowdfunding proactively, entrepreneurs can develop a plan in advance for handling crowdfunding contributions in a tax-efficient manner.

## CONCLUSION

This chapter demonstrates that the "proactive law as competitive advantage" theoretical paradigm yields valuable insights for entrepreneurs to execute crowdfunding offerings successfully. Incorporating a proactive, *ex ante* approach to law when planning the business aspects of a crowdfunding offering affords at least two benefits. First, like preventive medicine, companies can avoid crowdfunding's legal pitfalls altogether instead of being forced to treat legal maladies after they occur.

Second, using laws proactively can create competitive advantages in crowdfunding offerings. Developing a competitive advantage goes far beyond simply managing a company effectively. Competitive advantage grows out of a transformative culture that embraces law as a proactive opportunity and overcomes the natural tendency to view law as an obstacle. Entrepreneurs can create value by linking their legal strategy to their business goals, developing unique crowdfunding offerings, and cultivating a favorable public image through social media. The uniqueness, or rarity, of the crowdfunding campaign should complement a company's very identity, making the strategy difficult to imitate or replace with similar substitutes because of its intimate connection to a company's particular mission, organizational structure, or other foundational principle.



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Beyond crowdfunding, the theoretical approach of "proactive law as competitive advantage" has much to contribute to further research at the intersection of law and entrepreneurship. This chapter demonstrates the viability of the theory in one area of entrepreneurship (crowdfunding). The next step in the research is to develop the theory in relation to entrepreneurship more broadly. For example, additional analysis should reveal how the paradigm of proactive law as competitive advantage applies in the context of disruptive innovation versus sustaining innovation. The former encapsulates new technologies that threaten existing market leaders, whereas the latter includes incremental improvements that existing market leaders make to their products.

Research on proactive law as competitive advantage should further illuminate the dichotomy between disruptive and sustaining innovation. For example, where first-mover advantage is high, as in disruptive innovation, does proactive law as competitive advantage serve as an even greater entrepreneurial incentive? Or is proactive law as competitive advantage an equally beneficial approach in the context of sustaining innovation?

This chapter takes an initial step towards uniting the study of entrepreneurship with theories of proactive law as competitive advantage. Crowdfunding, though, is only one example of entrepreneurial innovation in the modern economy. In view of the fundamental importance of entrepreneurship and innovation to international economic competitiveness, a greater understanding of the links between legal strategy and entrepreneurial success would be beneficial.

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## KEY TERMS AND DEFINITIONS

**Competitive Advantage:** A company's ability to provide unique, long-term value in a superior way than its rivals.

**Corporate Governance:** How a company is managed and controlled, including, for example, rights to vote at company meetings, participate in board meetings, and receive periodic updates on performance.

**Debt:** Securities that offer the holder a pre-determined rate of return over a specified time period and typically do not give the holder corporate governance rights.

**Disruptive Innovation:** New technologies or business models that threaten status-quo market leaders.

**Equity:** Long-term, profit-sharing securities that give the holder corporate governance rights along with an ownership interest in the company.

**Preferred Stock:** Securities that specify particular rights and preferences, often combining elements of debt and equity securities and typically including corporate governance rights.

**Proactive Law:** A forward-looking approach to law that integrates legal strategy into business goals before legal problems arise.

**Securities:** Investment instruments that the Securities and Exchange Commission regulates (in the US).

**Unequity:** Short-term, profit-sharing securities that do not give the holder corporate governance rights.

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# Chapter 37
# Objective and Subjective Aspects of Decision-Making Support at the Mesoeconomic Level

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## ABSTRACT

*This chapter substantiates the importance of improving management effectiveness of mesoeconomic systems in current economic conditions and the features of mesoeconomy as a management object which defines the high complexity of decision making at the meso level. There are approaches, methods, and technologies which provide support of the decision making process via the integration of formal methods for objective data analysis and methods of accounting to solve semi-structured complex problems of mesoeconomy. A cognitive approach, and an approach involving the integration of the On-Line Analytical Processing and Data mining technologies with methods of a multi-criteria assessment of alternative, in particular methods of Multi-Attribute Utility Theory are considered in the chapter. Cognitive mapping of interaction between state and business in a mesoeconomic system are included as a case-study.*

## INTRODUCTION

Today evolutionary development of national economies in the global economic environment greatly depends on the level of management efficiency in meso-economic systems. This is due to the fact that the meso-level of the economy acts as a kind of an economic space center, the connecting element between individual economic entities of micro-level and a higher macroeconomic level of state or suprastate governance. On one hand, at the meso-level there is an opportunity to fully realize the systematic approach to management and to create effective institutional mechanisms enhancing economic development, but on the other hand to provide adaptation of the mechanism of management to tasks and features in the

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functioning of specific economic systems. Thus, firstly at the meso-level there is a possibility to transmit and implement managerial impulses of macro-level and through the stimulation of the formation and activation of certain economic ties and relations to achieve significant changes in the socio-economic development; and secondly, to adapt tools and institutes of development to the needs and the potential of concrete meso-economic systems, which are significantly different.

Together this allows considering meso-economies as a kind of development center which will create positive impulses that, in turn, will affect the entire hierarchical structure of the economy under condition of the effective management. Because of this and due to the binding of the economic potential to the specific areas and territories in the global economy, the formation of competitive advantages occurs mainly at the meso-level and the processes of globalization and regionalization or localization occur parallel.

The meso-economy is a complex, open, and dynamic socio-economic system. Thus, the specific features of meso-economic systems which are shown in the complexity of their structure, uncertainty, and unevenness of development, the inaccuracy of an assessment of parameters of such systems, differentiations of social and economic characteristics of components and subsystems, determines the complexity of making effective decisions in the managerial process. A significant number of tools have been developed in recent years to improve the efficiency of the decision-making process in economic systems of various levels.

However, in most cases the use of traditional tools of decision support at the meso-level is complicated either by insufficient data availability for analysis or the inability to rely only on objective indicators in managerial processes and so forth due to the importance to consider account the social (ecological/ethical/cultural) dimension of the development of meso-economic systems. Solving the problem of effectiveness of meso-economic management systems is possible through exploration of the targeted system and justification of decisions based on structuring of problems in complex and uncertain situations and the lack of statistical information about the current processes and phenomena.

This is possible by using methods and tools of neuroeconomics which allow encoding the subjective value of decision-making, determining the role of emotions in decision-making, investigating the interaction of emotional and rational mechanisms of decision-making, analyzing and modeling the basis of social and economic interaction and, thereby, overcoming the limitations of the classical economic theory and increasing the efficiency of decision-making processes at the meso-level.

This chapter focuses on explaining the approaches, methods, and technologies supporting management decisions at the meso-level of economy that take into account and integrate the objective and subjective aspects of managerial decision-making based on a combination of quantitative and qualitative procedures, including the analysis of possibilities of their application for the increase of management efficiency of meso-economic systems in modern economies.

## BACKGROUND

Over the past 10 years, meso-economic systems were deeply investigated by a number of research projects (e.g., Gorelova, Matveeva, & Nikitaeva, 2007; Kleiner, 2011; Kolesnikov, 2009; Wolfram, Torsten, & Henning, 2015; Ng, 1987). The term "meso-economics" dates back to the 1980s when several economists began to question a bridge between two main economic paradigms in the mainstream economics: micro- and macroeconomics. The term "meso-economics" has two meanings. First, it reflects the subject sphere of research – the part of a national economy located in economic space between the macro- and



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micro levels. This sphere includes branches, markets, regions, major cross-sectoral economic systems, business networks and clusters grouped according to various criteria (Kleiner, 2011). However, meso-economics is the scientific discipline that studies this subject area and possesses specific approaches, methodology, and tools.

In some work devoted to meso-economic systems, the researchers focus on the formation of a unified theory of operation for all types of meso-economic systems, as well as the development of an integrated management methodology for the meso-economy. The creation of a methodological and methodical approach to the analysis and synthesis of meso-economic systems is most often based on the genetic characteristics of national economies and specific tasks of a certain period in its development (e.g., Kleiner, 2011; Druzhinin & Ionov, 2001; Inshakova & Samokhin, 2008). Along with general theoretical and methodological developments, significant amount of research is devoted to the study of specific types of meso-economic systems: regions, clusters, and industries; and development of managerial mechanisms and the technology for them (Amin,1999; Kleiner, 2011; Moulaert & Mehmood, 2010; Porter, 2001; Scott & Garofoli, 2007; Vázquez-Barquero, 2002).

Another perspective of the meso-economic systems consideration (especially clusters, networks and regions) suggests their study as various groups of institutionally-coordinated agents, interacting arenas and subpopulations of human agents, firms and other organizations. In accordance with this approach, the meso-economy is a complex system consisting of a large number of heterogeneous elements, interacting in nontrivial ways. Accordingly, the properties of meso-economic systems and forecasts of its development cannot be determined through analysis of these individual elements, but it requires a comprehensive study of the phenomenon of self-organization and behavioral processes (Wolfram, Torsten, & Henning, 2015, p. 421). This approach is closely connected to synergetic one for researching complex socio-economic systems (Knyazeva & Kurdyumov, 1999).

Considering the important role of meso-economy in ensuring successful economic development of the micro- and macroeconomic systems, a significant amount of research has been devoted to the development management of meso-economic systems (Granberg, 2005; Kiselyova, 2007; Kolesnikov, 2009). In scientific research on the development management of meso-economic systems, an important place has been occupied with cases and works revealing the specific features of meso-economies (Druzhinin, 2005; Puppim de Oliveira, Ali, 2011; Rodríguez-Pose & Comptour, 2011).

The understanding of the importance of effective management of meso-economic systems to ensure economic growth and development and simultaneously the complexity of decision-making process at the meso-level has led to the emergence of scientific activities aiming to develop novel approaches, models, and analytical tools for decision support in complex systems with semi-structured problems. Among these approaches, an important role is played by the cognitive mapping approach (Gorelova, Verba, & Zakharova, 2004; Knyazeva, & Kurdyumov, 1999; Vanwindekens, Stilmant & Baret, 2013; Gorelova, Matveeva, & Nikitaeva, 2007).

In addition, the development of decision making methods in complex socioeconomic systems has been implemented in other areas of researches in recent years. Despite active development of instrumentation and decision support systems based on quantitative data analysis (Lotov, Bushenkov, & Kamenev, 2004; Katsko, Krepishev, & Sennikova, 2011) and subjective methods of modeling the problem situation (Anich & Larichev, 1996; Pirlot & Bouyssou, 2009; Saati, 2008), integration of appropriate techniques, corresponding to meso-economic systems to improve the efficiency of their management development has not been sufficiently implemented.



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Combining emotional (subjective) and rational (cognitive, objective) systems in the decision-making process recently has occurred in the course of research in neuroeconomics bringing together neuroscience, economic science, psychology, and several other disciplines (Klyucharev, Smits, & Shestakova, 2011). Studies on the duality of decision-making processes (Kahneman, 2003), mechanisms of subjective utility determination in the selection process out of the possible alternatives, risk account (Knutson, Taylor, Kaufman, Peterson, & Glover, 2005; Kuhnen & Knutson, 2005; Rangel, Camerer, & Montague, 2008), temporary discounting (McClure, Laibson, Loewenstein, & Cohen, 2004) are of particular importance in the context of the given research. However, for meso-economics and for improving the efficiency of decision-making at the meso-level, neuroeconomics, characterizing the peculiarities of emotional and rational systems of decision-making, is not used sufficiently.

Despite a considerable amount of research on the chosen area of interest, research on meso-economy management is mainly concentrated either on a strategic level of decision-making with help of methods of expert assessment and quality tools of strategic analysis, or on management of certain types of meso-economic systems or subsystems. This is largely determined by the complexity of decision-making formalization of procedures at the meso-level. There is an obvious lack of high quality of scientific papers on the development of methods of meso-economy management based on simultaneous consideration of objective and subjective characteristics of management process. The level of technological support of decision-making is insufficient for the effective management of complex socio-economic systems on the meso-level. In turn, research on the development of methods and tools to support managerial decision-making in complex systemsare more focused on the corporate sector of the economy and / or technological systems, and are insufficiently used in the management of various meso-economic systems.

Thus, sharing the attitude of researchers, highlighting the importance and complexity of effective management of the development of meso-economic systems, it is appropriate to focus in this chapter on identifying the specific characteristics of meso-economy as an object of management. The analysis of approaches, methods, and tools used in this area of research which consider the objective and subjective aspects of managerial decision-making, based on a combination of quantitative and qualitative procedures (methods of activating the thinking of experts and methods of formalization of complex systems, subjective methods of modeling the problem situation and quantitative data analysis) to improve the efficiency of the decision-making process at the meso-level.

## MANAGEMENT OF MESO-ECONOMIC SYSTEMS: FEATURES AND TOOLS FOR DECISION-MAKING SUPPORT

### Meso-Economy Features as an Object of Management

Theoretical studies and practical experience show that sustainable competitive advantages in the global economic system are largely dependent on geographically-localized factors (Amin, 1999). For example, studies by Enright (2000) show that out of 160 industrial clusters, more than 60% are world leaders and only about 20% are characterized by weak competitiveness. Comparable results were obtained in relation to the characteristics of the innovative capacity of clusters (Enright, 2000). Along with clusters other meso-economic systems demonstrate a higher level of competitiveness in today's global economy through the use of consolidated potential of businesses and synergies. The competition on the world



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market increasingly involves the regions but not the individual enterprises and organizations at the microlevel. In recent years, this has led to increasing attention of researchers to meso-economic systems of different types.

On one hand, meso-economic systems can be considered an intermediate level between the macro- and micro levels of an economy which can provide a transfer of administrative impulses from macro to microeconomic level and get an appropriate feedback. On the other hand, in some extent it is an independent system, existing in countries with a market economy. Meso-economy represents a part of national economy located in the economic space between macro- and micro level. While microeconomy studies empirically verify existing objects – firms, for example – and their behavior, and macroeconomy operates on the aggregated data and the designed objects modeling this or that aspect of interaction of groups of economic subjects, the meso-economy is compelled to serve as the conductor of various levels of hierarchy of the economic sphere and to work with diverse and very different objects.

In fact, the meso-level of the economy is considered a certain economic space center, an intermediate link (or rod) connecting economic agents on micro and macro level of national and/or supranational governance. Additionally, meso-economic systems have a fairly high level of independence and integrity. Their size, structure, resource availability, and functioning features allow application of a systematic approach to managing the economy to create effective strategies and institutional mechanisms of development while ensuring the adaptation of the managerial mechanism by objectives and specific features of functioning of the economic systems at the meso-level.

Modern researchers have identified four main components of meso-economy:

1. Branch meso-economy (branches and subsectors of a national economy).
2. Interindustry meso-economy (inter-industry vertical complexes, steady agrarian and industrial complexes or military industrial complex).
3. Regional meso-economy (regions, territorial clusters, and other regional groups of organizations).
4. Interregional meso-economy which is based on the territorial social and economic formations. (Kleiner, 2011, p. 6).

In this case, such economic systems as branches of industry, regions, large inter-sectoral economic complexes, industrial clusters, and agglomerations could be treated as meso-economic systems which belong to the class of socio-economic systems and contain active elements. This means their basic element is the human being; human activity determines the characteristics of all processes of functioning and development of such a system. Connection, due to which these systems exist, characterize the complex and contradictory relationships between people based on their interests, values, motives and attitudes.

For example, from an economic point of view building a nuclear power plant may become a rational way to solve the electricity shortage problem in the region as a meso-economic system. However because of a number of reasons (e.g., for fear of emergencies with nuclear reactors), the population of the region can prevent this decision, preferring a more expensive way to purchase energy from the neighboring regions.

In spite of a large variety all meso-economic systems have some common features:

- The presence of independent objects in their composition.
- The presence of a complex set of relations between objects, including elements of competition, cooperation, coordination, and co-evolution.



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- The presence of many subjects, the development of which is non-linear, and the interaction has non-trivial character.
- Failure in determining the strategic priorities of development, based on formal criteria only.
- Absence of a single management center.

On this basis, it is possible to assume that it is inexpedient to apply directly the traditional methodology of macroeconomic modeling, based on concepts of perfect market or a planned regulation, either the methodology of microeconomic modeling, based on concepts of rational behavior of a subject and a choice for optimal solutions made by well-known criterion with given constraints for making effective decisions at the meso-economic level. Instruments of decision-making support at the meso-economic level should consider system characteristics of meso-economy, functioning on an integrated methodological platform of systemic, institutional, and evolutionary paradigms in economics (Kornai, 1998; Kleiner, 2011).

Meso-economy as a system is complex and can be characterized by a large number of elements and relations between them and the environment, different kinds of uncertainty, imprecision of quantitative and qualitative estimation of parameters in such systems, different levels and obviousness of the development, nonlinearity of processes inside the system, and many others. In this regard, the problem of forecasting and governance of complex systems development is being considered as semi-structured. Simultaneously, the need to establish effective governance mechanisms of meso-economic systems and the development of appropriate tools to support managerial decision-making process is becoming increasingly important.

The management of meso-economy from a system approach position assumes:

- Problems of meso-economy are defined with taking into account the relationship with systems of a higher level hierarchy which includes the considered system and with which it is linked by common goals.
- The purposes of meso-economy should be considered in connection with a system in general or with larger systems.
- Sustainable development of the system cannot be obtained by making small changes to existing accepted forms; it is based on planning, assessing and making decisions that involve new and positive changes for the system as a whole.
- The system approach and system paradigm are based on such methods of reasoning as the induction and synthesis, which are different from the methods of deduction, analysis and reduction, used to improve systems.
- Planning of the sustainable development of the meso-economic system represents a process in which the scheduler assumes the role of a leader, in order to lead, but not to be lead by someone (Gorelova, Zakharova, & Radchenko, 2006).

Thus, for effective system management of meso-economy, it is important to understand the specificity of its relationships and their mutual influence and to find, first of all, the points of the managerial influence, the activation of which will allow to achieve positive changes in terms of resource constraints in the system as a whole; secondly, to find ways for the effective activation of such points. This requires improving the model and analytical tools to support the corresponding decision-making. In such a case the process of decision-making at the meso-level cannot be fully formalized, as it heavily depends on the



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value orientations of individuals defining the strategy. However, the subjective approach to the decision making process in a given perspective may also not be sufficiently effective, because people without using appropriate analytical tools may not simultaneously take into account all the internal and external factors, affecting meso-economic development.

Meso-economy as a control object has its own peculiarities; thus, to accept effective administrative decisions it is important to use such methods and technologies that can identify patterns and characteristics of the appropriate system development and apply them to determining the strategic guidance and plans for their implementation, based on objective data and subjective preferences, use of the potential of economic and mathematical methods and human intuition, value preferences and experience of specific subjects of management.

## Abilities to Integrate Objectively and Subjectively Focused of Decision-Making Process Support Instruments

Over the twentieth century, the complexity of managerial decision-making has continuously increased and is today higher than ever before. A rapidly changing world, including many interrelated subjects and objects, constantly provides new challenges for decision makers. This is especially important in meso-economic systems due to the fact that to provide for their successful development it is necessary to make non-standard decisions in conditions of uncertainty. One of the main actual directions of increasing of administrative activity efficiency is its automation. The main results of automation include improving the quality, rapidity and efficiency of management decisions, and increasing the efficiency of management as a specific type of activity. Automation of administrative activity is performed using the entire set of available methods and affects the entire range of management activities. An increasingly important role, respectively, in support of the activities of the subject of management is played by the decision support systems (DSS), allowing to estimate a set of various alternatives and to choose the best opportunity.

The results of several studies show that many systems of decision support for the management of meso-economic systems, of most interest are On-Line Analysis Processing technologies (OLAP) which are an adequate instrument of consideration for problems with a complex structure. OLAP class applications and technologies are designed to collect, store, and analyze multidimensional data in support of the management decision making process. To be considered an OLAP application, the DSS is also required to be a high-speed system.

An important feature of OLAP is the ability to analyze large volumes of data describing the studied object or process from different angles by providing analytics with tools for working with multidimensional data. The same quantitative characteristics can be described, represented and evaluated from different sides. The system must provide a multidimensional conceptual view of data, including full support for multiple hierarchies, as this is the most logical way to conduct strategic analysis. The data that the application works with are coming from transactional systems. On the basis of the analysis of these data the report with which the user works is under construction. This report is the main instrument for working with an OLAP application. Reports the user creates on his own, choosing dimensions, levels of aggregation, or receives regular reports with pre-defined structure. Thereafter, different analytical tools are used to the data selected for concrete research.

For example, analysis of information on innovative regional clusters can be conducted on such measurements of measures such as types of products, years, companies-participants of the cluster and such measurements of facts as cost, selling price, and the amount of goods sold. In OLAP applications, in



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addition to specific to OLAP methods, are methods used for the discovery of new knowledge such as Data Mining (DM) methods whch can be defined as the process of decision support based on the search of hidden patterns within the data (Parsaye, 1998).

Thus, the DM method is designed to detect previously unknown dependencies and works regardless of users, sometimes in fully automatic mode. As a rule, the application of this class handles very large volumes of data. DM methods focused on fulfilling the tasks of reporting, classifying, clustering, anomaly detection, induction rules, correlation, and regression analysis. In meso-economic systems, DM can solve a wide variety of tasks. For example, it can refer the regions of a particular cluster to increase the targeting of measures for economic policy or to optimize the selection of suppliers by product groups within the value chains for vertical clusters.

Actually, the OLAP application is to build a report that is a subset of the multidimensional cube and use in relation to them both OLAP-operations, and specific methods, for example, such as data mining. Analytical study of the problem with the use of DM is a specific process of obtaining new knowledge, built on the use of a variety of techniques which include decision trees, fuzzy logic methods, evolutionary programming, artificial neural networks, genetic algorithms, and other neuroeconomic methods.

A set of OLAP and DM methods used in combination are suitable for analysis of evidence and consideration of the problem situation from different sides, although it does not sufficiently supports the incorporation of subjective positions of decision-makers, and processing of information, bearing a qualitative assessment of objects. Therefore, it makes sense to use OLAP applications as a base platform for information-analytical support of decision making at the meso-level, but methodological apparatus of corresponding DSS should be expanded through the integration of technologies that allow taking into account subjective factors and parameters.

In other words, in the decision-making process in the meso-economic system the process of building a model of objective reality must followed by the process of creating the selection criteria based on their subjective assessment by the decision-maker. It is caused by the compliance of current state of economic system to the development purposes, and also the actually desirable future condition of the system is defined, eventually, by the person. However, the objective limits of human capacity for simultaneous assessment of multiple parameters determine the need for the application of specialized techniques.

In case of a large number of alternative criteria, the decision-makers' activity becomes so complicated that errors become inevitable. To solve problems with too much complexity for humans, multi-criteria methods for decision support are used. The model of preferences and policy of the decision makers is constructed using them. Methods based on models of subjective nature allow abstracting from the subject area and solve within a single algorithm the structured tasks of choosing between alternatives.

Widespread and repeated software implementation in the world theory and practice has received three approaches to multi-criteria assessment of alternatives in solving problems that lack of objective models:

- Analytical Hierarchy Process (AHP).
- Multi-Attribute Utility Theory (MAUT).
- ELimination Et Choix Traduisant la REalité (ELECTRE).

As the results of several studies show (Pletnyakov, 2012), the MAUT and AHP methods are the most promising for efficient working with a multidimensional OLAP-cube in the decision support system for making difficult decisions in relation to semi-structured problems. The process of using MAUT for



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working with OLAP-cube is fairly simple, in its framework each containing important for making decision cube dimension is evaluated using a utility function (Pletnyakov, 2012).

Using a combination of these objective and subjective approaches and their analytical units allows:

- Determining accurately the position of decision-makers on the importance of indicators and criteria. These methods give the opportunity to express a position of decision-makers with high precision and to obtain a correct idea of the meaning of the criteria in needs for building integrated indicators based on the views of several different decision makers in different positions.
- Choose the alternative that best meets the criteria. In case of finding the exact values of criteria it is a technical problem to be solved by the following the algorithm of the method.
- In case of a wrong choice to correct the importance of a particular criterion and to use the assessment of the importance of criteria in the future.

In fact, implementation of the proposed approach first permits the analyzing of information on the construction of objective models of meso-economy, its subsystems and problematic situations, and then providing instrumental support for the subjective assessment of validity, and selection of targets and criteria of their achievement by the decision maker. This provides the opportunity to actually combine formal mathematical methods as well as intuition and experience of the specific people. Initially, empirical knowledge is used as a source of information and at the decision-making stage, experience and knowledge about the importance of certain factors which are not amenable to formalization, are used by management.

A methodologically valid decision-making process has significant advantages over a choice made only on the basis of experience and intuition of experts or decision-makers. Even in case of the wrong choice, it is known by what criteria it was accepted and it is possible to conclude that the position was wrong. If the decision-maker wishes to follow intuition, it is possible to receive positive result but not information about how the decision differs taken earlier, and if different, in what direction. In case of successful adoption of solutions based on special calculation and analytical methods, the replication of successful experiences is possible. Therefore, it is possible to expect essential increases of efficiency of decision-making processes in general, in case of integration of the considered methods of support of decision-making within a uniform system.

In this manner, the use of OLAP and DM methodologies in combination with the MAUT allows analyzing objective data across different meso-economic parameters, identify hidden dependencies and patterns of its development in an automated process and take into account the subjective preferences of the decision-maker while choosing strategic guidelines. However, the use of appropriate technologies requires specific skills for decision-making process and comprehensive IT support. This approach is not the only one to solve the problem of efficiency increase in meso-economic decision-making by considering the simultaneous consideration of its objective and subjective components. A cognitive approach and tools of its practical implementation have significant potential in this context.



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## Potential of Cognitive Mapping in Support of the Meso-Economic Decisions-Making Process

A cognitive approach already discussed is a variant of integration of assessment methods of objective reality and subjective preferences of decision-makers which also permits simultaneous use of the potential of formal methods and expertise of the people to improve the process of decision making at the meso-level of the economy. Cognitive mapping is based on the methodological platform of epistemology, cognitive psychology, neurophysiology, anthropology, linguistics, information theory, decision theory, theoretical computer science, and the theory of artificial intelligence. It allows solving semi-structured problems by using intuition, experience, associative thinking and guesswork of experts, as well as providing a tool for transferring of such knowledge for quantitative calculations. Cognitive mapping focuses on the structuring knowledge of experts in a particular subject area and can be used in meso-economic decision making support systems development.

The technology of cognitive modeling allows defining possible and rational ways of management of a situation to provide the transition of purpose from initial negative states to positive. The technology of cognitive modeling allows meso-economic management to be proactive and avoiding potentially dangerous situations to be alarming and conflicting and, in case of their occurrence, to make rational decisions.

The main task of constructing cognitive models is to provide better understanding of an observed event, phenomenon, and process. Modeling sets to the researcher a certain scheme within which it is possible to test concrete hypotheses and, which allows predicting events. Cognitive models, based on the information processing scheme, are a heuristic construct used to organize the existing volume of literature, the stimulation of further research, coordination of research efforts and facilitate communication between scientists and decision makers. Cognitive models are based on conclusions drawn from observations. Their tasks are to provide intelligible representation of character of the observed, to help make predictions in the development of hypotheses, to develop mechanisms of managerial decision-making process.

The great advantage of a cognitive model is that it allows one to view the entire picture in details so as to integrate logic and imagination. Cognitive mapping consists of the following: the development of the structure of gained knowledge of the subject area (defined by a list of the main concepts of the subject area), the identification of relationships between concepts, and the definition of the relation of the subject area with the surrounding world. Thus, cognitive mapping is a convenient tool for the study of semi-structured problems, promotes better understanding and identifying contradictions and qualitative analysis of systems (Gorelova, Verba, & Zakharova, 2004).

The logical stages of cognitive model creation reflect consecutive transition from allocation of the basic factors characterizing a problem situation (including the target and operating factors) to a group of factors in the blocks forming tops or "concepts" of a cognitive map, further to definition of connections between factors, to identification of cause and effect chains, creation of a cognitive map and, at last, drawing up the equations of a cognitive model and checking its adequacy (Gorelova, Zakharova, & Radchenko, 2006). Cognitive modeling begins with the development of a cognitive map of the object. The cognitive map – a structural diagram of causal relationships in the system – is created to understand and analyze the behavior of a complex system.

Let the system consist of a set of the V separate elements. Two elements Vi and Vj of system on the scheme can be represented as separate points-tops and if the Vi element is connected with the Vj element by relationship of cause and effect, they should be connected by the focused arch. It is quite possible that consequences can be the cause of change of other factors. It is probable that consequences



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can be the cause of change of other factors. Cause and effect chains can be quite long and complicated. The causality analysis is required, for example, to predict the development of the situation, implementation of various schemes of management processes in the system. After creation of the cause-and-effect relationships, strategies of decision-making in a given subject area are defined.

Definition of elements of the object studied with a definite purpose and establishment of communications between elements is conducted with the help of experts by collecting and processing statistical information on the basis of studying of literary data via theoretical knowledge in a particular subject area. Cognitive structuring is resulted by development of the informal description of knowledge about a particular subject area which can be represented in the form of a diagram, graph, matrix, table, or text. The schemes of cause-and-effect relationships, interpreting the views and opinions of decision-makers, referred to as cognitive maps. The concept of cognitive maps – maps of cognition – is initial in the cognitive analysis and modeling of difficult situations (Gorelova, Matveeva, & Nikitaeva, 2007).

The cognitive map displays only the fact of existence of influence of factors at each other. Its main advantage is the ability to perform qualitative simulation. The complex nature of influences of factors, dynamics of changes of influences depending on change of a situation, temporary changes of factors are not displayed in a cognitive map. Considering all of these circumstances requires transition to the next level of structuration of information, displayed in a cognitive map (i.e., transition to a cognitive model is required). At the level of the cognitive model, each connection between factors of a cognitive map reveals to the corresponding equation which may contain both the quantitative (measured) variables, and qualitative (unchangeable) variables.

Process of cognitive modeling includes the following stages.

**Stage One:** The cognitive analysis of a difficult situation (immersion in a problem, identification of a problem) consists of a number of actions: statement of the problem and research objectives, the study of the current situation or process from the position of set goal; collection, systematization, analysis of existing statistical and qualitative information on problems (sources of information: statistical reports, documents, experts, media, private sources, etc.); the allocation of the main characteristic features of the process under study and identification of the relationships between them; determination of actions of the basic objective laws (e.g.,economic, social, political, ecological) of studied situation developments that will allow marking out objective dependences and tendencies in the processes happening in situations; definition inherent in the studied situation of requirements, conditions, restrictions; allocation of the main subjects connected with a situation, determination of their subjective interests in development of this situation that will allow to define possible changes in objective development of a situation, to allocate factors which subjects can really influence; definition of ways, mechanisms of action, implementation of economic and political interests of the main socio-political subjects that will allow to define further strategy of behavior and prevention of undesirable consequences of development of a situation.

**Stage Two:** Creation of a cognitive (graph) model of a problem situation consists of the following actions: allocation of the factors, according to experts characterizing a problem situation (allocation of the basic (main) factors describing a problem essence, allocation in total of basic factors of target factors, allocation in total of basic factors of the governing factors which will be a potential leverage over the situation in the model, definition of the factors - indicators reflecting and explaining development of processes in a problem situation and their influence on various spheres (e.g., economic, social, etc.); grouping of factors in blocks; the factors that characterize the area



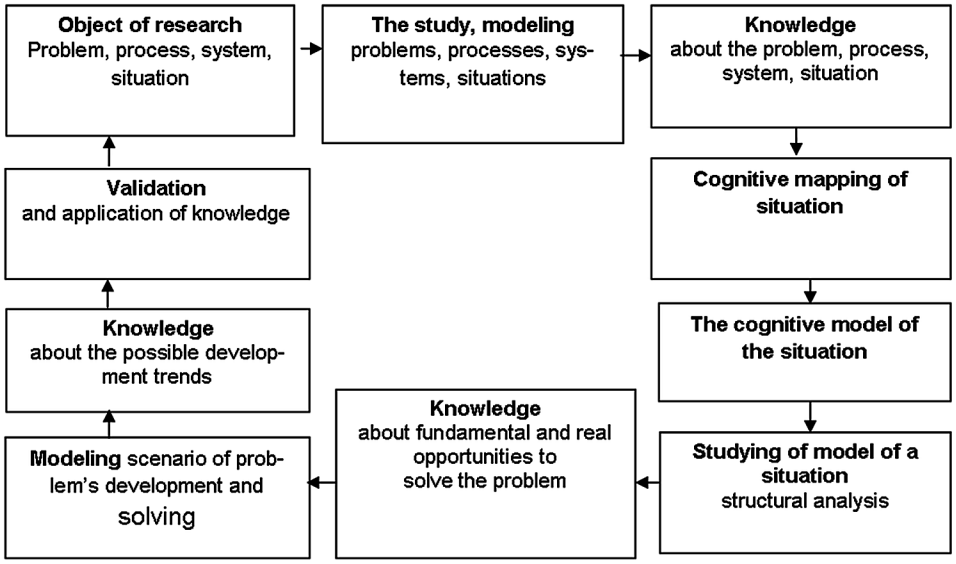
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of the problem and defining processes in this area are combined in one unit; there may be options depending on the specifics of the problem, objectives of analysis, number of subjects, situations, etc. Allocation in the block certain group of integrated indicators (factors), on which change can be judged. The general tendencies in this sphere, allocation within the block of indicators – factors – characterizing tendencies and processes in this sphere; definition of connections between factors (definition of connections and interrelations between blocks of factors that will allow to define the main directions of influence of factors of different blocks at each other, definition of direct connections of factors in the block: definition of the direction of influences and interferences between factors (i.e., identification of a chain: "reason – consequence"), determination of character and extent of influence, definition of connections between factors of various blocks; the creation of a cognitive map (graph) of a given situation; drawing up equations of a cognitive model of the situation; checking of an adequacy of the model.

**Stage Three:** Modeling. Cognitive modeling of processes in a situation is represented in the form of cyclic procedure (Figure 1).

Knowledge regarding the studied problem is widening; hence, the initial model is constantly improving. Thus, a cognitive modeling toolkit allows conducting structural and dynamic studies of complex structured objects which include socio-economic systems of the meso-level, and identifying a causal links between their basic components. The practical significance of the presented approach is determined by the ability of the assessment of the meso-economic effects of management actions on the basis of scenario analysis to improve the quality and soundness of decisions. In other words, a cognitive approach allows defining the basic characteristics of meso-economic system and to simulate scenarios of its development to identify effective management decisions with regard to their impact on the system as a whole. Thus, one of the main features of the cognitive model is a construction of a unique cognitive model for each meso-economic system.

*Figure 1. Procedures of cognitive modeling (Gorelova, Matveeva, & Nikitaeva, 2007)*






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## Cognitive Mapping of Interaction between State and Business in Meso-Economic System

Cognitive mapping of interaction between the state and business in meso-economic systems of the Southern Russian region will be presented as a case-study. The appropriateness of considering this case in our research is determined by the fact that a significant potential for improving the efficiency of development of meso-economic systems is incorporated in the space of partnerships between the state and business. Numerous examples of establishing public-private partnerships in developed and developing economies demonstrate significant positive effects for both participants of partnership relations and the economy as a whole due to the integration of capabilities and institutional resources of public and private structures.

Thus, the use of such forms of cooperation as business participation in the expertise of draft laws and regulatory impact assessment and creation of expert and advisory bodies, development of strategies and regional development programs, cross-sectoral personnel rotation, implementation of administrative reforms, leads to the improvement of state regulations which also includes the avoidance of redundant functions, adoption of balanced decisions, reduction of administrative barriers, improvement of the investment climate, growth of professional competencies among officials and improvement of public administration efficiency. Together, this helps to create an institutional environment that promotes effective economic development (Nikitaeva, 2007).

However, in some countries, including the modern Russian economy, the potential for cross-sectoral collaboration is significantly underutilized. Public-private partnership is not often a strategic priority since its potential is underestimated. Dependences between the proliferation of public-private partnerships and development of meso-economic systems are not clearly defined. Consideration of a meso-economic system of interaction between government and business as a subsystem of the regional economic system as a whole with the use of a cognitive approach will provide information to understand the essence of the occurring processes and form the basis for creating appropriate management decisions in the future.

Some results of study over the modern Russian system of interaction of state and business allow concluding that, on one hand, the main problems in the area under consideration is the class of semi-structured, the tendency of domination of the uncertain dependences, signs, and characteristics is observed. On the other hand, a number of effects, arising from the interaction between government agencies and commercial companies, are quantifiable, and requires determination of the relevant parameters and monitoring schemes. This gives the possibility of modeling the process of managing the interaction of state and business in the economic system of the region based on a combination of quantitative and qualitative procedures, and to increase the effectiveness of the adoption and implementation of management decisions aimed at the improvement of existing mechanisms of inter-sector cooperation through the development of an appropriate decision support systems.

To solve this problem, it is possible to use a cognitive approach assuming a combination on the basis of consecutive application of various methods of modeling of difficult systems including methods aimed at activating the use of intuition and experience of experts, and formalized representation methods of complex systems. The application of the cognitive approach allows building a systemic-functional model of interaction of state and business, which will present the main elements of the system in conjunction with the components of the economic system of the region and reflect the functional relationship between the factors determining the specificity of interaction between government and businesses in meso-economic projections.



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It gives the opportunity to run a dynamic system behavior modeling of interaction between government and business with application of cyclic procedures according to the scenario approach. From the formal perspective the cognitive map (the basis of cognitive model) is a symbolic directed graph (digraph) as:

$$G = \langle V, E \rangle, \tag{1}$$

where: V is the set of tops, tops ("concepts") $V_i \in V$, i =1, 2,…, k are the elements of the studied system; E is a set of acrs, arcs $e_{ij} \in E$, i,j=1, 2, …, N represent the interrelation between tops $V_i$ and $V_j$; the impact of $V_i$ on $V_j$ in the studied situation can be positive ("+"sign above the arc), when the increase (decrease) of one factor leads to an increase (decrease) in other negative ("- "sign above the arc), when the increase (decrease) of one factor leads to a decrease (or increase) in the other, or absent (0). Cognitive map G can be represented by a matrix of relations $A_G$ .

A matrix of relationships $A_G$ – is a square matrix, of which lines and columns are marked with tops of graph G, and on crossing of an i-line, j - column stand (or not) number one if the relation between the Vi and Vj elements exists (does not exist) like:

$$A_G = \left[ a_{ij} \right]_{k \times k}, a_{ij} = \begin{cases} 1 \text{ if } V_i \text{ is connected with } V_j \\ 0 \text{ if } V_i \text{ is not connected with } V_j \end{cases} \tag{2}$$

Building a cognitive map of interaction between government and business was based on a consistent application of the methods of structuring the "top down" and "bottom-up". Initially a detailed study of selected consolidated blocks of factors and then aggregation of the selected indicators were conducted with the conservation cause-and-effect relationships of their mutual influence. The choice of the concepts of systemic-functional cognitive model of interaction between government and business in the economic system of the region and the determination of cause-effect chains requires some explanation.

The state in the considered context represents a complex of institutes and officials and includes public authorities, and also public institutions implementing functions of regulation, and functions of providing services and managing state property. State institutions and organizations are represented in the system, on one hand, as a key component of the management subsystem of the system of interaction, but on the other hand as the main subjects of cross-sectoral collaboration. The public authorities play a dominant role in the budget process, prioritization of the distribution in expenditure of the regional budget, providing, respectively, the impact on the quality and of the populations' well-being in the region.

In addition, the regulatory impacts of governmental structures significantly affect regional markets of goods and services. Legislative and rulemaking activity of the state bodies has a direct impact on the formation and development of the institutional environment of the region. State agencies performing the functions of providing services and managing state property, are the major stakeholders in the development of public-private partnerships, particularly in infrastructure, investment and social spheres.

The impact of public authorities on business companies is conducted through the formation of a specific institutional environment, the use of various forms and technologies of interaction with the business community and its individual representatives, as well as through direct and indirect financial incentives and the regulation of business actors at the expense of the regional budget. Thus, tax assignments of business make bulk of receipts of revenues of the regional budget that puts its fullness



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into direct dependence on activity of business firms. Another group of factors affecting the regional budget is associated with functionality of regional markets of goods and services, while the demand is determined by the population and by commercial companies (which play a leading role in shaping the supply in regional markets).

A component "business" includes the key performance indicators of business companies in the region, including profitability, production, number of enterprises and organizations, the number of people employed in this sector of the economy, etc. Separation of blocks of indicators of investments and innovations seems reasonable in the framework of a cognitive model. This is due to the fact that these two concepts, although closely linked with accomplishing their businesses, are most dependent on the activities of the regional authorities, the institutional environment of meso-economy, simultaneously providing a significant impact not only on the performance of commercial structures, but also on the competitiveness of the regional economy. Moreover, it is necessary to consider investment and innovative activity of state organizations and, among them, research and educational institutions.

A set of indicators "interaction of state and business" includes the basic principles, forms, and technologies of direct cooperation between the government and business structures, forming the core mechanism for the implementation of public-private partnerships. It is the interaction that influences the processes of transformation of the institutional environment, the success of business development and transformation in the governmental bodies under the influence of the feedback loop. Direct two-way connection of an interaction concept with the top of innovation is due to the stimulation of innovative activity in the result of joint efforts of actors from different sectors as well as provision of innovative forms and technologies of cooperation between state institutions and business.

Regional risks are considered in this model from several positions. First, from the point of view of economic entities: for business firms enterprise risks are in direct dependence on degree of uncertainty of the business environment that allows speaking about existence of the inverse functional connectivity of the regional risks of commercial companies, and the interaction between the state and business in the region (including information exchange). In turn, the assessment of enterprise risks of companies corresponds to decisions on innovative and investment activity of economic entities. Thus, it is necessary to emphasize that innovation and investment are factors enforcing risks emergence due to the nature of these phenomena. Secondly, internal and external risks of regional economy are considered, including economic, political, social, environmental, financial, investment, criminal, and legislative risks are in the number of regional risks.

It should be noted that functional relations of certain types of risks with other concepts of the cognitive map can be both direct and indirect. In particular, increases of investment productivity of businesses and creation of new industrial facilities in most cases have a negative impact on the environment of the regional socio-economic system, as it increases environmental risks. The creation of new jobs within the same sample contributes to the reduction of social risks in the region. Based on the analysis of existing information (in the form of quantitative and qualitative data) about the condition of the system of interaction between state and business in the context of a particular socio-economic system of the region, a list of factors and indicators that characterize the area of a cognitive map was offered.

1. Regional budget may be defined as: $X_1, x_1^i \in X_1, i = \overline{1, n_1}$, where:
   $x_1^1$ - balanced budget;
   $x_1^2$ - budget expenses;



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$x_1^3$ - budget income;
$x_1^4$ - budget of development;
$x_1^5$ - the functioning budget;
$x_1^6$ - share of own income of the consolidated budget of the region in its full expenses;
$x_1^7$ - interbudgetary relations;
……
$x_1^{n1}$ - other indicators.

2. Indicators of state organizations may be defined as: $X_2, x_2^i \in X_2, i = \overline{1, n_2}$, where
$x_2^1$ - integrity of systems of public administration in the region;
$x_2^2$ - quality of public administration;
$x_2^3$ - the number of officials;
$x_2^4$ - administrative reform;
$x_2^5$ - regional policy;
$x_2^6$ - population confidence in the authorities;
$x_2^7$ - the activities of state organizations performing the function of providing services;
$x_2^8$ - characteristics of state-owned assets in the social, educational, infrastructure and other spheres;
……
$x_1^{n2}$ - other indicators.

3. Population of the region may be defined as: $X_3, x_3^i \in X_3, i = \overline{1, n_3}$, where:
$x_3^1$ - population;
$x_3^2$ - the number of economically active population;
$x_3^3$ - the unemployment rate;
$x_3^4$ - average income per capita;
$x_3^5$ - the standard of living;
$x_3^6$ - GDP per capita;
$x_3^7$ - national and cultural features;
$x_3^8$ - the coverage of social services;
……..
$x_3^{n3}$ - other indicators.

4. Regional markets for goods and services may be defines as: $X_4, x_4^i \in X_4, i = \overline{1, n_4}$, where:
$x_4^1$ - dynamics of prices in regional markets;
$x_4^2$ - supply and demand;
$x_4^3$ - saturation of the regional markets;
$x_4^4$ - types of branch markets;
……
$x_4^{n4}$ - other indicators.

5. Institutional environment may be defineds as: $X_5, x_5^i \in X_5, i = \overline{1, n_5}$, where:



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$x_5^1$ - legal environment;
$x_5^2$ - development of market economy institutions in the region;
$x_5^3$ - administrative barriers;
$x_5^4$ - the development of market infrastructure;
……
$x_5^{n5}$ - other indicators.

6. Business may be defined as:: $X_6, x_6^i \in X_6, i = \overline{1, n_6}$ , where:
$x_6^1$ - the output of products and services;
$x_6^2$ - basic production assets;
$x_6^3$ - profit / loss;
$x_6^4$ - the number and sizes of business entities;
$x_6^5$ - branch structure;
$x_6^6$ - exports and imports, interregional exchange;
$x_6^7$ - the number of people employed in business structures;
$x_6^8$ - average salary of employees;
$x_6^9$ - corporate social responsibility;
……
$x_6^{n6}$ - other indicators.

7. Investments may be defines as: $X_7, x_7^i \in X_7, i = \overline{1, n_7}$ , where:
$x_7^1$ - the total value of investments in the region;
$x_7^2$ - investments into fixed capital (fixed capital formation??);
$x_7^3$ - the share of residents ' investments in the regional economy in the total value of investments;
$x_7^4$ - sources of investment;
$x_7^5$ - investment efficiency;
……
$x_7^{n7}$ - other indicators.

8. Innovation may be defined as:: $X_8, x_8^i \in X_8, i = \overline{1, n_8}$ , where:
$x_8^1$ - innovation activity of enterprises and organizations;
$x_8^2$ - innovation-focused investments;
$x_8^2$ - the structure and the number of types of innovation in the region
……
$x_8^{n8}$ - other indicators.

9. Interaction of state and business may be defined as: $X_9, x_9^i \in X_9, i = \overline{1, n_9}$ , where:
$x_9^1$ - the forms and technologies of interaction between government and businesses;
$x_9^2$ - models of public-private partnership;
$x_9^3$ - the role of business in making decisions at the meso-level;
$x_9^4$ - organizational and infrastructure parameters of interaction;



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$x_9^5$ - economical and administrative parameters of interaction;

$x_9^6$ - balance of private and public interests;

$x_9^7$ - information support of interaction;

……

$x_9^{n9}$ - other indicators.

10. Risks may be defined as: $X_{10}, x_{10}^i \in X_{10}, i = \overline{1, n_{10}}$, where:

$x_{10}^1$ - economic risks;

$x_{10}^2$ - political risks;

$x_{10}^3$ - social risks;

$x_{10}^4$ - ecological risks;

$x_{10}^5$ - financial risks;

$x_{10}^6$ - investment risks;

$x_{10}^7$ - legal risks;

……

$x_{10}^{n9}$ - other types and indicators of risks.

The purpose of the developed model is to research the influence of interaction between government and business on the economic system development in the region in order to determine the directions, scope, and power of managerial actions that ensure the desired change of the target factors, which are the concepts of "population", "regional budget", "business". Such earmarking of targeted factors requires some adjustment. First of all, it is consistent with these strategic goals of Russia's development as the improvement of people's welfare and poverty reduction on the basis of dynamic and sustainable economic growth, as well as the way to achieve the stated objectives, consisting in the solution of a problem of the dramatic increase in the competitiveness of three components: human rights, state institutions and business. The regional budget is selected as one of the main indicators of quality of activity of the regional public authorities.

Creating a cognitive map on which the interaction system of state and business are embedded in the economic system of the region. Due to the fact, that when making management decisions it is necessary to assess the full range of consequences of regulatory decisions, since the goal of management in the proposed context is the use of cross-sectoral collaboration as a mechanism for the successful development of meso-economic systems. In this case, and state organizations and business structures are both factors of governance in the framework of interaction management of the state and business and integral components of the regional economic system, whose functions go far beyond multi-sectoral partnerships. The cognitive map of the system interaction of state and business in the regional economic system, reflecting the basic, strongest dependencies of the analyzed phenomena is presented in Figure 2.

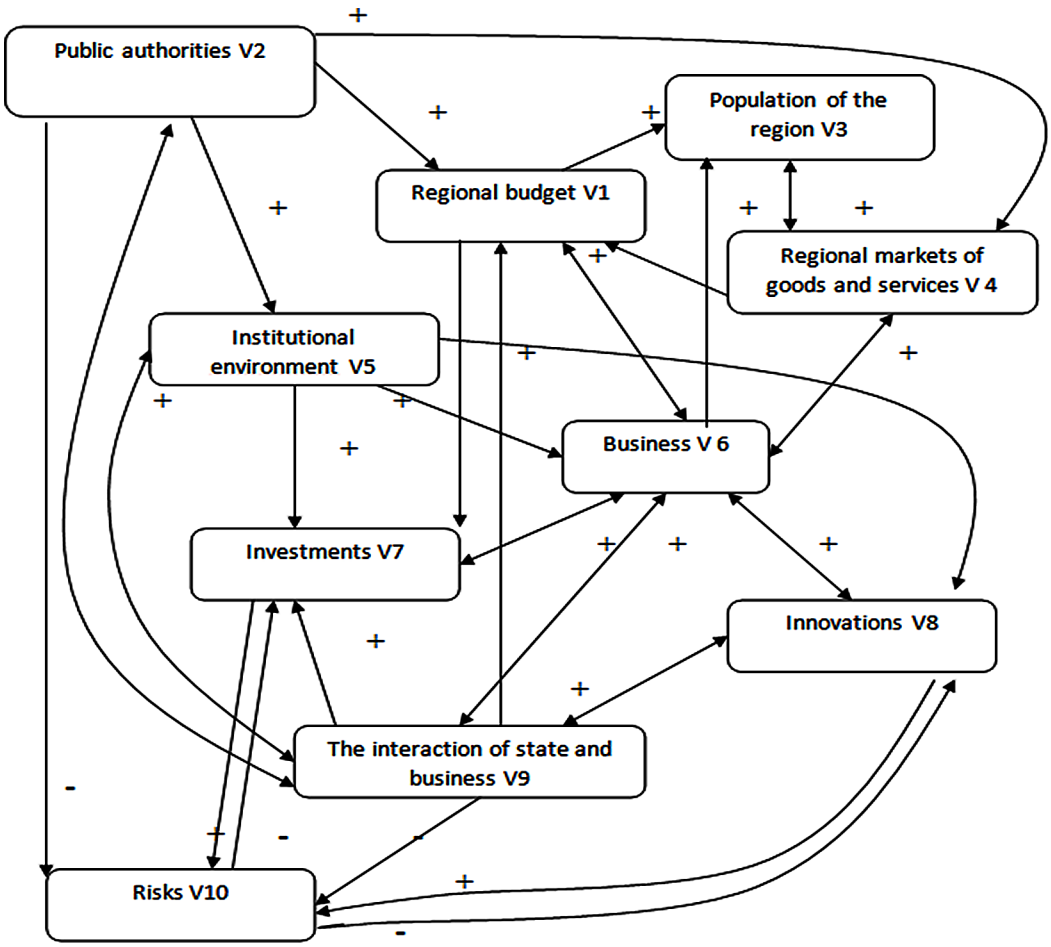
Type of the cognitive model most corresponding to the tasks solved in research taking into account the existing restrictions, is the vector functional graph (F-graph) which represents a tuple:

**K=<G, X, F>,** (3)



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*Figure 2. The cognitive map of the interaction between the state and business in the regional economic system*




where:

1. G=<V,E> - vector graph;
2. X – set of parameters of tops V; X={$X^{(Vi)}$}, i=1,2,…,k, $X^{(Vi)}$={$x^{(i)}_g$}, g=1,2,…$n_i$; i.e. each top of the parameter vector is independent from each other and put in compliance $X^{(Vi)}$, (or one parameter $x^{(i)}_g=x_i$, if g=1); X:V→R, R – set of real numbers;
3. F=F(X,E)= F($x_i$, $x_j$, $e_{ij}$) – the functionality of transformation of arches putting in compliance to each arch or a sign (“+”, “-”), or weight coefficient $\omega_{ij}$, or function f($x_i$, $x_j$, $e_{ij}$) = $f_{ij}$ (Gorelova, G., Matveeva L., Nikitaeva A., 2007).

When choosing the sign dependence of the tops of the graph on the cognitive map the matrix of contiguity of the offered configuration of a cognitive map will look as follows:



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$R =$

| | $V1$ | $V2$ | $V3$ | $V4$ | $V5$ | $V6$ | $V7$ | $V8$ | $V9$ | $V10$ |
|---|---|---|---|---|---|---|---|---|---|---|
| $V1$ | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| $V2$ | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | −1 |
| $V3$ | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| $V4$ | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| $V5$ | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 |
| $V6$ | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| $V7$ | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| $V8$ | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| $V9$ | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | −1 |
| $V10$ | 0 | 0 | 0 | 0 | 0 | 0 | −1 | −1 | 0 | 0 |

In the functional graph generated, perturbation coincides with the received perturbation and is equal to the sum of the elementary impulses acting on a top in the given time. Under the influence of various perturbations, the values of the variables at the tops of the graph may change; a signal received at one of the tops, is distributed along the chain to the other, amplifying or fading. The rule (PR) for the change of parameters in tops at the moment $t_{n+1}$ (Gorelova, Zakharova, & Radchenko, 2006, pp. 203-208).

Let the $x_i$ parameter depend on time (i.e. $x_i(t)$, t=1,2,3,...). Then it is possible to define the spread of perturbations on the graph (i.e., the transition of the system from state t-1 to t, t+1,…).

Let the value of $x_i(t+1)$ in the top $v_i$ depend on $x_i(t)$ and from the tops adjacent to Vi. Let $V_i$ be adjacent to $V_j$, let $p_j(t)$ – change in $V_j$ top in t time point, then the influence of this change on the $x_i$ parameter at the time of t will be described by the $\pm p_j(t)$ function depending on the sign of an arch connecting $V_i$ and $V_j$. Generally, if there are some tops of Vj, adjacent to Vi, the spread of perturbation on the graph is determined by the rule defined as in:

$$x_i(t+1) = x_i(t) + \sum_{j=1}^{k-1} f(x_i, x_j, e_{ij}) p_j(t), \tag{4}$$

where initial values of X(0) are knows in all tops and an initial vector of perturbation of P(0).

Modeling can be performed by steps or pulses. The essence of such modeling is that one of the vertices of the graph is set to a definite change. This activating top actualizes the whole system performance. Let present the $f_{ij}$ function between tops $V_j$,$V_i$ using the coefficients $\lambda_{ji}$, $\omega_{ji}$, characterizing the sign ($\lambda_{ji}$: «+» or «-») and the degree of influence of $\omega_{ji}$ parameter of $V_j$ top to the parameter of Vi top; replace the $p_j(t)$ function of influence of change in top of $V_i$, adjacent to $V_j$, with an impulse:

p(n) = x(n+1) – x(n), where x(n), x(n+1) – the values of the indicator in top V in the steps of the simulation at time t=n and follows t=n+1. Then the formula (4) is converted to the form:

$$x_i(n+1) = x_i(n) + \sum_{j=1}^{k-1} \lambda_{ji}\omega_{ji}[x_j(n+1) - x_j(n)], \tag{5}$$



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In models of this type, the coefficients $\omega_{ij}$ characterizing the interaction of adjacent tops can be defined either by expert or statistical methods. The rule (PR) of change for parameters in the tops at the time of $t_{n+1}$ if impulses came to $t_n$ time point in tops:

$$x_i(t_{n+1}) = x_i(t_n) + \sum_{v_j : e=e_{ij} \in E}^{k-1} f(x_i, x_j, e_{ij}) P_j(t_n) + Q_i(t_{n+1}), \tag{6}$$

The impulse generated by the change of a parameter in top:

$$P_{v_i}(t_{n+1}) = \sum_{v_j : e=e_{ij} \in E}^{k-1} f(x_i, x_j, e_{ij}) P_j(t_n) + Q_i(t_{n+1}), \tag{7}$$

As in the f-graph the impulse in the pulse process is represented by the ordered sequence without reference to time, it is possible to use formulae "in n-th time". Then:

$$x_{v_i}(n+1) = x_{v_i}(n) + \sum_{v_j : e=e_{ij} \in E}^{k-1} f(x_i, x_j, e_{ij}) P_j(n) + Q_i(n+1) \tag{8}$$

$$P_{v_i}(n+1) = \sum_{v_j : e=e_{ij} \in E}^{k-1} f(x_i, x_j, e_{ij}) P_j(n) + Q_i(n+1) \tag{9}$$

The impulse process model is a tuple <F, Q, PR> where the F – F-Graf, F=<(V, E), X, W>, $Q=Q(t_n)$ is a sequence of perturbations, PR – the rule of change of parameters. To use the impulse process model within a cognitive approach to assess the impact of management actions on target factors will make a plan of the experiment — the plan of filing a single initial pulse $q_i$ in the top of the chain $q_i$ =+1, $q_i$ = -1, additional single impulses on various n - steps of the simulation (Table 1).

*Table 1. The plan of making managerial impulses to the concepts of the interaction model of state and business in a meso-economic system of the region*

| No | Impulses $q_i$ | Q - Vector of Pulses in the Top | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $V_1$ | $V_2$ | $V_3$ | $V_4$ | $V_5$ | $V_6$ | $V_7$ | $V_8$ | $V_9$ | $V_{10}$ |
| 11 | $q_9$ (simple process) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | +1 | 0 |
| 22 | $q_9$ (simple process) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1 | 0 |
| 33 | $q_5$, $q_9$ | 0 | 0 | 0 | 0 | + 1 | 0 | 0 | 0 | -1 | 0 |
| 44 | $q_5$, $q_9$ | 0 | 0 | 0 | 0 | - 1 | 0 | 0 | 0 | +1 | 0 |
| 55 | $q_7$ (simple process) | 0 | 0 | 0 | 0 | 0 | 0 | +1 | 0 | 0 | 0 |
| 66 | $q_{10}$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1 |
| 77 | $q_5$, $q_7$, $q_9$ | 0 | 0 | 0 | 0 | -1 | 0 | -1 | 0 | +1 | 0 |



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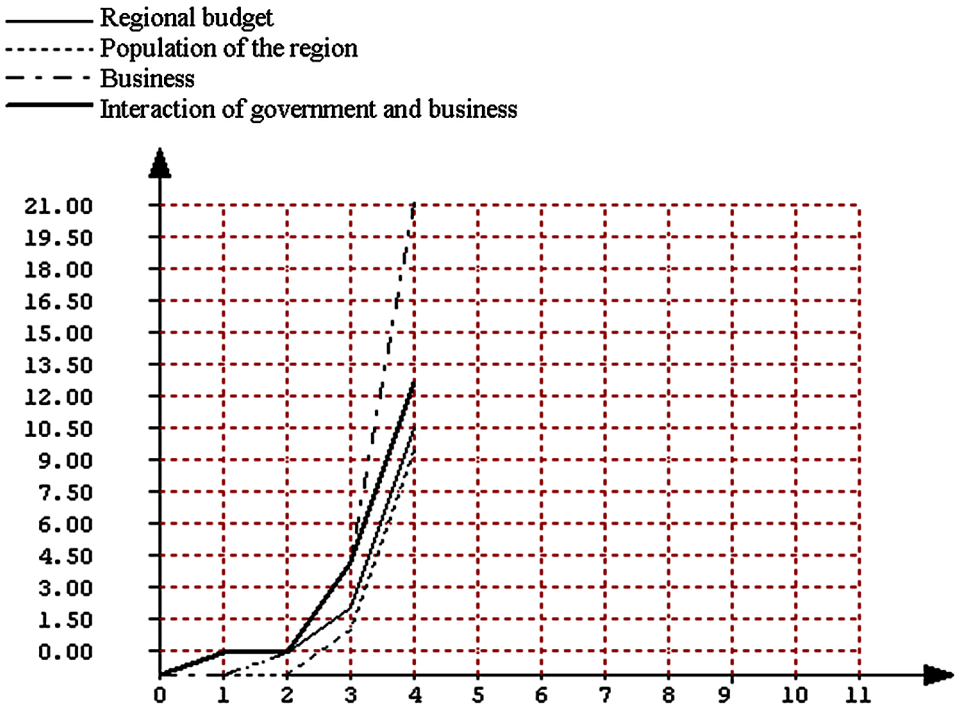
The considered impulses in the practice can have rather accurate economical and administrative interpretation in a quantitative or qualitative form. For example, the single positive impulse in the concept "interaction of the state and business" can correspond to the adoption of the regional law on concessional agreements, stimulating implementation of public-private projects. The negative impulse in the same top can result in reduction of informational openness of public authorities.

To conduct this experiment developed by Radchenko & Gorelova software permitted the solution of all problems in a complex by implementing the methodology of cognitive modeling of meso-economic systems. Thus, emphasis is on the implementation of structural analysis functions: identifying patterns of development situations, identifying "good" and "bad" scenarios, the analysis of the various subsystems interaction and interacting components, search of mechanisms of influence in the management system. Algorithms of the using software are based on cognitive and scenario modeling, theory methods of graphs and the theory of systems.

**Scenario One:** When making a positive single impulse into V9 top – "Interaction of the state and business" through four cycles of the simulation there is a clear tendency of growth of the target factors, and the highest rates of positive dynamics characters for businesses whereas indicators of the regional budget and the population change more slowly, though with rather high rates (Figure 3).

Prolongation of the scenario with the set initial impulse of q9 = + 1 shows a continuation of observed trends (experiment was conducted to the 17th step of modeling).

*Figure 3. Pulse processes at $q_9 = +1$*






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**Scenario Two:** Making of a negative single impulse into V9 top – "Interaction of the state and business" shows a mirror to the first scenario development of a situation (Figure 4).

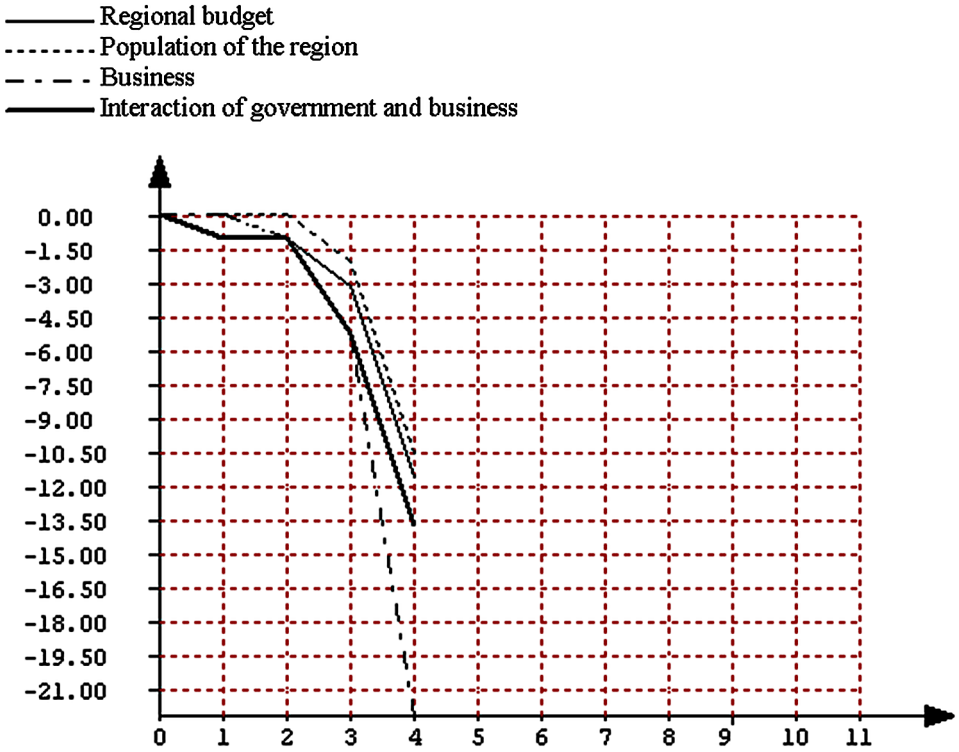
**Scenario Three:** Characterizes development of a situation on conditions of simultaneous entering of a positive single impulse into top of V5 and a negative single impulse into V9 top. The simulation results show that if on the first steps impulses in relation to resulting factors partially compensate influence of each other, already at the fourth step the obvious tendency of a prevalence of negative consequences of deterioration of interaction of the state and business over the initial positive impulses brought on institutional environment of regional economy (for example, due to reduction of administrative barriers) as shown in Figure 5)

These tendencies only amplify further and if the institutional environment worsens slower rates, businesses and the regional budget react to the negative impulse brought in the corresponding top, rather strongly (Figure 6).

The dominant influence of changes of the parameters of V9 top allows for the concluison that improving of the efficiency of institutions in the region should be carried out in conjunction with improving of the interaction between government and business.

**Scenario Four:** Describes the changes of the target factors in the system of interaction between state and business, incorporated in the structure of meso-economic relations when entering a positive single impulse into V9 top ("interaction of the state and business") and negative – in V5 concept ("the

*Figure 4. Pulse processes at q9 = - 1*






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*Figure 5. Pulse processes at $q_5 = +1$, $q_9 = -1$ (steps of modeling 1-4)*

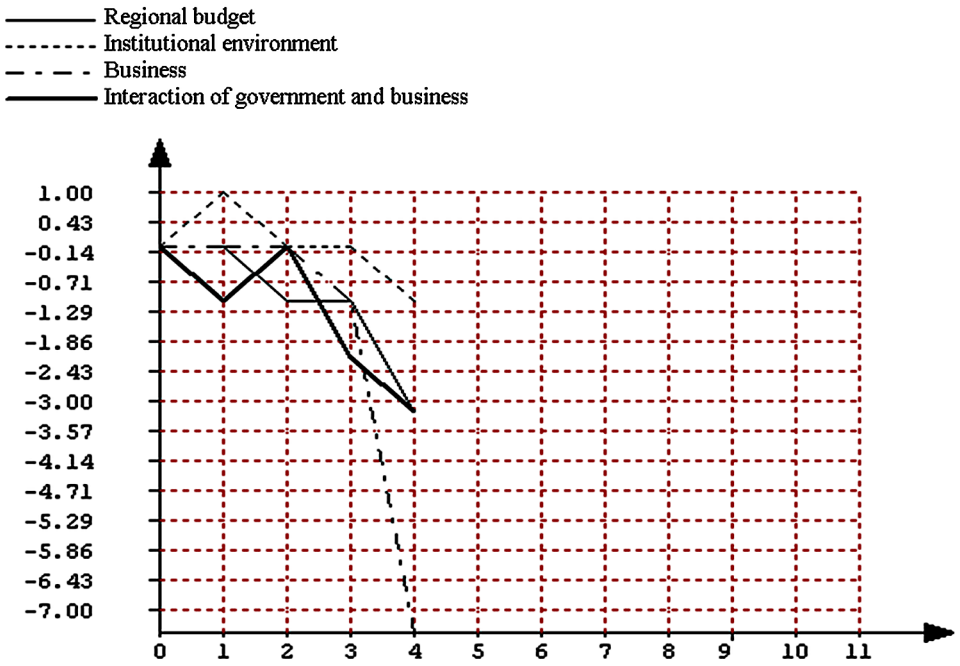
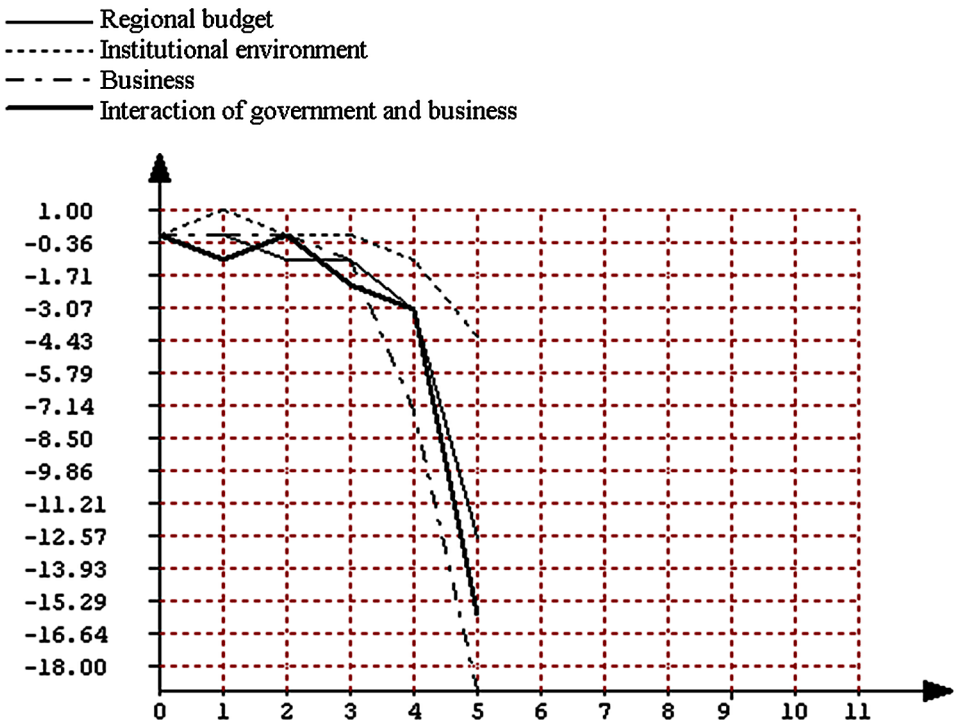



*Figure 6. Pulse processes at $q_5 = +1$, $q_9 = -1$ (steps of modeling 1-5)*






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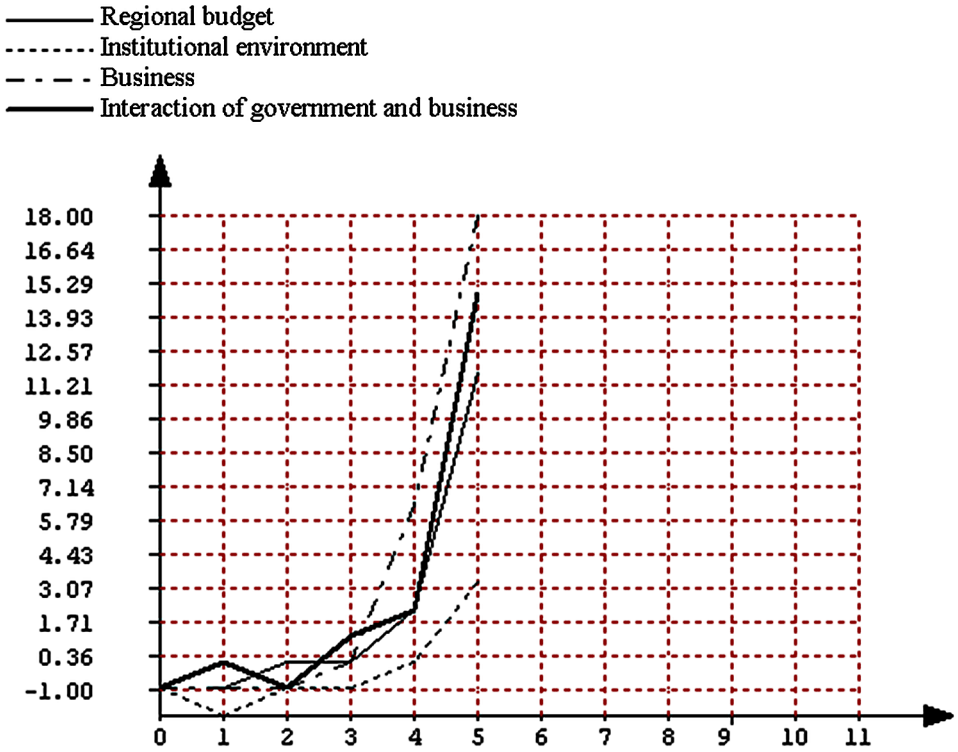
institutional environment"). In reality this scenario may reflect a situation where the development and adoption of the development conception for regional innovation clusters is accompanied by a parallel deterioration of the fiscal environment of small and medium business conduction, which is observed in particular in the Rostov region of the Russian Federation.

That is actually the situation opposite to the previous set of impulses that is considered. Development of the scenario shows that already through two steps of modeling the institutional environment overcomes a negative initial impulse due to the positive role of interaction between the state and business, and further, all the tops show a positive trend (Figure 7).

**Scenario Five:** Entering of a positive single impulse into V7 top – "Investments". Simulated development of the situation shows that a negative relationship between tops "Interaction of state and business" and "Risks" implemented through the concept of "Business" positive correlation between tops V5 and V9, as well as other functional dependencies of a cognitive model can lead to a certain reduction of risk on some steps of modeling even on condition of increase in investment and innovation activity (Figure 8).

Target factors begin to respond to managerial influence corresponding to this version of events through two steps that reflects the time lag necessary in order that impulses came to the interconnected tops due to their transfer on arches of a cognitive map. It corresponds also to real economic practice when time

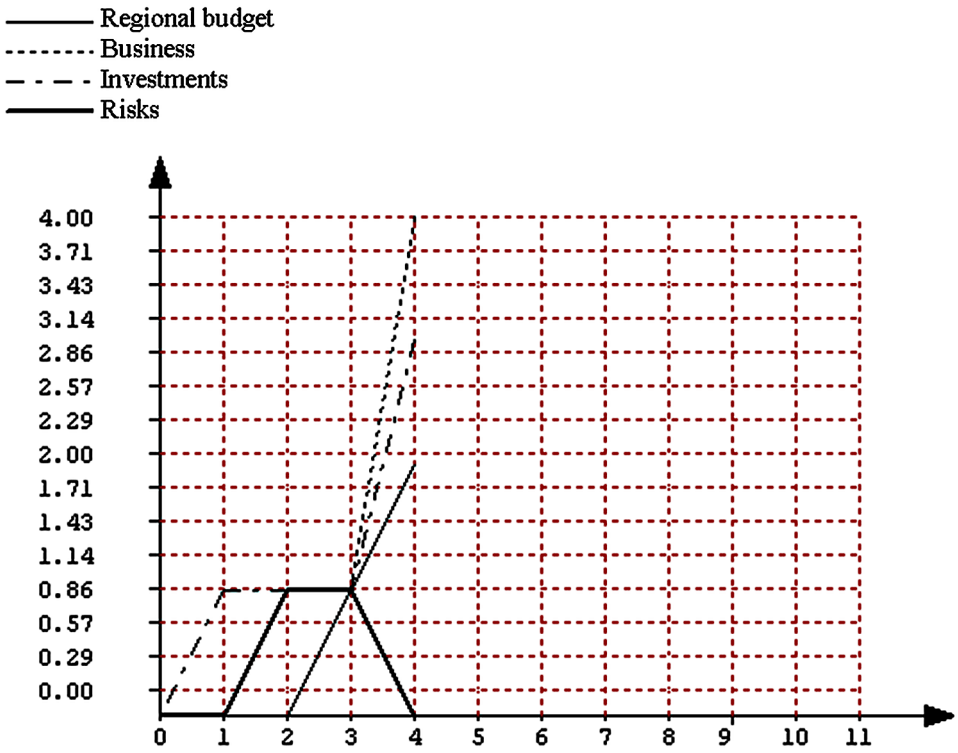
*Figure 7. Pulse processes at $q_5 = -1$, $q_9 = +1$*






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*Figure 8. Pulse processes at $q_7 = 1$ (steps of modeling 1-4)*




for receiving return on investments is required. The steady growth of target factors at lower growth rates of risks is observed further (Figure 9).

**Scenario Six:** Reflects simultaneous entering of negative single impulses into V5, V7 tops and a positive single impulse in V9 top. The analysis of a situation in dynamics allows to conclude that in spite of the fact that on the first steps negative influence of managing factors (which received negative impulses) on business (as a target factor) is observed, since the third step of modeling the condition of the institutional environment in the region is leveled and growth of indicators of business is observed. The following step reflects positive dynamics and operating, and all target factors (Figure 10). Tendencies of growth of indicators of target tops remain at experimental prolongation.

The results of the conducted experiment provided an opportunity to draw some conclusions related to the specific behavior of the meso-economic system of interaction between state and business to the capabilities of the methodology applied to the scenario analysis.

First of all, it is important to note that positive and negative impulses in top "Interaction of the state and business" have stronger impact on a condition of target factors, than impacts on other concepts of a cognitive map. Moreover, at simultaneous entering of multidirectional impulses into the managing concepts, one of which is "Interaction of the state and business", through several steps of modeling (from two to five) changes of target indicators are caused by development tendencies of the relations of



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*Figure 9. Pulse processes at $q_7 = 1$ (steps of modeling 1-7)*

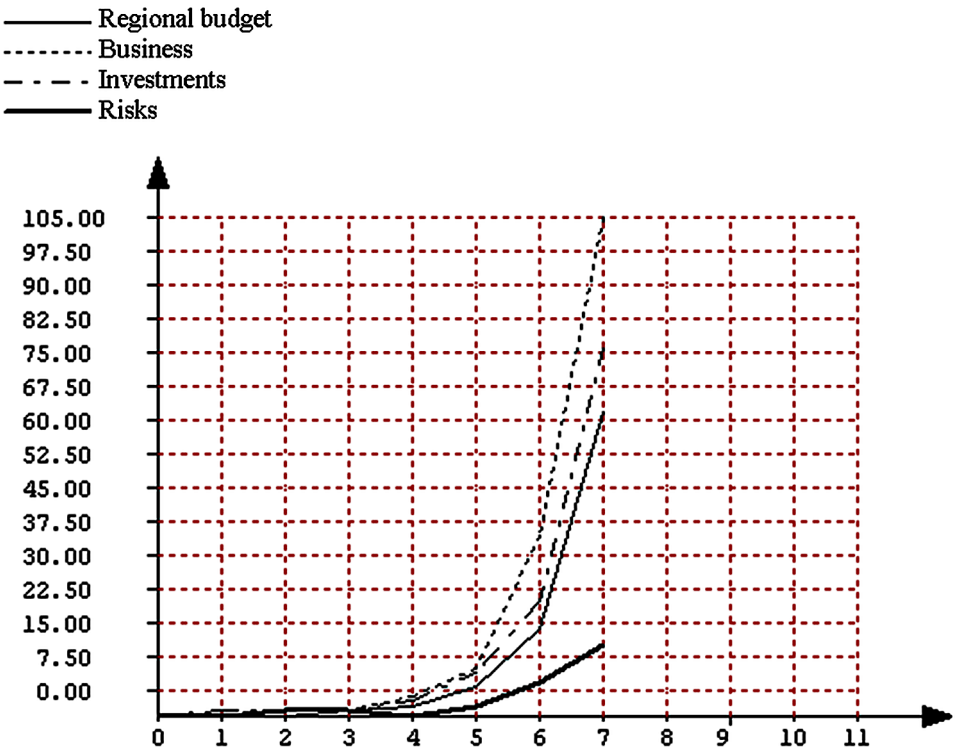
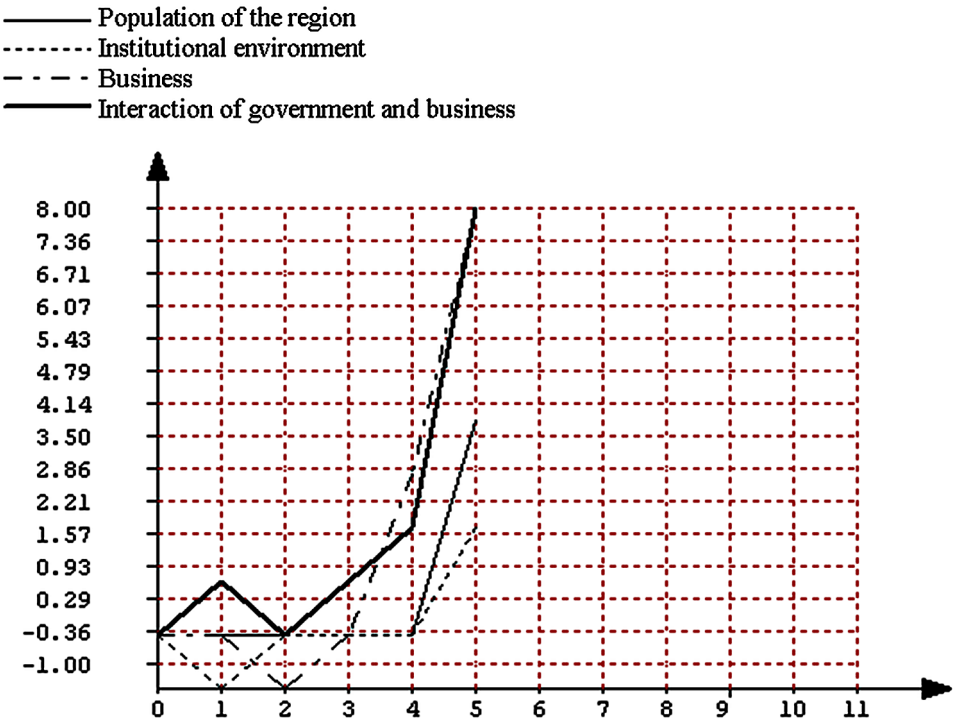



*Figure 10. Pulse processes at $q_5 = -1$, $q_7 = -1$, $q_9 = +1$ (steps of modeling 1-5)*






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state and business. This demonstrates the importance of improving the efficiency of interaction between government and business in conjunction with the strategic management of the regional economy.

Using the proposed model allows to generate alternative options for management decisions regarding the interaction between government and business and to carry out the most effective, in the context of specific realities of the meso-economy. The practical significance of the model can be enhanced as a result of its development in accordance with the specific objectives of socio-economic systems in the areas that provide additional adjustment of the model as an element of the decision making mechanism based on the available empirical data:

- Detailing indicators of the concepts of cognitive maps, which characterize the components of the economic system of the region, and the definition of their values to improve the accuracy of calculations.
- Clarification of identified functional dependencies to determine the weights of the dependencies of the tops of the graph.
- Converting the model to determine ways of improving structural stability of the system.

The advantages of using the discussed methodology, based on a systematic and cognitive approach and adapted to the needs of meso-economy management, consist of the possibility to assess changes of target factors in the regional development on the basis of introducing impulses of various force, orientation and frequency, corresponding to certain governmental influences with economical and administrative interpretation.

It increases efficiency of the decision-making mechanism of meso-economic scale and assess the full range of consequences of regulatory impacts through the application of the model taking into account complexity and coherence of components of meso-economic systems in the conditions of uncertainty of an environment at limited volumes of reliable information for forecasting of development of a situation by statistical methods.

## SOLUTIONS AND RECOMMENDATIONS

Since the dynamics of meso-economic systems, acting to some extent as cores / development centers and basis of modern global economy, in many ways determines the nature and pace of socio-economic development of national economies (being in many ways a conductor of regulating impulses of a control subject at national and supra-national levels, and also economic level of their implementation), an important role is given to the search of methods and tools to increase management efficiency of meso-economies of different types with consideration of their common characteristics and patterns of development.

To improve the effectiveness of decision-making support in meso-economic systems, it is desirable to apply approaches that combine methods of formal data work with the subjective information and personal preferences within uniform methodology. It can be the application of the approach, integrating the OLAP and Data mining technologies with methods of a multi-criteria assessment of alternatives, and also the use of cognitive approach, allowing to apply the methods, aimed at the activization of the use of intuition and expert experience, and methods of the formalized representation of complex systems, and also other approaches respecting the set requirements.



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Thus, for the practical application of the given approaches and methods fundamental role is played by their implementation in the form of the decision support systems, since it greatly expands the number of users of the corresponding technologies. Nevertheless, even the available software applications, which are not always united on the platform of a unified support system for decision-making acceptance, can significantly improve the quality of decision-making at the meso-level through the application of these approaches. This requires the adoption of the conceptual framework of decision-making as a methodological background.

## FUTURE RESEARCH DIRECTIONS

Currently, methods and technologies that will form the analytical apparatus of decision support systems are developing dynamically. Especially high dynamics of growth is shown by Business intelligence (BI) technologies, including OLAP technologies. While the fairly new, but increasing trend is the integration of different methods and technologies within a single software application, reflecting attempt of researchers to unite on a common methodological platform ways to work with objective and subjective aspects of solving semi-structured problems. However, not all of the considered methods can be used together.

Consequently, more research is needed to find the optimal combinations of approaches and methods, working with objective and subjective aspects of the decision-making process, and to identify areas of their convergence. In addition, the use of appropriate technologies requires a certain investment (in the development or acquisition of software) and ensures a sufficient level of staff for their practical application. Accordingly, it is important to study issues of evaluating the effectiveness of decision support systems with non-standard tools supporting the objective and subjective components of the decision making process.

Another point that should be taken into account when addressing issues of information and analytical support of decision making in meso-economic systems is associated with the tendency to strengthen the role of compatibility of information systems used in the modern world. All of these questions actually have set the trends for further research in this area.

## CONCLUSION

Thus, meso-economic systems play an important role in the modern economic development, possessing also specific features as object of management. By combining and effectively using the potential of various economic entities, meso-economic systems have a great potential as points and centers of economic development and become important actors in the global competition. In addition the complexity of decision-making, in meso-economic systems (e.g., regions, clusters, agglomerations, industries, etc.) leads to of the use of appropriate tools and information technologies to support managerial decision-making processes. Appropriate tools should allow management entity to identify explicit and implicit patterns of development and the relationships of meso-economic systems, analyze reliable data and consider the subjective preferences of the decision maker, simulate possible scenarios of events during the implementation of specific management actions.



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Using appropriate technologies, the decision support technologies should allow the user (expert, decision maker, etc.) working effectively with objective and subjective models of reality. It is possible, firstly, in case of application of the cognitive approach, to model meso-economic dynamics; and secondly, when integrated as part of the process of decision making, OLAP and Data mining technologies, and methods of multi-criteria evaluation of alternatives. The case study of the cognitive model construction has shown that its use helps to obtain non-trivial results. In particular, it shows that development of state-and-business cooperation in the region is able to neutralize a number of negative events which are associated with risk increase, deterioration of the institutional environment in meso-economy and have a stronger positive impact on the meso-economic dynamics even in comparison with development of such concepts as investments and innovations.

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## KEY TERMS AND DEFINITIONS

**Business Intelligence:** Methods and tools to translate raw information into a convenient form for conducting business analysis and search of strategic development opportunities at the expense of processing large volumes of unstructured data.

**Cognitive Mapping:** Methodology which allows simultaneous use of potential of formal methods and expertise of the people to improve the process of decision making by structuring knowledge of experts in a particular subject area and using methods of complex system formalization.

**Data Mining:** The collective name used for designation of set of detection methods in earlier unknown, uncommon, practically useful and available for interpretation knowledge necessary for decision-making in various spheres of human activity.



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**Decision Support Systems (DSS):** The interactive information system using data and models of a choice of decisions that provide users with convenient and efficient access to information resources and providing them with a variety of opportunities for processing information and decision-making.

**Meso-Economics:** The section of economic science connected with the study of behavior, the contents and essence of the intermediate systems, standing between micro and macroeconomic systems of national economy and having an important independent value.

**Meso-Economy:** Set of social and economic subsystems of the average level of economic hierarchy and the subsystems lying at lower levels of hierarchy, in particular, enterprises and their groups.

**OLAP (Online Analytical Processing):** A class of applications and technologies designed to collect, store and analyze multidimensional data in order to support management decision making processes.

**The Decision Maker:** The subject of the decision (the manager), empowered and responsible for the consequences of the taken and implemented management decisions.

**The Decision-Making Theory:** The field of knowledge studying the patterns of individuals to choose ways of solving different types of problems and ways of rational choice of the best of possible alternatives.

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# Chapter 38
# The Institutional Imperatives of Local Economic Governance:
## Lessons from a Small Island Developing State

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## ABSTRACT

*In Jamaica, a "new" local governance framework comprises a federated system of development committees (community development committees [CDCs], development area committees [DACs], and parish development committees [PDCs]) purportedly working in partnership with local authorities. Local governance is thus premised on the idea that utilization of local skills, knowledge, assets, and initiatives will lead to economic transformation. Focus has also shifted to micro, small and medium enterprises (MSMEs), given their local embeddedness and potential to foster local economic growth. This chapter investigates the extent to which local economic development (LED) model implementation is supported by appropriate governance structures. It argues that implementation of an LED model represents a decisive shift from local governance to local economic governance, which currently lacks a cohesive policy framework. The consequent effect is nothing more than atomized organizational actions that engender competition among localities and communities rather than a clear growth strategy at the local level.*

## INTRODUCTION

From reading the leading regional newspapers, there can be little doubt that a major topic on the minds of Caribbean policy leaders is the state of Caribbean development. Indeed, the so-called "wicked problems", combined with complexities of small size that further exacerbate the extent of integration into the global economy and levels of public debt, have challenged the economic growth agenda for most of the post-independence period for the majority of small island developing states (SIDs) in the region. An article in the *Jamaica Observer* of November 10, 2013 attributes the following view of the state of Caribbean economies to Dr. Kenneth Anthony, Prime Minister of St. Lucia:

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*(T)he Caribbean is experiencing 'a tragedy of the times', on account of governments being engaged in one form or another of self-denial while the Caribbean remains in the throes of a major crisis like it has never ever experienced before... the spectre of evolving into failed societies is no longer a subject of imagination…how our societies crawl out of this vicious vortex of persistent low growth, crippling debt, huge fiscal deficits and high unemployment is the single most important question facing us at this time…a grave economic crisis is gnawing away at Caribbean countries while governments are busy looking inward – each busy with their own agenda rather than pursuing a Caribbean solution to the economic crisis. (jamaicaobserver.com)*

As leader of a political administration and past legal advisor to the Caribbean Community (CARICOM), the Prime Minister's position makes him a legitimate bearer of the facts, however unsavoury. Furthermore, regional academic and policy discourses lend support to his views (Bernal, 2000; Briguglio, Persaud, & Stern, 2005; Hall & Benn, 2003; Payne & Sutton, 2001; UNECLAC, 2005; World Bank, 2005).

A 2012 ECLAC-AFD study on patterns of Caribbean development highlighted the region's search for an appropriate development model, even after decades of experimenting with approaches that run the gamut from "industrialization by invitation", transfer of technology, diversification of the economies, to promotion of regional integration. Increased incomes in some countries reflect significant socio-economic gains, but the ECLAC-AFD study found that these countries are threatened by low productivity, low levels of competiveness in certain productive sectors, fiscal and debt crises, natural disasters, and climate change. Further, up until the 1980s some economies relied on agriculture as the basis of their economic strategy, but following the loss of their preferential status as primary exporters to Europe, they have had to make the transition to tourism and offshore financial services as sources of income. The study concluded that "a lack of sustained growth in per capita incomes … makes it difficult to lift a large enough segment of the population out of poverty" (p. 8). The economic profile of Caribbean economies is shown in Table 1. Annual growth rates have fluctuated but have remained below world trends for the most part.

The ECLAC-AFD study highlighted the need for the Caribbean to adopt a new development strategy if the region is to successfully confront its social challenges and lessen the economic divide between the region and other rapidly improving economies of the world (p. 18).

For Jamaica, the focus of this chapter, a development path has been articulated in the Vision 2030 Jamaica National Development Plan (JNDP), the designated roadmap to "sustainable prosperity". The catchphrase *"Jamaica, the place of choice to live, work, raise families, and do business"* encapsulates the philosophy that underpins a mission to transform the country from middle income status to "one which affords its citizens a high quality of life and world-class standards in critical areas including education, health care, nutrition, basic amenities, access to environmental goods and services, civility and social order" (JNDP, p. XX11). Vision 2030 sets the parameters for sectoral and institutional reform initiatives, exemplars of which are the attempts to reshape the subnational sphere to create a context conducive to economic transformation of both people and places.

A number of reforms in the public sector had preceded Vision 2030. Local government reform since 1993 has sought to strengthen the democratic ethos and create a context for empowered citizenry and communities. Aligned to local government reform is a federated system of development committees – community development committees (CDCs), development area committees (DACs) and parish development committees (PDCs) – purportedly working in partnership with local authorities to establish a new



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*Table 1. Economic profile of Caribbean*

| Country | Population | Total Area (km²) | Type of Economy |
|---|---|---|---|
| Anguilla | 15,358 | 91 | Consumer Service Export (Tourism) |
| Antigua and Barbuda | 88,710 | 443 | Consumer Service Export (Tourism) |
| The Bahamas | 342,877 | 13,940 | Consumer Service Export (Tourism) |
| Barbados | 273,331 | 430 | Consumer Service Export (Tourism) |
| Belize | 307,000 | 22,966 | Goods Export (Agricultural products and oil) |
| Dominica | 67,757 | 751 | Consumer Service Export (Tourism) |
| Grenada | 104,487 | 344 | Consumer Service Export (Tourism) |
| Guyana | 754,493 | 214,970 | Mixed – Goods Export/ Consumer Service Export (Tourism) |
| Jamaica | 2,741,052 | 10,991 | Mixed – Goods Export/ Consumer Service Export (Tourism) |
| Montserrat | 5,934 | 40 | Consumer Service Export (Tourism) |
| Saint Kitts and Nevis | 52,402 | 230 | Consumer Service Export (Tourism) |
| Saint Lucia | 174,267 | 617 | Consumer Service Export (Tourism) |
| Saint Vincent / Grenadines | 109,333 | 389 | Consumer Service Export (Tourism) |
| Suriname | 524,636 | 163,270 | Mixed – Goods Export (Energy and bauxite/alumina) |
| Trinidad and Tobago | 1,341,465 | 5,130 | Goods Export (Energy) |

(ECLAC-AFD, 2012, p. 8)

local governance framework. This framework rests on the premise that utilizing local skills, knowledge, assets, and initiatives will lead to socio-economic transformation wherever local citizens/communities assume responsibility for their affairs. The emphasis on socio-economic transformation of the local space has given rise to the search for an economic mainstay of these spaces, as well as governance of economic activities. Focus has shifted to micro, small and medium enterprises (MSMEs), given their local embeddedness and in recognition of their potential to foster economic growth, and culminating in Jamaica's Micro, Small and Medium Enterprise (MSME) and Entrepreneurship Policy in 2013. Altogether these varied initiatives have placed local economic development (LED) firmly on the policy agenda in Jamaica. Local governance, which is implicit in the structural changes that have been made at the local level, has now transitioned into local economic governance, perhaps unintentionally. However, implementation of an LED model appears mired in a web of disparate and disconnected institutional arrangements that straddle central and local spheres.

This chapter uses an institutional analytical framework to investigate the extent to which the LED model is supported by appropriate governance structures. The critical question pertains to the character of local economic governance (LEG) in Jamaica or, more directly, whether such an institutional context exists or is even being contemplated. The chapter is divided into five sections: the first engages key concepts; the second examines the social forces that might explain the focus on development below the center; the third and fourth sections explain the policy strategies in Jamaica that suggest an LED model and analyze the issues in relation to the transition to LEG; and the fifth section presents the conclusion.



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## CONCEPTUALIZATION

Two prior actions are required for institutional analysis:

1. Clarifying the concept of institution to define the scope of the analysis; and
2. Discussing the assumptive bases of economic governance drawing on institutionalist thought.

Answers to the question of *what is an institution* have varied depending on the perspective. The interpretation of institutions-as-equilibria that is found in the work of, for example, von Hayek (1967) and Schotter (1981), emphasizes the stability that emerges from actors' mutually understood expectations, preferences, and optimizing behavior. In other words, a particular social order emerges as a result of the interaction of individuals within that order, rather than from an external source. Thus an institution from this perspective is taken to mean "a regular behaviour pattern sustained by mutual expectations about the actions others will take" (Crawford & Ostrom, 1995, p. 583), and therefore an institution is merely an equilibrium. The institutions-as-norms interpretation advocated by Coleman (1987) and others rests on the assumption that observed patterns of interaction and institutions are derived from common understandings among a group about what is proper or improper conduct in a given situation. The institutions-as-rules interpretation that is associated with Shepsle (1989), North (1990), Ostrom (1990), and Williamson (1996), for example, assumes that some patterns of interactions are linked to a common understanding that actions that do not conform with set standards are likely to be sanctioned (Crawford & Ostrom, 1995). Drawing on all three perspectives, institutions may be defined as "enduring regularities of human action in situations structured by rules, norms and shared strategies, as well as by the physical world" (Crawford & Ostrom, 1995, p. 582). Simply put, they are "rules of the game".

Any contemplation of implementing an LED model leads naturally to modes of governance. LED may be defined as "a process which brings together different partners in a local area to work together and harness local resources for sustainable economic growth" (Cardiff Consensus, CLGF, 2011, p. 1). Neo-institutional thought espouses key assumptions about effective and efficient governance of the local economy. These assumptions establish a clear link between the economy and society, and ultimately clarify the nature of LED. The most pertinent assumptions are that:

- The local economy is more than an assortment of "atomized firms and market preferences driven by rational preferences and a set of rules" but is an amalgam of networks and collective influences that shape individual action (Amin, 1999, p. 5).
- The local economy is a highly-diversified set of activities due to the weight of culture and context.
- The local economy is subject to path-dependent change due to the contribution of inherited socio-institutional influences.

From the preceding discussion, which attempted to conceptualize significant dimensions of the framework guiding this chapter, it should be obvious that institutional analysis emerges as a comprehensive and complicated process. Institutional analysis is used to examine how individual or collective interactions and rationalities are structured by norms, practices, and rules to achieve a particular end-state. Collective rationalities and interactions are relevant to the policy issues and responses connected with LED implementation in Jamaica, specifically in light of their organizational context. However, it is beyond the scope of this chapter to attempt more than an abbreviated version of this type of analysis.



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LED-oriented policies are being implemented in the absence of a strong and coherent discourse around an LED model in Jamaica specifically, and the Caribbean Region generally, and as a consequence institutional analysis from the perspective of this chapter serves more as a diagnostic tool for identifying the requisite institutional endowments in support of successful LED model implementation.

## DECENTERING DEVELOPMENT

Perhaps the experience of developing countries, especially small island states such as the Caribbean, provides the best illustration that the "development project" has failed. Binns and Nel (1999) noted the impasse created in development thinking following generations of imported Western development strategies and projects that have had little impact on poverty in Africa. They pointed further to the "dubious results" of structural adjustment programs that in their view have created an "opportunity for more situationally relevant and people-centred development" (p. 389). Sachs's (1992, p. 1) observation that "the idea of development stands like a ruin in the intellectual landscape" suggests that the concerns are not merely about the definition of development, but also about strategies, actors, and their roles, and hints of challenges within geographical spaces that are beyond those of developing countries. Devolution of power to local authorities and communities represents a critical dimension of the "decentering movement" that connects development and governance at the local level. On this point Bardhan (2002) has contended that "in the matter of service deliveries as well as in local business development, control rights in governance structures should be assigned to people who have the requisite information and incentives and at the same time will bear responsibility for the (political and economic) consequences of their decisions" (p. 202). The growing momentum around a "new" paradigm that identifies localities or local/subnational geographical spaces as convenient realms in which to pursue economic growth and improved welfare for citizens might be explained by the influences of key interrelated social forces.

The first of these is the phenomenon of globalization, which has given new meaning to location in light of the increased movement of capital, goods, and people facilitated by changes in technology and competition. In one sense, global markets ease access to resources, capital, technology, and other networks, but in another they reduce the efficiency of the traditional concept of location in terms of approximate distance to markets. In addition, global competition has had contradictory consequences for economic geography, one of which is a diminished role for governments in shaping competitive forces (Wilson, 1995). Porter (1998, 2000) offered the concept of "clusters" as both theoretical and practical response to the illogicalities of globalization. By extension, Porter's concept strengthens Storper's (1997) proposition that localities consist of unique socio-economic elements and characteristics that give them important comparative advantage, making them sites of economic vitality and strength within national economies. Porter (2000, p. 15) defined clusters as "geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (e.g., universities, standards agencies, trade associations) in a particular field that compete but also cooperate". Clusters, in Porter's (1998, 2000) view, provide important insights for both government and industry about the relationship between a business and its environment, and the management tools that are required for competitiveness.

"Cluster thinking" shifts the focus from internal competiveness and strategic factors to external matters, such as business location. The argument is that "companies have a tangible and important stake in the business environments where they are located in ways that go far beyond taxes, electricity costs,



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and wage rates", and that "the health of the cluster is important to the health of the company" (Porter, 2000, p. 16). The implications for government decision-making reside in how economic priorities are designed. Nations' and states' competitiveness demands that sound macroeconomic policies are balanced with deliberate microeconomic interventions, suggesting a policy outlook that assigns new and different roles to levels of government and other institutional actors. "Cluster thinking" has a transformative development management agenda, therefore, for as Porter (2000) has argued:

*Government's more decisive and inevitable influences are at the microeconomic level. Among them, removing obstacles to the growth and upgrading of existing and emerging clusters takes on a priority. Clusters are a driving force in increasing exports and are magnets for attracting foreign investment. Clusters also represent an important forum in which new types of dialogue can and must take place among companies, government agencies, and institutions such as schools, universities, and public utilities (p. 16).*

Where the concept of clusters is relevant to developing countries is in the view that, as critical masses of unusual competitive success in particular business areas, clusters are "a striking feature of virtually every national, regional, state, and even metropolitan economy" (Porter, 2000, p. 15).

Wide-scale adoption of neoliberal policies represents the second set of social forces that may explain rediscovery of *the local* "as the site of empowerment and hence as a locus of knowledge generation and development intervention" (Mohan & Stokke, 2000, pp. 247–248). The governance imperatives accompanying these policies have reignited strong advocacy for decentralization, even though the assumed positive correlation with economic development is contested. Decentralization describes a process in which power is transferred from one level of government to another, explained by Mohan and Stokke (2000, p. 251) as:

*Decentralisation in its neoliberal guise treats the local as a functional, economic space with policies designed to increase the efficiency of service delivery. In this sense the market is seen as a universal principle without any 'geography', although the implication is that local political economies have their own coherence within this totaling logic. Decentralisation simply facilitates the efficiency of these nested local economies.*

The value of economic efficiency has long held sway in arguments in favor of decentralization. Efficiency is thought to reside in high-quality service delivery and regulations that create an environment conducive to investment. This position is associated primarily with *fiscal decentralization*, which promotes the idea that local outputs that are differentiated according to local tastes and circumstances result in higher levels of social welfare (Oates, 1993, p. 240). In other words, decentralization facilitates effective local decision-making on account of increased local knowledge about service delivery demands and supply factors, with greater opportunity to strengthen links with local businesses. Further, decentralization facilitates economic growth on a national scale because of the prospects for reducing corrupt practices.

The counter-arguments are just as convincing: that the level of administrative and institutional capacity required by decentralization can hardly be met at a local level, which is usually constrained by limited resources (human, material, technical). Weak institutional and administrative capacity leads to inefficient and ineffective service delivery (roads, water, etc.), which in turn limits the scope for achieving local economic developmental goals. Conyers (1990, p. 18) added the concept of *elite capture* to the debate,



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noting that "decentralization may increase the participation of the people at the local level but sometimes it is only a small privileged group that gets to participate". Indeed, elite capture can potentially undermine effective business development, as decisions are made to benefit certain individuals rather than to promote general economic growth or achieve collective welfare (Bardhan, 2002; Matinez-Vazquez & Rider, 2005). Thus local government activities with local economic development potential, such as planning, regulation, and business licensing, lose their public interest value through being converted into rent-seeking activities by private interests (Devas, 2011).

The early tension in development economics between the Keynesian interventionist state – with responsibility for correcting market failures and ensuring economic efficiency, growth, macroeconomic stability, and social development – and the minimalist state of the neoliberal era has eased somewhat with the emergence of a *third way* marked by institutional reforms. Support for the *third way* comes from institutional economic thought, three aspects of which were highlighted by Amin (1999). First, derived from economic sociology is the view that markets are social constructs and therefore economic behaviors are "embedded in networks of interpersonal behaviour" (p. 366). Second, evolutionary and cognitive psychology advances that "the creative, learning and adaptive capacities of economic agents are centrally dependent upon the rationalities of their constituent actor networks" (p. 367). Third, "old" institutional economics reinforces the idea that the economy is shaped by enduring collective forces, making it an instituted process. Amin (1999) explained that formal (rules, laws, and organizations), informal, or tacit institutions (individual habits, group routines, social norms, and values) are a part of these collective forces, providing "stability in the real economic context of information asymmetry, market uncertainty and knowledge boundedness, by restricting the field of possibilities available, garnering consensus and common understandings and guiding individual action" (p. 367). In policy action, the third way is encapsulated in the concept of governance in which various actors are assigned a role in the process of development, signaling a shift away from the center. Thus institutions of the state and civil society collaborate to ensure learning, innovation, and "untraded interdependencies" (Cooke & Morgan, 1998; Storper, 1995). Innovation is at the core of economic competitiveness, whether at the level of firms, industrial sectors, or nation-states, and institutions are considered to have a *co-ordinating role* in reinforcing norms, routines, trust, and collaboration within the process of innovation (Leibovitz, 2003, p. 2615).

## INSTITUTIONALIZING LED: THE JAMAICAN EXPERIENCE

Unarguably, an LED paradigm is at an embryonic stage in Caribbean development discourse (see, for example, Schoburgh, 2014; Schoburgh & Martin, 2016), despite trends indicated elsewhere. But even in the absence of a specific LED ideological backdrop, governments in the Caribbean Region have not been idle, taking steps to respond to the economic niches created in local geographical spaces. Jamaica exemplifies this orientation in three policy frameworks, which from the perspective of this chapter represent the institutional foundations for an LED model.

### Federating Development Committees

The decentralization campaign that accompanied the neoliberal policies of the 1980s has given rise to a range of structures purporting to facilitate citizens' participation in development efforts, especially



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in developing countries. Often referred to as *user committees/groups*, or *stakeholder committees*, or *development committees*, these structures are identifiable by a single interest such as women or small businesses, or a multiplicity of interests such as *community development*, and are argued to "catalyse the beginnings of autonomous civil society activity at the local level, so that a start can be made in prying open closed political systems" (Manor, 2005, p. 195; Cornwall & Gaventa, 2001). Some structures are more narrowly focused on *economic development* at the subnational level, which, according to Fraser (1967) presents opportunities for improved relations between government and industry because the former is made more aware of the needs of the latter.

Development committees in Jamaica broadly encapsulate values such as democratic decentralization, participatory development, and "good" [local] governance, as espoused in the literature. They are normatively advantageous from a socio-economic and political perspective, on account of their association with:

- Efficiency and effectiveness in public decision-making, given that their principal function is to bridge the divide between policy and community/local needs in the process of development.
- Equity, based on their design as structures open to all interests and perspectives that rely on local initiatives and creativity, thus facilitating greater social inclusion.
- Political and macroeconomic stability, because of the investment of their membership in quality of development outputs and thus their potential positive impact on governing institutions at the local level and, more widely, on public sector performance.

Development committees are also an institutional response to the effects of rapid urbanization manifesting in a spill-over of economic activities across geographical boundaries that confound systems of control and governance. And when the outcomes of urbanization are viewed in combination with the socio-economic perturbations linked to globalization, development committees represent one set of institutions located on the continuum of the direction in which the state is being "hollowed out".

The "federated" system of development committees in Jamaica can be placed against the background sketched above. Ministry Paper 7 of 2003 assigned them the task of leading the development process at the local level. As a consequence, the 783 communities (demarcated geographical spaces) that make up 14 parishes delineated further into 14 local authorities (i.e., 12 parish councils, 1 municipal council, and 1 corporation) consist of a plethora of single- and multi-purpose civil society organizations (CSOs), with some CSOs coalescing around specific development issues. Development committees in Jamaica range from community development committees (CDCs), through development area committees (DACs), to parish development committees (PDCs). They are "federated" in that the interactions at one level feed into the next, based on a hierarchy of interactions that culminates at the level of the PDC. The PDC is described by the Ministry of Local Government and Community Development as a partnership of stakeholders drawn from local businesses, civil society, elected officials (members of parliament and councilors), state agencies, and other groups, established to co-ordinate and monitor local development (Ministry Paper 7 of 2003, pp. 6–7). At the national level, all PDCs form the national association of parish development committees (NAPDEC) and, with the Social Development Commission (SDC), mediate the interactions between PDCs and other actors in local development, and leverage support for the process.

There is a degree of organizational equivalence between the local authority and the PDC: both are democratic organizations in that leadership is elected. Local authorities are political institutions that govern the parishes; PDCs are civil society organizations (CSOs) that are expected to govern LED in



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the parishes. Another mechanism, the development area committee (DAC), is established to represent the interests of cross-boundary geographical spaces that result from spill-overs of economic and social activities, which, in addition to blurring geographical limits, threaten the economic viability of town capitals. Clearly applying the concept of development committees in Jamaica responds to both normative and empirical pressures. But are development committees sufficiently equipped for LED model implementation?

## Localizing the Growth Agenda

The Micro, Small and Medium Enterprise (MSME) and Entrepreneurship Policy (MSMEEP), launched in October 2013, established an expansive institutional framework aimed at facilitating the development of the MSME sector in Jamaica. Several criteria based on country context and purpose have been used to define MSMEs. However, the MSMEEP adopted a single national definition, shown in Table 2, based on size, employee base, and sales that replaced the myriad meanings[1] used previously.

The economic developmental potential of MSMEs is well documented, especially their strategic importance to an LED model. Implicitly, the MSMEEP acknowledges their potential to transform localities positively via their role in employment, wealth creation, and business expansion, and explicit contribution to private sector growth and expansion and overall social development. As an illustration, MSMEs' portion of the labor force was estimated at 18.3% in 1990 and 18.1% in 1996, and certain categories of businesses have increased since the mid-1990s. For instance the Labour Force Survey of 2011 revealed that the Own Account Worker (OAW) category (i.e., any person who operated a business but did not employ paid help) accounted for 35.9% of the employed labor force. There has also been a steady rise in the number of MSMEs in the island, exemplified by the number of non-agricultural micro and small enterprises, estimated at 36,780 in 1983, 88,850 in 1990, and increasing to 93,110 in 1996. Clearly the growth of the informal sector, estimated at 40% of GDP and including many of the MSMEs, suggests scope for their growth, even in the absence of more recent estimates of their total number. Surveys conducted in 2003 and 2008 show that the activities of MSMEs in Jamaica are concentrated in wholesale and retail trade ($\geq$50% and >55.7%, respectively) and community and social and personal services sectors (22% and 23.3%, respectively).

The MSMEEP identifies the myriad challenges that have stunted the growth and development of MSMEs and, by extension, stymied government efforts to meet national economic growth targets. In the mix is the nature of their business processes: weak operational capacity and, in particular, marketing capacity, leadership, communication, and technical skills, and unfamiliarity with business support services. The claim is that a low capacity for innovation and low utilization of technology by Jamaican

*Table 2. Definition of MSME, Jamaica 2013*

| Size of Firm | Number of Employees | Total Annual Sales/Turnover |
|---|---|---|
| Micro | $\leq$ 5 | $\leq$ J$10 million |
| Small | 6–20 | >J$10 $\leq$J$50 million |
| Medium-sized | 21–50 | >J$50$\leq$J$150 million |

(MSMEEP, 2013)



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MSMEs has reduced productivity and competitiveness in the sector (MSMEEP, 2013, p. 6). However, MSMEEP (2013) has singled out business informality as the greatest threat to the growth and development of the sector:

*Informal operations are obliged to remain invisible to the legal system and face restrictions in carrying out certain business activities. They also have a limited number of customers as well as limited access to certain government support (for example, participation in fifteen percent {15%} procurement set-aside) that is crucial to their survival (p. 6)*

This is compounded by the barriers (including excessive regulatory and administrative procedures, fees, and financial requirements) that MSMEs encounter in their attempts at formalization. At any given time it is estimated that the average micro and small business meets a little more than one third (36%) of the formal requirements, leading to the conclusion that the informal economy – estimated at 40% of GDP – is made up of MSMEs.

The foregoing empirical issues, combined with the government's priority on job creation and economic growth, have informed the MSMEEP's vision of "[a] highly entrepreneurial sector which fuels economic transformation through innovation, creativity and high performance" (p. 33) to the mission:

*To inculcate a deep-seated culture of entrepreneurship in MSMEs, reduce bureaucracy to improve the ease of doing business, build capacity, and provide timely and relevant support by forging strategic partnerships and linkages with key sectors within the society. (p. 33)*

The MSMEEP is pursuing policy, vision, and mission through 11 goals, including increasing the number of formal MSMEs by 10% each year; reducing the processing time for business registration by 60% by 2015; introducing entrepreneurship in the curricula of all primary, secondary, and technical institutions by 2020; and promoting and securing equity and equality of opportunity to enable women-owned and family-owned businesses to be effective economic actors in the MSME sector. Policy strategies respond to specific obstacles to MSME development, and will seek to improve the business environment, increase finance to the sector, enhance business development support, broaden the entrepreneurial and innovative base, and tackle cross-cutting socio-economic and environmental issues such social capital formation, gender-sensitivity, persons with disabilities, and youth.

MSMEs are acknowledged as an important dimension of a local economic growth strategy. Yet the MSMEEP seems disconnected from the local context, as the policy has been unable to establish a relationship between MSMEs and development committees, which in essence excludes significant dimensions of the creative and learning processes necessary for autonomous development. In truth, MSMEEP is a central government policy initiative challenging the idea of an alternative and innovative development path.

## Locating LED in Community Development

Formulated at the start of a period of national self-determination, the Jamaica Welfare Commission Act of 1965 outlined far-reaching social transformational goals. The Act built on its philanthropic foundations in the Jamaica Welfare Limited of 1937, giving birth to the Social Development Commission (SDC), a rational-legal institutional framework that fused social and economic development within the



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practical and ideological purview of the *community*. The *community* at this juncture was an important concept in development debates and there is general acceptance of its multidimensionality and complexity that go beyond simple geographical space. Making the community the target of social intervention was strategic for governments of developing post-colonial states as they integrated local initiatives into national developmental goals. Community development embodies a range of strategies deployed systematically to structure the innovative ways that individuals in a local geographical space – acting singly or in partnership with others – adopt to improve their circumstance. There has been a measure of "welfarism" in community development, given that the dominant development ideology of the period presumed that state and government institutions had a responsibility to direct public resources towards the most disadvantaged and economically vulnerable in society to remove the obstacles that constrain self-organization and development. Both dimensions converge in the functions of the Social Development Commission, as the underlying philosophy of the Jamaica Welfare Commission Act 1965 was that community development was a path to nation-building. This was an important value orientation, especially in a post-colonial setting. Community development thus relied on face-to-face interactions to aid the formation of social capital, theorized to be a critical precursor to the emergence of communities of interests. Implicitly, such communities produce the kind of solidarity that post-independence leaders felt would strengthen psycho-social connections, converting them into nationalism in the long run. Consequently the SDC, in addition to having responsibility for the affairs of the Jamaica Youth Corps, was assigned duties that encompassed all facets of community life. Thus, under Section 7 [1] a-d of the Jamaica Welfare Act 1965 the SDC is mandated to:

*(P)romote, manage and control schemes for, and to do any act or thing which may directly or indirectly serve, the advancement of sport; and the general interests and the social, cultural or economic development of the people of the island and in particular the rural and urban workers.*

Section 2 (1) a-d pertains specifically to the needs of the youth:

*(I)t shall be the duty of the Commission to carry out such community development projects and social welfare activities as, in the opinion of the Commission, are desirable…provide training and experience in community living and service and agricultural pursuits and skills ancillary thereto for young persons; provide and maintain residences and such other facilities and amenities as the Commission may consider necessary for the use or enjoyment of young persons undergoing training.*

The SDC, as noted elsewhere, reflects an integrated approach to community development (Schoburgh, 2006). The following timeline gives the clearest signal yet of how the local sphere of social interactions might be amalgamated with the broader national sphere.

**1960s:** Alleviation of social conditions of agricultural workers.
**1970s:** Community organizing, welfarist interventions, local enterprises development.
**1980s:** Community organizing, national youth service and skills building.
**1990s:** Poverty reduction, local governance.
**2000s:** Poverty reduction, wealth creation, local governance.



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**2013:** LED, which had been an aspect of the SDC's functions since the Commission was formed, but which had been subsumed under the broader strategy of community development. Since 1996, the SDC has had to share aspects of its social intervention portfolio with the Jamaica Social Investment Fund (JSIF), established in line with government's emphasis on social policy and in particular as part of the national poverty alleviation program. The JSIF's activities are limited to channeling resources to small-scale community-based projects. However, its alliance with international technical bureaucracies such as the World Bank, which provided its start-up funding through a loan arrangement negotiated by the government, its demand-driven response to community needs, and its seeming isolation from bureaucratic norms and partisan political influences, have accrued to it much political capital at the local level and contributed to a perception that it is a more effective organization than the SDC. In fact, the JSIF claims to have approved 1,025 "sub-projects" between 1996 and 2007 that cover a range of community needs in all parishes in the island, of which 746 have been completed, impacting the lives of 1.5 million Jamaicans (see jsif.org).

Of course the SDC can claim a similar, if not more impressive rèsumè with respect to its activities in communities. Arguably its impact in communities is diffused as its mandate shifts periodically. These shifts are facilitated by the Jamaica Welfare Commission Act 1965 that empowers the Minister to give policy directions to the SDC "on matters of public interest". In 2012, Noel Arscot, Minister of Local Government and Community Development, acting in accordance with statute provisions, instructed the SDC to make LED the organization's primary goal over the period 2013–2015. The SDC's local economic development support program (LEDSP) was conceptualized and made the central pillar of the organization's corporate plan. On the one hand, crafting of the LEDSP illustrates the agility of the SDC; on the other, it introduces some institutional ambiguities in the governance of LED in Jamaica, such as:

- **Scope of its Role:** Will the SDC facilitate and co-ordinate all LED activities?
- **Relationship with Other LED Actors:** How will this be defined?
- **Relationship with the Community:** How will community expectations be managed given the traditional role of the SDC?

## ISSUES IN INSTITUTIONALIZING LOCAL ECONOMIC GOVERNANCE

From both theoretical and practical perspectives, LED is a response to the void created by the failure of the grand narratives of development of the modern period, and can be seen as an alternative approach to achieving collective welfare (Binns & Nel, 1999). Some LED analysts make a distinction between LED in developed countries of the North, which arguably involves activities (investment, big-business support, and large project development) of relatively well-resourced local agencies, and the developing countries of the South, where LED features greater reliance on community-based initiatives, utilizing indigenous skills, and seeking primarily to ensure survival, rather than participating in the global economy (Binns & Nel, 1999; Judd & Parkinson, 1990; Taylor & Mackenzie, 1992). These analysts also observe an evolution in LED strategies in the North. For instance *business attraction*, characteristic of "first wave" strategies emphasizing provision of incentives (subsidized loans, tax exemptions, direct payments) to get specific firms to relocate to local communities, has made way for *business retention*, indicative of "second wave" strategies that take the form of indirect industry-level assistance (e.g., marketing, revolving loan funds) with emphasis on entrepreneurship, industrial clusters, and public-private



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partnerships. The goal of improved quality of life marked the gradual shift to public investment and economic development at the community level (Binns & Nel, 1999). These "third-wave" community-oriented strategies create opportunities for low-income and low-skilled workers, who were previously overlooked in "first wave" and "second wave" LED implementation that privileged mainly private sector initiatives and incentives with demand for a high-skilled labor force (Bradshaw & Blakely, 1999; Koven & Lyons, 2006; Olberding, 2002).

LED model implementation in Jamaica is at a very early stage but it is safe to say that, even at this point, there are strong similarities with "third-wave" strategies of the North, despite consideration being given to facilitating entrepreneurship and private sector development. Clearly all three policy responses discussed in previous sections of this chapter demonstrate the varied approaches to LED model implementation and governance, such as markets, bureaucratic hierarchies, associations, and networks. For instance, the Ministry of Industry and Commerce, with responsibility for implementing the MSMEEP, might be construed as the bureaucratic hierarchical mode of LEG, even though it is an organizational operative of the central government. LED initiatives are expected to form part of the functional scope of the SDC, as outlined previously. Thus the SDC, along with local authorities (i.e., local government) that have been mainly excluded from this investigation, is indicative of the hierarchical bureaucratic mode as well. However, the SDC (as well as local government) has a dual governance character in that they are sites for associative interactions and so can function as networks. Finally, development committees straddle markets, associations, and networks, given their location outside of the public domain. Implicitly all nodal points in LED model implementation in Jamaica are connected in their focus on tapping the economic potential at the local level. But they do so in loosely coupled systems and interactions with undefined boundaries. Perhaps the policy responses in Jamaica at this initial stage reflect the tone of the discourse surrounding LED model implementation, which Hollingsworth (2000) noted as fragmentary. The critical question, conceptually as well as empirically, is: What is the relationship between the different approaches to LED?

The answer resides in how the new rules of the game are designed. Facilitating individual and collective pursuit of economic welfare and development of private enterprise relies on an enabling environment at the local level. For sure an enabling environment for private enterprises, at both national and local level, is an essential ingredient for making a sustainable impact on development goals such as reducing poverty and creating employment. Clearly, an enabling environment for an LED model implementation points to the quality of economic governance, which relates to the extent to which government policies, laws, and regulations set the rules of the game for business and influence, positively or negatively, the performance of markets, the incentives to invest, and the cost of business operations (Amin, 1999; Amin and Thrift 2000). So what do the policy responses in Jamaica portend in this cautious transition to LEG? Institutional approaches exemplified in the work of Ostrom (2007), Hollingsworth (2000), Amin and Thrift (2000), Amin and Hausner (1997), Amin and Thrift (1995), and Nutt-Powell, Landers, Nutt-Powell, and Sorrell (1978) have espoused certain preconditions for effective LEG, suggested by the following questions. Do policy responses promote associations over individual activities? Is voice facilitated? Are facilities for negotiation accommodated? To what extent are recursive rationalities of behavior evident in the design of each policy action? Is LED a function of a plurality of autonomous organizations? To what extent does each perform a supporting role for the other? How innovative are policy responses? These are the main criteria against which *development committees*, the MSME policy, and the SDC's LEDSP are assessed to determine what needs to be done, if anything, to substantiate the move towards successful LED model implementation. Table 3 shows the results of the analysis.



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A reiteration of the position of this chapter with respect to LED is warranted: at this juncture an LED model is neither articulated clearly by the government, nor finds strong support in academic research or development discourse in the Caribbean, outside of this researcher's outputs and the work of the Commonwealth Local Government Forum (CLGF) whose activism, with all its best efforts, has remained in the realm of political discourse. The reason for this is that the original tone of the discourse about the value of the subnational/local has centered around local governance, which, though it acknowledges the necessity of integrating other actors into local policy processes, raises the importance of political institutions and their democratic functionality over their economic functionality. Conceptually, then, LED has no home and is barely linked to local government, contending for intellectual space with the broader concept of community development. Those issues notwithstanding, LED is demonstrated in policy practice and even more so outside of formal policy, if one takes into consideration the expansive informal economy that characterizes the environment of SIDs in the Caribbean. The level of informality in Jamaica is adequate rationale for formal adoption and implementation of an LED model. And from the perspective of this chapter, the three policy responses assessed in Table 3 signal the government's attempts in Jamaica to decenter development, if only cautiously.

The LED strategies cumulatively fulfil two of the criteria of LEG: that policy responses in contention exhibit an appreciation for LED as a *multi-actor domain*; and that *sensitivity to local path dependencies* is *sine qua non* to effective economic governance. Weaknesses are evident, however, in the extent to which the other criteria are met. For instance, *opportunities for strategic visioning, learning, and adaptation* are evident in application of the development committees' concept and the SDC's LEDSP emanating from a policy directive, but appears to be absent from the MSME policy. However, this positive ori-

*Table 3. Assessing Jamaica's LED strategies against LEG criteria*

| Values promoting effective LEG | Development Committees | MSME Policy | SCD-LEDSP |
|---|---|---|---|
| **Opportunity for Strategic Visioning, Learning, and Adaptation** | | | |
| 1. Promotion of associations | ✓ | Orientated to individual | ✓ |
| 2. Facilitation of voice | ✓ | Undeveloped | ✓ |
| 3. Accommodation of negotiation | ✓ | Absent | ✓ |
| 4. Evidence of recursive rationalities in design | ✓ | Absent | Partial |
| **LED as Multi-Actor Domain** | | | |
| 1. Evidence of plurality of autonomous organizations | ✓ | ✓ | ✓ |
| **Institutional Thickness** | | | |
| 1. Existence of middle tier governance forms, e.g., political institutions, social citizenship | ✓ | Not clearly defined | Distant |
| 2. Governance forms orientated to support enterprise development | Undeveloped | ✓ | ✓ |
| **Nature of the Institutional Arena** | | | |
| 1. Roles, activities and functions specified | Partial Legislative framework mooted | ✓ Central government assigned steering roles | ✓ Attempt made to clarify role |
| **Sensitivity to Local Path Dependencies** | | | |
| 1. Policy solutions are context-specific | ✓ | ✓ | ✓ |



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entation to an economic governance framework is countered by certain threats. Take, for example, the PDCs that much depends on in LED model implementation. Ministry Paper 7 of 2003 envisioned that PDCs would be incubators for inculcating values of "participatory local governance" with the support of other democratic structures like the CDCs, and importantly undertake long-term strategic planning for their respective parishes (pp. 6–7). The policy seems imprecise about the role of PDCs, and the other development committees for that matter. By definition this role ought to be developmental in orientation, which does not preclude the organization functioning as a site for democratic participation. Rather than linking PDCs with "participatory local governance", perhaps the appropriate link is with local economic governance. Truth be told, for the most part the requisite institutional elements in support of LED are invisible in PDC operations. And this is so even in cases where the PDC is active, such as the Manchester PDC. PDCs are voluntary organizations, which is not intrinsically an encumbrance to their effective functioning. However, in the absence of a clear purpose and mandate, systems of accountability, and clearly articulated criteria in consonance with their purpose, and against which they are adjudged on their effectiveness in fulfilling their mandate, one is hard-pressed to detect their *development* orientation. Again the Manchester PDC bears credence here, for it formulated its development plan for the parish for over three years but has failed to proceed towards implementation. But the weak development orientation of development committees is merely one aspect of the problem.

The SDC has a degree of economic governance responsibility in that all CSOs fall within its oversight; development committees are no different. The SDC (along with local authorities) could be seen as median governance mechanisms at the local level, providing the kind of institutional thickness that is required in economic governance. But in relation to the PDC, the SDC winds up reinforcing the ambiguity in the role of the PDC through the assessment rubric that the SDC deploys (see Table 4).

The indicators of performance – active, partially active, inactive/dormant, and defunct – further distance the PDC from its development function. A four-year activity trend analysis of development committees provides a startling picture (Figure 1). Clearly an active status does not say anything about the substantive functions that are required to ensure business is competitive or employment is created. Perhaps this status of PDCs might explain the absence of development committees from the MSMEEP. Therefore, while the idea behind establishing development committees is an excellent one, it is in the practice that the concept falters.

*Strategic visioning, learning, and adaptation* are also implicated in the design and location of the MSMEEP. To begin with, central government steered this initiative, given its direct alignment with Jamaica National Development Plan (Vision 2030), which negates the "localness" of implementation and the degree to which "recursive rationalities" are facilitated. The MSME policy responds to a genuine local concern – private business development – that is the core of successful LED model implementation. But it is disadvantaged by the existing structural frailties of the business environment that were identified in the *Doing Business Report* and that formed the initial focus of the policy. In fact, the MSME

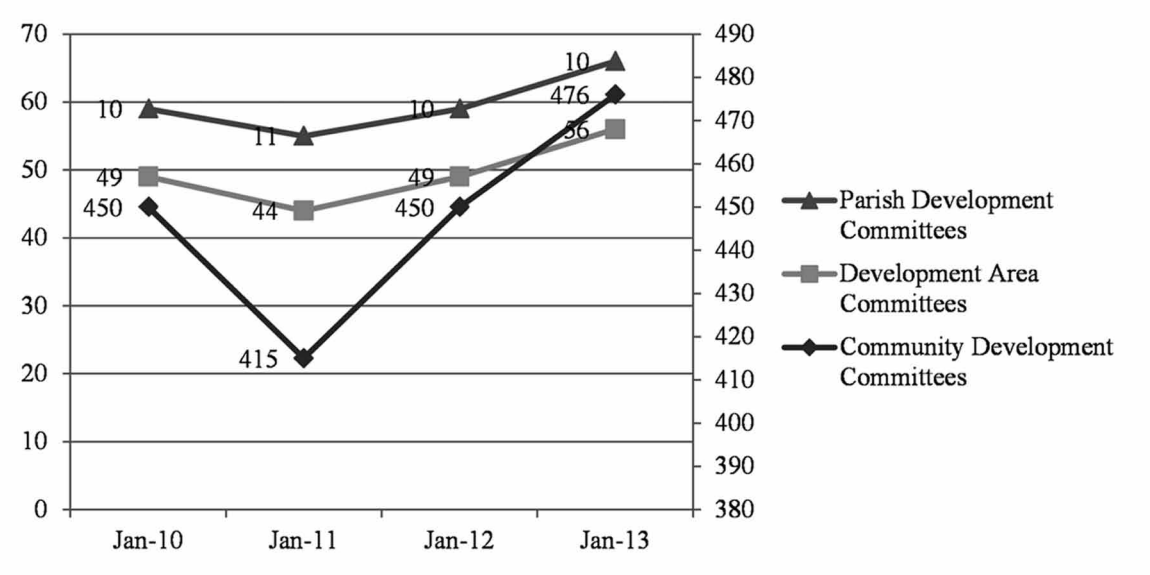
*Table 4. Indicators of level of activity of development committees*

| | |
|---|---|
| Active | Governance group should have met at least once every three months |
| Partially Active | Governance group should have met at least once every six months |
| Inactive/Dormant | Can be resurrected /reactivated |
| Defunct | No possibility of recovery/reactivation |



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*Figure 1. Activity profile of development committees*




policy declared that a whole-of-government approach was necessary for improving the regulatory and administrative environment for businesses in general.

Altogether the issues converge around the nature of the institutional arena, at the center of which is a difficulty in assigning new roles and delegating functions. The issues of size of these island-states and the role of the center in charting economic destiny may explain the propensity for development analysts to adopt a position in which the subnational level is hardly seen as a viable independent economic space. Rather, the worth of the subnational level is connected to the value it adds to the center, in both politics and economics. Such a perspective may be partly legitimized by centralized decision-making structures as the dominant risk management modus operandi. Aid governance might be blamed for reinforcing the inflexible arrangements that are associated with development policy because of the conditionalities that come with the programs. For instance, Jamaica signed its second IMF agreement in 2012 (the first was in 2007) and the country is held to strict economic targets with little space for experimentation. Yet aid governance rides on doctrines that complement an LED paradigm and therefore the implications of this dichotomy in Caribbean development discourse are far-reaching. Caribbean development policies and strategies are devoid of apposite alternatives that account for contextual economic opportunities. Participation of other actors in the process of development, so stoutly encouraged in both post-bureaucratic paradigms of state management and aid governance, has little grounding in a normative framework informed by LED ideologies and philosophies. Thus the acknowledged economic value of the informal economy, emergent businesses, or civil sector engagement is not integrated into a coherent framework. Each issue is analyzed separately and in relation to national development criteria, which understandably is the ultimate goal of LED, but which in reality disregards the local context and the impact on communities.

LED model implementation in Jamaica highlights how critical are the issues of co-ordination in effective LEG. Usually co-ordination, especially economic co-ordination, is the domain of national mechanisms, and thus LEG introduces *new* "rules of the game". Localizing economic development brings to the fore the critical role of networks in the process of co-ordination that are believed "to integrate vertical



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programmes and facilitate the flow of information about opportunities and about resources that need to be mobilized to seize these" (Bennet & McCoshan, 1993 cited in Helmsing 2001 p. 300). Networks, according to Helmsing (2000, p. 47), "facilitate externalities of economic decision-making to become internalised by better attuning decisions to each other, and by preventing negative, and maximising positive externalities". Essentially LED model implementation relies on co-ordination. Further, co-ordination is at the core of LEG. This symbiosis is illustrated in Jessop's (1998) definition of governance as "any mode of coordination of interdependent activities" (p.29). Jessop (1998) identified three activities that are relevant to LED: the anarchy of exchange, which refers to the unfettered use of market mechanisms; organizational hierarchy that at the subnational level raises the import of local or regional governments as governance structures; and self-organizing "heterarchy" that includes "self-organizing interpersonal networks, negotiated inter-organizational coordination, and de-centred, context-mediated inter-systemic steering" (p. 29). Jessop explained the latter two forms as involving "self-organized steering of multiple agencies, institutions, and systems which are operationally autonomous from one another yet structurally coupled due to their mutual interdependence" (p. 29). Policy strategies in Jamaica symbolize these different modes. At this stage each operates in a silo, leading to the conclusion that implementing an LED model represents a decisive shift from *local governance* to *local economic governance* but which, at this juncture, lacks a cohesive policy framework linking the different strategies in a seamless network of economic and social interaction. The resultant effect of the policy initiatives has been nothing more than atomized organizational actions that engender competition among localities and communities, rather than establish a clear growth strategy at the local level.

## FUTURE RESEARCH DIRECTIONS

The adjustments to institutions at the local/subnational level in the Caribbean reflect a search for an alternative paradigm for development, that is more in alignment with the dominant discourse, which favors more participatory and place-based approaches. However, there are questions about the institutional and capacity requirements of subnational governance and development. Important research problematics are indicated in the context of SIDs like the Caribbean, given issues relating to geography and population size, resource constraints, and the countries' precarious integration into the world economy. Altogether these issues suggest the need for both descriptive and prescriptive analyses of the appropriate infrastructure at the subnational level that can support an economic growth agenda.

## CONCLUSION

Rediscovery of the "local" has come on the heels of the failure of large scale projects, usually implemented by national governments to promote economic growth and employment, and improve citizens' quality of life. Individual responsibility and independent economic action underpin neo-liberal free market ideology. And, on account of the general proclivity of the poor, particularly in the South, to adopt measures of survival and chart their own economic destiny, an appropriate context is created for LED initiatives. SIDS must undertake a short learning curve in an environment in which a plethora of ideas and doctrines exist about managing the political economy. For many SIDS, development is not merely elusive; the process of experimentation that accompanies each idea or doctrine complicates matters, resulting at times



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in only partial implementation of plans or programs. Jamaica's efforts to reshape the subnational sphere to create a context conducive to economic transformation of people and place illustrate this point. The truth is that the efforts are insufficiently integrated. And, therefore, from institutional analysis it is clear that a critical ingredient for effective LEG – co-ordination – is missing. From institutional analysis also comes an appreciation for economic relations as a function of established rules of the game that require radical change to establish a new order.

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## ENDNOTE

[1] The Private Sector Organization of Jamaica (PSOJ) used total sales as the criterion for defining MSMEs; the Small Business Association of Jamaica (SBAJ) used total sales and the number of employees; the Planning Institute of Jamaica (PIOJ) used total sales and total assets; and the Ministry of Industry, Investment and Commerce (MIIC) used the number of employees and total sales

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# Chapter 39
# Foreign Direct Investment in India Opportunities and Challenges

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## ABSTRACT

*Foreign Direct Investment (FDI) is the dispersal and optimisation of resource packages like human, financial, knowledge, physical and reputational resources. The motivational factors such as natural resources, market resources, strategic resources, efficiency resources, locational advantages, etc., influenced Multinational Enterprises (MNEs) to perform various activities in the host countries. MNEs internationalise business mainly to acquire intangible assets and for balancing resources which they do not possess. India is in receipt of continuous capital flow due to favourable policy management and a strong business environment. Globally, Indian corporations continually display significantly better equity earnings over other countries both developed and emerging. The Government of India is very keen in simplifying FDI rules with an ultimate aim to attract more investors with zero hazards.*

## 1. INTRODUCTION

Foreign Direct Investment (FDI) is the spreading and value enhancement of resource packages by Multinational Enterprises (MNEs) in a host country where a company based in another country looks for business activities. Resource packages are the combination of human, financial, knowledge, physical and reputational resources. MNE's goal is to perform commercial activities and to retain strategic control in the host country. Host countries are based in another country, having high business potentials. MNE crafts value and placates stakeholder desires by operating across national borders. Normally, host countries are historically well aware about the local stake holder requirements. Accordingly, while operating across national borders, MNE is in disadvantage position as compared to firms from host country. MNEs engage themselves in Foreign Direct Investment (FDI) if the host country has locational advantage in

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relation to the home country. Value plan strategy on the foreign activities must be more eye-catching to MNEs, than the alternate value enhancement at home. The under noted key motivational factors influence MNEs to perform various activities in the host countries.

## 1.1. Natural Resource

This motivation leads to the hunt for financial, physical or human resources in host countries. All these means are primarily not easily available and trademarked. However, to make them available, MNEs, besides their optimal uses, add high value creation. Favourable institutional environment is the key factor which allows MNEs to access these resources.

## 1.2. Market Resource

Initially MNEs search for the customers in host countries and conclude by encompassing productive activities when foreign market confers higher value to the firm. Host country's locational advantage motivates MNEs to conduct economic activities in that location to enlarge their market size. Locational advantage is the incidence of customer's inclination which leads to procure firm's products. Looking for market by MNEs, is not the same as mere export. It involves MNEs multiple business activities, helped to transfer/convert bundle of resources and to retain strategic control over the host country.

## 1.3. Strategic Resource

MNEs motivation to invest is the aspiration to improve access to cutting-edge resources of host country through exploration, recovery and then laying into production. MNEs main thrust areas are to explore the cutting-edge resources, like up- stream, downstream, administrative, and reputational. The available/hidden resources are the locational advantage of the host country and are very difficult to access, examples, natural and market resource etc. FDI primarily decide by acquiring companies, tempting alliance activity/ making an insider in foreign knowledge group. The main thought behind it by MNEs is to become a recognised industry player in a set of advantageously knowledge development environment.

## 1.4. Efficiency Resource

It is the desire of the firm to capitalize environmental changes. In the process, MNEs international network leads to more attractive and ultimately helped to achieve consolidation with the concentration of Firm Specific Advantage's (FSA's i.e. having innovation capabilities and marketing capabilities) proprietary resources. Environmental changes comprise greater economies of scale through a rigorous process of technological breakthrough aiming shorter product cycle, increased industry focus on innovation, higher trigger on R and D investments besides smoothening trade and investment barriers. Locational advantages are the key factors to receive fresh FDI in host countries.

## 1.5. Locational Advantages

Locational advantages (natural and created) represent the entire set of strengths like reputation, skilled labour, growth facilities, scope of subsidiary industries, employment opportunities, common problems,



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economy gain, etc., surrounded in a specific location which is in operational at the highest level. MNEs place focus in a host country where natural resource, knowledge, transport, etc., are easily available besides having comfortable trade-barriers. MNEs success mostly depends on the advantages of favourable local environment. Utilised locational strengths of the host country are required to be assessed with the available/ untapped strengths. Further, an ongoing comparative assessment should be in place with other locations:

- Location advantages are the key contributing factor for FSAs that can be geared up by locally operating firms relative to firms operating elsewhere, examples are:
  - Ample natural resources may support in creating a prosperous firm in the natural resource industry like Agriculture, Forestry, Fishing, Hunting, Mining, Quarrying, Oil and Gas Extraction etc.;
  - A superior scholastic system will help firms that shape classy human resource skills;
  - The presence of an exciting and fashionable local market for specific products will possibly substitute local uprising in the relevant industry;
- Location advantages do not converse identical strength to all local operational firms vis-à-vis firms operating away. Rather, the more active and proficient use of locational advantages made by some firms, are usually through grouping of these locational advantages besides exploring FSA's specific proprietary resources. Location advantages can vary widely based on the geographical opportunity. It delivered and facilitated all the firms operating in a particular country when the government designed an encouraging tax regime for some specific economic activities or pay attention on talent advancement of human resources while boosting general business. While locational advantages mounted up in some parts of a country, economic clusters is positioned on to that parts only. Accordingly, firms that are operating in that part of the country will receive all out business advantages and framed simultaneously the heart of the cluster besides creating the cluster boundaries. Geographical opportunities may:
  - Extend to a narrow cluster;
  - Be a broader region within a country;
  - Be a country or a region across more than a country;
- Location advantages also spread across the country borders intending to craft advantages to insiders at the expense of outsiders. Most of the regional trading and investment agreements spoke exceedingly for the creation of cross border location advantages. Besides motivation of the firm, locational- advantage can also be described in the spirit of deployment of firm's economic activity in that location.

## 2. REVIEW OF LITERATURE

Researchers, Anusha Chari and T. C. A. Madhav Raghavan (2011) examined that India's retail market remains largely prohibited to large international retailers like Wal-Mart and Carrefour. The liberalization move was opposed by opposition due to the apprehensions about employment losses, unfair competition resulting in large-scale exit of many domestic retailers.



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Research Scholar, Mr. Rajib Bhattacharyya (2012) opined that the spectacular and unprecedented growth of FDI in the global economic landscape, over the last two decades, evidenced that FDI is an integral part of the development strategy of both the developed /underdeveloped and developing nations. FDI in the retail can enlarge market size by reducing transaction and transformation costs besides adoption of advanced supply chain.

Ms. Neha Dangi (2013) expressed that FDI is the lifeblood for the economic development of any country as it plays an important role in the long-term development, not only as a source of capital but also for enhancing competitiveness of the domestic economy. FDI in multi-brand retail supports the government's role of achieving remunerative prices for farmers.

Mr. Bobby Srinivasan (2014) opined that the Modi government is committed to ease FDI flows particularly in the areas of defence, insurance and infrastructure besides smoothening the tax regime for investors.

Nupur Goel (2015) had done a small sample survey for analysing the impact of foreign direct investment on unorganized retail sector. Outcome was on high impact on business in regard to profit declination, unemployment besides establishing the monopolistic type of situation in the retail market.

Ashima Mangla (2015) conducted study on Indian Retail Sector wherein the researcher expressed that FDI in retail will play an important role in the long-term development of a country by enhancing the competitiveness of domestic economy. India is being looked by many foreign investors due to rise in purchasing power, growing consumerism and brand proliferation.

Mr. Desti Kannaiah and Mr. A. Vinayagamoorthy (2016) studied that India being second most-populous country has immense scope for retail expansion besides increasing consumerism.

Dr. Kishor Jagtap and Smt. Sushma Verma (2016) studied that FDI globally is considered to be a significant component of development strategy of any country. India is no exception to it. Indian Market is constantly on the path of growth due to its increasing size and rise in purchasing power of the people.

Mr Dheerendra Kumar Baisla (2016), opined that FDI is a method of allowing financial resources, technology, and techniques, which enhance value in the diverse sector of economy. Basically, it is considered as a tool to economic development. Indian retail sector is one which carries great potential for attracting FDI.

Ms. Sanghamitra Samal and Mr. D.Venkatrama Raju (2016) studied that the economic development of a country is based on its "Industry Revolution" with more production and promotion which are mostly possible through the revolution of agriculture, industries etc. Inflows through Foreign Direct Investment (FDI) are the major facilitator to achieve the above.

## 3. RESEARCH METHODOLOGY

Researcher made this paper based on the secondary data, sourced and collected from various books, media, journals, government publications, newspapers etc. The paper is descriptive in nature. Collected data is presented in the form of tables. Tabled data analysed and studied in the form of charts, diagrams. Requisite internet searching has also been done for this purpose. Researcher also took help from some web sites and placed some charts etc from their sites in the paper.



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## 4. PREPAREDNESS OF INDIA

Multinational companies internationalise business mainly to acquire intangible assets and balancing resources which they do not possess, and which are essential to develop a competitive advantage for survival in more competitive environments. Dynamics that formerly paying FDI attention to developing- countries, were political steadiness, policies in place and availability of cheap labour but now size of the market, expected growth potential and skilled labour, dominate. The transformational impact of liberalization during the last twenty-five years of Indian Economy, has been profound and substantial. Indian economy today, compared to what it was in 1991, undergone a veritable sea change.

Following tasks are being carried out, in phases, to attract foreign investors' attention:

- **Credible Evidence-Based Policy Options for Improved India-ASEAN Economic, Trade and External Relationship:** India has been hunting a combined multilateral, regional and bilateral approach to trade policy with its major trade partners i.e. the Association of the South East Asian Nations (ASEAN), which made them to form long relationships to establish a major regional research and policy hub;
- **Trade, FDI and Economic Growth Linkages in Selected South Asian Countries:** The linkages between FDI and economic growth had been the focus of sizable research for many years. However, the linkages are subject to empirical scrutiny and remain the topic of debate all-time;
- **Financial Decoupling of Emerging Asset Markets from Japan and US:** Financial Organizations have anxieties to persuade customers to invest newly developed Exchange Traded Funds (ETF), designed to track the performance of emerging markets.

Non-Financial Debts (NFDs) include amounts owed on credit cards, loans made to households in the form of mortgages, government agencies, non-profit organizations /corporations i.e. those are not in the financial sector. NFDs have been played also as a source of finance under FDI for the economic-development of any country.

Foreign -companies investing India, have goals to avail the benefits of the prevailing moderately lower wages and distinctive investment advantages such as tax reliefs etc. FDI facilitates host country to achieve technical expertise besides employment generation. The main reasons for continued foreign - capital flow in India, are for favourable policy management and strong business environment. Investors like the Indian monetary policy discipline such as inflation management, fiscal management. Government's continuous focus in narrowing the fiscal deficit, will ultimately facilitate Central Bank in lowering interest rates. In the process, domestic currency has become stable and strong, easing reduction in forex risk to overseas investors. Lower oil price coupled with improving fiscal management policy like shrinking government subsidies, will definitely be a sustenance in reducing Government's fiscal deficits to a great extent.

Domestic corporate's growth rate roving around at an average of 7%, displays significantly better than average equity earnings growth rate amongst 23 developed and 23 emerging markets. Near future looks better due to expected tax rate reduction in coming years and abolition of all taxes by replacing goods and services tax(GST). As per Bloomberg's data, average corporate earnings, MSCI India Index, will likely to be over 16% in near future.

A transparent, predictable and easily comprehensible policy agenda on FDI has been put in place by the Government with a provision to update every year, even as and when needed, to capture and to keep pace with the global/domestic regulatory changes. Government of India is very keen in simplifying



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FDI rules further by enhancing investment limit in the existing sectors and to bring more sectors afresh both under automatic and approval route. Government's ultimate aim is to attract more investments with zero hazards.

## 4.1. Government Initiatives

Recent Government Budget has commended various reform steps under FDI Policy which will ease operations in number of potential areas like Asset Reconstruction Companies (ARC), Stock Exchanges, Insurance and Pensions besides smoothening fund raising and governing norms i.e. more transparency in tax related matters, higher FDI limits and establishing systems for speedy approvals process. To facilitate the budget plan, concerned-department, outlined liberalised FDI policy-rules by bringing more sectors under the automatic route. The main focus is to establish quicker approval process to exhibit India as an attractive investment destination.

Key initiatives are outlined below:

- Ministry of Finance (India) framed the residency permit policy for the foreign company executives:
  - Executives can enjoy long stay by investing US$ 2 bn or more, in India, through residency permits besides the benefits of special package on upscale housing, cheap rates for utilities, etc.;
- Asset Reconstruction Companies (ARC) that purchases bad assets or NPAs from banks at a negotiable price and helps banks to clean up their balance sheets, are allowed 100% FDI under automatic route. The main purpose is to manage growing concern of declining asset quality of Commercial Banks;
- FDI in construction sector contribute more than 8% of India's GDP. Recent amended policy on construction development Sectors includes:
  - **Simplification of area restriction norms:** Area restriction and minimum capitalisation norms will not apply, if 30% project costs of any housing project, spent towards affordable housing;
  - **Minimum capitalisation norms reduction:** i.e. US $5M. FDI is now allowed in any construction project, irrespective of size;
  - **Simplification of exit norms from project:** Foreign investors are allowed to exit from construction development projects, earlier 3 years locking periods, removed;
- FDI (100%) under Government approval on trading for food products originated in India, includes through E-commerce also;
- Under automatic route 49% FDI in defense sector, above, on approval by Government on case to case basis besides permitting to manufacture small arms and ammunition;
- Direct-to-home, mobile TV and teleports under "Broadcasting Carriage Services" up-to 100% allowed under automatic route;
- FDI-74%, allowed in private security agencies, against the existing norms of 49%;
- 49% automatic route allowed under FDI for Single Brand Product Retail Trading, beyond under Government route. Local sourcing norm for the foreign firms relaxed initially for three years of their commencement. On completion, next five years the Foreign Company have to meet the annual average rate of 30% domestic sourcing norm. Afterwards effective norms will be, on an annual basis, on trading on Retail Single Brand Product;



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- Under Multi Brand Retail Trading 51% has been allowed under Approval Route;
- 74% FDI on pharmaceuticals industry through automatic route, over 74% under government approval process;
- 74% FDI allowed in Private Bank, includes FII's investments;
- Foreign Direct investment, on regulated Non-Banking Finance Companies (NBFCs), under the automatic route;
- The following cases are to be considered as domestic investments and will be exempted under FDI Cap Criteria's:
  - Investment made by Persons of Indian Origin in Non-repatriable mode;
  - Overseas Indian Citizens;
  - Non-Resident Indians;
- Insurance cap under FDI rose from 26% to 49%;
- FDI up to 100%, allowed in railway infrastructure (excluding operations) for founding network and providing requisite facilities for running bullet trains;
- Relaxed-norms for tea plantation, animal husbandry, mining, petroleum, natural gas sectors for the overall economic growth;
- **Recent Sweeping Reforms:** The Government has recently made sweeping reforms in the areas of defense, civil aviation, single-brand retail and pharma sectors for attracting more foreign investments:
  - Earlier, FDI beyond 49% was permitted through approval route in cases of access to modern and "State-of-the-art" technology. Government has done away with "State –of- the-art" technology clause;
  - 100 percent (Existing 74%) FDI under automatic route in brownfield airports (where funds are pumped into an existing airport) has been permitted;
  - In pharma, it has been decided to permit up to 74% FDI under automatic route in brownfield projects;
- Similar to domestic institutions, Foreign shareholding limit in Indian Stock Exchanges rose from current 5% to 15%, applicable for banking company, stock exchange, depository, commodity derivative exchange and insurance company. It, ultimately facilitates the following:
  - **Enhancement of Global Attractiveness and Competitiveness:** It comprises of 12 pillars such as institution, infrastructure, macroeconomic environment, health and primary education, higher education and training, good market efficiency, labor market efficiency, financial market development, technological readiness, market size, business sophistication and innovation;
  - **Scope of Acquiring and Adopting Updated Technology and to Implement Best Practices, Well Accepted Globally**: Among the main available sources of Foreign Technology, FDI plays a pivotal role, especially for countries having less advanced stage of technological development;
  - Indian capital market can foresee overall growth and development;
- Till now, Foreign Portfolio Investors are only, having access in secondary market. Henceforth, they can also acquire shares through initial allotment;
- Limit described above on Foreign shareholding limit in Indian Stock Exchanges (15%), applicable for the following:
  - Foreign Investment under Foreign Portfolio Investment;



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  - Investments by FIIs (Foreign Institutional Investors);
  - Qualified foreign investment;
  - Investment by Foreign Venture Capital;
  - Non-Resident Investment;
- Almost all the regulators, under various sectors, have fixed minimum capitalization norms. The norms are exclusively eliminated under FDI policy;
- **Remittance and Repatriation:** In finance, repatriation means the process of converting foreign currency into domestic currency and subsequent remittances thereof or vice-versa. It depends on the exchange rate between the two currencies;
- **Remittances of Proceeds on Sale, on Winding up and for Liquidation of Companies**: See below:
  - Remittances for share and securities sales proceeds, are directed by "The Foreign Exchange Management (Remittance of Assets) Regulations, 2000";
  - Remittances, net of applicable taxes, permitted against the sale of shares and securities to the outside resident, if security puts on repatriation basis;
- **Remittance on Winding up/Liquidation of Companies:** Remittances, generated out of winding up proceedings of companies on liquidation, allowed, subject to applicable taxes and on providing the following:
  - No objection /Tax clearance certificate;
  - Certificate confirming full payment of the domestic liabilities or sufficient provisioning thereof;
  - All winding up formalities under Indian Companies Act, complied and supported with Auditor's certificate;
  - If winding up took place outside any court in India, requisite auditor's certificate covering that no legal actions are undecided in any Indian court, either on the company or on the applicant;
- **Dividend Repatriation:** Free Repatriation, subject to Tax deduction at source / Dividend Distribution Tax at source, without any limit;
- **Repatriation of Interest:** Free Repatriation, net of applicable taxes, without any restrictions.

## 5. RECENT MAJOR INVESTMENTS/DEVELOPMENTS

After through study, the researcher could find the following significant FDI announcements made during the recent past:

- Honeywell International Inc declared to establish a refining technology hub and the same will be used by Indian refineries for getting global standard transportation fuel. The aim is to curve crude oil imports besides producing ecologically preferable diesel fuels;
- Apple Inc permitted to open its first stores in India besides manufacturing in the country under new foreign investment rules that exempt 3 years to foreign retailers in sourcing 30 percent of the goods sold in company-owned stores locally. Apple now can sell iPhones, iMacs and iPads through resellers and to set up its own shops in India. Its first development centre will generate employment potential of around 4,500 people;



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- The new rules applicable to retailers also help Swedish furniture-retailer IKEA for setting up stores in India;
- A refrigerator plant worth INR2500M (US$ 37.28M) already installed by Panasonic Corporation. They further planned to invest at its existing facility, around INR 200M (US$ 3M) for lithium ion batteries;
- Vital Paper Products planned to set up a packaging product unit worth INR 600M (US$ 8.95 M). It is globally famous for the major supply chain players in the paper industry;
- Vistra Group Ltd, one of the reputed Hong Kong based professional services provider, acquired largest Corporate Trust Services provider named IL and FS Trust Com Ltd.;
- Banana-Republic, reputed US- fashion brand plans to open its first partnership store;
- Hong Kong based, Silver Spring Capital Management plans to invest over 20,000M (US$ 298 M) for construction of highways;
- Amazon will be set up 2.9 million sq. ft, the second largest global delivery centre, employing 13,500 people against the existing 1000 employees across different offices;
- One big seed plant by Biotechnology giant, Monsanto is in the process to set up;
- Japan Government agreed to extend loan for US$ 8110M for constructing first bullet train in India;
- Cool-pad Group Limited, China declared to set up their Research and Development (R and D) centre at US$ 300M;
- "Indian Railways" granted Diesel Locomotive Factory project worth INR 1,46,560M (US$ 2190M) to General Electric;
- French transport major "Alstom," has been awarded electric locomotive project worth INR 200,000M (US$ 2980M);
- Foxconn will set up a manufacturing plant US$ 5000M over the next three years;
- ThyssenKrupp group's elevator unit, Germany-based company, plans to set up a manufacturing plant EUR 44M (US$ 50.5M) with a target to double its group's revenue to US$ 1000M in next three-four years;
- PepsiCo will invest INR22110M (US$329M) for setting up a new core production facilities. Pepsi further decided to establish a juice manufacturing unit worth INR5000M (US$74.56 M);
- BSH Home Appliances Group, to develop local technologies, opened its first technology centre in India;
- Ford Motor Co. planned to set up a mobility solutions, business services and product development centre at INR 13,000M (US$ 189.2M) aiming to establish a global technology and business centre;
- Around 175-200 hotels will be set up by JW Marriott over the next four years;
- Holitech Technology (China), produces basic chemical materials and electronic products, plans to invest US$ 1 bn;
- UAE-based Gamma Group will invest around INR 3,000 crore (US$ 436.5 million) in the infrastructure, health and education sectors and will generate around 2,000 indirect and direct jobs;
- For better efficient logistics market, FM Logistic Asia plans to invest EUR 50 million (US$ 52.9 million) in the next four years;
- For the development of tourism and hospitality, 86 Memoranda of Understanding (MoUs) aggregating INR 15,000 crore (US$ 2180M) were signed in the first Incredible India Tourism Investment Summit- 2016.



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## 6. GLOBAL POSITIONING

Regional Comprehensive Economic Partnership (RCEP) plans to ease existing investment rules. India likely to be awarded the most favoured nation (MFN) treatment within the ten top countries like US, Hong Kong, China, Ireland, Netherlands, Switzerland, Singapore, Brazil, Canada. RCEP report also demonstrated that on account of continued economic turnaround in India, the FDI inflows are exhibiting an upward trend in India. Global Competitiveness Index makes ranking grade for considered countries on specified factors like country's quality of institutions, prevailing macroeconomic environment, quality of education, potential market size and infrastructure potential etc. India improved its position by 16 marks to 55 amongst 140 countries as per the latest Competitiveness Index by World Economic Forum's.

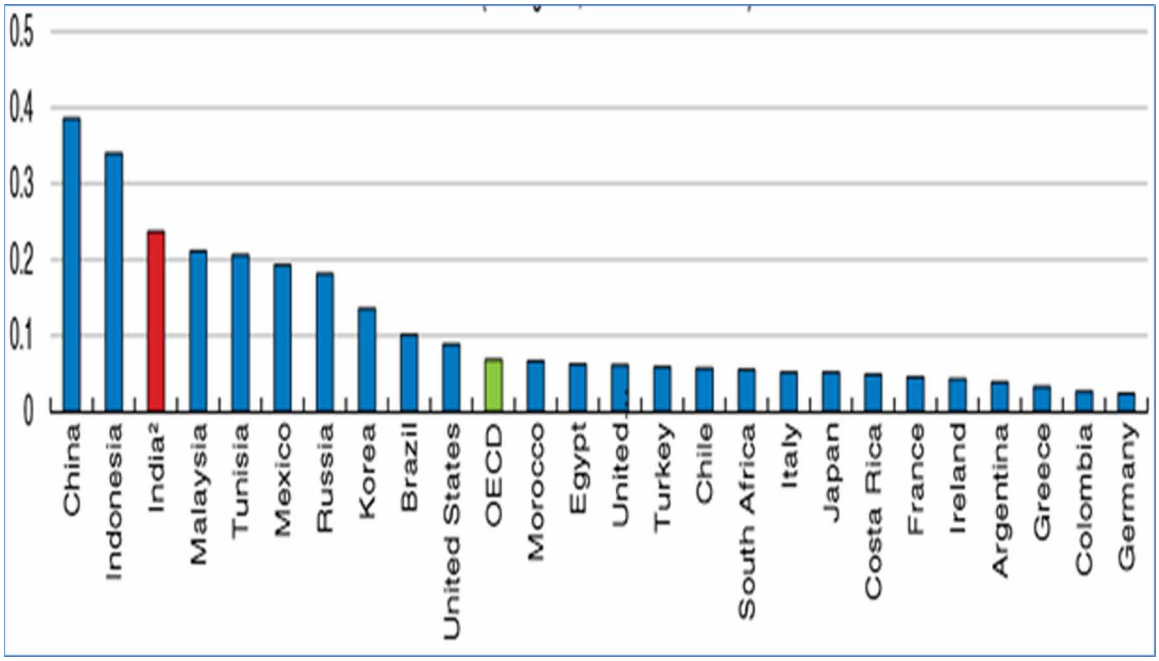
### 6.1. FDI Restrictions

On-going reforms on FDI restrictions are the major contributor which can well define a country's performance in inviting foreign investment. The reforms are made through an investment package by improving different policy areas. The FDI regulatory restrictiveness index measures statutory restrictiveness on Foreign Direct Investments across 22 economic sectors.

The OECD FDI restrictiveness index reveals that India is among the top reformers of FDI regulatory restrictiveness index 2016. The highest is, the more restriction. As per the OECD Report (2017), presently, China is the most restricted country followed by Indonesia and India. FDI restrictiveness Index is the lowest in Germany (see Figure 1).

Domestic restrictions on FDI were remained relatively high in 2015 in relation to many emerging economies and OECD countries and subsequently made ease afterwards.

*Figure 1. Exhibit 1 (Source: OECD report'17)*






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## 6.2. Recent Global Comments

Foreign Direct Investment plays an important role for any country's overall economic growth. Accordingly, countries are required to showcase, on a routine basis, their preparedness/competitiveness to raise the confidence level of the global investors. As per the A T Kearney Foreign Direct Investment (FDI) confidence index report, India has placed himself globally in to 8th rank in the year 2017:

- Recent global thoughts, Indian Stocks, Bonds, Currencies, in the Asian emerging countries, are less dependent on external demand, resulted as the most popular picks for investors besides making strategic call;
- Tokyo-based emerging-markets trader Masakatsu Fukaya recently said, "The best pick is India because of its good fundamentals, room for further rate cuts and higher yields, all of which are making good conditions to attract fund inflows;"
- Western Asset Management Co, widely known for its global fixed income products, favors Indian Bonds;
- Pioneer Investment Management, a global investment manager, dedicated to keep always "overweight" positions due to Government's on going reform processes, improving growth and relatively high yields;
- I G Asia, a service provider, contracts for difference (CFDs) with IG – the flexible way to trade the financial/forex markets, favors Indian equities;
- CLSA Ltd, a global analysist, and BNP Paribas, like Indian shares;
- Peter Kohli, CEO of DMS Funds, recently told, India will follow bull market for the next five years;
- Global beliefs that India is expected to have the fastest GDP growth rate, to beat China, very fast;
- "Emerging Global Thought" on India, are most favourable as the current forward valuation levels exhibit sustainable growth at a sound price for the long term.

# 7. GROWTH SUMMERY

India Foreign Direct Investment, IFDI (July'2017) reached at US$ 3409Million. Average FDI since 1995 to 2017 was US$1252.56 Million. The inflow was all time high at US$5670Million in Feb'2008 and was low at US$60Million in Feb'2014.

## 7.1. Present Position

Ending March' 2016, out of 18,549 reporting Indian companies, 17,008 companies, had in their balance sheet, FDI or Overseas Direct Investment (ODI). Ending March 2016, 649 companies had investments on bi-directional direct investment. FDI was attracted by 14,383 and ODI was invited by 1,976, Companies. In the same period, 15,032 companies reported to have inward direct investment, include 10,794-Foreign Subsidiaries Companies i.e. single foreign investors, more than 50% equity holding. ODI reporting Indian companies stood at 2,625 and out of which 2,093 having 3,320, Foreign- Subsidiary Companies:



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*Table 1. Indian companies that reported foreign liabilities and assets in the year 2015-16*

| Category | Types of Company | Direct Investment (No. of Companies) | | |
|---|---|---|---|---|
| | | Inward and Outward | Inward Only | Outward Only |
| Companies (Unlisted) | Foreign Associates in India | 357 | 3,551 | --- |
| | Foreign Subsidiaries in India | 181 | 10,501 | --- |
| | Others | - | 125 | 1,528 |
| | TOTAL (16,243) | 538 | 14,177 | 1,528 |
| Companies (Listed) | Foreign Associates in India | 76 | 129 | - |
| | Foreign Subsidiaries in India | 35 | 77 | - |
| | Others | - | - | 448 |
| | Total (765) | 111 | 206 | 448 |
| Grand Total (17,008) | | 649 | 14,383 | 1,976 |

Source: FIPB

*Table 2. Financial and non-financial FDI companies: Foreign equity participation (amount in bn ending March'2016)*

| Category | Companies (Numbers) | Equity and Debt | Equity Amount (Resident and Non-Resident) | Equity Under FDI | % of Equity Share Under FDI |
|---|---|---|---|---|---|
| Finance Com | 684 | 933.8 | 886.9 | 582.5 | 65.7 |
| Non- Financial Com | 14,348 | 4,852.3 | 4,440.6 | 3,461.7 | 78.0 |
| Total | 15,032 | 5,786.1 | 5,327.5 | 4,044.2 | 76.0 |

Source: FIPB

*Table 3. Listed and unlisted FDI companies with foreign equity participations (FEP) (Amt in bn INR at face value: March 2016)*

| Category | Unlisted Company | | Listed Company | | Total |
|---|---|---|---|---|---|
| | Amt | % | Amt | % | Amt |
| No of Comp | 14,715 | 97.9 | 317 | 2.1 | 15,032 |
| PUC | 5,373.6 | 92.9 | 412.5 | 7.1 | 5,786.1 |
| Equity | 4,972.3 | 93.3 | 355.2 | 6.7 | 5,327.5 |
| FDI Equity | 3,926.2 | 97.1 | 118.0 | 2.9 | 4,044.2 |

Source: FIPB



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*Table 4. Inward/outward direct investment (amount at market value in bn INR as of March 2016)*

| Direct Investment | Inward | | Outward | |
|---|---|---|---|---|
| | 2015 | 2016 | 2015 | 2016 |
| Equity | 18,639.8 | 18,806.6 | 4,460.7 | 4,659.3 |
| Debt | 1,173.6 | 1,333.4 | 1,176.3 | 1,130.9 |
| Total | 19,813.4 | 20,140.0 | 5,637.0 | 5,790.2 |

Source: FIPB

*Table 5. Direct investment companies with foreign liabilities/assets (other) (amount in bn INR as of March 2016)*

| Investment (Other) | Liabilities Outstanding With Unrelated Party | | Assets Outstanding With Unrelated Party | |
|---|---|---|---|---|
| | 2015 | 2016 | 2015 | 2016 |
| Trade Credits | 2,046.9 | 1,871.9 | 1,035.5 | 1,150.7 |
| Loans | 4,460.9 | 4,543.8 | 1,759.4 | 1,844.4 |
| Currency and Deposits | 2,533.8 | 3,034.1 | 566.1 | 393.3 |
| Other Receivable and Payable accounts | 3,291.5 | 3,191.0 | 822.9 | 1,047.1 |
| Total | 12,333.1 | 12,640.8 | 4,183.9 | 4,435.5 |

Source: FIPB

*Table 6. Inward direct investment: country wise distribution – March'16 (Amount in bn INR at market value)*

| Countries | FDI | EQUITY | DEBT |
|---|---|---|---|
| All Countries | 20,140.0 | 18,806.6 | 1,333.4 |
| Mauritius | 4,194.9 | 3,977.8 | 217.1 |
| USA | 3,497.4 | 3,319.3 | 178.1 |
| UK | 3,040.5 | 2,978.8 | 61.7 |
| Singapore | 2,199.2 | 1,967.3 | 231.9 |
| Japan | 1,615.1 | 1,471.0 | 144.1 |
| Germany | 1,381.9 | 1,326.1 | 55.8 |
| Netherlands | 1,043.9 | 934.5 | 109.4 |
| Switzerland | 972.3 | 947.7 | 24.6 |
| Korea Rep | 392.6 | 284.5 | 108.1 |
| France | 295.1 | 274.4 | 20.7 |

Source: FIPB



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*Table 7. ODI stock: Country-wise distribution March 2016 (Amt in bn INR at market value)*

| Countries | ODI: TOTAL | Equity | Debt |
|---|---|---|---|
| All countries | 5,790.2 | 4,659.3 | 1,130.9 |
| Singapore | 1,190.2 | 1,041.1 | 149.1 |
| Mauritius | 1,022.4 | 764.7 | 257.7 |
| Netherlands | 813.5 | 742.7 | 70.8 |
| USA | 593.8 | 339.3 | 254.5 |
| UAE | 301.1 | 218.0 | 83.1 |
| Bahrain | 293.3 | 35.0 | 258.3 |
| Jersy | 279.7 | 275.7 | 4.0 |
| UK | 193.1 | 155.7 | 37.4 |
| Cayman Islds | 132.3 | 129.9 | 2.4 |
| Cyprus | 128.0 | 127.0 | 1.0 |

Source: FIPB

*Table 8. Indian companies equity participation (activity wise: mfg and services), March 2016 (Amount in bn INR at face value)*

| Activity | Equity Amt (Resident and Non –Res) | Equity Under FDI | % Share of Equity Under FDI |
|---|---|---|---|
| Plantations & Allied activities (Agri related) | 12.8 | 10.6 | 82.8 |
| Mining | 64.1 | 32.6 | 50.9 |
| Manufacturing | 2,161.4 | 1,820.7 | 84.2 |
| Gas, Conditioning Supply, Steam, Electricity | 336.4 | 197.2 | 58.6 |
| Waste management, Sewerage, Water supply and remediation activities | 6.9 | 4.7 | 68.1 |
| Construction | 223.0 | 165.7 | 74.3 |
| Information and Communication | 504.4 | 287.9 | 57.1 |
| Other Services | 2,018.5 | 1,524.8 | 75.5 |
| Total | 5,327.5 | 4,044.2 | 75.9 |

Source: FIPB

- Number of Indian Companies, including Special Purpose Vehicle (SPV), Public-Private Partnership and Limited Liabilities Partnerships (LLPs) that reported Foreign Liabilities and Assets in the year 2015-16.

## 7.2. Key Findings (March 2016)

To reach a conclusion, researcher has analysed the findings based on the tabled data. Subsequently, a decision statement is made on the overall assessment:



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*Table 9. FDI in 15,032 companies with major activity wise distribution as of March 2016 (amount at market value in bn INR)*

| Activities | No. of Companies | Equity | Debt | Total |
|---|---|---|---|---|
| Plantations/ Allied Activities (Agriculture-related) | 82 | 49.2 | 2.4 | 51.6 |
| Mining | 116 | 457.0 | 19.3 | 476.3 |
| Manufacturing | 3821 | 9,338.7 | 667.6 | 10,006.3 |
| Gas, Steam and Air Conditioning and Electricity supply | 375 | 402.1 | 75.9 | 478.0 |
| Water supply/ sewerage/ waste management/ remediation activities | 68 | 4.2 | 0.7 | 4.9 |
| Construction | 728 | 392.8 | 139.3 | 532.1 |
| Services | 9842 | 8,162.6 | 428.2 | 8,590.8 |
| Total | 15,032 | 18,806.6 | 1,333.4 | 20,140.0 |

Source: FIPB

*Table 10. Cumulative FDI flows into India 2000-2016*

| | | |
|---|---|---|
| Cumulative (FDI) amount of Inflows (Equity plus Re-invested earnings plus other capital) | | US $453.183bn |
| Cumulative (FDI) inflows (Equity Amount) (Excluding remitted amount through RBI's (Central Bank) "NRI Scheme" | INR 16,400bn | US $310.137bn |

Source: FIPB

- **Coverage:** (Tables 1, 2 and 3) Unlisted companies have played a pivotal role:
  - Majority received inward FDI;
  - Unlisted companies attracted share at face value of FDI equity capital (INR3926.2 bn) vis-à-vis, listed company (INR 118.0 bn);
  - The share (face value) of foreign equity participation for non-financial companies was much larger (Rs3461.7bn) in comparison, finance companies (INR582.5 bn);
- **Inward and Outward Direct Investment:** (Table 4) FDI(Inward) raised at INR 20,140 bn at market value with a much larger share (93.4%) than debt. Prior year FDI was INR 19,813.4 bn. Total market value of ODI reached at INR 5,790.2 bn from the previous year of INR 5,637 bn. Under ODI, 80.5%, a major share, contributed Equity participation. A marginal increase on market value i.e. from 28.5% to 28.7%, in the proportion of outward to inward direct investment, was noticed;
- **Other Direct Investment:** (Table 5) Other investments liability comprise deposits, currency, trade credit, loans. Other outstanding liabilities through unrelated non-resident publics put up at INR 12640.8 bn in March' 16 against INR12333.1 bn as on March'15. Corresponding overseas assets as of March' 2016, accounted for 35% of such liabilities;
- **Inward and Outward FDI (Source/ Destination Countries):** (Tables 6 and 7) Mauritius was on the top of the list of countries, contributed 20.8% followed by USA (17.4%), UK (15.1%), Singapore (10.9%) and Japan (8.0%). An Indian company, attracted ODI mainly, from Singapore (20.6%) followed by Mauritius (17.7%), Netherlands (14.0%) and USA (10.3%);



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- **Inward FDI (Activity/Sector Wise):** (Tables 8 and 9) a major foreign participation through equity investments (75.9%) attracted by Manufacturing and Services sectors only. FDI, at market value, comprising Equity and Debt through Manufacturing and Services sectors, contributed INR10006.3 bn (INR10208.1 bn a year ago) and INR 8,590.8 bn (INR7748.4 bn a year ago) respectively. More foreign attraction was noticed in manufacturing and services sectors;
- **Cumulative FDI Flows in to India (2000-2016):** (Refer Table 10) Around 69% of investments received under FDI, are made through equity, long term financial instruments. Long term investment on the host country, thought when the investors have confident on the strategic growth in that country. Total FDI as of March'2016 reached US$ 40 bn, 29% increase over and above the same period of 2015 (US$ 30.93 bn):
    - Service sector attracted the highest equity inflow under FDI at US$ 6.9 bn during 2015-16. Computer hardware/ software sector, ranked after service sectors with US$ 5.9 bn;
    - Equity inflow through FDI, for the month of March 2016 alone, reached at US$ 2.47 bn, 0.35bn over in the same period last year, witnessing year on year growth of 16.5%. Highest equity inflows witnessed from Singapore at US$ 13.69 bn. Mauritius, ranked 2nd with US$8.35bn, followed by USA at US$ 4.19bn, Netherlands US$2.64bn and Japan at US $2.61bn;
    - During the year 2016, total inbound Mergers and Acquisitions value reached at $30.8 bn comprising 176 deals vis-à-vis $19bn, a 62.3 per cent over the corresponding year 2015.

## 7.3. Latest Position

See Tables 11 and 12.

- FDI received under equity mode till March'2017 stood at US$ 43.476 bn, rose by 9% in dollar term, year-on-year basis. FDI in equity inflow under services sector attracted the highest, amounting US$ 8.68 bn, followed by telecommunications – US$ 5.56 bn and trading-US$ 2.33 bn. FDI equity inflows for March 2017 alone, was US$ 2.45 bn;
- Ending March'2017, FDI equity inflows were highest from Mauritius (US$ 11.16 bn), then Singapore (US$ 5.46 bn), Japan (US$ 2.56bn), and USA (US$ 2.03 bn);
- As per Grant Thornton India's report (Assurance, Tax and Advisory firm), there were 59 PE transactions worth $1.22 billion in July'2017, against 88 deals worth $826 million in the corresponding month last year. As the market consolidation is much expected in sectors like e-commerce, telecommunication due to facing cash crunch, Mergers and acquisitions are likely to be the favored route for foreign direct investment flows into India in the coming years;
- As per The Financial Times report- 2017, India was ahead of China and the US in regard to FDI inflows:
    - The main reasons for the continuous growth, are government's thrust in improving "Ease of doing business", relaxing FDI norms in various sectors. In the last three years, the government eased 87 FDI key rules across 21 major sectors. Under the ease-of-doing-business drive, the government launched a portal to replace the website of the "Foreign Investment Promotion Board," a body was responsible earlier for FDI approval. Now the approval is entrusted to respective ministry;



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*Table 11. FDI Inflows during April'2016 to March'17*

| | | |
|---|---|---|
| Total Inflows (FDI) into India (Equity + Reinvt earnings + Other Capital) | | US$ 60.082bn |
| FDI Equity Inflows | INR2916.96bn | US$43.476bn |

Source: FIPB

*Table 12. FDI equity inflows (month-wise) during FY 2016-17*

| Financial Year 2016-17 | Amount of FDI Equity Inflows | |
|---|---|---|
| | INR in bn | US$ in bn |
| April 2016 | 223.450 | 3.362 |
| May2016 | 132.710 | 1.983 |
| June 2016 | 151.110 | 2.245 |
| July2016 | 274.300 | 4.081 |
| August2016 | 321.500 | 4.803 |
| Sept2016 | 343.660 | 5.149 |
| Oct'16 | 413.530 | 6.195 |
| Nov'16 | 316.310 | 4.677 |
| Dec'16 | 227.270 | 3.347 |
| Jan'17 | 270.670 | 3.976 |
| Feb'17 | 81.180 | 1.210 |
| March'17 | 161.260 | 2.448 |
| FY 2017 | 2916.950 | 43.476 |
| FY 2016 | 2623.220 | 40.001 |
| % growth over last year | +11% (Rupee term) | +9% (Dollar term) |

Source: FIPB

    - Foreign Direct Investment (FDI) grew by 37 per cent to USD 10.4 billion during the first quarter of the current fiscal (April-June'2017) vis-à-vis. USD 7.59 billion during the same period last year;
- FDI is estimated at a CAGR of 20-24% and is expected to touch US$ 68 bn by 2025, from only US$ 1 bn in 2015;
- India's balance of payments (BoP) improved, due to continued-inflow of foreign investments resulted stabilising international value of Indian currency.

## 8. SUCCESS OF THE PRESENT GOVERNMENT IN BRINGING FDI DURING THEIR RULING

To ascertain, the Researcher took out FDI Inflows for the years 2008-to 2012 (Before the ruling of the present Government) and for the years 2013 to 2017 i.e. during the ruling of the present Government.



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## 8.1. Data Collection

For the purpose of ascertainment, FDI inflow data were collected from the "Foreign Investment Promotion Board's, India (FIPB) latest reports.

## 8.2. Methodology

To test the success level, 5 years before and post 5 years FDI inflow data of the earlier and the present ruling Government are collected. Keeping in view the objective of the study, t-test was employed. This has been used as a statistical tool to find out whether the initiative for attracting FDI by the present Government had any significant effect over the earlier Government. t-test is carried out, based on the following equation:

$$t = \left( \frac{X_2 - X_1}{S} \right) \sqrt{\frac{N_1 N_2}{N_1 + N_2}}$$

where, $X_1$ is the mean of 5 years before period and $X_2$ is the mean of 5 years FDI inflows, during the present Government. $N_1$ and $N_2$ are the number of observations. S is the combined standard deviation. For a confidence level of 95%, we have a t-value of 2.306 for a total sample size of ten. If we have an outcome with a t-value greater than 2.306, then Hypothesis H1 is considered true else H0 is considered true.

**Hypothesis H0 (Null Hypothesis):** There is no significant difference between pre and post-period.
**Hypothesis H1:** Significant difference between pre and post periods persist (see Table 13).

*Table 13. FDI inflows*

| Year | In Million US$ |
|---|---|
| 2007-08 | 34843 |
| 2008-09 | 41873 |
| 2009-10 | 37745 |
| 2010-11 | 34847 |
| 2011-12 | 46556 |
| 2012-13 | 34298 |
| 2013-14 | 36046 |
| 2014-15 | 45148 |
| 2015-16 | 55559 |
| 2016-17 | 60082 |

Source: FIPB



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## 8.3. t-Test: Calculation

$X_1$ (Mean from 2008- to 2012) = US$39173M

$X_2$ (Mean from 2013 to 2017) = US$46227M

S1 (Pre period Standard Deviation) = 5032,

S2 (Post period Standard Deviation = 11469,

$$\text{S (Combined SD)} = \sqrt{\frac{\Sigma\left(X_1 - \bar{\bar{X}}_1\right)^2 + \Sigma\left(X_2 - \bar{\bar{X}}_2\right)^2}{N_1 + N_2 - 2}} = 8856$$

$$\text{Then t} = \frac{39{,}173 - 46227}{8856}\sqrt{\frac{5\times 5}{5+5}}$$

t = 1.26

As the t value is less than 2.306 it is not statistically significant. However, FDI inflow, since 2015, has increased significantly during the tenure of the present Government with an average y-o-y growth of19%, exhibited in Figure 2.

## 9. SENSEX

SENSEX is the benchmark index pertaining to the capital market of any country. It needs to be technically formulated in such a way that should have a wide acceptance among the global individual investors, institutional investors fund managers and foreign investors. The goals of the index are:

- Market movement's measurement;
- Benchmarking of funds' performance;
- For index based derivative products;
- BSE Sensex Index adopts, globally accepted, "Free-float Market Capitalization" i.e. proportion of shares of a publicly traded company that is traded in the stock market, considered for index building. Major global index providers like S & P, Dow Jones etc used Free-float methodology;
- S & P BSE Sensex Index: Yearly Sensex movement of Bombay Stock Exchange for the past five years (see Table 14).

Remarkable 49% growth, in the Indian equity market has been observed during the last five years. Since the globalisation process takes place, the stock market efficiently managed global competitiveness



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*Figure 2. FDI inflows: Exhibit 2*

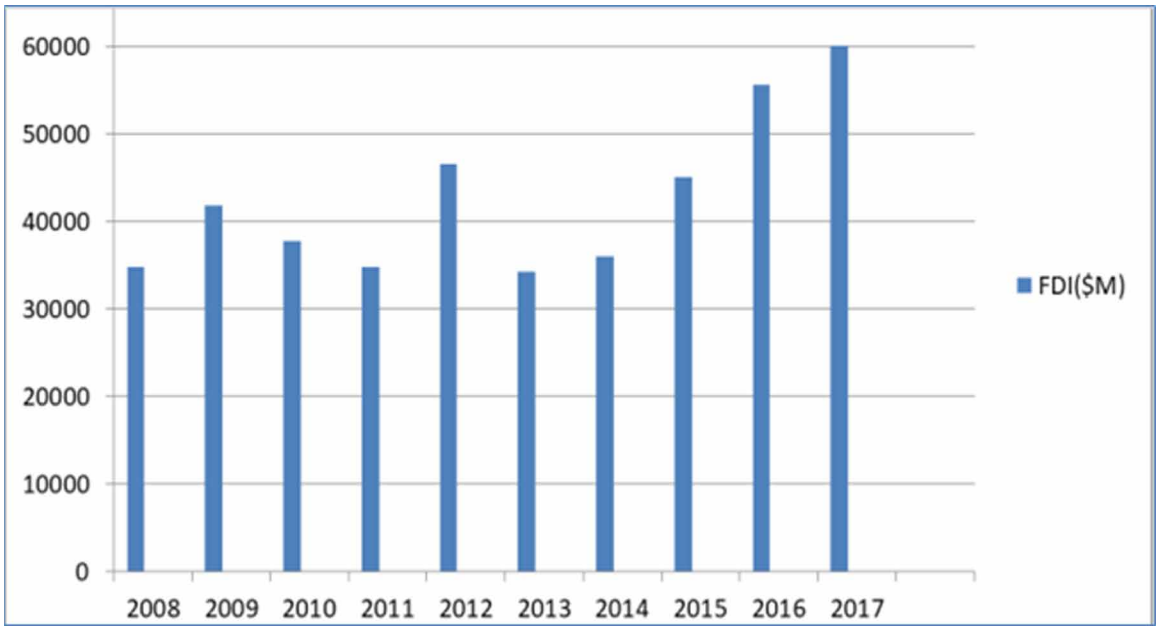



*Table 14. S & P BSE Sensex index*

| Year | Open | High | Low | Close |
|---|---|---|---|---|
| 2013 | 19,513.45 | 21,483.74 | 17,448.71 | 21,170.68 |
| 2014 | 21,222.19 | 28,822.37 | 19,963.12 | 27,499.42 |
| 2015 | 27,485.77 | 30,024.74 | 24,833.54 | 26,117.54 |
| 2016 | 26,101.50 | 29,077.28 | 22,494.61 | 26,626.46 |
| 2017 | 26,711.15 | 32,686.48 | 26,447.06 | 31,388.39 |

Source: BSE Report

in spite of delicate activities by various bull and bears. Similarly, Sensex trend for the decade exhibited booms and busts of the Indian equity market also.

## 9.1. Market Capitalisation

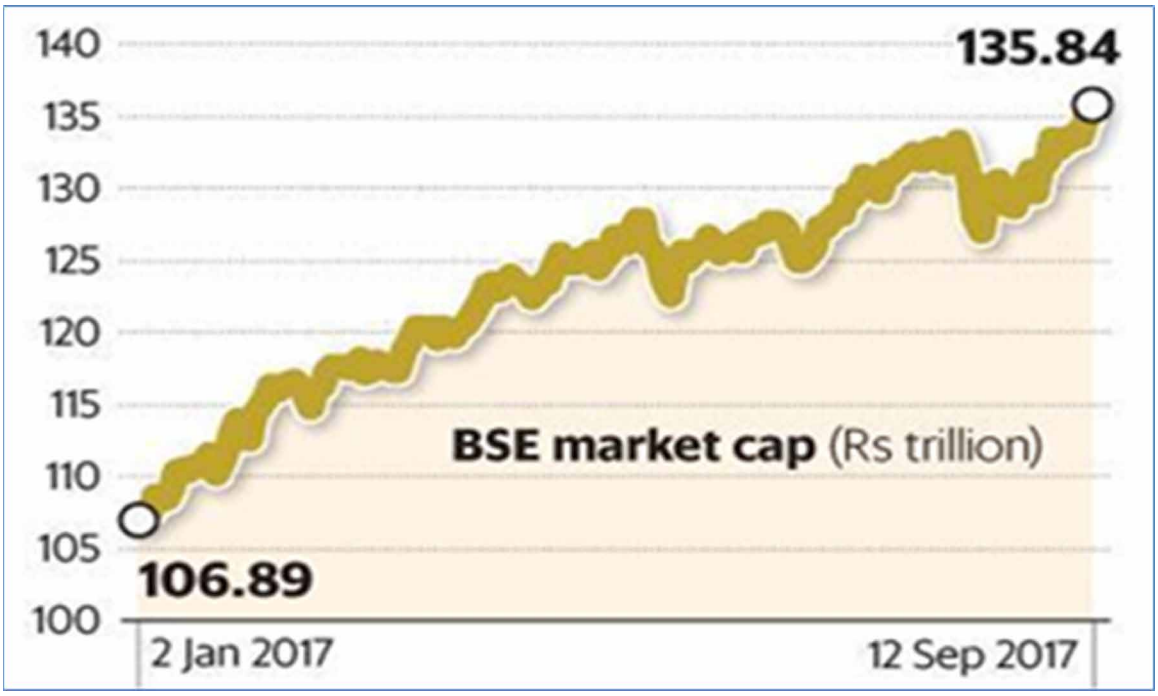
The value of India's listed companies recently reached a new high at Rs135.84tn. It was Rs 106.89tn as on 2/1/2017, 27% growth in 9 months' period (see Figure 3).

BSE's mid and small cap indices also hit a new high. Normal gross domestic product is expected to grow at 11%.



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*Figure 3. Exhibit 3 (Source: Bloomberg)*




## 10. ROAD AHEAD

India require around US$ 1tn, under their 12th Five-Year Plan (2012–17), for the holistic infrastructure sectors growth comprising highways, ports, airways, etc. Major supports are required from FDI inflows. Major activities, attracting FDIs at market prices contributing around 50%, like Manufacturing Sector followed by service sectors, covered about 40% includes 'Information and Communication Services', 'Financial and Insurance Activities' etc. Global FDI is expected to rise by 5% to $1.8 trillion in 2017. India retains 3rd spot on UNCTAD's list of investment destinations:

- To continue the present status, India needs to adopt the following:
  - Emphasis on the right balance between regulations in place and liberalization process, encouraging investment for sustainable development;
  - Further relaxation in liberalizing the entry requirements of the key economic factors such as infrastructures, aviation, mining, financial services and real estate;
  - Continue to have restrictions, on the national security and related areas, a great challenge.

The positive business climate was further kindled with the launch of "Make in India" initiative in September 2014 by the PM. PM's ambitious 'Make in India' initiative has been able to attract the world's attention to India as a manufacturing hub. The program aimed at driving new innovativeness designed to stand-in uniqueness, to protect intellectual property and to facilitate investment through building best-in-class manufacturing infrastructure. The success of the program will largely depend on the preparedness



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to provide the necessary infrastructure in terms of energy, technology, skilled manpower, land, simpler regulations to the industry to become a manufacturing super power nation.

To enable technology in manufacturing companies and run 100% integrated digital supply chain, domestic software companies have to step up and provide platforms which are tuned to Indian ecosystems. Furthermore, the core to "Make in India" campaign is to bring more foreign MNCs to set their facilities in India, which will create employment opportunities for the countrymen.

India currently ranks 99th in labour market efficiency among 148 countries. India needs to provide an efficient employable workforce i.e. skilled labourers. Simultaneously, India needs amendment in the restrictive labour and land laws. India's further preparedness is required to boost its manufacturing sector through road-rail-sea-air infrastructure linking, required to bring in Raw material to manufacturing plants as fast as possible and to take finished goods as quickly as possible to rural, urban and international markets.

While Government keenness on attracting foreign investment into the country to boost the country's economy faster, the make in India Lion can roar out loud only when more policies are prepared enough to support and nurture the manufacturing sector to grow and make India as world's manufacturing hub. Foreign Institutional Investors which started selling after Trump's win also upturned their trend in the recent past and invested in shares worth US$ 43.476 bn (2016- 2017). Historically, India's economy is founded through cash transactions. Moreover, a substantial transaction operates, informally. Privileges of the Government on the recent move on demonetisation (flushing out illegal cash) are to resist corruption and tax evasion besides crippling criminal enterprises and terrorists. After the recent demonetisation move and GST implementation, the Sensex gathered substantial points and Nifty also traded firmly above its crucial psychological level, signifies strong global markets. Rupee also traded at higher level, near 1-month high, 65.36 against the US dollar, boosting the sentiment in equity markets. Less cash economy will ultimately march into a digitized credit system to frame India as one of the best attractive country in the eyes of global investors.

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# Chapter 40
# On Some Aspects of State-Owned Enterprises' Foreign Direct Investments (SOEs' FDI): The Case of Polish SOEs' FDI

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## ABSTRACT

*This chapter seeks to enrich the existing literature by discussing the broader context of international engagement of state-owned enterprises (SOEs). It discusses the rationale for examining foreign direct investment (FDI) done by SOEs and outlines the challenges which need to be addressed in this respect. It provides a brief overview of FDI carried by Polish SOEs. The authors applied the qualitative methodology of critical literature review and descriptive analysis of internationalization of Polish state-controlled firms. This chapter can contribute to the current studies devoted mainly to Chinese or other Asian emerging state-controlled multinationals by adding the Central and Eastern European (CEE), in particular the Polish, perspective. It concludes that given the well-recognised peculiarities of such entities adequate framework needs to be adopted to explore their foreign activities. The Polish multi-case study encompassing nine entities demonstrates that the group can be pretty heterogeneous and indeed can combine the specificity of multinational enterprises (MNEs) and SOEs.*

## INTRODUCTION

The reasons for state ownership fluctuate over time, but state-controlled firms appear to be a constant feature of the economic landscape (PWC, 2015). SOEs are often granted privileges that are not available to competitors, which gives them the undue advantage over their rivals. There is a clear need to

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understand the behaviour and practices of SOEs in global context, beyond the borders, to identify the key concerns and to develop the rules safeguarding fair conditions for public and private market participants (Cuervo-Cazurra et al., 2014). The topic is even more relevant taking into account the last global economic crisis 2008+. The crisis period was related to the growing importance of SOEs and according to some researchers their importance will grow in the next years (Flores-Macias & Musacchio, 2009; Bremmer, 2010; Augustynowicz & Kwiatkowski, 2013).

This chapter discusses the rationale for exploring SOEs' foreign activities in the current world setting. The authors deliberately skip the review of the extremely broad literature devoted to emerging markets and mainly Chinese SOEs as these cases seem to differ substantially from European firms, at least due to the peculiarities of varieties of capitalism models adopted (Nölke & Vliegenthart, 2009). The authors instead focus on the perspective of global coordination. They review the studies and international reports which identify the evolving international role of SOEs. They also outline the main features of internationalisation process of Polish SOEs in the most advanced form of foreign direct investment (FDI). Such entities are featuring high on the agenda of currently negotiated agreements such as Transatlantic Trade and Investment Partnership (TTIP), or classic bilateral investment treaties (BITs). Their activities, in particular foreign operations, are in the spotlight of many international institutions which recognise the growing need of monitoring of SOEs' development.

This chapter is structured as follows. First, the authors present the background briefly introducing the distinct traits of state-owned enterprises. Next, they move towards the main issues of this chapter and outline the basic facts about the international engagement of SOEs as retrieved from databases. Special attention is being paid to Polish SOEs and their FDI against SOE from other CEE countries. Challenges stemming from growing foreign presence of many previously domestic oriented SOEs are discussed in the next section. Then, before formulation of conclusion the authors highlight some recommendations and future research directions. Last but not least, the chapter provides some concluding remarks, summing up in a way the conducted study.

## BACKGROUND: IDIOSYNCRASIES OF STATE-OWNED ENTERPRISES

The real-life phenomenon which are SOEs and their internationalization efforts call for the alteration within the varieties of capitalism. Some experts underline that e.g. the typology distinguishing between the liberal market economy (LME), capital market economy (CME), dependant market economy (DME) should be enriched with the fourth model of SME – the State-Permeated Capitalism (Nölke, 2015). This new version complements existing ones by accentuating the state influence on the economy also via nurturing domestic champions and their outward FDI. Though, even in Europe the traditional varieties of capitalism have been undergoing profound changes in the result of 2008 global financial crisis (Schweiger, 2014). Todays' approach seems to evolve towards more nuanced perception of state-owned or controlled companies away from simple dichotomy state or private which views SOEs as hybrid organizations, in which the levels of ownership and control by the state can vary significantly (Bruton et al., 2015). Modern state capitalism accommodating four new varieties - wholly owned state-owned enterprises, the state as a majority investor, the state as a minority investor, and the state as a strategic supporter of specific sectors - hence, challenges the conventional, very polarized view of state versus private ownership (Musacchio et al., 2015).



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There are large discrepancies in SOEs reporting by national statistical offices and responsible ministries. In the OECD countries only 10% of SOEs are publicly listed (OECD, 2004). Despite these differences SOEs in most OECD members respect the same general rules for insolvency and bankruptcy as private companies do. Accounting and auditing standards apply to SOEs as they do to private companies, and SOEs may additionally undergo controls carried out by specific state audit entities. They also have to observe stringent financial disclosure and transparency standards. In fact, in some countries such as Denmark or Poland, they are even obliged to follow some additional requirements.

Contrary to the legacy of old common wisdom assuming inferior economic results of SOEs Musacchio (et al., 2015), argue

*… that many of these firms following these new varieties of state capitalism are taking the stage in the global economy and are often performing at least equal to, if not better than, their private counterparts. 25 largest SOEs among the top 100 firms in the Fortune Global 500 have an average return on assets of 3.49% and an operating margin of 14%, which is comparable to the 3.44% and 5.7%, respectively, what can be found among the largest 75 private firms in the world. (Musacchio et al., 2015)*

Musacchio (et al., 2015) pointed to the emergence of a new form of state capitalism that is related to the transformation in the nature of SOEs. Nowadays governments can hold majority or minority equity positions. Public listing of these firms called for improvement of the financial reporting and higher transparency of governance which was possible thanks to independent board members. This kind of reforms attracted minority private investors (Pargendler et al., 2013) and gave rise to profitable businesses that expand in foreign markets. Next to the firms with the majority stake of the state companies with the government as the minority shareholder exists (Inoue et al., 2013).

SOEs have been mainly researched with respect to their domestic performance and apparent disadvantages - inferior efficiency, agency problems, ineffectiveness, and weak corporate governance (Shapiro & Globerman, 2009). It has been argued, that SOEs are "less able to develop capabilities or ownership advantages" that would be transferable to be exploited abroad, and which are a key driver for international growth (Kirca et al, 2012). Though, there is also a widespread recognition of numerous benefits accruing to these enterprises. The empirical analysis conducted by Christiansen and Kim (2014) indicates that, in addition to any financing advantages, large state-invested enterprises also seem to benefit from an unusually favourable position in their home markets. Most frequently cited advantages include: outright subsidisation (tax exemptions, favourable tax regimes or other in-kind benefits); concessionary financing and guarantees like credit below market interest rate; other preferential treatment by government (less restrictions, softer disclosure regulations, not required compliance with certain standards); monopolies and advantages of incumbency; captive equity as SOEs' equity is generally "locked in" and their managers are not expected as much as in private firms to deliver in terms of dividends or other rate of return etc. and exemption from bankruptcy rules and information advantages (Christiansen & Kim, 2014). For these reasons SOEs are prone to engage in economically irrational behaviour such as excessive capital investments or anticompetitive business practices, and in consequence disrupting the order of fair international competition. Thus, the OECD has been calling for ensuring a level playing field, or competitive neutrality between SOEs and private-sector companies (Capobianco & Christiansen, 2011).



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# STATE-OWNED MULTINATIONAL ENTERPRISES: CONTRASTING CONCEPTUAL ISSUES WITH FACTS AND FIGURES

## Conceptual Issues on the International Engagement of State-Owned Multinational Enterprises

The operations of SOMNEs being embedded in organizational settings that differ from the private sector and additionally in diversified institutional context – different countries expose the need to review and maybe revise the prevailing international business theories focused on internationalization of firms. There is a clear need of explanations why SOE internationalize (Bass & Chakrabarty, 2014; Choudhury & Khanna 2014; Götz & Jankowska, 2016).

When one takes into account the fact that SOEs operate to fulfil the governmental priorities there is the question which if any of the priorities can impede or facilitate the emergence of SOMNEs. The traditional justification for the existence of SOEs rather indicates the inhibitory mechanism to SOEs' internationalization. Since SOEs operations go in line with the ambitions and goals of the politicians one can presume, that only if these ambitions and goals have anything to do with foreign expansion this kind of entities will internationalize. OFDI on the side of SOEs can reduce the export opportunities for domestic firms. The substitution of export activities by the OFDI operations can lead to negative balance of payment in the domestic market of SOEs. These implications work rather as a kind of impediment to SOEs internationalization (Mazzolini, 1980). The establishment of SOEs in particular industries can be explained by some resource constraints in the country (Vernon, 1979). These can be industries not attractive for the private sector and at the same time often not prone to internationalization. Exploitation of state ownership to improve the employment rate in the domestic economy will impede the internationalization of SOEs through OFDI since this internationalization mode can have negative impact on the situation in the domestic labour market (Mazzolini, 1980).

Nevertheless, the internationalisation of SOEs can be fostered by the political priorities related to the ambitions of state governments to dominate in particular industries worldwide. These aspirations can be sometimes even far away from the conventional wisdom and logic in business that is based on the rules of risk mitigation and profit maximisation. Financial goals can be put into the background and the power and dominance goals can be in the forefront. The lack of profitability logic is sometimes reflected in the set of target markets SOEMNEs focus on. The choice of markets can be based on the foreign policy priorities and not on the country-specific advantages the markets provide to foreign investors. It is quite visible in the case of Chinese firms (Ramasamy et al., 2012). The internationalization ambitions of SOEs can be fostered by their higher resilience to risk. Governments providing budget, resources and possessing the power to influence regulatory framework can reduce the risk related to international business operations. It is possible especially when SOEs come from countries with strong governments (Knutsen et al., 2011).

The liberalization of trade, FDI inflows and outflows, removal of any market entry and exit barriers result often in the growing intensity of competitive rivalry within particular national markets thus exposing the necessity to find new competitive arena even among SOEs. Foreign expansion can be used to stabilize the position of SOEs (Clifton et. al., 2011; Dau, 2012; Witt & Lewin, 2007). The competitive pressure in the domestic market faced by SOEs forces the managers to focus more on market goals than just on political and social implications of their operations. Combining the internal – SOEs specific features with the changes in their external settings of operations one can indicate that the motivations to



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go international on the side of SOEs will work only if the regulatory framework is conducive. It means that the probability of SOEs internationalization is higher when the external circumstances they operate in resemble more the pure market economy conditions. With respect to internationalization processes, on the one hand SOEs can be the target of foreign takeover (IFDI), on the other hand they can themselves become a vehicle for carrying foreign investment abroad (OFDI), in which case their ownership matters much being either a liability or an asset.

As one of the pioneers in this area in 1979, Vernon identified likely challenges and problems to be expected due to internationalisation of SOEs (such as the inclination to use domestic inputs), which as it seems they have not materialised, perhaps also due to such early warning statements as these quoted in the Vernon's paper (1979). SOEs' engagement in internationalisation certainly reflects the political economy of home country (Dharwadkar, 2000). SOEs discussion has typically been framed around questions of efficiency, productivity or administrative bureaucracy. SOMNEs development requires new augmented approach which takes into account the fact that these firms are vehicles to exercise foreign policy and diplomacy goals. On the one hand, peculiarities of SOEs contribute to the traditional knowledge of MNEs by adding the "non-business argument, on the other hand studies on MNEs enhance the understanding of foreign expansion by SOEs by adding the "extraterritoriality" argument (Cuervo-Cazurra, 2014). Whereas the first assumes some irrationality with political objectives given priority over economic ones; the latter argument point to the extraterritorial dimension of the need to address market imperfection or export certain ideology. These extensions are further complemented with augmented versions of five theories. Agency theory focuses on the relationships between the agent who is tasked by the principal to perform an action in the principal's name and principal themselves himself (Holmstrom, 1979). SOEs typical dual agency problem needs to be extended in SOMNEs case into triple one including also the relations between headquarter and subsidiary managers. Transaction cost economics explains firm behaviour as deriving from the information asymmetries and imperfect contracting or opportunism (Williamson, 1985). In the case of SOMNEs, the perceptions of transaction costs differ mainly because the government has a different risk tolerance than private owners. Governments have larger budgets and resources that enable them to take more risks (Kaldor, 1980). The resource-based view focuses on how firms can develop own capabilities to achieve an advantage over competitors (Penrose, 1959). SOEs peculiar resources can be seen as an asset but also as a liability. If the earlier is true SOE would engage in larger riskier projects, when the latter is true SOEs would face some hostility in host country and hence prefer greenfield investments over acquisitions. Resource dependence theory analyses power relationships among two parties, where the one is able to exercise power over the other one which depends on the former. In case of SOMNEs a way to reduce the influence of politicians would be to depend less on government funds and support via internationalizing the firm (Noreng, 1994). Finally, the neo-institutional theory focuses on understanding of the legitimacy required to operate in a foreign country. Companies have to respond to various pressures and imitate practices that are perceived as legitimate (DiMaggio, Powell, 1991). A MNE faces two sets of such pressures on its legitimacy, from the home country headquarters and from the host country environment (Kostova & Zaheer, 1999). This conflict suggest that SOMNEs are more likely to select host countries in which their state ownership is perceived as more legitimate than these host countries in which there is less legitimacy of state ownership. Additionally, one may expect that regardless of the selected host country, SOMNEs are more likely than private MNEs to engage in legitimacy building actions under the umbrella of corporate social responsibility (CSR).



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## State-Owned Multinational Enterprises in the Cross-Country Perspective: Facts and Figures

SOMNC is a legally independent firm with direct ownership by the state that has value-adding activities outside its home country; be they downstream activities such as sales subsidiaries, or upstream activities such as R&D centers (Cuervo-Cazurra et al., 2014).[1] A SOMNE represents a hybrid organizational form with the dual characteristics of both the state-owned enterprise (SOE) and the multinational enterprise (MNE). When compared with private MNEs, SOMNEs are generally less profit-oriented and have a more complex corporate governance structure. They have less autonomy to establish their strategies, but also experience a lower level of uncertainty in their external environment. As a result, SOMNEs have more difficulty than private MNEs in developing strategies and making organizational changes.

The developments of SOMNEs can be attributed to different global trends. First, is the fact that due to globalization challenges and increased competition SOEs have been less able than in the past to depend on governments for protection, and compensation for significant losses from the increased foreign competition in their local markets (Tan & Tan, 2005). This less favourable settings have forced SOEs to engage in OFDI, to compensate for suffered changes. Second trend is the establishment of new codes and regulations by international institutions guiding the international capital flows. Thirdly, privatisation processes enabling turning SOEs into SOMNEs were accompanied particularly after the 2008 crisis with opposite trends of MNEs turning into SOMNEs via nationalisation and bail-outs mainly.

Of the 2000 largest companies "Forbes Global 2000" (2010-2011), 204 have been identified as majority SOEs with ownership spread across 37 different countries. The numbers vary significantly by country, with China leading the list (70 SOEs), followed by India (30), Russia (9), the United Arab Emirates (9) and Malaysia (8). Among OECD countries SOEs operate in Norway, France, Ireland, Greece, Finland, Korea, Belgium, Sweden, Austria and Turkey. Their numbers do not reflect the share of the state in the whole economy but might be a proxy for the relative importance of the state among a country's most international business players.[2] The proportion of SOEs among the Fortune Global 500 has grown from 9% in 2005 to 23% in 2014, driven particularly by the growth of Chinese firms. SOEs global proliferation and increasing significance worldwide also as vehicles for FDI is testified by the numbers. Among 100 thousands MNEs only 650 are state owned MNEs (44% from advanced economies), though, they have more than 8500 foreign affiliates and out of 100 largest MNEs as much as 19 are SOMNEs (World Investment Report, 2011).

Figures provided by the Dealogic database (comprehensive information on international deals with the industry, region and main characteristics of the deal) demonstrate that deals done by Chinese and Russian SOEs account for 45% of all international transactions of SOEs. Among OECD countries, the top five countries with large state-owned enterprises' international transactions are France (415 deals), Italy (216 deals), Norway (205 deals), Japan (155 deals) and Germany (137 deals) (Christiansen & Kim, 2014). Significant number of transactions which took place among European countries seemed to illustrate the cross-border consolidation processes/integration of EU market (Christiansen & Kim, 2014). Although the growing role of state enterprises in the international marketplace does not yet present a serious macroeconomic challenge (Christiansen & Kim, 2014). Their international investment can if then fall into three categories. The first category refers to SOEs, that located in sectors where all other private enterprises operate internationally (e.g. hydrocarbons). The second type has been a wave of cross-border consolidations in the public utilities sectors in the EU area, which in many cases has involved SOEs. The third category embraces Chinese SOEs that in particular have been encouraged by their government to expand abroad as part of the so-called "go global" strategy.



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Firms from the OECD countries are the largest owners of foreign subsidiaries, however, just less of 2% of their parent companies are SOEs (Kowalski et al., 2013). This is considerably lower than the share of SOEs on the "Global 2000 list", suggesting that private firms tend to be overall more active internationally than SOEs. To assess the extent of FDI done by SOE Kowalski (et al., 2013) conducted regression analysis.[3] Obtained results show that the SOEs do not differ from private firms with regard to their number of domestic subsidiaries but their number of foreign subsidiaries and as such the ratio of foreign over domestic subsidiaries is significantly lower than for private firms. These findings suggest that the SOEs among the world's largest publically listed companies tend to be less internationally oriented than their private counterparts. Nevertheless, there are considerable differences with respect to the quantitative magnitude of this aspect as SOEs in OECD countries tend to be relatively more domestically oriented than in emerging economies. Despite such orientation international institutions stress the need to explore cross-border implications of SOEs activities.[4]

The comprehensive list of 15 largest SOMNEs encompasses four companies from China and one from France, Norway, Sweden, Malaysia, Japan, Singapore, Qatar, Brazil, Russia, Venezuela and India (Cahen, 2014). Their TNI index varies between 2.7 (China National Petroleum - CNPC), and 82.9 (Qatar Telecom - Ooredoo) whereas government control ranges from 38% (Gazprom) to 100% (Chinese - Sinochem Group, China National Offshore Oil Corp; China National Petroleum, CITIC; Petróleos de Venezuela SA (PDVSA) from Venezuela, Vattenfall AB from Sweden and Petronas from Malaysia).

Based on qualitative study of foreign direct investment conducted by Brazil's Petrobras Cahen (2014) claims that SOEs can be either risk-seeking or risk-averse agents depending on the risk level related to the entry to the particular country and on institutional transformations in their home countries. SOES international behaviour reflects also different stages of evolution these firms undergo. SOEs' motivation for internationalization evolved in reaction to changing environment, in particular to conducted reforms. Besides, as it seems greater SOE internationalization leads to more efforts to modernize SOE managers' approaches.

## State-Owned Enterprises in Poland and Their Foreign Investments Against Other CEE Countries: Facts and Figures

Studies on OFDI by Polish firms are still relatively new research area and they often don't present the findings separately for state-owned firms (Ciesielska, 2014; Éltető et al, 2015; Gorynia, Nowak, Wolniak, 2010; Gorynia et al., 2015; Götz, 2014; Nowiński, 2015; Obłój, Wąsowska, 2012; Wąsowska, Obłój, 2013). Findings obtained by these authors to some extent confirm the classic theory developments, though, also stress the peculiarities of Polish emerging multinationals such as the relatively lower importance of psychological distance and political risk when expanding abroad.

According to "Forbes Global 2000" in 2011 Poland had 6 firms on the list all of them being SOEs (*The world's…*, 2012).[5] Such 100% dominance of SOEs in that ranking can be also spotted in Czech Republic. It is also high in Greece (25%) and Norway (20%). In other EU countries it is respectively: 10% in Austria, 13% in Belgium, 8% in Finland and France, 2% in Germany, 7% in Ireland, 3% in Italy, 4% in Sweden and 1% in UK. The high proportion of SOEs in Poland among largest companies additionally justifies the need to study this particular cohort of enterprises. These companies with the Ministry of Treasury as shareholder contribute to the economy by creating jobs, safeguarding tax incomes and generating considerably revenues particularly in strategic sectors such as energy (Baniak, 2015). Many of them thanks to their activity in the field of corporate social responsibility (CSR) are part of RESPECT index measuring other than purely



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economic performance of Warsaw Stock Exchange (WSE) listed firms. It shall be noted that out of 20 companies included in this ranking in 2013 almost 50% (9) are enterprises with state stake. Inspection of SOEs against the background of varieties of capitalism compiled by Musacchio (et al., 2015) revealed that Poland has some 498 firms with the central government as a majority shareholder and 691 firms with the central government as a minority investor (Musacchio et al., 2015, p. 117).

Besides scare lists and rankings which enable inferring some data on SOEs and their foreign activities in particular there are also other substitute dataset providing complementary information. OECD Indicators of Product Market Regulation (PMR), are a comprehensive and internationally-comparable set of indicators that measure the degree to which policies promote or inhibit competition in areas of the product market where competition is viable.[6] They measure the economy-wide regulatory and market environments and include also data on state control in particular public ownership - scope of SOEs and their governance.

Comprehensive data gathered and published by OECD with respect to PMR show the decreasing scope of public ownership in Polish economy as the value of index fall from 4.9 in 1998 to 4.3 in 2013. Likewise, the variable "state control" has declined in 2013 as compared to readings in 2008 and 2003. These figures can be enriched by insight on size, composition and outward orientation of the state sector (Christiansen, 2011). Comparison of the total number of all Polish SOEs in 2009 with most recent figures from 2012 points to significant drop from 1210 to 326 firms (OECD, 2013; 2014). Another source claims, that the number of such firms in Poland has decreased from 365 in 2010 to 198 in 2012 which means drop of more than 45% within relatively short period of time (Adamczyk, 2014). Due to the missing information on employment and value in 2009 it cannot be assessed how much this decline in number of SOEs translated into lower employment or value. Interestingly there is information only on two M&A deals done by listed SOEs in 2012 valued at USD 2896 million.

Following the transition commence for a long time, Polish OFDI was almost negligible and limited in fact to trade-supporting activities in selected key export markets (Zimny, 2013). It really took off after the EU accession in 2004. This year can be seen a symbolic watershed moment, but it has not been until then when Polish private sector had matured enough and first home-grown multinational enterprises (MNEs) and state owned enterprises (SOEs) also began investing abroad (Éltető et al., 2015). Transformation in early nineties induced several processes and triggered profound changes in economic landscape but foreign commercial expansion does not seem to be one of them. Although the ratio of OFDI stock from Poland to IFDI stock in Poland is still rather small and accounted for 25% in 2011, compared to 126% in the European Union, it has grown rapidly from 3% in 2000 and 7% in 2005. The recently observed in Poland wider approval for foreign expansion should be seen as the late result of long-term processes which started 25 years ago. So far, Polish governments have been running rather neutral policy towards OFDI or Polish MNEs. Notwithstanding, the natural conditions enabling firms to thrive, it seems Poland might adopt a more active approach in this respect, among others trying to turn SOEs into national champions and, eventually, into MNEs.

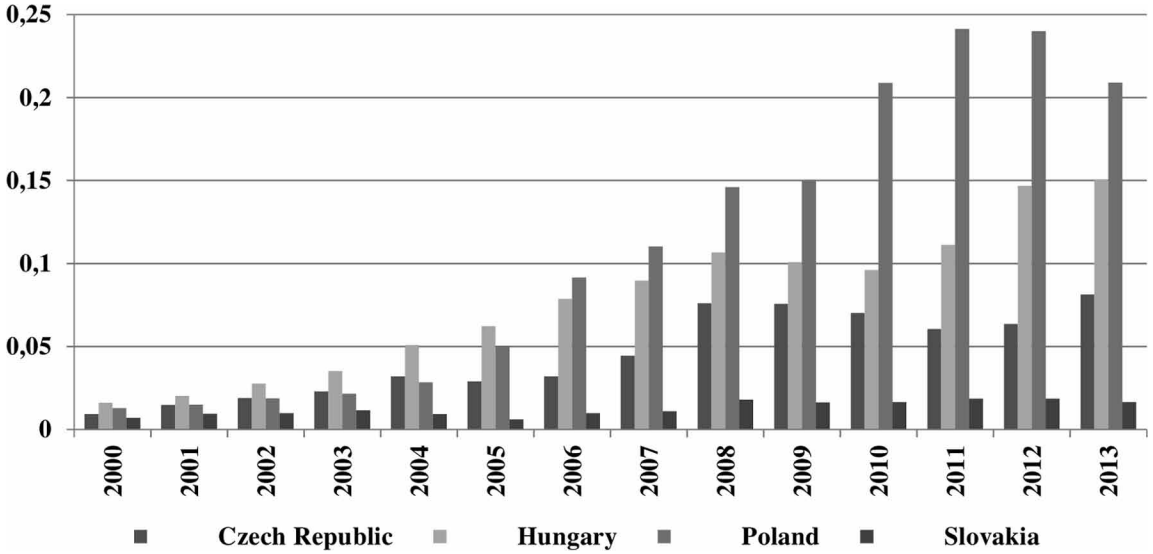
The low proportion of OFDI is not only a Polish feature, but shared with other countries of the region also among the Visegrad Group - V4 group which is presented in Figure 1.

Some state-owned enterprises also began investing abroad, sometimes with the Government's encouragement. Actually, despite certain communist burden and inefficiency SOEs might have had it easier to internationalize as most of their private CEE firms were then occupied with privatization, and modernization, focusing on the domestic market which offered plenty of opportunities and facing significant scarcity of multiple resources when trying to penetrate foreign markets (Ferencikova & Hluskova, 2015).



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*Figure 1. OFDI stocks percentage of total world*
*Source: UNCTAD databases, http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx, retrieved January 2015.*




CEE countries are hence rightly branded by Kalotay (2010) as dwarfs when it comes to OFDIs. However, the increasing OFDI stocks presented in Figure 2, implies that all V4 countries are continually expanding their presence abroad. Poland due to its sheer size naturally leads the group. Two dates stand out: 2004 and accession to the EU after which OFDI stocks have picked up and 2008 when the value accumulated stagnated.

Nevertheless, available statistics presented in Figure 3 reveal that flows from V4 countries represent maximum 0,8% of world flows, and usually range within some 0,001 and -0,4. Even Poland (the largest country of V4 group with seemingly highest potential although visible leading within the group) has once barely exceeded the 0,6% mark.

The negligible role CEE region plays in world as sources of FDI can be again confirmed by figures on V4 OFDI stocks as a percentage of world total. Even group's leader Poland cannot claim more than 0,25%. The authors' earlier study (Éltető et al, 2015) shows that here has been no clear trend in all V4 countries with respect to OFDI flows. Sudden formidable surge or plunge of such flows may suggest the possible significance of single contracts / deal / acquisition which may distort the whole stream volume.

In the VCC Report it has been stated that in Poland 5 of the 19 firms have a significant state stake in them, although only two – PGNiG (73%) and LOTOS (53%) – are majority-owned by the state (Zimny, 2013). In 2012, the Report found that "the ranking includes some state-controlled firms but is dominated by private ones" (Zimny, 2013). Major Polish MNEs included a number of state-owned (or state-controlled) enterprises in the petroleum (PKN Orlen, LOTOS), gas (PGNiG) and chemical (Ciech) industries. In April 2015 the estimated value of foreign investment of key Polish SOEs totalled 30 billion PLN (Baniak, 2015).

Foreign acquisitions of Polish SOEs raised much controversies. Business media reported on that occasions of wider costs and losses for the whole society (Frączyk, 2014). Impairment losses and write-offs due to failed investment abroad have led to a decline in the share prices of investing enterprises. The largest state-owned companies seem to have a special talent for making losses abroad, losing a fortune,



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*Figure 2. OFDI stocks USD at current prices and current exchange rates in millions*
*Source: UNCTAD databases, http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx, retrieved January 2015.*

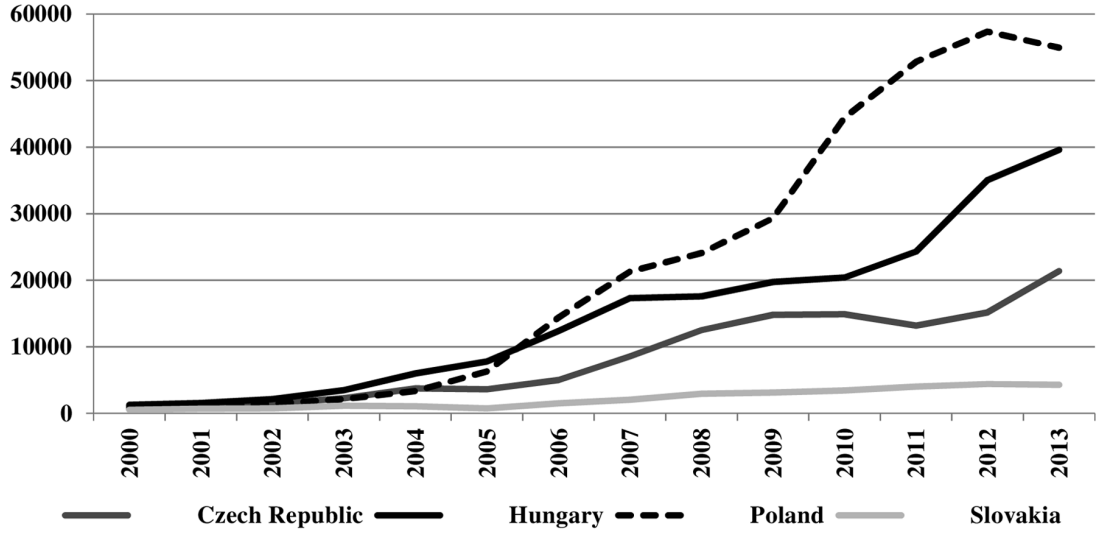
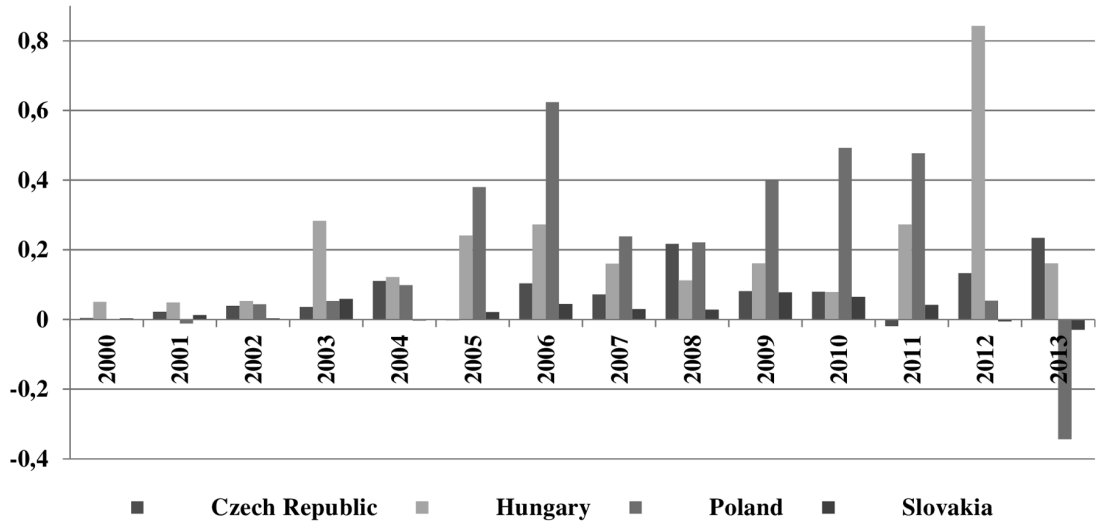



*Figure 3. OFDI flows percentage of total world*
*Source: UNCTAD databases, http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx, retrieved January 2015.*




yet belonging to Polish taxpayers. Quoted are failed investments in Norwegian oil deposits by Lotos in 2008, PKN Orlen purchase of Lithuanian refinery Mozejki in 2006, KGHM acquisition of copper deposits in Kongo in late nineties. These fiascos to some extent reflect home-made own mismanagement, though, not only. Hostile approach faced by Orlen in Lithuania and hurdles multiplied by Russian pipelines operator or misleading preparation of oil rig by subcontractor in case of Lotos Norwegian venture indicate other "external" factors. Affected enterprises seek compensation, try to utilise available tools such as the tax shield and sue to the international arbitrage tribunals. Altogether, the losses due to failed



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foreign purchases make a considerable sum which by the fact of state ownership can be regarded as wealth reduction of the society and /or liability for country's budget (Irzyński, 2014). Apparently overly optimistic foreign acquisitions turned out to be miscalculated and brought about rather losses, write-offs and share prices' drop implying also the need to repay loans taken to finance the purchase. Write-offs do not mean of course a sudden outflow of money from firms' corporate bank accounts, though, they lead to the asset revaluation in balance sheets. Nevertheless, such investments can be also perceived as overdue internationalisation of Polish firms and an opportunity for the national economy and nation's wealth (Roguski & Furman, 2013). Geographic expansion is an important element of business strategy. And even when not smooth, it can enable to fail your way to success as it offers a chance to acquire know-how, built expertise, strengthen competences, and gain expertise. The media frenzy accompanying them may obviously be justified, though, one need to bear in mind that such firms are usual suspects and their moves are watched much more closely hence commented and criticised than those of private peers which might as well be unsuccessful.

Available insight on Polish FDI done by SOEs comes mainly from dedicated case studies and there is no single source providing exhaustive information on either MA or Greenfields by SOEs.[7] Hence, in order to assess the foreign expansion by Polish companies with the state as stakeholder first the list of such firms has been established. As the main reference serves Rzeczpospolita List of "2000 Polish firms" (Lista Polskich Przedsiębiorstw i Eksporterów, 2015). From all 2000 entities, have been selected companies with indicated state stake and simultaneously listed on WSE. In the first step 19 of such companies have been identified. Closer inspection of available data enables also excluding firms: with almost non-existent (reduced significantly recently following the privatisation processes), around/below 10% state stake or apparently not involved in foreign activity. This enabled setting up the final registry of nine Polish listed SOE conducting FDI. Table 1 offers synopsis of covered SOEs.

The state stake varies in the examined group between some 27% and 72%. Lotos and PGNiG are only two firms where the state owns more than 50% of stake. Explored companies run abroad not only core business units (mining, extraction or trading) but also servicing units dealing with auxiliary functions – ships chartering, placing Eurobonds etc.). Comparing and contrasting the examined Polish SOEs enables some simple profiling of them with respect to their foreign presence. Assessing each firm against the background of its peers illuminates certain idiosyncrasies and allows to capture the dominating trait. The authors are aware that interested companies may not share our judgement and see their foreign involvement differently. Though, our opinion derives from evaluating each firm in wider context of its peers' engagement. Based on such exercises, the authors would suggest that:

- PGNiG, Lotos, PKN Orlen and KGHM can be indeed regarded as multinationals. Their complex structure and various modes of involvement abroad renders such name. They set up new businesses, purchase existing firms and conduct not only activities of core business such as resources exploration, processing but also establish firms tasked with global coordination of such spread presence – they manage and exercise control over other entities within the group, serve for marketing purposes and are representative offices. Their foreign presence is both geographically and operationally diversified.
- Azoty is a resource-seeking firm, venturing abroad with clear aim of tapping into foreign mineral resources and realising hence concrete acquisition projects.



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*Table 1. Summary of Polish SOEs active abroad*

| SOE | State Stake (%) | Foreign Presence |
|---|---|---|
| PGNiG | 72 | 7 foreign subsidiaries out of total 31. Located in Germany, Norway, Sweden, the Netherlands, Lebanon, United Arab Emirates and Ukraine. Operating branch in Pakistan, representative offices in Belgium, Belarus, Ukraine, Russia. |
| Lotos | 53 | 15 out of 40 subsidiaries are hosted abroad, mainly in Lithuania, Cyprus, Norway and Curacao. |
| PZU | 35 | 11 out of 55 Group subsidiaries are abroad, in Ukraine, Germany, Romania, Latvia, Lithuania and Sweden. |
| PKP Cargo / PKP SA | 33 | 6 direct foreign subsidiaries, out of which 2 are in liquidation; in 2 PKP has more than 50% share and 7 indirect subsidiaries in Slovakia, Hungary, Czech Republic, Italy and the Netherlands. |
| Azoty | 33 | Companies run in Germany and in Africa in Senegal. |
| KGHM | 32 | 9 subsidiaries supervised directly by KGHM out of 52 entities in the Group are located abroad, and 26 affiliates being part of KGHM International. |
| Tauron | 30 | 2 subsidiaries out of 14 are located abroad along with 50% share in firms in Czech Republic and Sweden. |
| PKO BP | 29 | 6 out of 46 subsidiaries within the Group are located abroad, among them 4 direct and 2 indirect subsidiaries in Ukraine and Sweden. |
| PKN Orlen | 28 | 7 out of 36 entities constituting the group are located abroad – in Czech Republic, Lithuania, Germany, Sweden and Malta. |

Source: Own elaboration (data as on November 2015).

- PZU and PKO BP are distinctly regional, market-driven ventures preferring close neighbouring locations with activities being extension and replication of operations carried at home and constituting the core business.
- Tuaron can be regarded as rather a small-scale timid investor gradually expanding presence abroad.
- PKP Cargo investments seem to fit into strategic-asset and indirectly a market-seeking FDI as it purchases foreign railway carriers in order to serve foreign markets.

Given the state stake and scope of foreign presence it seems justified to name investigated firms as rather quasi-SOMNEs/para-SOMNEs – as they are owned or controlled by the state to the limited extent (as compared to Chinese SOESs), their expansion abroad has begun relatively recently and has limited reach.

## SOLUTIONS AND RECOMMENDATIONS

The dual nature and hybrid form of SOMNEs implies various challenges. This peculiarity is best summarised by He (et al., 2015) who stressed: the possible internal conflicts, management autonomy, varying expectations, perceived and tolerated uncertainty or readiness of risk taking and degree of flexibility.

In the current consensus view of many governments some rules of the game are required when state enterprises are engaged in commercial competition. This is mainly due to the fact that while governments have entered into numerous obligations with respect to international trade and investment, state-owned enterprises may frustrate the fulfilment of these commitments. Hence it must be stressed that it is not motives or efficiency of SOE what matter but trade- and investment-distorting effects with which these negotiators are concerned.



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In respect of state-owned enterprises, the EU seeks to impose certain substantive and transparency requirements for the moment being not included in WTO agreements.[8] Efforts are being undertaken to set up a joint platform of state-owned enterprise-related disciplines, which can be used in subsequent international trade agreements and forums to address state capitalism concerns. For the EU, government ownership is not problematic in itself but certain advantages provided by governments must be addressed.[9]

The prominence of SOE as topic of public debate and policy-makers' interests is reflected in currently negotiated TTIP (Wooton, 2015) and features high on the agenda of recently concluded TTP (Hufbauer, 2015). Trans-Pacific Partnership members are committed to assure the level playing field between SOE and private firms by limiting, for example, the preferential access to finance or new markets. Obviously, certain transition periods before new rules take effect and possible carve-out are taken into account. Trans-Pacific Partnership launches some discipline on accounting practices and governing boards and a requirement that SOE open their procurement of goods and services to foreign firms. The treatment of SOE is also topic being covered during the negotiations of comprehensive bilateral investment agreement between the EU and China (Bickenbach, 2015). The Commission believes that this deal needs to address unfair advantages enjoyed by Chinese SOEs. Various privileges of such enterprises on the one hand, can be detrimental for European companies investing in China, on the other hand, may offer Chinese SOEs investing in Europe an unfair advantage. The likely remedies include first and foremost more transparency - "inter alia the timely publication of financial accounts according to international standards, the disclosure of leading managers' past and present connections to government offices, the publication of any exemptions of SOEs from any measure, regulation or law, and the disclosure of any tax preferences or subsidies for any SOEs" (Bickenbach, 2015, p. 23). New rules would be not only in interest of European about also Chinese companies who might in that way be freed from continuous prejudices and suspicions.

Existing regulatory frameworks that discipline some forms of anti-competitive behaviour of SOEs have been designed with domestic objectives in mind or were conceived at times when the state sector was oriented primarily towards domestic markets (Kowalski, 2013). In terms of international trade and investment, it is difficult to identify explicit strategies of OECD governments to expand the activity of their SOEs abroad. This does not mean that the authorities have no means of shielding an SOE or a national champion from foreign competition, or of helping facilitate their expansion abroad.

There is already in force law which regulates at the international level foreign activities of SOEs (Kawase, 2014). Regarding outward direct investments, some international investment agreements (IIAs) concluded between home and host countries contain provisions exempting subsidies. Other preferential treatment for SOEs that is discriminatory and anticompetitive in nature by host countries may be found to be in non-compliance, for instance, with the principle of national treatment or that of fair and equitable treatment. Furthermore, a foreign investor can bring a claim against the government of its host country for the reason of SOEs' misconduct under the investor-state dispute settlement (ISDS) provisions of the relevant IIA. On the other hand, regarding inward direct investments, when a host country deals with strategic investment activities and anticompetitive business practices by foreign SOEs, it is effective to apply within the purview of the OECD Code of Liberalisation of Current Invisible Operations, domestic investment review and blocking processes for the reason of protecting national security and public interests. Many IIAs basically do not restrict such investment reviews without liberalisation commitments on investment. And most IIAs provide for national security and public order exceptions. The IMF's Santiago Principles and the OECD Declaration on SWFs and Recipient Country Policies can be cited as relevant international soft law (WIR, 2009; Götz, Jankowska, 2016).



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## FUTURE RESEARCH DIRECTIONS

It is visible that there is no proper understanding of how institutions in the country of origin of SOEMNEs affect the strategies of outward investments (Kirca, 2010; Nielsen & Nielsen 2010, Wan, 2005, Wan & Hoskisson, 2003). Experts argue that attention should be paid to listed SOEs which display characteristics of both the state and private sectors. They may be motivated by objectives other than profits, and these are determined through a political process, on the other they are simultaneously subject to market forces.

There are however, many aspects missing form current international legal framework and the indication and characterization of these aspects could be the future focus of the study. It seems infeasible currently to require transparency of information such as the description of business and financial standing; to control outright government subsidies; to monitor person-oriented SOEs' strengths (like close relationships with influential politicians). Problems arise also in terms of how to quantify preferential treatment in environmental regulations for SOEs or SOEs' lax corporate governance. Even the definition of an SOE is another difficult issue to agree upon. Should the term 'state-owned' be taken literally as meaning 100% government ownership or more than 50% of its voting shares held by the government could be sufficient? What about "state-influenced enterprises"? (Shapiro & Globerman, 2009) Furthermore, treatment of enterprises owned by sub-national governments is seemingly another reason for splits among the negotiators.

Given the internationalisation processes of SOEs i.e. their higher involvement in trade and investment it seems inevitable to better monitor and asses these tendencies to help governments formulate informed and balanced policy responses. Existing law has mainly domestic inward perspective and does not seem adequate for international processes. National antitrust law can be used to deal with the abuse of dominant position by SOEs and to prevent anticompetitive effects associated with M&As by SOEs (Capobianco & Christiansen, 2011). Competitive neutrality arrangements in some OECD members aim to mitigate or eliminate competitive advantages of state-owned enterprises, with respect to taxation, or financing costs (OECD, 2012). In the EU, for example, the state interactions with other entities are governed by special rules in the areas of antitrust, state aid and transparency. WTO rules are generally ownership-neutral and the disciplines that they impose on government regulations and actions do not distinguish between situations where the provider of the goods or services is a public or a private. They can, nevertheless, discipline some government policies and actions involving state-owned enterprises, for example, when they receive trade-distorting state subsidies. Violation of national treatment or most-favoured nation principles, granting of subsidies or other forms of influencing trade by state-owned enterprises themselves can also be covered by WTO disciplines.

Yet, some of the definitional ambiguities have rendered application of these disciplines uncertain and some provisions allow countries to exempt state-owned enterprises' actions from certain WTO disciplines. Finally, many existing PTAs and BITs include specific provisions on state-owned enterprises, attempting to fill gaps in existing multilateral provisions.

The literature on SOMNEs is scant and mostly focused on Asia.[10] In fact what the authors know mostly come from the public administration, developmental economics and political economy literatures. Little is known about their international impacts and aspirations in the global arena and, in particular, about SOMNEs form CEECs.



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## CONCLUSION

This chapter has been inspired by the recognised and growing interest in international dimension of SOEs activity. As it seems SOEs cause more concerns due to their outward orientation. This issue is additionally compounded by the scare data available in this respect. There is still very little reliable information on the importance of state-owned enterprises in today's global markets and on the exact nature of the advantages they may be enjoying because of their ownership (Büge et al., 2013). Some 10% of the world's 2000 largest corporations are fully owned or partially controlled by governments (Krist & Benka, 2013).

Right now there are almost no rules governing how SOEs may operate in international trade, and SOEs can have unfair advantages in competition with privately-owned companies that must respond to market forces. Given the predicted growth tendency several issues need to be addressed which require enhanced policy coordination and information sharing to prevent or mitigate politicization of their operating and low efficiency and to assure that the international trade and investment environment remains open, non-discriminatory and offering a level playing field – so called competitive neutrality. Nevertheless, on the positive note it needs to be stressed that as found by OECD "SOEs are becoming more "international", but not necessarily more "political" and "host countries have often welcomed the contribution from foreign state-owned investors" (Christiansen & Kim, 2014). Twenty years ago, concerns about unfair competition between private companies and state-owned enterprises were minimal as most SOEs concentrated on home markets. However, today many SOEs are significant players in global markets. On a domestic level, countries can keep SOEs in check by anti-trust actions. Internationally, however, current rules are weak and do not adequately address the issue. In the EU itself, the member countries rely on SOEs to differing degrees and the EU has had to develop rules to ensure a level competitive playing field. TTP and TTIP negotiations, present an opportunity to develop rules to ensure fair competition. Without effective international rules on state-owned enterprises, free trade and investment are endangered. SOEs require an explicit and deliberate regulatory treatment due to their unique properties (Kawase, 2014). Given the controversies they initiate it seems that one coherent approach to their regulation is a preferred way than the piecemeal and overlapping rules currently considered.

Polish companies covered in this study are in fact partially state-owned enterprises given the not high (and diminishing) share of the Ministry of Treasury as stakeholder. It seems questionable if despite their significant foreign presences and the fact that their FDI are accounting for the bulk of total Poland's OFDI they deserve to be called the SOMNEs (or given the above – partially state-owned/para state-owned); if the scale and scope of their foreign engagement suffice for such name? This descriptive exercise may promote better understanding of foreign activities of Polish SOEs. It may enrich current literature on SOMNEs and in particular fill the current gap with respect to other than Chinese state-owned foreign activity. It synthesises the available knowledge on the internationalisation of Polish state-controlled and owned entities. Hence, it complements existing studies devoted mostly to single firm – case studies.

Literature review suggest the need of covering many legal aspects of SOEs international activity (e.g. Blyschak, 2016). Exploring SOMNEs in global context might include comprehensive comparison either to private domestic peers or other SOMNEs from a region or a given industry and sector. Such contextual embedded analysis would also yield some insight to the peculiarities of SOMNEs. In other words, it is not only the concrete topic which needs to be addressed with respect to SOMNEs' operations but also the research setting and design of investigation which can shed light on various so far not examined issues.



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Based on the authors' investigation following general conclusions can be drawn. It might be expected that the future research agenda on SOEs' international activity would evolve around the aspect of their low (lack of) efficiency and worse performance due to managerial deficiencies, agency problems or other state-related labilities. On the other hand, most likely the further exploration would tackle the undue competitive advantages and other benefits which accrue to SOMNEs and which stem from the state protection. Given the aforementioned controversies and polarised opinions on SOMNEs rise the authors believe that it is of utmost importance to design the research properly. So it can better capture the SOEs peculiarities against the background of other entities. The contextualisation hence should not be underestimate. True picture of SOEs' foreign activity can be painted reliably only if contrasted with private peers from the sector or other SOMNEs from the region. The broader context would provide more detailed assessment. It would enable diagnosing if SOMNEs are indeed so special class of enterprises or their foreign investments actually do not deviate from the behaviours of their private peers.

As revealed by the close examination of articles published by the FT 45 top journals during the most recent 15-years period only 39 out of them actually focused on SOEs (30 of them exclusively on China!) and although, inquiry into SOEs is rising, the research on the topic continues to be scarce (Bruton et al, 2015). The authors believe that their research and presented discussion might contribute to the contemporary debate on SOEs and SOMNEs in particular and address the encouragement of Bruton, Peng, Ahlstrom, Stan, Xu (2015, p. 95) to "devote additional attention to (SOEs) this important, adaptive, and enduring organizational form that generates approximately 10% of global GDP and represents some of the world's largest firms".

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## KEY TERMS AND DEFINITIONS

**Diversity of Capitalism and Varieties of State Capitalism:** Classification of types of capitalism which among others accounts for the role played in the economy by the state. Besides differentiating between liberal market economy, capital market economy, it recognizes various models of state capitalism with diversified scale of state intervention ranging from the wholly state-owned enterprises to subtle state aid facilitating development.

**Escape Motive:** The need to reduce the dependency on the state as potentially perceived by SOMNEs which can materialise via conducting investment abroad.

**Extraterritoriality Argument:** Tendency revealed by SOMNEs to perceive OFDI as a way to export certain ideology, expand zone of influence.

**Foreign Direct Investment:** FDI - the most advanced form of internationalisation, implies the highest commitment in running the activity abroad as compared to export or joint venture. It can take the form of acquisition (M&A) or greenfield projects.

**IDP - Investment Development Path:** The pattern describing the evolution of foreign direct inflows and outflows of a given economy and tracing it against the GDP developments. This construct shows whether a country is rather a FDI (capital and know-how) recipient or donor.

**International Investment Regime:** Vast collection of arrangement, agreements, partnerships and treaties (mostly IIA – international investment agreements and BIT – bilateral investment treaties) which set the perimeters of international expansion usually by private entities. Though, the increasing role of SOEs in the process of internationalisation leads to new generation of treaties and partnerships being negotiated / concluded which cover also these class of investors and controversial issues pertaining to them.

**Non-Business Argument:** Inclination revealed by SOMNEs to get involved in economically less (no) feasible projects, to incur unjustified higher costs, to accept more risk when venturing abroad and hence be less profitable than private business or even bring losses.

**State Owned Transnational Company / State-Owned Multinational Enterprise:** SOTNCs / SOMNEs – state-owned company active abroad, with affiliates and activities be they upstream or downstream performed in foreign markets. SOMNE / SOTNC can be created via nationalisation of existing MNE/TNC or via internationalisation of SOE. Polish SOTNCs – firms constituting the case study of this paper; group of selected nine Polish firms who met the criteria of state involvement – at least 10%, are listed on Warsaw Stock Exchange and possess affiliates abroad.

**State-Owned Enterprise:** SOE - broad term defined diversely in the literature usually stands for the company controlled, owned or invested by the state – mostly by the Treasury. The ownership and control can be expressed in various ways. Such firms are believed to enjoy special treatment (see: advantages), though, suffer also from certain inefficiencies, inflexibilities, etc. (see: disadvantages).

## ENDNOTES

[1] UNCTAD (WIR, 2011) defines a *state-owned multinational (SOMNE)* as an organizational form that is both a multinational enterprise (MNE) (i.e., the firm has one or more foreign affiliates engaged in value- adding activities in one or more foreign countries) and a state-owned (or controlled) enterprise (i.e., the firm has a minimum of 10% government ownership). The 10% cut-off is high enough that the state likely influences corporate governance and thereby affects firm performance.



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[2] The prevalence of SOEs also varies considerably across industrial sectors. Statistics on SOE sales, assets and market value among the world 's largest companies have been used to calculate Sectoral SOE Shares (SSS).

[3] Dependent variables: in the first regression the number of firm's domestic subsidiaries, in the second - the number of its foreign subsidiaries; and in a third - the ratio of foreign to domestic subsidiaries as a proxy for internationalization. As independent variables have served parent sales, profits, assets, market value and a dummy that equals one if the firm is an SOE and equals zero otherwise (Kowalski et al., 2013, p. 36).

[4] 2014 OECD Business Survey on State Influence on Competition in International Markets sheds additional light on concerns related to cross-border activities of state enterprises. It also summarizes key results from the OECD Database on National Practices and Regulations which contains information on national and international regulation with respect to state enterprises - announced in May 2015 as pilot project requiring refinements.

[5] Forbes Global 2000 - SOE sales, profits, assets and market value as a % GNI.

[6] Database on National Practices and Regulations with Respect to State Enterprises, http://qdd.oecd.org/subject.aspx?Subject=8f22ef7d-b780-4570-a4b1-7e0cb3ad7e04

[7] The problem with obtaining the reliable and comparable data for Poland is similar to the OECD studies (Christiansen, Kim, 2014, p. 26).

[8] An unprecedented step – commission releases TTIP negotiation proposal (Julien, Sohlberg, 2015).

[9] Textual Proposal - the European Union's initial proposal for legal text on "Competition" in TTIP. It was tabled for discussion with the US in the negotiating round of 10-14 March 2014 and made public on 7 January 2015. The actual text in the final agreement will be a result of negotiations between the EU and US. Textual Proposal Possible Provisions on Competition, http://trade.ec.europa.eu/doclib/docs/2015/january/tradoc_153030.pdf

[10] Special issue of the Journal of International Business Studies: Governments as Owners: Globalizing State-Owned Enterprises (2014) 45 (8), 919–942 contributes significantly to the so far rather limited research.

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# Chapter 41
# Trade and FDI Between the Czech Republic and Portugal:
## Analysis of the 2000–2015 Period

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## ABSTRACT

*With the collapse of communism, some former communist States of Eastern Europe managed to muddle through their way to a market economy and entered the European Union. This brought about the acceleration of Foreign Direct Investment (FDI) among the European economies and accelerated the globalization process. Although there is plenty of research on FDI and trade among countries, the aim of this chapter is to analyze how trade between Portugal and the Czech Republic have evolved over form 2000 until 2015. The chapter seeks to complement previous studies on FDI and trade as Portugal and the Czech Republic are part of the European Union, but have had different historical, cultural, and economic paths. The main conclusion of the chapter is that trade between both countries has grown significantly. The main reason affecting trade between both countries is the economic unrest Portugal has been through since 2008.*

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## INTRODUCTION

Although FDI and the analysis of trade have been extensively researched among scholars, as well as their effects for both home and host countries, far less attention has been placed on how countries that historically had hardly any trade between them – as they belonged to different economic blocs – have evolved over time, as is the case of the Czech Republic and Portugal, that entered the European Union (EU) in, 2004 and 1986, respectively. As such the purpose of this article is to analyze the commercial trade between the Czech Republic and Portugal between 2000 and 2015, who are the main players participating in this process, and how this has impacted on the Czech firms investing in Portugal and on Portuguese firms investing in the Czech Republic.

The chapter begins with the literature review on Foreign Direct Investment (FDI) and on how Czech firms have managed to internationalize. Afterwards, it is presented a brief presentation of both countries, Portugal and the Czech Republic, economically and culturally. For this the chapter contextualizes the analysis based on the EU context. The third section contains the main factors of trade. The fourth and fifth sections compare both countries historically and economically and evaluate both countries with an analysis of the evolution of the mutual trade during 15 years. Within the analysis two main events are introduced: 2004, when the Czech Republic joined the EU and 2008, when the global economic crisis started. The sixth section presents the main Czech companies operating and investing in Portugal and the main Portuguese companies operating and investing in the Czech Republic. The final section presents the conclusions.

## BACKGROUND

Studies about international trade, internationalization and FDI are abundant. Analyzing how the theories about internationalization have evolved, Ribau, Moreira, and Raposo (2015) conclude that for decades theories analyzed how trade and FDI between countries occurred. Subsequently, there was a huge focus on multinational firms, and only after the 1980s onwards focus on internationalization shifted to Small and Medium-sized firms (SMEs) and how important they are to international business.

International trade can be defined as the exchange of goods and services that connect people, businesses, and countries along international borders in global processes of production and consumption influencing, directly and indirectly, the way everybody lives live.

As a result of international trade, FDI has become one of the most significant factors for economic development, as it allows the international flow of goods among countries, enabling the recovery and / or modernization of the economies (Razin & Sadka, 2007). FDI is one of the results and, at the same time, one of the major drivers of international trade, where multinational and small and medium-sized enterprises (SMEs) started to play a leading role.

FDI allows not only the flow of goods but also the creation of jobs. One consequence of this increasing flow of FDI is that countries seek to implement economic policy measures to attract investment flows (Chenaf-Nicet & Ronjier, 2016). Moreover, as FDI embodies technology and know-how, there are potential benefits that are not very explicitly exposed as technology transfers, productivity gains, managerial and know-how transfers, and access to broader markets (Blomström & Kokko, 1998).



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Hanson (2001) supports that FDI generates positive spillovers for host countries. However, Lipsey (2002) finds that there is no consistent relation between the size of inward FDI and GDP or growth. Markusen and Venables (1999) defend that FDI could harm local industry.

Moreira (2008) defends that there are positive effects from FDI as there are positive technology accumulation among SMEs supplying their multinational clients. Görg and Greenway (2004) support that spillovers from foreign to domestically owned firms are mostly negative. Although there appears to be no consensus among scholar about the externalities of FDI, most countries are looking forward to increasing their international trade, as well as their share of FDI activities.

The lack of policy making supporting the internationalization of SMEs led Moini, Kalouda, and Tesar (2008) to propose that government policy makers in the Czech Republic need to understand the necessary linkages between their SMEs foreign market entry modes and the country's future economic growth. For the Czech Republic to improve its economic status in the European Union, it is mandatory to support Czech SMEs in order to underpin their competitiveness in the global marketplace.

Fink, Harms, and Kraus (2008) conclude that 40% of Czech firms enter the German market, followed by the Slovakian market (12%), and the Polish market (11%). Taking into account the different language skills of the old and new generations in the Czech Republic – as the older generation was used to learn only Russian as a second language and the new generation is more akin of learning English or German – they claim that the greatest obstacle for firms to penetrate in foreign markets is the language barrier (Fink, Harms, & Kraus, 2008), as German was selected as the most popular language in terms of international trade in this study, which might explain why Germany is the largest and the most attractive neighbor for the Czechs. Fink, Harms, and Kraus (2008) conclude that that self-commitment is particularly important in international business cooperation, as self-commitment positively influences the performance of both cooperating firms. As such trust-based relationships in the firms' internationalization process is a promising alternative particularly for SMEs.

Musteen and Datta (2011), when analyzing how Czech manufacturing SMEs learn about foreign markets, reinforce the importance of role of knowledge of prospective managers when developing a good understanding of the international markets. The better the improved understanding of the main factors to compete in foreign markets, the better entrepreneurs and SME managers perform in international markets.

Based on a qualitative study among entrepreneurs in the Saxon-Czech border area, Zanger, Hodicová, and Gaus (2008) conclude that entrepreneurs on both sides of the border experience feelings of foreignness towards the corresponding neighboring country, which limits the entrepreneurs' willingness to cooperate with companies from the neighboring country.

Cieślik, Michałek, Michałek, and Mycielski (2015) investigated the determinants of export activity comparing firms from the Baltic States and Central European Countries for three years: 2002, 2005, and 2009. They conclude that the results for both groups of countries are not different as firms' export performance was positively related to the level of productivity, firm size, the share of university graduates in productive employment, investment on R&D activities, and the internalization of firms measured by foreign ownership. Moreover, there are some differences among countries, namely the level of productivity was significant for the Czech Republic. Similarly, they also conclude that it would be advisable to formulate policy recommendations for the development of export promotion strategies as export performance could be improved by attracting export-oriented FDI, which can generate positive spillovers to domestic firms.



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Based on the analysis of data collected in interviews with managers and founders of 67 Czech entrepreneurs, Zapletalová (2012) concludes that most of the firms follow a typical stage approach of outward internationalization. Moreover, very few firms follow the "rapid internationalization" approach followed by born-globals, which is a clear indication that internationalization is still a leapfrogging process for most SMEs. Based on the analysis of questionnaire-based research that involved 297, Zapletalová (2015) concludes that the historical context of centrally planned economy in the Czech Republic until 1989 is still affecting negatively the internationalization process of Czech firms, as their degree and level of internationalization is still significantly low.

The lack of language skills of key employees before entering foreign markets, the lack of employee experience with foreign market expansion, the time that elapses between the opening of the business and foreign market expansion, the lack of explicit objectives for export activities, the unclear definition of the strategy to be implemented abroad, and the lack of clear market segment focus are the main difficulties of Czech SMEs when expanding abroad (Kubíčková & Procházková, 2014).

According to Moini, Kalouda, and Tesar (2008), when compared to their non-exporting counterparts, exporting SMEs in the Czech Republic (a) tend to be larger, and more motivated in systematically exploring export opportunities, (b) utilize a larger percentage of their production capacity, and (c) have fewer problems in obtaining financial services. Exporting firms tend to face three major challenges when embracing international business activities: a financial burden, unknown foreign marketing practices, and locating prospective clients.

Símová (2010) follows an inward internationalization perspective and studied how the retailing industry in the Czech Republic went through dramatic changes from the early 1990s to mid-2000s. She concludes that there have been dramatic changes, quantitatively and qualitatively, as the Czech retailing industry has achieved a relatively high level of concentration and internationalization, as many international firms entered the Czech market.

Foreign direct investment in Portugal was analyzed by Moreira and Dias (2008), who concluded that Portugal went through several phases, and FDI skyrocketed since Portugal joined the EU.

The literature on internationalization of Portuguese SMEs is also abundant. For example, Lisboa, Skarmeas, and Lages (2011) explore the importance of innovation as a means for developing firm-specific advantages abroad. Moreira and Alves (2016) claim that internationalization is difficult for SMEs even when small psychic distances between countries are present. Carvalheira and Moreira (2016) support the idea that even artisanal firms can internationalize when opportunities arise. However, no single study was found regarding Portuguese SMEs internationalizing to the Czech Republic.

One can conclude that, on the one hand, the perspective towards FDI is multifaceted and, on the other hand, that there is no single study regarding foreign direct investment or trade analyzing how Portugal and the Czech Republic are interrelated. Moreover, the studies on Czech SMEs are almost unanimous referring the difficulties in internationalizing.

## BRIEF PRESENTATION OF THE CZECH REPUBLIC ECONOMY

The Czech Republic is a small central European country (about 79,000 $km^2$). As of 2015, it had around 10.5 million inhabitants (EuroStat, 2016a). The Czech currency is the Czech Koruna (CZK) and the GDP in 2015 was €163,948 million (€16,600/per capita) (Countryeconomy.com, 2016). The country's human development index (HDI) (used by the United Nations to measure the progress of a country),



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was 0.870 points in 2014. As such, the Czech Republic is in the 28th place among 188 countries (CountryEconomy.com, 2016). The Czech Republic holds the 36th position of the Doing Business ranking (The World Bank, 2016).

After joining the EU in 2004, the Czech economy has continuously grown. However, this significant boost was affected by the economic crisis in 2008 and although the Czech economy has recovered quite fast, it has not been able to follow up with the previous, pre-crisis pace. Since joining the EU, the rate of the Czech export within the EU has doubled (81% from all the export) and the surplus of the trade has quintupled. The Czech Republic's main import and export partners are Germany, Slovakia and Poland. Although the Czech and German industries are strongly linked, the Czech economy is very dependent on the German one. Since joining the EU, the Czech Republic has been considered as a recipient of foreign direct investment from the EU. In comparison with the other Central European countries, the Czech Republic has the strongest share of Foreign Direct Investments inflows (Rusnok, 2014).

According the Eurocentrum Praha seminar, that was held in December of 2014 and where were discussed among others the economic models that would be the most suitable for the Czech Republic, Mr. Ales Chmelar – the Chief Economist at the European Section of the Czech Office of Government – presented various forecasts of economic development, which echoed since 1989. The development of the Czech economy was, as mentioned above, primarily influenced by inflow of foreign investment. The inflow peaked around the time of the entry into the EU in 2004. However, after the last economic crisis broke out, the Czech economy felt a steep fall in 2008. As such, the main objective of the Czech economic policies is the support of a long-term productivity growth (Government of the Czech Republic, 2015).

According to the Economic and Financial Affairs of the European Commission from 2015, the Czech economy returned to growth in 2014, following two years of contraction, and unemployment has been on a declining trend. The return to growth has been largely driven by domestic demand, with investment growing particularly strongly.

The Czech Republic's public finance outturns have improved markedly, but some issues remain in the areas of taxation, fiscal sustainability, and fiscal framework. The country continues to suffer from a relatively high level of tax evasion, although efforts are being made to fight this problem.

There is an overall high level of employment but certain disadvantaged groups remain underrepresented in the labor market. These groups include parents with young children, low-skilled workers, people with disabilities and gypsies.

The general government deficit has improved significantly since 2009 and the Czech public finances do not appear to face sustainability risks in the short term.

Real GDP growth is expected to strengthen further in 2016, although developments in the external environment might have a negative effect (European Commission, 2015).

## BRIEF PRESENTATION OF THE PORTUGUESE ECONOMY

Portugal is a small country (around 92,000 $km^2$) situated on the West coast of Europe. Its territory includes two autonomous regions: Azores and Madeira. It is one of the oldest countries in the world. Portugal has a population of around 10.3 million inhabitants (EuroStat, 2016a). Portugal's currency is the Euro (€). The country's GDP (nominal) in 2014 was of €174,385 million (€16,800/per capita). The service sector is the main contributor to the economy.



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The human development index (HDI) (used by the United Nations to measure the progress of a country) was 0.830 points in 2014, 43rd place out of 187 countries. As for the Doing Business Ranking, Portugal occupies the 23rd place (The World Bank, 2016).

The majority of Portugal's commercial trade and foreign direct investment flow happens within the European Union. In 2015, 72.7% of exported goods and 76.4% of imported goods were traded with UE countries. Spain, Germany, and France stand out as the main partners both in terms of imports and exports. Regarding foreign direct investment, the Netherlands and Spain represent both the biggest percentage of inflow and outflow (AICEP, 2016a).

Regarding the most recent members (Bulgaria, Slovakia, Slovenia, Estonia, Hungary, Latvia, Lithuania, Poland, Czech Republic, and Romania), despite the increases caused by their entry in the European Union, they still account for a small part of Portugal's imports and exports (INE, 2008). The Czech Republic and Poland stand out as the main partners amongst this group.

The Portuguese economy has been severely affected by the international economic crisis. However, from 2008 to 2013, it has shown visible signs of international dynamic. Commercial trade and foreign direct investment have both increased. In 2013, exports surpassed imports for the first time in this period, forming 40% of the GDP (€67,000 million in goods and services). Spain, Germany, France, Angola, and the United Kingdom, Portugal's most important partners have seen their percentage in the total export/import reduced (see Table 1), which suggests a tendency to look for new markets.

Portugal has been increasing its investments in foreign countries, although it remains a bigger receiver than investor. As of 2012, Portugal occupied the 9th place amongst the UE27 countries in the FDI intensity index (INE, 2014).

Portuguese technological companies have also developed cooperative actions: 96% of them with national partners, 45% with UE27 partners and 9% with the USA (INE, 2014).

*Table 1. Percentage of Portugal's biggest partners in the total imported/exported goods*

| Country | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|
| **% of Total Exported Goods** | | | | | | | | |
| Spain | 27.9 | 27.2 | 27.0 | 24.9 | 22.5 | 23.6 | 23.5 | 25.0 |
| Germany | 12.8 | 13.0 | 13.0 | 13.5 | 12.4 | 11.6 | 11.7 | 11.8 |
| France | 11.8 | 12.4 | 12.0 | 12.2 | 11.8 | 11.6 | 11.7 | 12.1 |
| Angola | 5.8 | 7.1 | 5.1 | 5.4 | 6.6 | 6.6 | 6.6 | 4.2 |
| United Kingdom | 5.5 | 5.6 | 5.5 | 5.2 | 5.3 | 5.5 | 6.1 | 6.7 |
| Total | 63.8 | 65.3 | 62.6 | 61.2 | 58.6 | 58.9 | 59.6 | 59.8 |
| **% of Total Imported Goods** | | | | | | | | |
| Spain | 30.8 | 32.8 | 32.1 | 32.3 | 32.0 | 32.3 | 32.6 | 32.8 |
| Germany | 13.4 | 13.2 | 13.9 | 12.3 | 11.4 | 11.4 | 12.3 | 12.9 |
| France | 8.1 | 8.3 | 7.2 | 6.8 | 6.6 | 6.8 | 7.1 | 7.4 |
| Angola | 5.4 | 5.8 | 5.7 | 5.4 | 5.2 | 5.2 | 2.7 | 1.9 |
| Netherlands | 4.7 | 5.3 | 5.1 | 4.8 | 4.8 | 5.0 | 5.1 | 5.1 |
| Total | 62.4 | 65.4 | 64.0 | 61.6 | 60.0 | 60.7 | 59.8 | 60.1 |

Source: Own preparation based on data from National Institute of Statistics (INE).



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## THE MAIN FACTORS OF TRADE

In order to understand trade between Portugal and the Czech Republic, it is important first to understand the common market these countries are part of. Both countries have joined the European Union, Portugal in 1986 and the Czech Republic in 2004. This allows for both countries, as well as all countries in the single EU market, to take advantage of the free circulation of goods, capital, people, and services. It also allows goods to travel internally without being subject to customs duties, discriminatory taxes or import quotas. Investment is also made easier.

The Eurozone was created in 1999 (although not all member states joined) introducing a common currency, the Euro (€). This common currency eliminates fluctuations in the exchange rate providing predictability and safety and reducing transaction costs, which facilitates trade and capital movement. However, the Eurozone also has its disadvantages; the economy of a particular country might influence buyers and investors on their decision to buy Euro, thus affecting the Euro exchange rate (Geoghegan, 2014). While Portugal joined the Eurozone, the Czech Republic did not, which is a factor that surely affects trade between the two countries, which will be explored later on.

Various factors affect trade in Europe. While the EU facilitates trade, its member States do not all trade equally amongst themselves. Factors like direction of trade, distance, population, language, legal origins, currency, physical infrastructures, borders, and transport efficiency have an impact on trade between certain countries (Hanousek & Kočenda, 2014). As part of the analysis regarding goods, parts and components, capital goods, and consumer goods, this chapter summarizes them below, noting which factors may influence the trade between Portugal and the Czech Republic.

*The direction of trade does matter and we reject the hypothesis of a zero effect. (…) The trade links among the old EU members have been long established (…). The majority of the trade flows in parts and components within the EU is carried along the East–West alignment, as is trade in capital and consumer goods. (Hanousek & Kočenda, 2014, p. 19)*

The fact that most of Portugal's trade is carried out with old EU members can be explained by this factor. Commercial trade with its neighbors has been happening for a long time, and they are its biggest partners. Regarding the trade between Portugal and the Czech Republic, it is hard to understand to which extent this tendency affects trade; while Portugal does tend to import more from, than export to, the Czech Republic, the numbers are not so different as to confirm this trend.

*Distance negatively affects trade in all four types of goods. (…) However, the economic significance of distance is relatively low. (Hanousek & Kočenda, 2014, p. 15)*

While the geographic proximity of European countries is not very significant, it is important to note that most of Portugal's trade (within the EU) is with the countries closest to it like Spain; and Germany and France for the Czech's trade. This can lead us to believe that (cultural and geographic) distance might be one of the factors that explain the low levels of trade amongst the two countries.

*Population as a factor exhibits a positive effect on all types of goods. The combined populations of the country pairs represent the size of the market. (Hanousek & Kočenda, 2014, p. 16)*



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Portugal and the Czech Republic have a similar number of inhabitants, around 10 million. While not the smallest, each country definitely has a small internal market. The sizes of both markets are one of the strongest reasons responsible for such a small interest in doing business with each other. Small markets can be often unattractive, especially in comparison with the bigger – in this case also closer – markets (Spain and Germany for example) that can provide economies of scale.

*A common language does not seem to matter excessively for European trade, (Hanousek & Kočenda, 2014, p. 16),*

which is understandable as in the European context there is a large number of different languages and companies deal mostly in English with their European partners.

*The effect of a common currency is largely statistically significant, but its economic impact is limited. (Hanousek & Kočenda, 2014, p. 17)*

While Portugal adhered to the Eurozone, the Czech Republic did not. This means trade is subject to exchange rates, which can also influence the exchange of goods between the two countries. According to the statistics of the CNB (Czech National Bank) from 2015, the Czech Koruna since 2000 has been significantly strengthening against both Euro (see Table 2) and US Dollar (Mrázek, 2015). The effect of the exchange rate on businesses can depend on several factors, like elasticity of demand, economic growth in other countries, percentage of raw materials imported, reason of an appreciation/depreciation, inflation or fixed contracts (Pettinger, 2013).

*The factor of hard physical infrastructure exhibits the lowest coefficients when compared with the rest of the infrastructure measures. (…) High level of physical infrastructure is (…) taken as a standard, despite existing differences between old and new EU countries. (Hanousek & Kočenda, 2014, p. 17)*

European countries are generally equipped with good infrastructures. Portugal is equipped with one of the most developed road networks in Europe, 14,310 km long (in the mainland, of which 2,988 km are highways), a railway 2,544 km long, 15 airports (a high number due to the many islands of Azores and Madeira) and 20 ports (AICEP, 2016a).

*The Czech Republic possesses one of the most advanced transport networks in Central and Eastern Europe. Its geographical position at the very centre of Europe makes it a natural crossroads for major transit corridors. An extensive network of transport routes serves not only the Czech Republic but also links the country to neighbouring and other European states, and the density of the transport network ranks the Czech Republic among the world's most advanced countries. (CzechInvest, 2013)*

*Table 2. CZK/EUR exchange rate: annual average*

| **Year** | 2000 | 2002 | 2004 | 2006 | 2008 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CZK/EUR Exchange Rate** | 35.61 | 30.81 | 31.90 | 28.34 | 24.94 | 25.29 | 24.59 | 25.14 | 25.97 | 27.53 |

Source: Own preparation based on data from the Czech Statistical Office.



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The Czech Republic features 9,435 km of railway, 10 airports and 127,693 km of highways.

*ICT [Information and communications technology] exerts the most influence on trade in parts and components and in capital goods. (Hanousek & Kočenda, 2014, p. 17)*

According to the ICT development index, which monitors and compares developments in information and communication technology across countries, Portugal (49th) and the Czech Republic (38th) are above the global average, while not reaching the European average (International Telecommunication Union, 2014). The two countries rank extremely close to each other. Considering parts and components are some of the most traded goods between both countries, this factor might be quite influential.

*Border and transport efficiency is the most influential factor for trade in primary and consumer goods. (Hanousek & Kočenda, 2014, p. 18)*

Shipping by sea has always been one of the most important means of transport that the goods exchange has been dependent on. In our case, this plays an inherent role for the Czech-Portuguese trade. The closest Czech ports are either Hamburg, Germany or Naples, Italy, which obviously makes shipping more complicated for the Czechs.

*The effect of the business and regulatory environment is quite pronounced for the trade flows of primary goods. (Hanousek & Kočenda, 2014, p. 18)*

This factor refers to indicators of irregular payments, favoritism, government transparency, and measures to combat corruption. The transparency index published, which measures how corrupt each country's public sector is perceived, shows that Portugal and the Czech Republic rank on 28th and on 37th position with similar values (Transparency International, 2016a; 2016b).

Clearly, there is no single factor influencing trade between both countries. However, market size, distance, and border and transport efficiency are the strongest arguments speaking against a bright future of the Czech-Portuguese trade.

## COMPARING BOTH COUNTRIES. MAIN SIMILARITIES AND DIFFERENCES

Becoming aware of essential similarities and differences between the Czech Republic and Portugal is important to analyze what opportunities and cultural challenges need to be overcome in order to bring these countries together and stimulate trade. This section summarizes them below.

### History

During last century both countries went through difficult times with Portugal being ruled by a right wing dictatorship during part of the century and Czech Republic being ruled by a communist dictatorship after the World War II.



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Autocratic regimes suffered the influence of international actors that led Portugal to lose their former colonies, on one side, and the Czech Republic to break free from the tight control exercised by the former Soviet Union. With democracy both countries have managed to enter the European Union, and a process of Europeanization, in which the European Monetary Fund has played an important role in the institutional change and policy adjustments to their European counterparts (Petrovic & Solingen, 2005).

Historically, both countries have followed different paths. The Czech Republic has been part of the Duchy of Bohemia under the great Moravian Empire and afterwards of the Holy Roman Empire. In the sixteenth century it was gradually integrated into the Habsburg Monarchy. In the 1800s the Bohemian kingdom became part of the Austrian Empire. With the collapse of the Austro-Hungarian Empire after the World War I it became the Republic of Czechoslovakia in 1918. After the World War II it fell under the soviet influence until 1989 when the communist regime collapsed. In 1993 Czechoslovakia peacefully dissolved into two independent states: the Czech Republic and Slovakia. In 2004 the Czech Republic entered the European Union.

The Roman Empire had a strong influence in Portugal since the first century b. C. In the fifth century, with the decline of the Roman Empire, Iberia in general was influenced by Germans. In the eighth century Arabs occupied Iberia and Christians run away to the north of Iberia.

In 1139, with the Christian conquest, the Kingdom of Portugal was set up. Since 1297 Portugal is the European country that maintains its original frontiers.

As a result of an outward perspective during the XV and XVI Portugal expanded its borders abroad establishing the first global empire with foothold in Africa, South America, Asia and Oceania.

In 1990 a revolution ended the Portuguese monarchy and the first republic was set up. In 1926, due to social conflicts, a dictatorship was established that lasted until 1974, when a military coup ended the colonial war that was taking place since 1961. In 1986 Portugal entered the European Union (at that time European Economic Community).

The support of an industrial strong foothold allowed the Czech economy to withhold the changes it went through over time. Portugal was more outward oriented building an empire offshore which impeded the creation of an industrial network (Soares, 2015).

## Economy

Table 3 summarizes the main economic indicators for both countries. Currently in Portugal there is a structural lack of competitiveness, low levels of cooperation and little flexibility in determining wages and productivity. Foreign investment in Portugal has been low. Although the Portuguese economy has been growing, its growth has been slow. As such, Portugal needs to create jobs, readjust social policies, review labor legislation, and bring academia and the business community closer (Valles, 2015).

Portugal and the Czech Republic present the same value in the Global Competitiveness Ranking (4.5). Taking a closer look to each country's specific evaluation, one can find that Portugal surpasses the Czech Republic in most basic requirements: institutions, infrastructure and health and primary education. It is, however, drastically surpassed by the Czech Republic on the macroeconomic environment requirement, occupying the 128$^{th}$ position compared to the Czech Republic's 40$^{th}$. Most secondary indicators remain close, except for the financial market development requirement, where Portugal is in 104$^{th}$ place versus the Czech Republic's 44$^{th}$. Furthermore, the countries also vary in labor market efficiency, with Portugal



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*Table 3. Comparing the Czech Republic and Portugal*

| Indicator | Year | Czech Republic | Portugal |
|---|---|---|---|
| GDP at current prices ($10^6$ €) | 2014 | 154,929 | 174,384 |
| GDP at current prices (€ per capita) | 2014 | 14,700 | 16,800 |
| Public Debt (% of GDP) | 2013 | 45.7 | 128 |
| FDI inflow | 2013 | 4,990 Million USD | 6,626 Million EUR |
| FDI outflow | 2013 | 3,294 Million USD | 6,199 Million EUR |
| Exports ($10^6$ €) | 2014 | 130,808 | 48,168 |
| Imports ($10^6$ €) | 2014 | 114,594 | 58,708 |
| Trade Balance ($10^6$ €) | 2014 | 16,172 | -10,605 |
| Global Competitiveness Ranking | 2016 | 37th | 36th |
| Doing Business Ranking | 2015 | 36th | 23rd |

Sources: Own preparation from EuroStat (2016b), INE (2014), CountryEconomy.com (2015; 2016).

finding itself in 83rd place versus the Czech Republic's 62nd, and market size. While the domestic market size ranking is close for the two countries, foreign market size ranks Portugal in 48th versus the Czech Republic's 27th (World Economic Forum, 2015a; 2015b).

With a GDP per capita in purchasing power parity similar to Portuguese, the minimum wage in the Czech Republic is of 337€ (9200 Czk). Salaries are on average 30% lower in the Czech Republic than in Portugal. The weight of social security in GDP is around 20%, less 6% of recorded between Portuguese (Valles, 2015).

Although some features and indicators are common, currently there are some aspects that distinguish the situation of both countries, such as Portugal's public debt, which has presented levels above 125% of the GDP (AICEP, 2016a), as opposed to the Czech Republic, which maintains levels below 46% (AICEP, 2016b).

In terms of income of the families, while Portugal presents high levels of inequality in income distribution, the Czech Republic exhibits low inequality. However, both countries presented income in Purchasing Power Parity (PPP) per capita that is only slightly more than half of the EU average (INE, 2005, p. 113, 209).

*Between 1995 and 2004, the unit labor costs fell 3.6% among the EU15.*

While in the Czech Republic this indicator fell as well, Portugal was among the few European countries that saw these costs increased (INE, 2005, p. 220).

*The unsustainability forecast of the social protection system has led the Czech government to a strict management of responsibilities and rights, significantly preventing the escalation of its weight in the economy. The contributions of employers, workers and pensioners are financing the system by about 75%. In Portugal, it does not exceed 45%, requiring of the state an additional effort of 12% of GDP. (Valles, 2015)*



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The contributions are proportionally higher in the Czech Republic (34% employer and 11% employee) than in Portugal (27% employer and 11% employee) (Valles, 2015).

Regarding education, essential to the economy of a country, while Portugal presented the second highest rate of school dropouts in the European Union (EU 25), 38.6% as of 2005, the Czech Republic had one of the best performances in this area, 4.3%. It also surpassed the EU15 average of the percentage of people aged 20-24 that has completed at least secondary education, topping this list (INE, 2005, p. 92). Czech policies are based on incentives to bring universities closer to business, avoiding scenarios where unemployment of young graduates is alarming. These policies aim to increase added value growth in innovation-driven areas where competitive factors are based on design, innovation, research, and development in an economy that started from a strong industrial base. In 2013, the percentage of 30 to 34 year olds who had completed tertiary education increased significantly in comparison to 2002 in both countries, from 13% to 29.2% in Portugal and 12.6% to 26.7%. In the same year, Portugal and the Czech Republic also registered two of the lowest rates of early school dropouts, 5.4% and 19.2%, respectively. The Czech Republic has fulfilled its 2020 national target for this indicator (EuroStat, 2014).

Regarding investment in research and development, Portugal presented a considerable growth in 2004, staying at a top position. However, the Czech Republic surpassed it regarding the percentage of GDP that this investment represented (INE, 2005).

Although, especially due to the crisis, Portugal belongs between the less developed economies of the EU, its economy is growing linearly with its potential. The significant role in Portuguese economy is held by small and middle enterprises that are involved by 80% on the employment creation and by 60% on the Portuguese export. This feature is obvious also on quite high amount of Portuguese FDI abroad. There is a quite high concentration of enterprises especially on the north of Portugal and then around Lisbon. The south of the country is more agricultural and also touristic.

Portugal's trade balance has been historically negative, although this deficit has been decreasing thanks to a growing dynamic of Portuguese exports (BusinessInfo, 2014). "With a vibrant automotive industry, the Czech Republic has established itself as an open and dynamic market economy" (The Heritage Foundation, 2015). The Czech Republic is also strongly characterized as a mature host country for FDI (CzechInvest, 2016).

The most prospective fields where both counties supplement each other very well are: construction/ civil engineering, food industry, banking, telecommunications, car industry and tourism (BusinessInfo, 2014).

## FDI

Table 4 shows stock of FDI between Portugal and the Czech Republic Million Dollars at current prices and current Exchange rate, between 2000 and 2015. Table 5 shows the stock of FDI in % of gross domestic product. One of the main conclusions is the difference between inward and outward foreign direct investment has grown faster for the Czech Republic than for Portugal. This means that, as outward FDI (OFDI) is larger in Portugal than in the Czech Republic, the Portuguese economy is more outwardly oriented, whereas the Czech economy is still more inwardly oriented with massive FDI from Holland and Germany.



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*Table 4. Stock of FDI, in US million dollars at current prices and current exchange rate*

| | Outward FDI from Czech Rep. | Outward FDI from CZ to PT | Inward FDI to Czech Rep. | IFDI-OFDI | Outward FDI from Portugal | Outward FDI form PT to CZ | Inward FDI to Portugal | IFDI-OFDI |
|---|---|---|---|---|---|---|---|---|
| 2000 | 738 | - | 21,644 | 20,906 | 19,794 | - | 32,043 | 12,249 |
| 2001 | 1,136 | - | 27,092 | 25,956 | 22,091 | 1 | 38,188 | 16,097 |
| 2002 | 1,473 | - | 38,669 | 37,196 | 20,730 | 2 | 47,117 | 26,387 |
| 2003 | 2,284 | 18 | 45,287 | 43,003 | 33,914 | 147 | 64,589 | 30,675 |
| 2004 | 3,760 | - | 57,259 | 53,499 | 43,257 | 160 | 71,319 | 28,062 |
| 2005 | 3,610 | 167 | 60,662 | 57,052 | 40,927 | 15 | 66,697 | 25,770 |
| 2006 | 5,017 | 198 | 79,841 | 74,824 | 52,063 | 14 | 89,596 | 37,533 |
| 2007 | 8,557 | 230 | 112,408 | 103,851 | 67,726 | 22 | 119,682 | 51,956 |
| 2008 | 12,531 | - | 113,174 | 100,643 | 62,769 | 10 | 105,511 | 42,742 |
| 2009 | 14,805 | - | 125,827 | 111,022 | 66,988 | 22 | 118,299 | 51,311 |
| 2010 | 14,923 | - | 128,504 | 113,581 | 62,286 | 39 | 114,994 | 52,708 |
| 2011 | 13,214 | - | 120,569 | 107,355 | 64,767 | - | 103,481 | 38,714 |
| 2012 | 17,368 | - | 136,493 | 119,125 | 59,992 | - | 115,599 | 55,607 |
| 2013 | 20,627 | - | 134,085 | 113,458 | 61,960 | - | 123,727 | 61,767 |
| 2014 | 19,041 | - | 121,530 | 102,489 | 58,355 | - | 108,515 | 50,160 |

Source: Own preparation based on UNCTAD Database.

*Table 5. Stock of FDI as % of the gross domestic product*

| | Outward FDI from Czech Rep. | Inward FDI to Czech Rep. | Outward FDI from Portugal | Inward FDI to Portugal |
|---|---|---|---|---|
| 2000 | 1.2 | 35.21 | 16.72 | 27.07 |
| 2001 | 1.69 | 40.21 | 18.18 | 31.42 |
| 2002 | 1.8 | 47.33 | 15.44 | 35.1 |
| 2003 | 2.3 | 45.61 | 20.56 | 39.15 |
| 2004 | 3.16 | 48.13 | 22.86 | 37.7 |
| 2005 | 2.65 | 44.61 | 20.74 | 33.8 |
| 2006 | 3.23 | 51.44 | 24.96 | 42.96 |
| 2007 | 4.53 | 59.53 | 28.2 | 49.83 |
| 2008 | 5.33 | 48.12 | 23.96 | 40.27 |
| 2009 | 7.2 | 61.16 | 27.48 | 48.54 |
| 2010 | 7.21 | 62.07 | 26.14 | 48.26 |
| 2011 | 5.81 | 53.04 | 26.45 | 42.26 |
| 2012 | 8.4 | 66.02 | 27.52 | 53.03 |
| 2013 | 9.88 | 64.22 | 27.26 | 54.43 |
| 2014 | 9.27 | 59.14 | 25.15 | 46.76 |

Source: Own preparation based on UNCTAD Database.



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When one analyzes OFDI from Czech Republic to Portugal, the total amount invested is 613 Million € highly concentrated between 2005 and 2007. However, the OFDI from Portugal to the Czech Republic is only 431 Million throughout 2001 and 2010, as such, it is possible to conclude that FDI between two countries still have a long margin to grow and that trade between both countries is strongly dependent on exporting activities.

## Hofstede's Cultural Dimensions

Hofstede's cultural dimensions (Hofstede Centre, 2016a; 2016b) are important to compare both countries in a cultural and business perspective, as shown in Table 6.

Both countries rank extremely close on Power Distance and Indulgence. This means that there is a clear hierarchical order accepted by society in both countries. It also tells us that both societies are relatively restrained in that they respect social norms and do not focus on leisure time as other self-indulgent countries. This can potentially help business between both countries since they can find a cultural connection and interact better while doing business. A common respect for the rules and the hierarchy of a company, for example, can help build trust and facilitate business.

Individualism, Masculinity and Long Term Orientation present the biggest difference between both countries. While the Czech Republic is closer to an individualistic society, Portugal is clearly collectivist. This could present an obstacle in a business context since Portugal focuses highly on relationship building and the group is more prevalent that the individual, while the Czech society expects the individual to take care of him/herself and those immediately close to them. In a business context, there might be clear differences as trust-commitment relationships might be much more prevalent for Portuguese firms than for Czech firms. Portugal, being a feminine country, values consensus and negotiation, while the Czech Republic, being a masculine country, focuses more on competitiveness and performance. Long Term Orientation is the dimension that polarizes the two countries the most. The Czech Republic is a pragmatic society that aims to achieve results, showing a better ability to adapt than Portugal, a country highly focused on its traditions and on maintaining them, where societal changes are seen with suspicion.

Both countries rank very high on Uncertainty Avoidance, with an extremely high score in Portugal. Both countries rely on rules and security and people focus on working hard. However, Portugal shows more prevalence in maintaining rigid codes of belief and in avoidance of unorthodox behavior.

*Table 6. Portugal vs. Czech Republic scores*

| | Portugal | Czech Republic |
|---|---|---|
| Power Distance | 63 | 57 |
| Individualism | 27 | 58 |
| Masculinity | 31 | 57 |
| Uncertainty Avoidance | 99 | 74 |
| Long Term Orientation | 28 | 70 |
| Indulgence | 33 | 29 |

Source: Own preparation based on data obtained from www.geert-hofstede.com.



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## EVOLUTION OF THE CZ-PT TRADE

The evolution of the trade between both countries from 2000 until 2014 is shown in Table 7.

Starting the analysis in 2000 allows a brief look at the years before the Czech Republic joined the EU. According to the annual reports on the Foreign Policy of the Czech Republic – published every year by the Ministry of Foreign Affairs of the Czech Republic – and annual statistics reports published by the Portuguese National Institute of Statistics (INE), it is possible to observe a positive, growing trend in the trade evolution between Portugal and the Czech Republic.

### Years 2000 to 2004

In 2000, Portugal was holding an important position especially within the EU due to its chairing in the first half of the year. The attention that was paid to the mutual relationships has increased especially because of the planned extension of the EU. This was mirrored in frequent visits (heading mainly to Portugal) and intensive political dialogues of representatives of both countries about intensification of mutual relationships and cooperation. During the year several visits were held in both countries. An important moment was a visit from the prime minister of the Czech Republic, Mr. Miloš Zeman. The evolution of the international trade between the Czech Republic and Portugal shows the growth of the Czech exports. The mutual turnover reached 187.5 million EUR. Czech exports amounted to 124.9 million EUR. Czech imports from Portugal have totaled 62.5 million EUR, which is an increase around 80% from the previous year. The most important Czech exported items were machines and means of transport

*Table 7. Evolution of trade between the Czech Republic and Portugal (in $10^6$ €)*

| | Turnover | Imports | Exports | Balance |
|---|---|---|---|---|
| 2000 | 187.5 | 62.5 | 124.9 | 62.4 |
| 2001 | 225.9 | 84.4 | 141.5 | 57.1 |
| 2002 | 254.7 | 98.1 | 156.6 | 58.6 |
| 2003 | 239.3 | 113.6 | 125.7 | 12.1 |
| 2004 | 289.5 | 131.5 | 158.0 | 26.5 |
| 2005 | 370.6 | 136.3 | 234.2 | 97.9 |
| 2006 | 467.8 | 180.3 | 287.5 | 107.2 |
| 2007 | 562.3 | 239.0 | 323.3 | 84.3 |
| 2008 | 560.4 | 230.8 | 329.6 | 98.9 |
| 2009 | 518.7 | 228.6 | 290.1 | 61.5 |
| 2010 | 682.0 | 302.8 | 379.2 | 76.4 |
| 2011 | 719.3 | 326.8 | 392.5 | 65.8 |
| 2012 | 676.0 | 331.7 | 344.3 | 12.6 |
| 2013 | 689.7 | 344.6 | 345.1 | 0.5 |
| 2014 | 799.2 | 372.4 | 426.8 | 54.5 |
| 2015 | 862.2 | 382.8 | 479.4 | 96.6 |

Source: Own preparation based on the Czech Statistical Office's External Trade Database.



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(54.7% - especially SKODA cars) followed by export of market products (37.7%) and chemicals (4.2%). Among the Portuguese main exports are machines and transportation equipment (44%), market products (27.9%), chemicals (9.2%) and raw material (8.4%) (Ministry of Foreign Affairs, 2001).

In 2001, the level of Czech-Portuguese relationship had been influenced by the membership of both countries in the North Atlantic Treaty Organization (NATO). Moreover Portugal had been supporting the Czech Republic in its effort to enter the EU. Portugal considered the Czech Republic as its potential ally due to similar geographical and economical extension. One of the most important visits held in this year was an official visit of the Portuguese president Mr. J. Sampaio. The main export commodities from the Czech Republic were again machines, means of transport (30.4% of all export are SKODA cars), metallurgical products – especially concrete steel and rails, tires, machines and devices for energy production, fabric, chemicals and glass-making (Ministry of Foreign Affairs, 2002).

The main commodities imported from Portugal were cork and its products, linen thread and fabric, cloth wear and footwear, electro technical products (Ministry of Foreign Affairs, 2002)

The year 2002 witness an increase in the Czech-Portuguese relations as result of the membership of both countries in NATO, and the preparations of the Czech Republic to enter the EU. Portugal was considered a prospective partner of the Czech Republic in the Union. Due to parliamentary elections (held in both countries in 2002) there were no high-level bilateral visits.

The main imported commodities from the Czech Republic were, much like the previous year, cork and related products, clothing wear, footwear, ball bearings, electro technical products, linen threads, glass-making, chemicals and metalworking machines. Portuguese investors were active in the Czech Republic in several enterprises from the fields of metallurgy and construction industries. Nevertheless, there is room for potential improvements for mutual economic relations (Ministry of Foreign Affairs, 2003).

Czech-Portuguese relations recorded in 2003 a significant boost. Portugal was considered by the Czech Republic as a key partner within the euro-Atlantic alliance, also due to the similar perception of International Policy aspects, as a result of their similar geographical size and geopolitical importance.

Portugal and the Czech Republic kept long-term intensive economic relations and a significant reinforcement was to be expected after the Czech Republic joined the EU. The trade between both countries maintained the same flow of commodities.

Portuguese investors visited the Czech Republic on behalf of many common enterprises from fields of metallurgy and construction (Ministry of Foreign Affairs, 2004).

## Years 2004 to 2008

The relationship between Portugal and the Czech Republic had been successfully developing on the bilateral and multinational level in the context of the EU and NATO. Intensive development had been noted also between governments and parliaments, also due to similar experience of both countries with a totalitarian regime, but also because of similar interest in good relationships with neighboring countries, close approach to the transatlantic connection and similar opinions about the arrangement of the EU. Czech-Portuguese relationships were also boosted by visits involving the highest political and diplomatic level.

Portugal and the Czech Republic have a long-term intensive economic relationship that increased significantly after the Czech Republic joined the EU. In 2004 a sharp increase of the Czech exports was registered (29%). Portugal held 33$^{rd}$ position of the foreign trade turnover of the Czech Republic. The



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main Czech export commodities did not changed and were: means of transport, metallurgical products, devices and mechanical tools, electronics, glass, plastic products, natural rubber, rubber-based products, and cotton.

Neither the main imported commodities from Portugal changed: TV and car radio components, motor cars, metallurgical products, natural rubber, cork, clothing, footwear, and pharmaceutical products. Following the 2003 trend, an increased interest for textile fibers and metalworking machines was registered (Ministry of Foreign Affairs, 2005)

In 2005, the relationship between the Czech Republic and Portugal, within the EU and the Euro-Atlantic alliance, kept successfully developing bilaterally as well as multilaterally, stimulating mutual communication and parliamentary dialogue. In May 2005, a new honorary Consulate of the Czech Republic started activity in Funchal – the capital of the autonomous region of Madeira. Mutual economic relations proved significantly dynamic, especially after the Czech Republic entered the EU. Both the Czech exports to Portugal and Portuguese exports to the Czech Republic significantly increased and the turnover doubled since the year 2000. The main Czech export commodities are still means of transport, manufactured goods classified by the type of the material, cars and their spare parts, metallurgical products, glass, textile, tires and metalworking tools. The main Portuguese import commodities also did not register significant changes (Ministry of Foreign Affairs, 2006)

In 2006, Portugal and the Czech Republic continued its important partnership, not only within the EU and NATO but also outside of it. The countries are connected by close opinions and positions about some of the European questions as they are for example important supporters of the principle of solidarity. Both countries are recipients of the funds from the Cohesion Fund and the Structural Funds of the EU. During the year 2006 a Bilateral Cultural agreement between Portugal and the Czech Republic was discussed and formed and its signing set out to enable more active cooperation in the area of education, science and research, for example. Mutual economical relationships kept dynamically growing and traded commodities did not change from the previous years (Ministry of Foreign Affairs, 2007).

In March 2007 during the official visit of the Czech Minister of the Interior to Portugal, a software and information about the application of the program 'SIS One 4All' was officially handed by Portugal. The program is related to the integration of the Czech Republic to the Schengen area. Portugal took an important part during enforcement of the enlargement of the Schengen area and supported the entrance of the Czech Republic.

During the second half of 2007 Portugal was holding the Presidency of the Council of the European Union. Within the Presidency there were official visits by the Czech Prime Minister and the Minister of Foreign Affairs to Portugal. Moreover several contacts at the ministry level were established. These bilateral meetings have strengthened the existing alliance between both countries. Also, discussions about the coordination procedures of the institutional reform of the EU were held, while in the end there was an obvious convergence of the positions of both countries.

Mutual economic relations have been growing. In 2007, Portugal held the 31$^{st}$ position of the Czech exports and 34$^{th}$ position of the Czech imports. The main commodities have not changed significantly. Traditionally the highest individual items of the Czech export were personal cars and their components. The radios and sound reproduction devices, chemically produced fibers, pharmaceutical products and wine enriched Portuguese exports (Ministry of Foreign Affairs, 2008).

Between January 2007 and June 2008 a growing tendency was found in the trade between Portugal and the Czech Republic. Regarding imports, these countries were responsible for 945.6 million euros in 2007, 1.7% of total imports. The Czech Republic (ranked at 27$^{th}$ globally) was the main partner then,



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despite accounting for less than 0.6%. Regarding exports, in 2007 these countries were responsible for 848.3 million euros, 2.3% of total exports. The Czech Republic (25th) was the second biggest receiver of goods.

In 2008 mutual business relations between the Czech Republic and Portugal were developing very well. Especially since 1997, the Czech Republic registered a surplus and trade balance. Portugal kept the 30th position of the Czech export and 36th position of the Czech imports. The main export commodities from the Czech Republic are among others still machines and transportation. The main exports commodities from Portugal to the Czech Republic are above all machines and transportation, market products, chemicals, raw material (Ministry of Foreign Affairs, 2009).

## Years 2009 to 2015

In 2009 the business relations between Portugal and the Czech Republic were affected by the global downturn in economic activity. In regards to the Czech exports, Portugal has moved up from 30th to the 27th position, and from 36th to the 34th position regarding Czech import. The turnover has moved up from 34th to the 32nd position. Among the Czech export, to the commodities previously mentioned have been added products like telecommunications equipment, screens, projectors, devices for heating and cooling, musical instruments, papers and paperboards. The main Portuguese export commodities have been also enriched with products like tobacco, electronics, measuring instruments, metal and plastic products, waste paper, and cork products (Ministry of Foreign Affairs, 2010)

In 2010 trade increased significantly between Portugal and the Czech Republic. From 518.7 million EUR in 2009 the number has increased to 682.0 million EUR in 2010. The export and import commodities have been expanding and have started to vary more than in the past years. The previous Czech export commodities to Portugal have been enriched by the navigational aid apparatus, processing units, TVs, the steel parts of motor vehicles, brakes, tires, speedometers for vehicles, parts of electrical capacitors, seamless pipes. The main Portuguese import commodities to the Czech Republic were enriched as well by audio players for motor vehicles, tire materials, electric capacitors, radios with cassette recorders, bleached wood pulp (cellulose), parts of seats, brakes (Ministry of Foreign Affairs, 2011).

During the last 4 years, Portugal has been strengthening its position considering the Czech trade relations; from the 64th position in 1993 it has moved to the 33rd position (regarding total turnover) from in 2011. The year 2011 has registered a very high turnover of the trade between Portugal and the Czech Republic, 719.3 million EUR. The numbers have proven that the crisis has not affected the CZ-PT trade significantly. However, in 2013 the mutual trade has noticed just an infinitesimal growth, while the balance remained the same. This was a good sign for Portugal. The main commodities of Czech exports for 2013 were, much like previous years, cars (24.6%), electronics (24.3%), mechanical tools (17%), products from steel and iron (4%), metallic products (3.8%), tires and rubber products (3.7%), furniture (2.6%), plastic and its products (2.5%), toys and sport equipment (1.9%), aluminum and its products (1.2%). The main commodities of Portuguese export for 2013 were electronics (23.2%), cars (10.1%), high-strength textiles (9%), unmanufactured tobacco (8%), plastic products (6%), mechanical tools (5.8%), products from steel and iron (5.5%), pharmaceutical products (4.1%), tires and rubber products (3.1%) (BusinessInfo, 2014).

The year of 2014 has shown a significant increase of the Czech export. The turnover has reached the highest number, 799.0 million €, making it obvious that the trade between the Czech Republic and Portugal has been increasing and that the mutual relationships and economies resisted the crisis well.



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The increase is moderated without significant deflections. This can mean a good prognosis of the future trade between those two countries.

As of 2014, the Czech Republic ranked at 18th globally with 0.67% of total Portuguese exports, and at 22nd globally with 0.7% of total Portuguese imports.

For the first time in history, trade between both countries was above the threshold of 800 million EUR.

## MAIN CZECH AND PORTUGUESE COMPANIES INVOLVED IN TRADE

### Main Czech Companies Trading with Portugal

The main Czech companies operating in Portugal are Skoda Auto and Moravia Steel. Skoda, a Czech car company, founded in 1925, is one of the oldest of this branch in the world. In 1991, became a subsidiary of the Volkswagen Group. In 2015, the company expects to strengthen its presence in the Portuguese market by 50%. «In 2014 the brand sales were slightly above the market average: grew 36.5%, although it has maintained its share compared to 2013. The fleets channel represented approximately 65% of total sales, with special focus on the taxi business, where the Škoda managed to extend their presence by 40% (Rebelo, 2015).

Moravia Steel Iberia is a Czech metallurgical company operating in Portugal, since 1997, based in Lisbon. It trades stainless steel products.

There are several Czech firms working as intermediary between PT and CZ, such as: Likor, Portugal-market, Kateřina Kročilová, Cerfis Wines, Café Portugal, and Um Porto. Excepting Café Portugal, all of them import Portuguese wines. Portugalmarket and Cerfis Wines also import Portuguese olive oil, and Café Portugal only imports coffee (Ministério dos Negócios Estrangeiros, 2012).

### Main Portuguese Companies Trading with the Czech Republic

The main Portuguese companies operating in Czech Republic are Mota-Engil and EFACEC. Mota-Engil, a Portuguese industrial conglomerate, works with civil engineering and construction, energy, steel works, transport concessions, environment and services. It also deals with logistics, retail and warehousing. EFACEC is a Portuguese group working with electro mechanics and electronics; it is the biggest company in this industry.

As Portuguese business established in Czech Republic, there are Café Oliveira and Trindadent. Café Oliveira is a very traditional Portuguese style of café, serving Portuguese snacks and wine. Trindadent is a Portuguese dental office based in Prague (Ministério dos Negócios Estrangeiros, 2012)

In 2013, 850 Portuguese companies exported to the Czech Republic, a number that has escalated from 748 in 2010 (AICEP, 2016b).

## SOLUTIONS AND RECOMMENDATIONS

One can describe those markets as economically similar but culturally different. The cooperation and exchange of goods have been significantly growing after the Czech Republic entered to the European Union. However, the 2008 crisis disturbed the dynamic economic trade growth between both countries.



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Still, after a small decrease and stagnation of the trade between those two countries, the last years have registered a slow recovery and the prognosis seems to be positive. However, if Portuguese and Czech authorities desire to increase trade and foreign direct investment between the two countries at a more accelerated pace, it is necessary to promote trade fairs among potential investors in order to overcome cultural and economic barriers, as well as the strong feelings of foreignness between both countries.

## FUTURE RESEARCH DIRECTIONS

It would be interesting to understand how Portuguese firms are evolving in the Czech Republic and how Czechs firms are evolving in Portugal after their investment abroad. This would be important to understand how foreignness has affected their economic path abroad.

Taking into account the new important roles that have been given to economic diplomacy, it would be important to address how diplomats and economic players of both countries are deploying their strategies, and what resources are using to increase exports and trade.

## CONCLUSION

One of the main conclusions is that trade has been increasing over time. Although exports from Portugal to the Czech Republic show an almost constant growth, exports from the Czech Republic to Portugal show several fluctuation, as a result of the economic unrest Portugal has gone through since 2008 financial crisis, which is reflected on the trade balance constant ups and downs favoring the Czech Republic.

Another important conclusion is that despite the heavy historical, cultural and economic differences Portugal and Czech Republic are improving their trade rankings. However, despite their growing trend their main economic partners are the same: Spain, and Germany for Portugal, and Germany, Slovakia, and Poland for the Czech Republic.

As supported in the literature review (Fink, Harms, & Kraus, 2008; Zanger, Hodicová, & Gaus, 2008; Zapletalová, 2012; Kubíčková, & Procházková, 2014), Czech firms still follow a traditional sequential path when internationalizing their activities, showing strong feelings of foreignness and lack of understanding of foreign markets. As such, as most of the internationalization of Czech firms is to neighbor countries, the feeling of foreignness and the lack of understanding of foreign markets might be aggravated to far distant countries like Portugal, with which the Czech have more dissimilar cultural attributes.

Another conclusion is that despite this fruitful cooperation, both markets are too small, and possibly unattractive for a huge deeper future cooperation. Clearly, history plays a heavy role: Portugal is still concentrated in its former colonies, with a small psychic distance, common language, and close cultural gap, while the Czech Republic is still concentrated in its close neighbors, with whom they have close affinities.

One thing is clear, joining the EU was an important step for both countries to deepen their relationships. Future policy intervention is necessary to increase trade between both countries, as small and medium-sized firms may find it difficult to overcome their historical and cultural differences. This is tuned with what was proposed by Moini, Kalouda, and Tesar (2008) and by Cieślik, Michałek, Michałek, and Mycielski, (2015) who propose the formulation of export promotion strategies for SMEs and the attraction of export-oriented FDI.



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There are several areas, such as heavy industries or electronics, which would possibly be attractive and interesting for investments or trade of both countries. For Portugal the wine industry, cork, celluloses and paper, or agricultural (fruits, fish, seafood) products could represent a sizeable source of future income.

For the Czech Republic, as an industrial country, metallic parts, cars, and heavy industries are still representing the most important source of income. However, IT and pharmaceutical industries have good perspectives for growth.

At firm level it is important to emphasize that it is necessary that firms embrace more assertive modes of entry (as foreign direct investment and franchising) in order to control distribution of goods in the recipient country, as for example Skoda is doing in Portugal.

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## KEY TERMS AND DEFINITIONS

**Balance of Trade (BOT):** The difference between a country's imports and its exports. When a country imports more than it exports, one can say that it has a trade deficit. When a country exports more than it imports, one can say that it has a trade surplus.

**Culture:** Considered the collective programming of the mind. The main consequence of this collective programming is that members of groups, categories, or countries will tend to behave homogeneously among them, bet heterogeneously between them. Culture is important in business as firms operating in different countries need to be aware of those differences. Several dimensions – Power Distance Index (PDI), Individualism versus Collectivism (IDV), Masculinity versus Femininity (MAS), Uncertainty Avoidance Index (UAI), Long Term Orientation versus Short Term Normative Orientation (LTO), Indulgence versus Restraint (IND) – have been put forward to meaningfully compare counties

**European Single Market:** Established by 12 countries in 1993 to ensure the so-called four freedoms: the movement of goods, services, people and money. With the European single market, EU citizens can study, live, shop, work, and retire in any EU country.

**European Union (EU):** A group of 27 countries (Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom) that operates as a cohesive economic and political block. It was formed in 1993 with the purpose of achieving political and economic integration. Nineteen of the countries use the euro as their official currency.



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**Exports:** An export is a function of international trade whereby goods produced in one country are shipped to another country for future sale or trade. Exports contribute to the producing nation's gross output.

**Foreign Direct Investment:** A foreign direct investment (FDI) is an investment made by a company or entity based in one country, into a company or entity based in another country. It normally includes mergers and acquisitions, building new facilities, reinvesting profits earned from overseas operations and intra company loans.

**Imports:** A good or service brought into one country, but produced in another country. The higher the value of imports entering a country, compared to the value of exports, the more negative that country's balance of trade becomes.

**International Trade:** The exchange of goods and services that connect people, businesses and countries along international borders in global processes of production and consumption.

**SMEs:** Abbreviation of small and medium-sized enterprises. Although there are plenty of definitions across the world, the working definition used in this document is the one that was created by the European Commission, to permit a coherent and effective access of SMEs to European community funds.

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# Chapter 42
# Promoting Service Quality and Customer Satisfaction in Global Business

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## ABSTRACT

*This chapter explains the overviews of customer service, service quality, and customer satisfaction; the significance of service quality in global business; and the significance of customer satisfaction in global business. Customer service is the significant element required for a successful business. Knowing customer expectations and delivering excellent service quality can considerably promote the entrepreneurial success and business growth. Gaining high levels of customer satisfaction is very important to business because satisfied customers are most likely to be loyal and to make repeat orders and to utilize a wide range of services offered by business. High service quality effectively promotes customer satisfaction and customer satisfaction has a positive relationship with business revenue. The chapter argues that promoting service quality and customer satisfaction has the potential to enhance organizational performance and reach strategic goals in global business.*

## INTRODUCTION

Services industry plays an essential role in the economic globalization and a determining factor in strengthening the industry's competitiveness (Cheng, Hsu, & Huang, 2012). Regarding service quality perspective, service has to meet customer needs and customer expectations (Liu & Xie, 2013) and is considered as the difference of terms of service provision and the customer expectations of perceived service (Breja, Banwet, & Iyer, 2011). The active prediction of service quality certainly helps decision makers effectively manage their service operations to sustain the quality service to meet customer needs (Qiu, Wu, & Yu, 2011). Service quality can be evaluated by considering customer perceptions and customer expectations (Celik, Aydin, & Gumus, 2014). Categorizing service quality elements regarding their effects on customer satisfaction is required in modern business (Basfirinci & Mitra, 2015).

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As competition in the services sector is increasing, the ability of companies to understand their customers and ensure their satisfaction with the services is becoming significant (Meidutė-Kavaliauskiene, Aranskis, & Litvinenko, 2014). In the highly competitive marketplace, customer satisfaction is one of the most critical success factors to many leading companies (Nahm, 2013). Customer satisfaction is viewed as a fundamental determinant of customer value (Eisenbeiss, Cornelißen, Backhaus, & Hoyer, 2014). Customer satisfaction is recognized as an attractive theme for the long-term business success, positive word of mouth (WOM), improved customer retention, profitability, and dynamic competitiveness (Ihtiyar, Ahmad, & Osman, 2014). Customer satisfaction concerning perceived quality is critical for customer retention (Steiner, Siems, Weber, & Guhl, 2014). Customer loyalty becomes a major concern for retail stores across the globe (Thomas, 2013).

This chapter aims to bridge the gap in the literature on the thorough literature consolidation of service quality and customer satisfaction. The extant literatures of service quality and customer satisfaction provide a contribution to practitioners and researchers by describing the theory and applications of service quality and customer satisfaction in order to maximize the business impact of service quality and customer satisfaction in global business.

## BACKGROUND

In a service-dominant paradigm, service is the essence of society and industry (Chen, Huang, Shu, & Wang, 2013). Customer is the most important part of any business of the services sector (Huang & Huang, 2012; Lu & Yang, 2010). Customer value leads to the effective workgroup performance in the digital age (Kasemsap, 2013a). Getting information from three types of customers (i.e., online customers, offline customers, and multichannel customers) helps executives and marketing managers get a better understanding of the implications of the reduction of the personal interaction and the extent to which the consequences of failure of a single channel to deliver the specific service output vary across different types of customers (Fernandez-Sabiote & Roman, 2012).

Service quality has gained the significant attention in the last two decades (Ramanathan & Karpuzcu, 2011). Service quality is the antecedent of customer satisfaction (Caceres & Paparoidamis, 2007; Gorla, Somers, & Wong, 2010). Service quality and customer switching behavior are the important factors that affect the service companies' market share and profitability (Liang, Ma, & Qi, 2013). The relationship between the dimensions of service quality and customer satisfaction may exhibit a nonlinear pattern which means that paying more attention to a particular dimension of service quality may not always lead to the higher customer satisfaction (Kano, Seraku, Takahaski, & Tsuji, 1984).

In the context of global competition, there has been an increasing awareness in improving the processes which are directly correlated with customer satisfaction (Chougule, Khare, & Pattada, 2013). Customer satisfaction is central to the marketing concept (Szymanski & Hise, 2000). Customer satisfaction involves an attitude toward a product or service that successfully provides a pleasurable level of the consumption-related fulfillment (Oliver, 2010). Customer satisfaction is considered as one of the most critical outcomes of marketing activities by the market-oriented firms (Kandampully & Suhartanto, 2000). Customer satisfaction contributes to the firm's profitability and customer retention (Fornell, 1992).

Customer satisfaction leads to the positive outcomes, especially in predicting the future intention to use the products and services (Zhao, Lu, Zhang, & Chau, 2012). Customer satisfaction is a fundamental dimension to drive the business outcomes and the performance of processes in modern organizations



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(Kenett & Salini, 2011). Customer satisfaction analysis has become an important issue in strategic management (Greco, Matarazzo, & Slowinski, 2007). Overall customer satisfaction is a stronger predictor of buying behavior than any individual service quality dimension (Bruwer, 2014). Customer satisfaction can lead to the long-term benefits and customer loyalty (Tam, 2011). Ensuring customer satisfaction has become essential for the survival of services industries (Cheng, Yang, & Teng, 2013).

## PERSPECTIVES OF SERVICE QUALITY AND CUSTOMER SATISFACTION

This section emphasizes the overviews of customer service, service quality, and customer satisfaction; the significance of service quality in global business; and the significance of customer satisfaction in global business.

### Overview of Customer Service

Customer service has become increasingly important (Liao & Kao, 2014). In the era of experience economy, service providers have to provide customers with the high-quality service experience in order to attract more customers and achieve the higher customer satisfaction (Hsieh, Yuan, & Kuo, 2011). In the new service-dominant logic, customers and service providers are more interacted, involved, and immersed in the process with their skills and knowledge. Integrating the online and offline channels is associated with increasing customer retention (Ladhari & Leclerc, 2013). Frontline service employee plays a crucial role in developing and enhancing the relationships with customers (Genzi & Pelloni 2004; Gwinner, Gremier, & Bitner, 1998; Hansen, Sandvik, & Selnes, 2003).

It is important for service personnel to have the high ethical standards, be committed to the business, and be willing to serve customers (Lin, 2014). The relationship between customers and service employees are getting stronger and longer, which increases the importance of service encounter. Service convenience is a formative concept and contributes to the long-term exchange relationship between consumers and service providers (Dai & Salam, 2014). There are the effects of money gain and loss on the customers' perceived value of waiting time for service events as predicted by prospect theory (Lin, Xia, & Bei, 2015).

The adoption of cloud computing services depends on having the capability to ensure the quality of service to the cloud computing users (Choi & Jeong, 2014). Many business benefits are achieved through the utilization of technologies, such as cloud computing and virtualization (Kasemsap, 2015a). Researchers and practitioners should recognize the importance of cloud computing toward gaining sustainable competitive advantage in global supply chain (Kasemsap, 2015b). Wang et al. (2014) stated that cloud computing promises to provide the high-quality services with the service-oriented architecture. The interactions among the main effects of service quality, customer expertise, and perceived switching costs yield the additional insight into the change in the relative importance of technical and functional service quality in the customers' decision to be loyal (Bell, Auh, & Smalley, 2005).

Service management is defined as what is perceived by the tourists and decision makers during the process of service generation and delivery processes (Lin, Huang, & Yeh, 2012). Website quality, trust, merchandising, and customer service have positive effects on the online satisfaction for auction websites (Wu, Huarng, Fiegantara, & Wu, 2012). The purchase occasion affects the type and intensity of emotions, customer experience, and the likelihood of repurchase (Tombs & McColl-Kennedy, 2013).



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The provision of logistics services is a crucial point in supply chain management that can influence the brand perceptions of customers (Oflaç, Sullivan, & Baltacioğlu, 2012).

## Overview of Service Quality

Zeithaml (1988) defined service quality as the judgment of a customer about a product's overall excellence. Heskett et al. (1994) stated that service quality has been identified as a significant element of success in attracting the repeat customers. Service quality is valuable in distinguishing itself from competitors toward obtaining competitive advantage in the service-oriented world (Rapert & Wren, 1998). Quality is one of the most important tasks of the rapidly growing services sector (Rahman, 2008; Xie, Wang, & Lai, 2011). McCollin et al. (2011) stated that service quality is difficult to quantify as it is a function of differing customer perceptions, the market conditions, the measurement process, and the interpretation of the collected data.

High-tech information technology (IT) firms are characterized by a path dependency of the generative learning, which must be recognized by managers toward managing the service quality operations (Soltani, Chau, & Liao, 2012). The interaction of conscientiousness and emotional stability influences service quality (Teng & Liu, 2014). The transfer of training is positively associated with both service quality and job satisfaction (Zumrah, Boyle, & Fein, 2013). Customers who are happier will evaluate service quality in utilitarian services in a more positive manner than do customers who are less happy (Hellén & Sääksjärvi, 2011).

The measurement of service quality is a relevant issue for modern organizations (Franceschini, Galetto, & Turina, 2010). Service quality can be investigated through the measurement of the extent to which service performance meets customer expectations (Basfirinci & Mitra, 2015). SERVQUAL model is developed to measure the service quality perspectives (Parasuraman et al., 1985, 1988, 1994). Parasuraman et al. (1985) developed the gap theory to measure the service quality construct and conceptualized service quality as the gap between the customer expectations about the service and the customer perceptions of the actual performance of the service.

SERVQUAL is a valuable tool for executing the managerial analysis where a gap is measured as the difference between customer expectations and customer perceptions (Celik et al., 2014). Five metrics of SERVQUAL include tangibles, reliability, responsiveness, assurance, and empathy (Awasthi, Chauhan, Omrani, & Panahi, 2011; Parasuraman et al., 1988). Tangibles comprise the physical appearance of the service facility, tools, staff, and communication resources. Reliability represents the ability of the service provider to reliably execute the promised service. Responsiveness shows the willingness of the service provider to immediately provide the service. Assurance practically relates to the knowledge and politeness of the staff and their capability in order to reveal the trust, faith, and confidence. Empathy describes the care and personalized attention of the employees to customers.

Originally tested in five service settings concerning retail banking, credit card services, repair and maintenance of electrical appliances, long-distance telephone services, and title brokerage (Ladhari, 2009), the measurement scale involves 22 items representing five dimensions of tangibles, reliability, responsiveness, assurance, and empathy. Carrasco et al. (2012) indicated that there are attempts to standardize the service quality evaluation (e.g., SERVQUAL instrument), which is a multiple-item scale for measuring service quality with several dimensions. Yu et al. (2014) explained that SERVQUAL can be an appropriate method to define and measure the customer satisfaction for the IT solutions. Four SERVQUAL dimensions (i.e., reliability, responsiveness, empathy, and tangibility) have a significant



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influence on customer satisfaction (Marinković, Senić, Kocić, & Šapić, 2013). Employing the exploratory and confirmatory factor analyses, the retail service quality model (ReSERVQUAL) includes interaction and trustworthiness, store environment, understanding the consumers, and policy (To, Tam, & Cheung, 2013).

Since its introduction in the 1980s, the Kano model has become a popular model for evaluating the quality attributes (Chen, 2014). For example, the Kano model helps organizations explore the components of service quality of the commercial airline, affecting the customer satisfaction and the service characteristics on the customers' perception of quality (Basfirinci & Mitra, 2015). Kano et al. (1984) classified product features into five distinct categories (i.e., must-be quality, one-dimensional quality, attractive quality, indifferent quality, and reverse quality). Must-be quality can be defined as the basic attribute of service quality in terms of customer satisfaction (Basfirinci & Mitra, 2015). One-dimensional attribute will lead to customer satisfaction when fulfilled, and will lead to customer dissatisfaction when not fulfilled. Attractive attribute leads to the high levels of customer satisfaction when fulfilled, but do not cause any dissatisfaction when not fulfilled because they are not expected by customers, who may be unaware of product features (Shen, Tan, & Xie, 2000).

Although the Kano model was originally employed to enhance the product quality development in manufacturing, it has been applied to various services industries (Kuo, Chen, & Chen, 2010). In the services sector, the Kano model and SERVQUAL are broadly utilized in order to achieve the customer satisfaction in health care (Lim, Tang, & Jackson, 1999), tourism (Pawitra & Tan, 2003), banking (Chen & Kuo, 2011), and education (Sahney, 2011). Quality function deployment (QFD) is a systematic method that provides a method of translating the customer requirements into the technical requirements for each stage of product development (Bhattacharya, Sarkar, & Mukherjee, 2005; Karsak, Sozer, & Alptekin, 2002; Tseng & Lin, 2011). QFD has been regarded as a powerful customer-oriented design tool for developing the improved products to achieve the higher customer satisfaction by integrating many functions of an organization (Nahm, 2013). In the QFD process, rating the importance of customer requirements is a crucial step since it largely affects the target value setting of design requirements (Nahm, 2013). The successful QFD application may result in the greater customer focus, shorter lead times, and knowledge preservation (Liu, 2009).

QFD can be applied to the manufacturing sector, services industry, and logistics service (Baki, Basfirinci, Murat, & Cilingir, 2009; Bottani & Rizzi, 2006; Tu, Chang, Chen, & Lu, 2010). QFD supports the product planning on the basis of the customer's voice by a stepwise analysis and the deployment of customer requirements (Akao, 1990). QFD requires the collaboration among different business areas as a prerequisite for the design tasks (Bottani & Rizzi, 2006). The correlation between the requirements from customers and the determinants of service quality is analyzed with the fuzzy QFD in order to indicate the determinants of customer satisfaction (Su & Lin, 2008).

The analytic hierarchy process (AHP) (Saaty, 1980) has been broadly adopted to address the multicriteria decision-making (MCDM) problems according to the multiple criteria involving the subjective judgment of hierarchical structure (Cho & Cho, 2008; Liao & Kao, 2010). The AHP can be applied to measure the service quality of an organization (Ramanathan & Karpuzcu, 2011). The AHP includes six essential steps (Lee, Kang, & Chang, 2009; Murtaza, 2003): define the unstructured problem, develop the AHP hierarchy, perform pairwise comparison among decision factors, estimate the relative weights of the decision factors, check the consistency property of matrices, and obtain the overall rating for the alternatives.



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An extensive amount of research has focused on the chain of psychological effects from perceived service quality to customer loyalty (Frank, Torrico, Enkawa, & Schvaneveldt, 2014). Perceived service quality is prominent for service quality assessment from customer perspective (Sandmann, 2013). Perceived service quality falls short of customer expectations in five dimensions of service quality (i.e., tangibles, reliability, responsiveness, assurance, and empathy) (Mersha, Sriram, Yeshanew, & Gebre, 2012). If customer expectations are higher than the result of service process, then customer perceived service quality is not satisfactory (Huang, Wang, & Xue, 2012).

Perceived service quality positively influences customer loyalty (Johnson, Herrmann, Huber, & Gustafsson, 1997). Customer loyalty drives the long-term corporate profitability (Reichheld & Sasser, 1990; Zeithaml, Berry, & Parasuraman, 1996). Verbal scripting is shown to impact the customer perceptions of service quality (Victorino, Verma, & Wardell, 2013). The perception of service quality reveals an opportunity to augment the service quality through attention to activities that are associated with the supportiveness dimensions of service offering (Erasmus & Grabowski, 2013).

In the era of growing foreign tourism, providing excellent quality service at hotels is increasingly important (Yang, Jou, & Cheng, 2011). The attractiveness of tourism destinations is a topic of great interest to researchers and professionals wishing to understand the ability of destinations to attract tourists (Medina-Muñoz & Medina-Muñoz, 2014). Destination image influences service quality and perceived value (Kim, Holland, & Han, 2013). Regarding airline customer satisfaction and loyalty, there are the different factors of in-flight service quality that are important according to the customer seat class (An & Noh, 2009). In the case of the prestige class, there are six important service quality factors: alcoholic and non-alcoholic beverage, responsiveness and empathy, reliability, assurance, presentation style of food, and food quality; while the economy class has five important service quality factors: responsiveness and empathy, food quality, alcoholic beverage, non-alcoholic beverage, and reliability (An & Noh, 2009).

The relationship between perceived congruence of communication and service quality is mediated by a self-perceived performance (Özbek & Yuldashev, 2010). Regarding Internet banking, service quality dimensions include website attributes, reliability, responsiveness, fulfillment, efficiency, and privacy and security (George & Kumar, 2014). Hospital information has become an important infrastructure in the large-scale hospitals, and the incremental software development is significant for improving service quality (Kawamura, Kimura, & Tsumoto, 2014). Service quality perceptions positively influence the patient satisfaction with overall hospital care (Bakan, Buyukbese, & Ersahan, 2014). Wan et al. (2012) stated that a true buyer-seller relationship is a key determinant of consumer behaviors for the adolescent consumers of hairstylist services. The level of frontline employees' traits is positively related to the level of customer traits (Streukens & Andreassen, 2013).

## Overview of Customer Satisfaction

Customer satisfaction has been focused in marketing (Pyon, Lee, & Park, 2009). Hernon and Whitman (2001) defined satisfaction as a sense of contentment that arises from an actual experience in relation to an expected experience. Jaiswal (2008) considered customer satisfaction as a customer assessment in terms of whether service meets customer needs and customer expectations. Customer satisfaction has been well-studied concerning the behavioral aspects of marketing research (Hao, Yu, Law, & Fong, 2015). Customer satisfaction measures the customer's subjective experience with products and services. Two different conceptualizations of customer satisfaction (i.e., transaction-specific satisfaction and cumulative satisfaction) have been reported in the literature (Andreassen, 2000; Boulding, Kalra, Staelin,



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& Zeithaml, 1993). Cumulative satisfaction involves satisfaction as the customer's current experience with products and services (Fornell, Johnson, Anderson, Cha, & Bryant, 1996).

Parasuraman et al. (1991) stated that service providers must recognize the customer needs in order to fulfill the customer expectations to achieve the high customer satisfaction during the service experience. Managing customer expectations is an important perspective to enable customers to have a satisfactory experience (Clow & Beisel, 1995; Coye, 2004). Customer expectations' manifestation depends on how customers perceive and interpret the environmental factors influencing the formation of customer expectations (Gorla et al., 2010). Competent service providers can raise customer expectations in order to achieve a customer franchise and build a threshold that competitors must achieve to enter the market (Parasuraman et al., 1991). Service providers should encounter many difficulties in managing customer expectations, creating a favorable experience in a dynamic business environment (Ho & Zheng, 2004; Hubbert, Sehorn, & Brown, 1995).

An increase in profitability results from a growth in market shares, repeat purchases, an increase in productivity, and lower costs for acquiring and serving new customers (Reichheld, Markey, & Hopton, 2000). A significant work on the related customer satisfaction with consumer loyalty has been primarily reported in the services sector, such as banking, hospitability, electronic commerce, and telecommunications (Danaher & Gallagher, 1997; Hallowell, 1996; Shankar, Smithb, & Rangaswamy, 2003). Many research papers have been published on the effect of customer satisfaction and customer loyalty on customer profitability which is related to customer lifetime value (Qi, Zhou, Chen, & Qu, 2012). Customer value analysis not only empowers customers to express their preferences for various product features, but it also facilitates the company's justification of different customization solutions (Du, Jiao, & Tseng, 2006).

In order to focus the service employees' attention on delivering the high levels of customer satisfaction, many companies directly reward employees who deliver the high levels of satisfaction as reported in the companies' formalized satisfaction measurement processes (Jones, Taylor, & Reynolds, 2014). The impact of relational norms on customer satisfaction is bridged by the perceived service quality and customer trust (Lai, Li, & Lai, 2013). Service providers can gain benefit and raise customer satisfaction by managing customer expectation during service experience delivery (Hsieh et al., 2011). Service provider's service orientation predicts the customer's cognitive trust in the service provider above customer agreeableness concerning the affective and cognitive trust (Webber, Payne, & Taylor, 2012). Trust relates not only to customer trust in the individual companies, but also to the broader business context in which customer-seller relationships may develop in modern business (Hansen, 2012).

Consumer value relates to loyalty and price consciousness through consumer satisfaction (Hur, Kim, & Park, 2013). Sánchez-García et al. (2012) stated that the influence of satisfaction on loyalty is dependent on the time perspective of the intentions. The functional-utilitarian quality attributes (i.e., availability, efficiency, fulfillment, and privacy) may lose their ability to delight the customers as the customer relationship matures. Hedonic quality attributes (e.g., design, enjoyment, and image) only exhibit an increasing effect on customer satisfaction for more experienced customers (Falk, Hammerschmidt, & Schepers, 2010). Sorooshian et al. (2013) stated that hedonic dimension indicates the users' feelings of excitement presented in the place where their desired goals are the vital issues. Utilitarian benefit, hedonic benefit, nonmonetary cost, and alternative attractiveness are the significant predictors of customer satisfaction, which affects customer loyalty (Ha & Park, 2013).

Businesses need to pay attention to customer feedback to practically provide the service (Berry, Carbone, & Haeckel, 2002; Meyer & Schwager, 2007). Service quality is more important than information



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and system quality in influencing customer satisfaction and purchase intention (Hsu, Chang, & Chen, 2012). Positive affectivity is associated with the customer satisfaction and the customer perceptions of service quality (Burns & Bowling, 2010). Ueltschy et al. (2009) stated that customer satisfaction is strongly influenced by culture. Many multinational corporations have implemented the cross-national satisfaction measurement programs for tracking and benchmarking customer satisfaction across their various markets (Morgeson, Mithas, Keiningham, & Aksoy, 2011).

The variability of customer satisfaction index is measured by the standard deviation or the coefficient of variation (Valentini, Battista, & Gattone, 2011). Many studies on factors that influence the customer satisfaction have been conducted for the consideration of improving the services offered by destinations, hotels, and travel agencies (Haber & Lerner, 1999; Macintosh, 2002; Ryan, 1995). Customer satisfaction is an important measure of service quality in travel agents (Filiz, 2010). Six Sigma is a customer-centric method which reduces process variation and optimizes development in global operations (Kasemsap, 2016). Six Sigma can be utilized to improve the service quality and increase the competitiveness of hospitality industry (Chen, Chen, Chang, & Hsu, 2010). Six Sigma, organizational learning, and organizational innovation have the positive relationships with the improved organizational performance (Kasemsap, 2013b).

It is important for the online travel agencies (OTAs) to understand the customer satisfaction of different segments (Hao et al., 2015). OTA websites play an essential role in the perspective of tourism, which includes information distribution, transaction facilitation, destination marketing, and connections among travelers (Ip, Law, & Lee, 2011; Law, Qi, & Buhalis, 2010). Tourism managers and researchers should pay more attention to customer satisfaction with their websites, and they increasingly turn to the advanced technologies for the insights into making their OTA websites more competitive (Chaudhuri, Dayal, & Narasayya, 2011; Turban, Sharda, Aronson, & King, 2008). Customer satisfaction leads to the repeat purchases and the increased likelihood of making recommendations for OTAs (Anderson, Fornell, & Lehmann, 1994; Chon, 1989; Oliver, 2010). Several studies have followed the behavioral science paradigm (Hevner, March, Park, & Ram, 2004) to investigate the networks of customer satisfaction (Del Bosque & San Martin, 2008; Yoon & Uysal, 2005; Yüksel, Yüksel, & Bilim, 2010). The evaluation of customer satisfaction is critical for OTA web design (Ip et al., 2011; Law et al., 2010).

Overall customer satisfaction serves to reinforce the brand loyalty (Tsai, 2014). Retail and service establishments should be aware of the customer perceptions of transitory bias concerning performance metrics (Trocchia & Luckett, 2013). The physical distribution quality and cost are positively related to the customer's purchase satisfaction and the customer's retention (Rao, Goldsby, Griffis, & Iyengar, 2011). The assessment of patients' satisfaction levels, and the knowledge of what factors influence satisfaction are very important for health care managers (Raposo, Alves, & Duarte, 2009). Satisfaction with health care is affected by the objective measures of service quality (Ly & Glied, 2010). The ability to provide the outpatient services with the exceptional quality is paramount to the long-term survival of hospitals, as the revenues from the outpatient services are predicted to exceed the inpatient revenues (Carlucci, Renna, & Schiuma, 2013).

## Significance of Service Quality in Global Business

Service quality is a measure of how well the service level matches customer expectations (Yang, Hsieh, Li, & Yang, 2012). Maintaining and improving service quality is necessary to achieve performance objectives (Sherman & Zhu, 2006). Continuous improvement of service quality results in the enhanced



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customer satisfaction, the increased efficiency, and the maximization of business value of the service within the firm (Lepmets, Cater-Steel, Gacenga, & Ras, 2012). Service quality and customer satisfaction are the main influencers of service providers' switching intentions. Each service provider should seek to maximize its own profit by determining its service volumes and service quality (Nagurney, Li, Wolf, & Saberi, 2013). As service failures are inevitable, firms must be prepared to recover and learn from service failures (Lapré, 2011).

The improvement of service quality and customer satisfaction has been widely mentioned over the past decades (Su & Lin, 2008). Service quality is related to consumer satisfaction as it reflects the customers' evaluation of service providers' performance (Zhao et al., 2012). Service quality plays an important role by moderating the influence of intention to utilize the self-service technologies on consumer behavior (Lee, Chiu, Liu, & Chen, 2011). Service quality has a significant influence on the long-term behavioral intentions through the high levels of customer satisfaction (Chen, Lee, Chen, & Huang, 2011). Service quality and customer satisfaction are recognized as the major factors in maintaining the long-term business relationships (Rahman, 2008). Service quality plays a crucial role in improving the organizational profits because it is related to customer satisfaction and customer loyalty (Baker & Crompton, 2000; Leal & Pereira, 2003; Zeithaml & Bitner, 2000). Service employees play an important role in the customers' evaluations of service quality (Bebko & Sciulli, 2009) or the judgment of a restaurant experience (Wall & Berry, 2007).

The quality level of the delivered services has a significant impact on the scale economies and ownership effects (Destandau & Garcia, 2014). The assessment of service quality provides an important feedback for agents to assess its service to its customers (Filiz, 2010). The careful design of quality standards can allow the incentive regulation to achieve the cost savings without quality degradation (Ter-Martirosyan & Kwoka, 2010). The financial and psychological risks are affected by the reliability and empathy of service quality, while the functional and social risks are influenced by the cues of service quality (Chen & Chang, 2005). While there are short-term trade-offs between service quality and productivity, a focus on service quality in the long term may help increase customer satisfaction, thus improving service productivity and overall organizational performance (Choi, Lee, & Olson, 2015).

The relationship between service quality and customer loyalty is an important marketing perspective across different industries (Srivastava & Rai, 2014). Advancing research on service quality requires clarifying the theoretical conceptualizations and validating an integrated service quality model (Akter, D'Ambra, & Ray, 2010). A service quality model is used by service requesters to specify the expected quality levels of service delivery; by service providers to advertise quality levels that their services achieve; and by service composers when selecting among alternative services in a service composition (Jureta, Herssens, & Faulkner, 2009). Executives and managers should enhance the training program and keep their objectives in mind to satisfy the various demands of customers, to raise their perceived service quality, and to ensure gaining high level of customer satisfaction (Luoh & Tsaur, 2011). Service quality elements significantly contribute to consumer behavior (Ariffin, Abdullah, & Bibon, 2012).

Businesses have derived the various benefits from the offshore outsourcing of information and communication technology (ICT) services while managing the perceived risks regarding the service quality of information security delivered in the supply chain (Bahl & Wali, 2013). Customer orientation is the main factor that impels hotels to become the ambidextrous firms (Tang, 2014). Customer orientation helps firms create the effective service solutions to meet the customer needs (Grissemann, Plank, & Brunner-Sperdin, 2013; Sin, Tse, Heung, & Yim, 2005). Customer orientation enhances the managerial and financial performance (Sin et al., 2005; Tajeddini & Trueman, 2012). To ensure that superior



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service quality is delivered, hotels should enhance their service capabilities to meet the customer needs and provide the greater value for customers (Narver & Slater, 1990; Zhou, Brown, & Dev, 2009).

Davis-Sramek et al. (2009) stated that both technical and relational order fulfillment service quality effectively influence satisfaction, which positively affects both affective and calculative commitment among retailers. Service quality and corporate social responsibility (CSR) have direct effects on brand identification and customer satisfaction and have indirect effects on customer satisfaction (via brand identification) and on service brand loyalty (via customer satisfaction and via brand identification) (He & Li, 2011). Maintaining an effective brand relationship is required for brand management in emerging markets (Kasemsap, 2014). The global retailers should manage the retail marketing mix elements and retail brand strategy in order to achieve the improved marketing outcomes in modern business (Kasemsap, 2015c).

Customer-centric strategy firms need to focus on the forward-looking indicators and ensure the relationship between decision rights, performance measurement, and reward systems (Bonacchi & Perego, 2011). Customer retention is a mediator in the service climate-firm performance chain (Towler, Lezotte, & Burke, 2011). The cell phone industry is in a particular position that lies in the intersection of high technology and services industry (Boakye, Prybutok, & Ryan, 2012). Cell phone provider's service quality and customer intention to switch the cell phone products significantly influence customer intention to switch the cell phone providers (Peng, Scott, Prybutok, & Sidorova, 2014). Dwivedi et al. (2010) stated that both service quality and secondary influence are significantly correlated with the consumers' behavioral intentions to change the Internet service provider. IT service quality is determined by the value that the IT service brings to both the IT service provider and its customers (Cater-Steel & Lepmets, 2014).

## Significance of Customer Satisfaction in Global Business

Customer satisfaction becomes the influential element toward promoting the repeated business relationships and increasing the long-term profitability in modern business (Wirtz, 2001). A loyal customer is a source of competitive advantage through the repeat purchase and the positive WOM (Thomas, 2013). WOM can contribute to the firm's success in an effective manner (Wangenheim & Bayón, 2007). The relationship between customer satisfaction and customer loyalty has been the focus of a good deal of research (Castañeda, 2011). The impact of customer satisfaction on customer loyalty varies across customers (Wang, Zhao, Wang, & Liu, 2007; Xia, Ping, Gao, & Jia, 2007). Customer loyalty is vital for the success of retail stores (Chiu, Wang, Fang, & Huang, 2014). Zeithmal and Bitner (2000) stated that the extent of satisfaction depends on service quality, product quality, price, and personal factors.

Customer satisfaction is cumulative and both prior satisfaction and post-recovery satisfaction should be recognized in the context of service recovery (Siu, Zhang, & Yau, 2013). Customer complaints and the handling of complaints play an important role in customer relationships (Faed, Hussain, & Chang, 2014). Customer and employee relationship-building actions affect the organizational value via the mediator of customer satisfaction (Luo, Wieseke, & Homburg, 2012). Customer demands (negative customer behaviors) and customer resources (positive customer behaviors) affect customer satisfaction through the frontline employees' customer-oriented attitudes and customer-oriented behaviors (Stock & Bednarek, 2014).

The concept of customer satisfaction has been analyzed in the academic literature on marketing and pricing (Roth & Bösener, 2015). Customers' reactions to price increases (i.e., repurchase intention) are strongly driven by two factors: the magnitude of the price increase and the perceived fairness of the



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motive for the price increase (Homburg, Hoyer, & Koschate, 2005). Raithel et al. (2012) stated that the factors known to influence customer satisfaction are important for investor behavior. The success of chief executive officers in managing customer satisfaction has a direct, personal, and economic impact in the pattern of their annual bonus awards (O'Connell & O'Sullivan, 2011).

In the financial services industry, the utilization of online channels improves customer satisfaction and enhances customer loyalty (Ladhari & Leclerc, 2013). Established financial theory focuses on the trade-off between risk and return (Kasemsap, 2015d). The impact of customer satisfaction on the institutional investor holdings is contingent upon the intangible asset intensity, the product-market demand uncertainty, and the financial market volatility (Luo, Zhang, Zhang, & Aspara, 2014). Customer satisfaction is the market-based asset that can contribute to the firm's value by increasing its stock market returns and reducing the riskiness of the stock market returns (Merrin, Hoffmann, & Pennings, 2013). Both customer satisfaction and the interaction between earnings and satisfaction have a significant influence on the firm's value (O'Sullivan & McCallig, 2009). Customer satisfaction reduces the negative deviation more than the positive deviation of the financial analysts' forecasts from the actual earnings (Ngobo, Casta, & Ramond, 2012).

The linkages among customer satisfaction, employee evaluation, and business performance data are crucial in modern business (Grigoroudis, Tsitsiridi, & Zopounidis, 2013). The relationships among customer satisfaction, customer retention, and firm profitability have been well-established in the marketing literature, and provide the extensive justification as to why customer satisfaction measurement is an essential point in the marketing-related decision making (Wu, DeSarbo, Chen, & Fu, 2006). Identifying relative weight of different dimensions of health care-related quality services, which concur together to determine the outpatients satisfaction, is very important, as it can help the health care managers allocate health care resources and identify managerial actions able to guarantee the higher levels of patients' satisfaction (Carlucci et al., 2013).

## FUTURE RESEARCH DIRECTIONS

The classification of the extant literature in the domains of service quality and customer satisfaction will provide the potential opportunities for future research. Customer relationship management becomes one of the most important business strategies in the digital age, thus involving organizational capability of managing business interactions with customers in an effective manner (Kasemsap, 2015e). Part of providing quality customer service is actively seeking customer feedback and establishing favorable relationship. The practical way to do this perspective is to establish customer loyalty programs. Building an attractive relationship with customers leads to the enhanced customer loyalty, thus increasing business profits.

Customer lifetime value is one of the most important measures of the worth of a customer. Customer lifetime value takes into account not only the customer's value, but also the expected value over their projected lifetime as a customer. Studying consumer behavior helps marketers understand consumer perceptions about a particular product or range of products. By studying consumer behavior, executives and marketing professionals can tap into consumer experiences with similar products to promote consumption and gain competitive advantage over competitors. The relationships among service quality, customer satisfaction, customer relationship management, customer loyalty, customer lifetime value, and consumer behavior will be the valuable topics for future research directions.



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## CONCLUSION

This chapter highlighted the overviews of customer service, service quality, and customer satisfaction; the significance of service quality in global business; and the significance of customer satisfaction in global business. Customers expect the reliable service delivery in an easily accessible pattern. Customer service is the significant element required for a successful business. Customer service has an impact on both existing customers and potential customers. Customer service can provide business owners an essential learning experience to understand the dynamics of the modern business world and keep up with the latest business trends. Knowing customer expectations and delivering excellent service quality can considerably promote the entrepreneurial success and business growth. Providing high service quality is a crucial issue for business success. High service quality effectively promotes customer satisfaction and customer satisfaction has a positive relationship with business revenue.

Gaining high levels of customer satisfaction is very important to business because satisfied customers are most likely to be loyal and to make repeat orders and to utilize a wide range of services offered by business. Customer satisfaction is the best indicator of how likely a customer will make a purchase in the future. Customer satisfaction measures how products or services supplied by a company meet or surpass customer expectations. Customer satisfaction is significant because it provides marketers and business owners with an effective marketing metric that they can utilize to manage and improve their businesses. Customer satisfaction is also a major perspective of differentiation that helps executives and marketing professionals attract new customers in the competitive business environments. Promoting service quality and customer satisfaction in global business has the potential to improve organizational performance and gain sustainable competitive advantage in the digital age.

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## KEY TERMS AND DEFINITIONS

**Customer Loyalty:** The likelihood of previous customers to continue to buy from a specific organization.

**Customer Satisfaction:** The degree of satisfaction provided by the products or services of a company as measured by the number of repeat customers.

**Customer Service:** All interactions between a customer and a product provider at the time of sale.

**Customer Value:** The difference between what a customer gets from a product, and what individual has to give in order to get it.

**Customer:** A person who buys products or services.

**Satisfaction:** The customer level of approval when comparing a product's perceived performance with his or her expectations.

**Service Quality:** An assessment of how well a delivered service conforms to the client's expectations.

**Service:** The product or service that is consumed by the end user and does not require any further processing.

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# Chapter 43
# What Attracts Foreign Direct Investments in Asian Economies?
## An Institutional Approach to FDI

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## ABSTRACT

*This chapter focuses on institutional configurations in host economies and examines the configurations that had a high propensity for foreign direct investment (FDI) inflows in Asian economies. While many previous studies on the relationship between FDI and growth focus on institutions in host economies, they are apt to search for one and/or best institutions. They do not perceive heterogeneous sets of linked institutions. This chapter contributes to the existing literature in a twofold manner. First, this analysis, based on multiple factor analysis, demonstrates a substantial variation in institutional configurations across Asian economies in attracting FDI. These Asian economies can be categorized into three clusters. Second, the fuzzy-set quality comparative analysis shows that two of the institutional configurations have a high propensity for FDI. The one found in Singapore relies on institutional complementarities similar to liberal market economies, while the other one, which is characteristic to Thailand, focuses on human capital formation in Asian welfare capitalism.*

## INTRODUCTION

Foreign direct investment (FDI) has gained importance in increasingly globalized Asian economies since the 1990s. However, some Asian economies seem to have attracted more FDI than others. This chapter focuses on institutional configurations in host economies and examines those institutional configurations that created greater potential for FDI inflows in Asian economies in the 2000s. While many previous studies on the relationship between FDI and growth focus on institutions in host economies,

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they are apt to search for one and/or best institutions in order for host economies to attract FDI. They do not perceive the relationship between institutional configurations, i.e., heterogeneous set of linked institutions, and FDI inflows.

Our contribution to the existing literature is twofold. First, multiple factor analysis (MFA) demonstrates a substantial variation in institutional configurations across Asian economies that attract FDI. We categorize these Asian economies into three clusters based on institutional configurations. Second, fuzzy-set qualitative comparative analysis (fsQCA) shows that two of the institutional configurations create greater potential for FDI inflows. Of these, the one found in Singapore relies more on institutional complementarities similar to liberal market economies (Hall & Soskice, 2001), while the other one, which is characteristic to Thailand, focuses more on human capital formation typical in Asian welfare capitalism.

Our findings suggest that in order to attract FDI from multinational corporations (MNCs), governments in developing Asian countries should deregulate domestic product and labor markets, and create a well-functioning financial market. Alternatively, they should focus on human capital formation with relatively protected domestic markets.

## OVERALL TRENDS IN FDI

Since the 1990s, foreign direct investment (FDI) has played a leading role in globalizing Asian economies. Today, most Asian economies have become important destinations for FDI from advanced economies. FDI has several advantages for these economies, in addition to its direct effect on economic growth. FDI is often associated with technological transfer or the introduction of new knowledge and skills, which in turn improves the economic environment for long-term growth. While domestic firms may benefit from the inflow of new knowledge associated with FDI, the increased competition in domestic markets induced by FDI may put pressure on local firms to enhance their productivity and promote human capital mobility among firms. A combination of these factors can create the conditions necessary for increased long-term economic growth. It is therefore believed that FDI inflows contribute to economic growth in Asian economies (Lee, Lee, & Kim, 2011).

Figure 1 shows the ratio of regional inward FDI to world inward FDI from 1990 to 2014. During the whole period, the ratio for the African region is steady at nearly 3 per cent. The ratio for South and Central America remained steady at roughly 5 per cent until 2010, when it increased to nearly 8 per cent.

North America, i.e., Developed economies: America, was the largest recipient of FDI, accounting for nearly 30 per cent of the total FDI in the 1980s. However, its share gradually declined and approached the share of the EU in the 1990s. In the early 2000s, the regional share of North America dropped rapidly, whereas there was a steep rise in the share of the EU region. Since then, the EU has been the largest recipient of FDI, accounting for roughly 40 per cent in the 2010s. However, the ratio of inward FDI to total FDI in the EU region gradually declined to 33.70 per cent in 2013.

It is clear from Figure 1 that economies in the Asian region have attracted an increasing share of global FDI since the mid-2000s. The ratio of inward FDI in this region was relatively stable at roughly 15 per cent in the 1990s while there was the dip in the ratio around the East Asian Crisis. However, it began to rise in the mid-2000s and has continued rising. The ratio approached the North American level in 2010 and has remained roughly equal to it since. Clearly, this region has become one of the most attractive destinations for MNCs making direct investments. The overall trend in FDI indicates that Asian



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*Figure 1. Inward FDI by region*

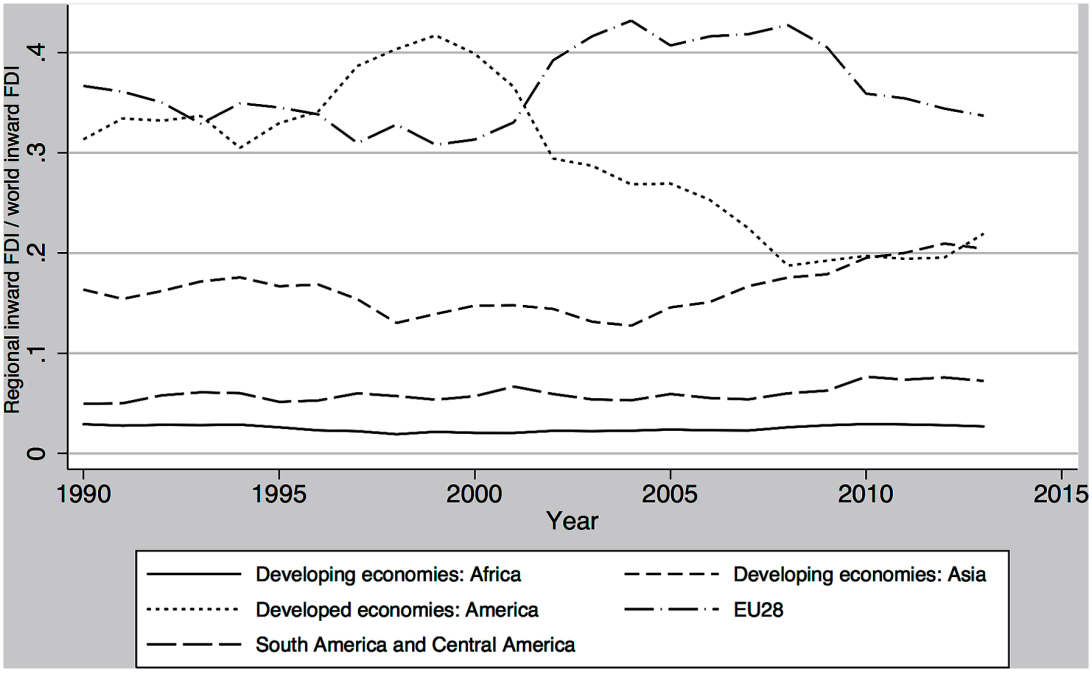



*Table 1. Major sources of FDI to south, east and south-east Asia, share of inward FDI stock (%)*

| | 1981 | 1991 | 2001 | 2008 |
|---|---|---|---|---|
| Total world | 100 | 100 | 100 | 100 |
| European Union | 18.3 | 16.3 | 12.7 | 14.3 |
| United States | 23.2 | 15.6 | 10.0 | 7.9 |
| Japan | 19.5 | 22.7 | 8.9 | 8.0 |
| South, East and South-East Asia | 22.4 | 30.7 | 41.1 | 38.0 |
| China | 0.1 | 0.4 | 11.1 | 13.3 |
| Hong Kong | 11.9 | 16.9 | 17.8 | 14.2 |
| Korea | 0.8 | 1.8 | 1.7 | 2.1 |
| Singapore | 4.1 | 3.1 | 4.0 | 3.2 |
| Taiwan | 1.0 | 4.8 | 3.8 | 2.6 |
| Others | 16.5 | 14.7 | 27.2 | 31.8 |

Source: UNCTAD, World Investment Report, 2010..

economies are likely to become the largest recipients of FDI in the future. These findings lead us examine which economies in the Asian region have contributed to the growth of FDI in Asia.

Intraregional FDI has become increasingly important relative to other sources of FDI. From Table 1, we can see that the major sources of FDI have shifted in favor of economies in Asia. In the 1970s, the United States played a leading role, but Japan overtook the United States in the 1980s. The share of



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these traditional sources has been declining since the early 1990s (the USA and Japan accounted for 10.0 per cent and 8.9 per cent respectively in 2001). Regional economic integration has provided a boost to intraregional investment, which increased from 22.4 per cent in 1981 to 30.7 per cent in 1991. It now accounts for around 40 per cent of the total FDI stock. MNCs from newly industrialized economies (NIEs)—Hong Kong, Korea, Singapore, and Taiwan—have been relocating their production operations within the region to take advantage of lower costs. This allows them to enhance their competitiveness and promote industrial restructuring and upgrading in their home countries. Through this process, neighboring host countries have gained increased access to capital and foreign markets.

FDI has served as a vehicle for transferring technologies and enhancing competitiveness. For low-income countries in the region, participation in regional production networks has become an effective way to build productive capacities, promote exports, further industrial development, and enhance economic growth. In recent years, FDI and industrial upgrading have generally followed a sequential path linking up economies at different stages of development, thereby creating new development opportunities. Electronics and other high-tech products continue to be a key industry that drives industrial upgrading. In this regard, China has steadily become a significant host economy (World Investment Report, 2009) and has established competitive positions in a series of high-tech products by leveraging FDI inflows.

Although FDI in Asian economies as a whole has rapidly increased since the 1990s, some economies have attracted more FDI than others. The performance of major economies in the region in attracting FDI also varied significantly (see Figures 2 and 3).

## AN INSTITUTIONAL APPROACH TO FDI

When MNCs invest in an economy, they encounter regulations or practices affecting FDI that are specific to that host economy. It is generally believed that these regulations or practices discourage MNCs to engage in FDI.

We can see the regulations imposed on MNCs with regard to FDI from the Investing Across Borders (IAB) dataset developed by the World Bank. This dataset is based on a survey of lawyers, professional service providers (mainly accounting and consulting firms), investment promotion institutions, chambers of commerce, law professors, and other expert respondents in the countries covered. For the 2012 IAB data, the World Bank surveyed about 3,500 respondents in 104 economies between November 2011 and April 2012. We compare FDI regulations in Asian economies based on this data.

Establishing a subsidiary of a foreign company takes less than a week in Hong Kong and Singapore, and takes about a week in Korea and Malaysia. In contrast, in China, India, Indonesia, Philippines, and Vietnam, it takes more than a month. We find a similar pattern for the number of procedures required to start a foreign subsidiary as a proxy for regulations on FDI. Hong Kong and Singapore have the least number of procedures (3 and 4 respectively). In contrast, China and Philippines have 18 procedures; India, 15; and Vietnam, 12.

These processes are costly and burdensome, particularly for small and medium MNCs. As the first point of interaction the foreign investor has with a country's administration, start-up procedures can seal a country's reputation as being investor-friendly or otherwise. Reforms in start-up procedures can lead to improved governance and reduced corruption, and signal that the government is open for FDI. As a result, economies could attract more FDI if they made their start-up procedures more efficient and transparent.



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*Table 2. Regulations on FDI*

| Region | Economy | Average Number of Procedures Required to Start a Foreign Subsidiary | Average Number of Days Required to Start a Foreign Subsidiary |
|---|---|---|---|
| Asia | China* | 18 | 65 |
| | Hong Kong | 3 | 3 |
| | India | 15 | 35 |
| | Indonesia | 11 | 56 |
| | Japan | 10 | 25 |
| | Korea | 8 | 10 |
| | Malaysia | 5 | 9 |
| | Philippines | 18 | 64 |
| | Singapore | 4 | 4 |
| | Taiwan | 7 | 21 |
| | Thailand | 6 | 31 |
| | Vietnam | 12 | 110 |
| North America | Canada | 2 | 6 |
| | USA | 8 | 8 |
| Europe | France | 8 | 11 |
| | Germany | 11 | 17 |
| | UK | 7 | 14 |

Data source: The World Bank Group, Investing Across Borders, New Foreign Direct Investment Regulation Data. http://iab.worldbank.org/Data/FDI-2012-Data.

Note: Data for China is available only for 2009.

However, the experience of foreign companies trying to invest in an economy does not seem to reflect success in attracting FDI (see Figure 2 and 3). In the 2000s, inflows to the two largest emerging economies, China and India, continued to increase. Among the four Asian NIEs, FDI inflows to Korea and Hong Kong continued to grow, but they declined in Singapore and Taiwan. In Malaysia and Thailand, FDI inflows fell slightly. A number of other South-East Asian countries, including Indonesia and Vietnam, have maintained growth in FDI.

Although it is widely believed that regulations discourage MNCs from undertaking FDI, not much is known about the kinds of regulations or institutions that affect FDI and the extent to which they do so.

As many previous studies on the relationship between FDI and growth suggest, empirical evidence that FDI generates positive effects for developing countries is ambiguous (Carkovic & Levine, 2005). FDI may influence growth mainly through indirect channels, and therefore, spillovers from foreign to domestically owned firms are not likely to be automatic, since local conditions have an important effect in influencing firms' adoption of foreign technologies or skills (Blomström & Kokko, 2003).

Thus, some studies explore the conditions necessary for FDI to have a positive impact on economic growth. For example, Balasubramanyam, Salisu, and Sapsford (1996) emphasize trade openness as being crucial for the potential growth effect of FDI, among other conditions. Alfaro, Chanda, Kalemli-Ozcan, and Sayek (2004) focus on financial markets, and identify the role played by local financial institutions as intermediaries in channeling the contribution of FDI to economic growth (see also Alfaro, Kalemli-



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Ozcan, & Sayek, 2009). De Mello (1997) argues that in order for FDI to have a beneficial impact on growth, host economies must attain a certain level of human capital accumulation, particularly in terms of education. Similarly, Borensztein, De Gregorio, and Lee (1998) formulate an equation for growth including interaction terms for human capital and FDI, and find that FDI enhances growth only in the presence of human capital.

While the above studies differ in terms of their emphasis on institutional factors when investigating the growth-enhancing effect of FDI, they all focus on institutions in host economies. Many other studies have investigated the relationship between institutions and FDI, and demonstrated the different ways in which institutions can affect FDI inflows. These include an efficient legal system (Djankov, La Porta, Lopez-De Silanes, & Shleifer, 2002), entry barriers (Alesina, Ardagna, Nicoletti, & Schiantarelli, 2005; Djankov, 2009), the regulation of labor market (Botero, Djankov, La Porta, Lopez-De Silanes, & Shleifer, 2004), and investors' protection (Djankov, La Porta, Lopez-De Silanes, & Shleifer, 2008). In fact, these studies aim to identify the institutions that matter the most for host economies to attract FDI. All these studies indicate that institutions, in general, seem to have an effect on FDI, but there is still limited and inconsistent knowledge regarding the specific institutions that play a significant role in attracting FDI.

The studies that are driven by the search for a good institution may be misguided. FDI is the inflow of private capital from an MNC to a firm in the host country. The inflow of FDI into a host country depends on its long-term attractiveness to MNCs. MNCs evaluate each economy not only in terms of a sole institution, but also in terms of the bundle of institutions (Pajunen, 2008) or, more precisely, the complementarities between institutions. Therefore, we argue that FDI is likely to result from the complementarity of institutions, and even if different countries have the same outcome, it is likely that this outcome has been generated by different institutional configurations. Varying configurations can generate the same outcome through different paths.

Therefore, we ask the following questions: which institutional configurations can we find in Asian economies and which of them has high potential for attracting FDI inflows? To answer these questions, we employ the varieties of capitalism (VoC) approach, which is useful for revealing the institutional diversity of Asian economies, and determining the relationship between institutional configurations and FDI inflows in Asian economies (Hall & Soskice, 2001; Amable, 2003).

Although FDI in Asian economies as a whole has rapidly increased since the 1990s, some economies have attracted more FDI than others (Figures 2 and 3). We are interested in determining whether this differential evolution of FDI in Asian economies is related with the institutional diversity of Asian economies, and in identifying the institutional conditions that encourage MNCs to engage in FDI.

Thus, our first task is to explore the institutional diversity of Asian economies. The second is to clarify which institutional configurations are related with increased inflows of FDI. In other words, we reveal the multiple pathways to greater FDI inflows from the institutional diversity of Asian economies. Many existing studies that suggest the positive effects of certain institutions on FDI inflows are mainly based on panel data because of the limited availability of institutional data. We believe that it would be difficult to reach a robust conclusion owing to the relatively small number of Asian economies. Moreover, because of the diverse combination of institutions in these economies, it would be difficult to address the problem using conventional statistical techniques such as panel data or regression analyses. Therefore, we employ fsQCA to explore the relationship between institutional conditions and FDI inflows.



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*Figure 2. FDI, net inflows in the 2000s*

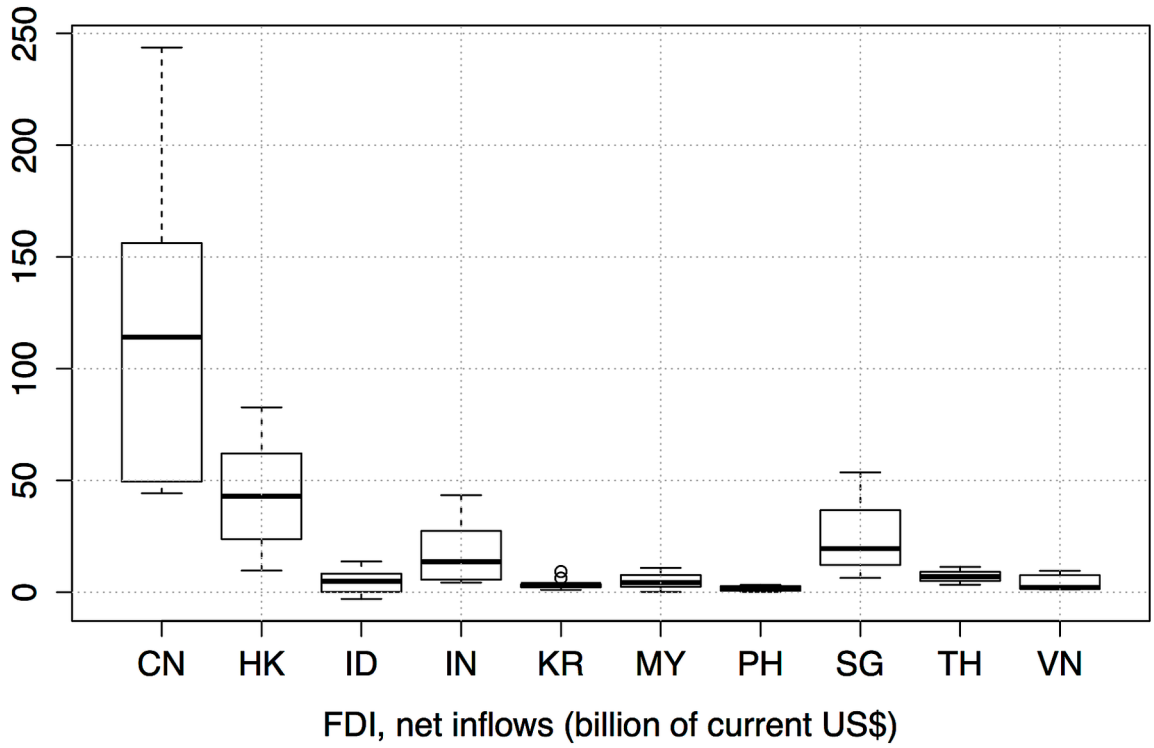
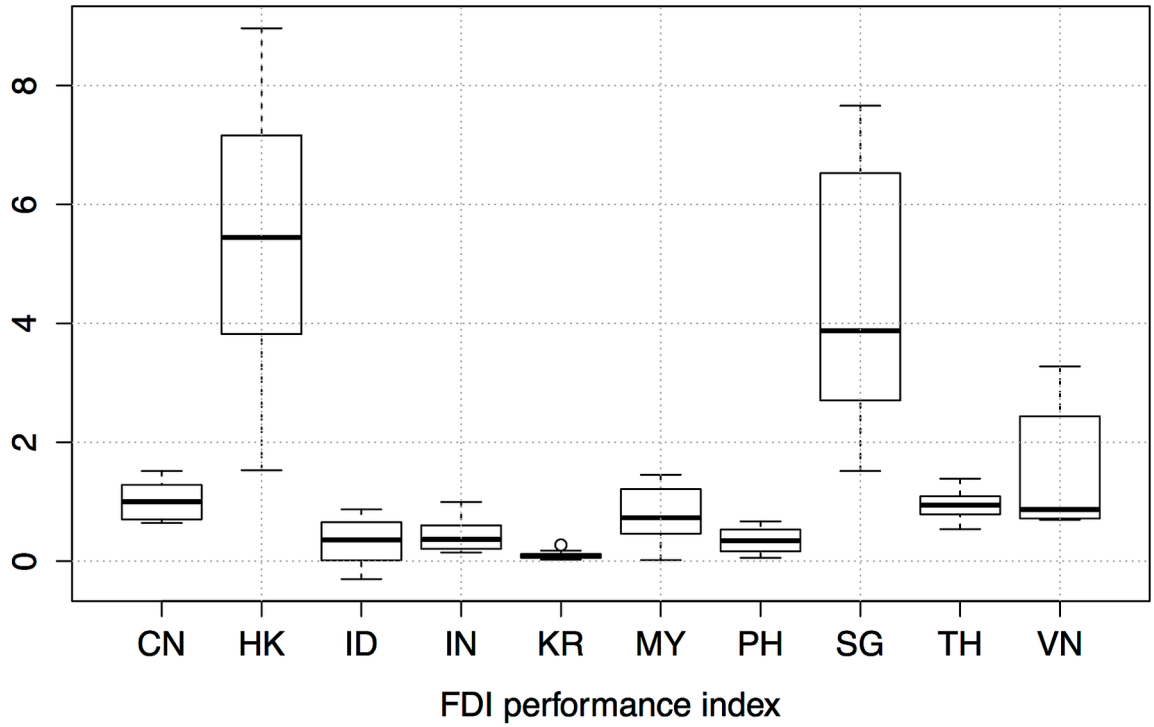



*Figure 3. FDI performance in Asian economies in the 2000s*






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The remainder of this chapter is organized as follows: Section 4 identifies the institutional diversity of Asian economies by applying MFA, which enables us to obtain indicators representing the institutional characteristics of each economy. Section 5 explores the multiple pathways from institutional conditions to FDI by applying fsQCA to causal conditions. Section 6 concludes.

## HOW DO HOST ECONOMIES DIFFER IN TERMS OF INSTITUTIONAL CONFIGURATION?

In this chapter, we consider 10 Asian economies: China (CHN), Hong Kong (HKG), Indonesia (IDN), India (IND), Korea (KOR), Malaysia (MYS), the Philippines (PHL), Singapore (SGP), Thailand (THA), and Taiwan (TWN). Using MFA, we investigate how each economy is characterized by their institutional configurations. This analysis aims to shed light on institutional diversity of Asian economies attracting FDI.[1] Also, we aim to obtain principal components and factor scores that will be used as proxies for institutions in the next section.

The variables in our data table correspond to 10 Asian economies in the 2000s. There are 22 variables from five institutional domains that are grouped as follows: financial market, labor market, product market, trade openness, government, and education (see Appendix for details). All the variables in the institutional domains are averaged over the sample years, largely in the 2000s.

We employ MFA, which is a multivariate analysis developed to analyze a population of individuals represented by groups of several variables and to characterize their inter-structure and intra-structure. MFA therefore enables us to seek a common structure present in these groups (Pagés, 2004; Abdi & Valentin, 2007; Bécue-Bertaut & Pagès, 2008).

MFA is performed in two steps. First, a principal component analysis (PCA) is performed on each data set (five groups of variables and 10 economies). The first principal component and factor scores obtained from this process can be used later as institutional data in each domain. It is then normalized by dividing all its elements by the square root of the first eigenvalue obtained from its PCA. Second, the normalized data sets are merged to form a unique matrix, and global PCA is performed on this matrix. Then, a global space is obtained in which we can compare the typologies provided by each group. MFA can thus be referred to as an extended version of PCA.[2]

Because MFA is an extended version of PCA, we retain the characteristics and interpretation rules of PCA. We thus obtain dimensions (principal components), eigenvalues, variance, and cumulated variance from MFA. We see from the result of MFA that the sequence of eigenvalues identifies two dominant dimensions that, together, account for 65.24% of total inertia. By visualizing the plane drawn by these two dimensions, we can compare individual economies and institutional spheres (see Figure 4).

Table 3 shows the correlation coefficients between these dimensions and variables that allow us to interpret each dimension. This table indicates that the first dimension is highly positively correlated with such variables as openness [logistics performance index (op3), trade (op4)], development of financial markets [domestic credit to private sector (fm3), market capitalization of listed companies (fm1), strength of investor protection index (fm4)], government effectiveness (gov2), and human development index (hd). In addition, this dimension shows a strong and negative correlation with variables representing regulated labor markets [difficulty of hiring index (lm1), rigidity of employment index (lm3), difficulty of firing index (lm4)], and regulated product markets [cost of business start-up procedures (pm4), start-up procedures to register a business (pm2), and time required to start business (pm1)]. In these findings,



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*Table 3. Correlation coefficients*

| Dimension 1 | | Dimension 2 | |
|---|---|---|---|
| **Variable** | **Correlation Coefficient** | **Variable** | **Correlation Coefficient** |
| gov2 | 0.9416483 | gov1 | 0.9835692 |
| op3 | 0.9247453 | ed2 | 0.9243987 |
| op4 | 0.8866782 | | |
| ss | 0.8760079 | | |
| fm3 | 0.8131368 | | |
| fm1 | 0.7888692 | | |
| fm4 | 0.7409924 | | |
| lm1 | -0.6639391 | | |
| pm4 | -0.7609396 | | |
| pm2 | -0.8123199 | | |
| pm1 | -0.8372262 | | |
| lm3 | -0.8386177 | | |
| lm4 | -0.8962555 | | |

Note: Significant level, 5%. For variables see Appendix.

the positive side of the dimension represents the degree to which economies are developed in terms of financial markets, openness, and government effectiveness, while the negative side represents the strength of regulation in product and labor markets.

If we consider the second dimension, this is positively correlated with total government expenditure (gov1) and public spending on education (ed2). This dimension can be seen as a factor representing the government expenditure, especially on education; hence, it can be referred to as human capital formation.

Figure 4 illustrates where Asian economies are located on the global plane, which is constructed using the first two dimensions. On the right-hand side quadrant, we see Hong Kong, Singapore, and to a lesser extent, Malaysia, Korea, and Thailand as advanced economies in terms of financial market development, trade openness, and government effectiveness. Other economies located on the left-hand side quadrant indicate that these economies have highly regulated product and labor markets. Now, if we consider the upper quadrant of the dimension, we can see that Malaysia, Korea, Vietnam, and, to a lesser extent, Thailand may be characterized as economies focused on human capital formation.

Considering this result together with that of the cluster analysis based on the MFA data, the institutional characteristics in Asian economies can be described as follows:

**Cluster 1:** Singapore and Hong Kong.

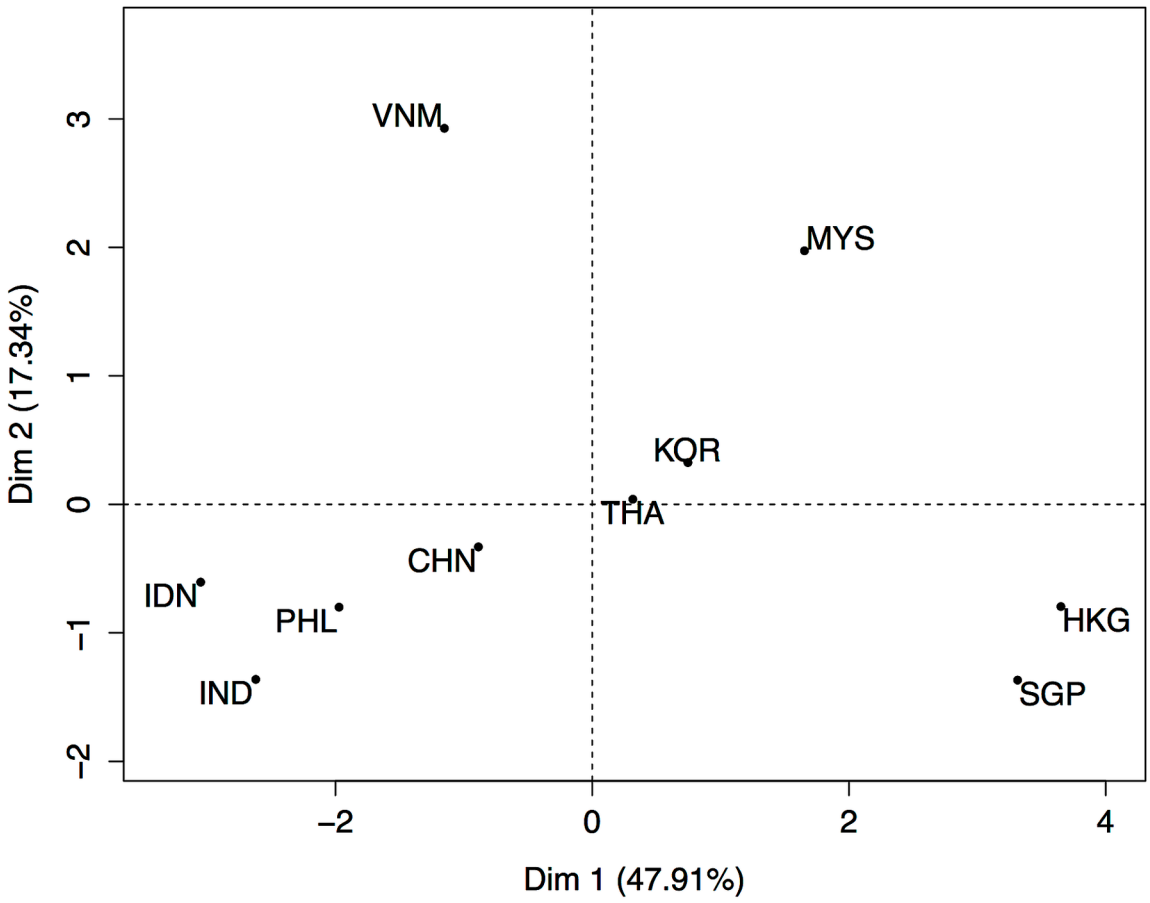
Singapore and Hong Kong have well-developed financial markets, and their governments' efficiency in putting the policy focus on international market has led to excellent logistic management systems and high level of trade openness.

**Cluster 2:** India, Indonesia, China, and the Philippines.



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*Figure 4. Institutional diversity of Asian economies*




India, Indonesia, China, and the Philippines can be characterized as economies having highly regulated labor and product markets.

**Cluster 3:** Korea, Malaysia, Thailand, and Vietnam.

This cluster consists of Korea, Malaysia, Thailand, and Vietnam, which share institutional similarities with cluster 1, except Vietnam. Additionally, these economies can be characterized as those focusing on human capital formation.

As mentioned above, the previous studies emphasize that developed financial market, level of education, or trade openness are crucial for economies to stimulate the growth of FDI, or that FDI inflows can be promoted by efficient legal system, deregulated labor market, or investors' protection. According to this study, we find economies in the first and fourth quadrants attract more FDI than other Asian economies (see Figure 2 and 3).

The results of MFA also suggest the possibility of a systematic relationship between the institutional diversity of Asian economies and FDI inflows. Therefore, the next task is to identify which institutional configuration matters in attracting FDI, and also to explore the causal relationship between those insti-



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tutional conditions and FDI performance, or multiple pathways to FDI inflows in Asian economies due to institutional factors.

## INSTITUTIONAL DIVERSITY OF ASIAN ECONOMIES AND FDI PERFORMANCE

FDI inflows in some economies may increase owing to the presence or absence of some institutional factors. As mentioned earlier, economies are evaluated by MNCs not only as individual institutions, but also as specific combinations of institutional conditions. Therefore, we explore the institutional configurations that attract FDI. At the same time, we identify multiple pathways to an outcome (FDI) from a combination of conditions (institutions) in Asian economies.

### Data and Methodology

In order to use FDI inflow as an outcome variable, we create FDI inflow performance index using sample Asian economies. It is the ratio of a country *i*'s share in total FDI inflows of sample Asian economies to its share in total GDP, which is given by

$$FDIperformance = \frac{FDI_i \Big/ \sum FDI_i}{GDP_i \Big/ \sum GDP_i}$$

where $i = 1, 2, \ldots, 10$. A value of one implies that the share of total FDI inflows and total GDP is equal. Hence, economies with a value higher than one attract more FDI than expected based on their relative GDP size. The index, accordingly, captures the influence on FDI of factors other than market size.

This analysis uses institutional variables as conditions, which are obtained from the result of MFA in the previous section. More specifically, factor scores based on the first principal component of each institutional domain are used as indicators representing institutional characteristics. We have five institutional variables according to institutional domains in the previous section, that is, high level of financial market development, high level of labor market regulation, high level of product market regulation, low level of international market orientation, and high level of human capital formation. All the data are averaged over sample years.

As mentioned above, the key issue is not to explore which institutional factor is the strongest in attracting FDI, but how different institutional conditions combine, and whether there is only one combination or several combinations for generating high FDI performance. In addition, we are focusing on a relatively small number of cases (10 economies) and considering these cases as diverse combinations of institutional conditions, we have a difficulty in addressing problems using conventional statistical techniques, such as regression or panel data analyses, owing to limited availability of institutional data. Therefore, any technique specifically designed to estimate the net effects of independent variables in linear-additive models would not be useful. In dealing with these problems, we employ fsQCA (Ragin, 2000, 2008; Kenworthy & Hicks, 2008). This allows us to identify hypothesized causal factors, or combinations of



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those factors that are related to the outcome in terms of the logical language of set theory. Hence, this technique is appropriate for finding a combination of institutions, or multi pathways to outcome.

Pajunen (2008) also employed fsQCA to investigate a causal relationship between institutions and FDI. While his study is certainly a pioneering work in this field that focused on combinations of individual institutions, our analysis is more comprehensive that focuses on five institutional domains, each of which consists of many institutions and complementarity of domains, based on the VoC approach. Second, Pajunen analyzed 47 countries including both developed and less-developed countries, so that an institutional diversity within Asian economies may be obscured in his study; however, our analysis specifically focuses on Asian economies, so that we can indicate institutional diversity of Asian economies (as can be seen in the previous section). We have shown that institutional configurations in Asian economies are not homogenous.

fsQCA requires the use of set-theoretic variables. Fuzzy sets refer to the pseudo-continuous scale on which all cases are coded, and they range from zero to one. Because the interest is on how strongly cases conform to theoretical categories, fuzzy coding schemes are based on connection to qualitative anchors. Cases coded zero are considered "fully out" of a set, and those coded one are "fully in" a set. Membership along the continuum between zero and one can be determined qualitatively using a scaling procedure. For each of our variables, we use three qualitative thresholds of set membership: "crossover point" from "more in than out" to "more out than in" the set.

To specify the thresholds, we first apply quantile classification method to raw data, and then assume that median is the crossover threshold, the minimum number is the threshold for full set exclusion, and the maximum number is for full set inclusion. We finally use a mathematical rescaling with the logistic function to distribute the rest of the cases between these points.

Table 4 displays the fuzzy set scores for FDI performance index and five institutional conditions. The results are presented in equation form using letters as abbreviations for the conditions and outcome. FDI represents high level of FDI performance index; F high level of financial market development; L high level of labor market regulation; P high level of product market regulation; O low level of international market orientation; and E high level of human capital formation. Capital letters indicate the presence of a condition, while small letters indicate the absence of a condition. For example, F indicates a high level of financial market development, and f indicates a low level of financial market development. Most of the raw data are from the period 2001–2010 (see Appendix for details). We conduct fsQCA analysis using the R package for QCA (Thiem & Duşa, 2013).

## Empirical Results

The following section presents the results of the empirical analysis of the necessary and the sufficient conditions for the presence of a high level of FDI performance.

### Necessity Relations

Here, we investigate how economies with different degrees of membership score in different institutional configurations attract FDI. We begin by identifying what institutional factors or combinations of those factors are necessary for a high level of FDI performance. In doing so, we evaluate the results using both graphical representation and descriptive measures, namely, consistency and coverage scores. For analyzing the necessary condition, we need to assess to which degree cases are members of conditions



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*Table 4. Fuzzy-set scores of FDI performance and institutions*

| Economy | Outcome | Condition | | | | |
|---|---|---|---|---|---|---|
| | FDI | F | L | P | O | E |
| | High Level of FDI Performance | High Level of a Financial Market Development | High Level of Labor Market Regulation | High Level of Product Market Regulation | Low Level of International Market Orientation | High Level of Human Capital Formation |
| CHN | 0.5257 | 0.4823 | 0.4746 | 0.5308 | 0.2883 | 0.0500 |
| HKG | 0.9500 | 0.9500 | 0.0500 | 0.0556 | 0.1179 | 0.5890 |
| IND | 0.1129 | 0.1048 | 0.7588 | 0.7617 | 0.9500 | 0.0542 |
| IDN | 0.1621 | 0.0535 | 0.9500 | 0.9500 | 0.6151 | 0.2506 |
| KOR | 0.0500 | 0.6064 | 0.8252 | 0.2360 | 0.6640 | 0.6895 |
| MYS | 0.4104 | 0.7004 | 0.1498 | 0.4196 | 0.1748 | 0.9367 |
| PHL | 0.1235 | 0.0500 | 0.8303 | 0.6255 | 0.7785 | 0.1159 |
| SGP | 0.9099 | 0.5819 | 0.0500 | 0.0500 | 0.0500 | 0.2740 |
| THA | 0.5150 | 0.5158 | 0.2828 | 0.1899 | 0.6432 | 0.6446 |
| VNM | 0.6254 | 0.0772 | 0.5357 | 0.5371 | 0.4192 | 0.9500 |

and outcome in relation to their overall membership in outcome. This indicator is referred to as necessity consistency. If the necessity consistency is high enough, the evidence is consistent with the hypothesis that the condition is necessary for outcome. For example, low consistency means that there is no subset relation between a combination of institutional factors and outcome. In addition, we analyze the necessity coverage. This evaluates to which degree cases are members of conditions and outcome in relation to their overall membership in conditions. Coverage assesses the empirical relevance of a consistent subset.

Table 5 shows the result of the analysis of the necessary conditions for the outcome, "high level of FDI performance." We set 0.90 as a threshold of necessity consistency, and 0.70 of necessity coverage for accepting a condition to be necessary.

For institutional condition abbreviations see Table 4.

In Boolean logic, logical AND (*) refers to the intersection of sets and logical OR (+) to the union of sets. As mentioned above, a capital letter indicates the presence of a condition and a small letter its absence. As can be seen in Table 3, a high level of FDI performance can be expected in countries characterized by high level of international market-orientated economies (o), low level of regulation in product

*Table 5. Necessary conditions for "high level of FDI performance" outcome*

| | | Consistency | Coverage | PRI |
|---|---|---|---|---|
| 1 | o | 0.924 | 0.765 | 0.515 |
| 2 | p | 0.923 | 0.717 | 0.473 |
| 3 | l | 0.938 | 0.807 | 0.525 |
| 4 | lp | 0.923 | 0.851 | 0.452 |
| 5 | F+E | 0.912 | 0.701 | 0.847 |

Note: PRI=proportional reduction in inconsistency.



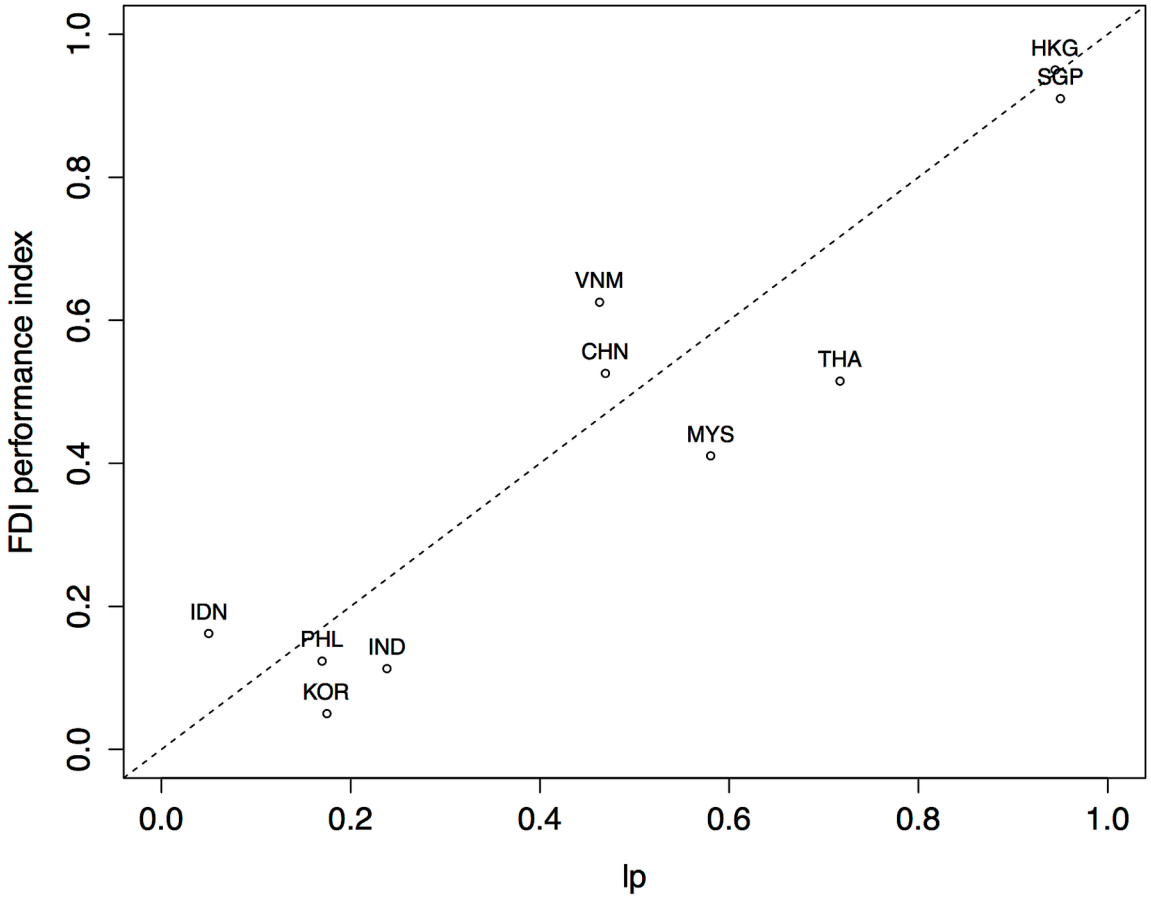
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market (p), low level of regulation in labor market (l), low level of labor market regulation combined with the low level of product market regulation (lp), and high level of financial market development (F) or high level of human capital formation (E) or both.

This result shows that deregulated markets and international market-oriented economies are necessary for the presence of the outcome "high FDI performance." In addition, a well-developed financial market or a high level of human capital formation is also necessary for the presence of a high level of FDI performance. The result indicates that there could be multiple pathways to high FDI attractiveness from MNCs in advanced economies.

Figures 5 and 6 graphically show the necessity relationship between institutional conditions and FDI performance. This relationship is indicated by the data points located below and to the right of the 45-degree line. Figure 5 shows a scatter-plot of the outcome "high level of FDI performance" and a low level of labor market regulation combined with low level of product market regulation (lp) as a condition. All the economies are on or very close to the 45-degree line, and this combination explains most of the cases. Therefore, this combination exhibits a condition that is more or less necessary for a high level of FDI performance (consistency 0.923, coverage 0.851).

*Figure 5. lp, necessity relationship between institutional conditions and FDI performance*






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*Figure 6. F+E, necessity relationship between institutional conditions and FDI performance*

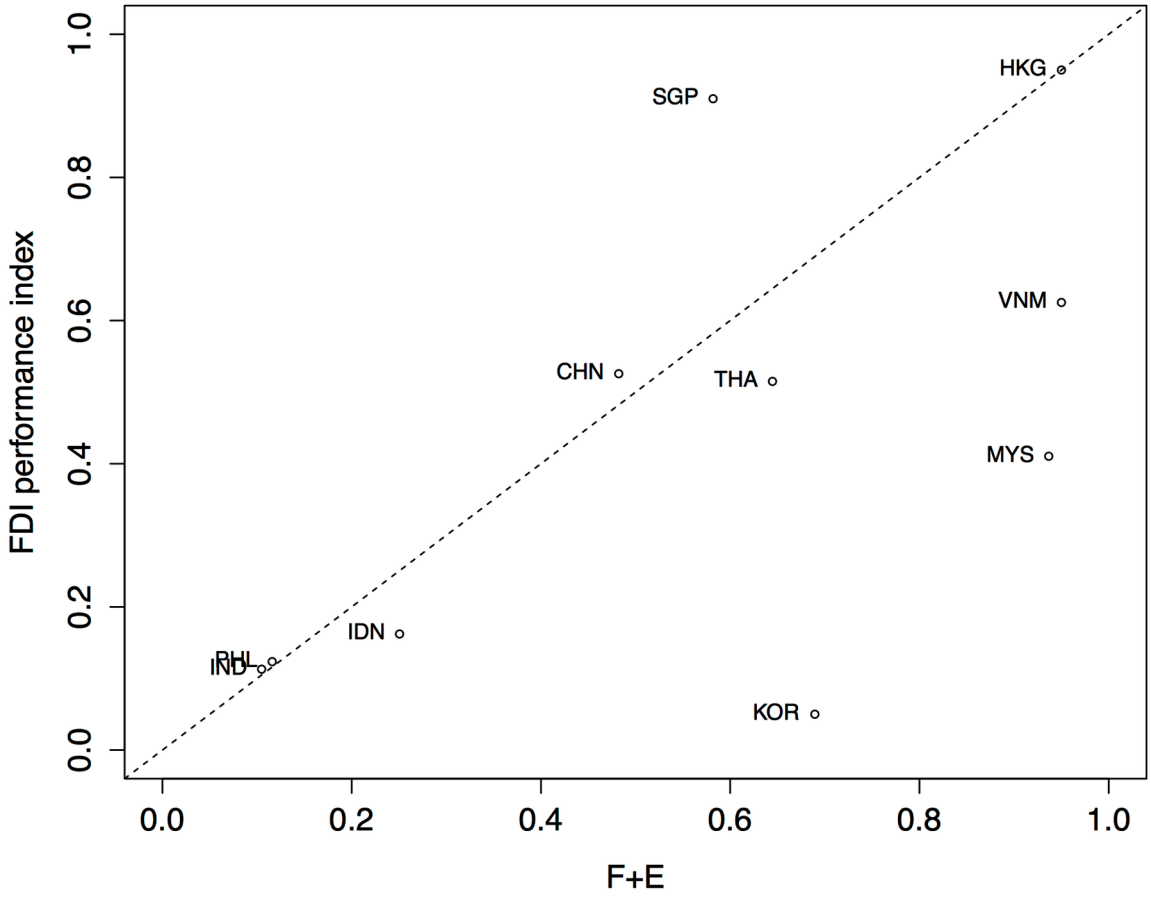



Figure 6 depicts a scatter-plot of the outcome "high level of FDI performance" and a high level of financial market development (F) or human capital formation (E) as a condition. It shows that most of the economies are located next to, or on the 45-degree line, except Singapore that is clearly above the line. This means that a high level of financial market development (F) or human capital formation (E) is a necessary condition for the presence of a high level of FDI performance (consistency 0.912, coverage 0.701).

## Sufficient Relations

Here, we are concerned with causal sufficiency—the ability of certain configurations of institutional factors to consistently produce high level of FDI performance. To test whether different paths to high FDI performance exist in Asian economies, we use a truth table approach that allows for a possibility that a given outcome may follow from several different combinations of causal conditions. Hence, it displays all logically possible combinations of causal conditions and indicates cases' distribution across those combinations.



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Table 6 presents the truth table. The "n" column denotes how many cases conform to the listed configuration. The "cases" column shows economies conforming to the relevant configuration. The "OUT" column tells us whether or not a partial causal condition is treated as an instance of high level of FDI performance. If the OUT denotes a one, we know that this combination is a consistency sufficient for the outcome. The 0s and 1s in each cell instruct how to consider a case's location, that is, its membership or non-membership in a particular fuzzy set. Formally, rows in the truth table can be interpreted as specification of the corners of the vector space, and they indicate the characteristics of the causal combinations represented by each corner.

We can assess all five causal conditions in Table 6: financial market development, labor market regulation, product market regulation, international market orientation, and human capital formation. We have four different configurations of institutional conditions as a result of fsQCA when setting 0.85 as a threshold of consistency: Flpoe + FlpOE + flPoe + FlpoE. However, Table 6 shows that there are only two different configurations to produce a high FDI performance. In the previous subsection, we found from the necessary conditions analysis that deregulated markets, financial market development or high level of human capital formation are necessary for an outcome. Yet, by adding sufficient conditions, we see that FDI performance should be in combination with "O" (economy focused on international market) or with "E" (human capital formation). These results show that high level of FDI performance results from different combinations of institutional conditions.

*Table 6. Sufficient conditions for "high level of FDI performance" outcome*

| F | L | P | O | E | OUT | n | Incl | PRI | Cases |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0.945 | 0.872 | SGP |
| 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0.904 | 0.438 | THA |
| 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0.875 | 0.202 | CHN |
| 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0.869 | 0.710 | HKG,MYS |
| 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0.836 | 0.370 | VNM |
| 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0.608 | 0.000 | KOR |
| 0 | 1 | 1 | 1 | 0 | 0 | 3 | 0.398 | 0.000 | IND, IDN, PHL |

Note: n=the number of cases in configuration;Incle=sufficiency incslusion score.
PRI=proportional reduction in inconsistency.

*Table 7. Analysis of sufficient conditions for "high FDI performance" outcome*

| Solution | Flpoe | + | FlpOE |
|---|---|---|---|
| Economy | SGP | | THA |
| Consistency | 0.945 | | 0.904 |
| Raw coverage | 0.486 | | 0.271 |
| Unique coverage | 0.284 | | 0.069 |
| Solution consistency | 0.951 | | |
| Solution coverage | 0.555 | | |

Note: The consistency threshold has been set at 0.9.



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We logically minimize the table using Boolean algebra. Table 7 shows the result, and it confirms the above argument based on Table 6. It is apparent that there are two routes for increasing FDI performance: (1) Flpoe OR (2) FlpOE.

Consistency indicates the degree to which the solution is sufficient for producing an outcome, and coverage indicates the degree to which cases correspond to a combination of conditions. Looking at the parameters of fit, this solution suffices to generate good FDI performance because the solution consistency is high (0.951), and the solution coverage is relatively satisfying (0.555).

Asian economies attract FDI under certain combination of institutional conditions. These conditions are sufficient for FDI when combined with institutional conditions, which include

1. The presence of high level of financial development, the absence of labor market regulation, the absence of product market regulation, the absence of low level of international market orientation, and the absence of high level of human capital formation (Flpoe), or
2. The presence of high level of financial market development, the absence of labor market regulation, the absence of product market regulation, the presence of low level of international market orientation, and the presence of high level of human capital formation (FlpOE). Therefore, depending on the path, either trade openness (Flpoe) or human capital formation (FlpOE) matters.

Although these alternative paths are treated as logically equivalent, we assess the relative importance of the different combinations of causally important conditions based on the unique coverage of the paths (Ragin, 2008). Of the total solution's coverage of 0.555, 0.284 is uniquely due to the first path (Flpoe). Conversely, the second path (FlpOE) uniquely covers only 0.069. This implies that most of the cases with memberships in the second path also have memberships in the first path. Stated differently, most of FlpOE is Flpoe. Hence, the first path (Flpoe) is empirically more important than the second path (FlpOE).[3]

Figures 7 and 8 graphically presents the results. It shows two scatter-plots, each with fuzzy FDI performance on the Y-axis and one of two solutions from Table 5 on the X-axis. Note that for a condition or a combination of conditions to be sufficient, all cases should be located around or above the 45-degree line. We recognize that most of the cases (economies) are located above the diagonal line. Hence, FDI performance would be explained quite well by the relevant solution (Flpoe + FlpOE). This is the case for our two configurations; none of the economies lie far below the line.

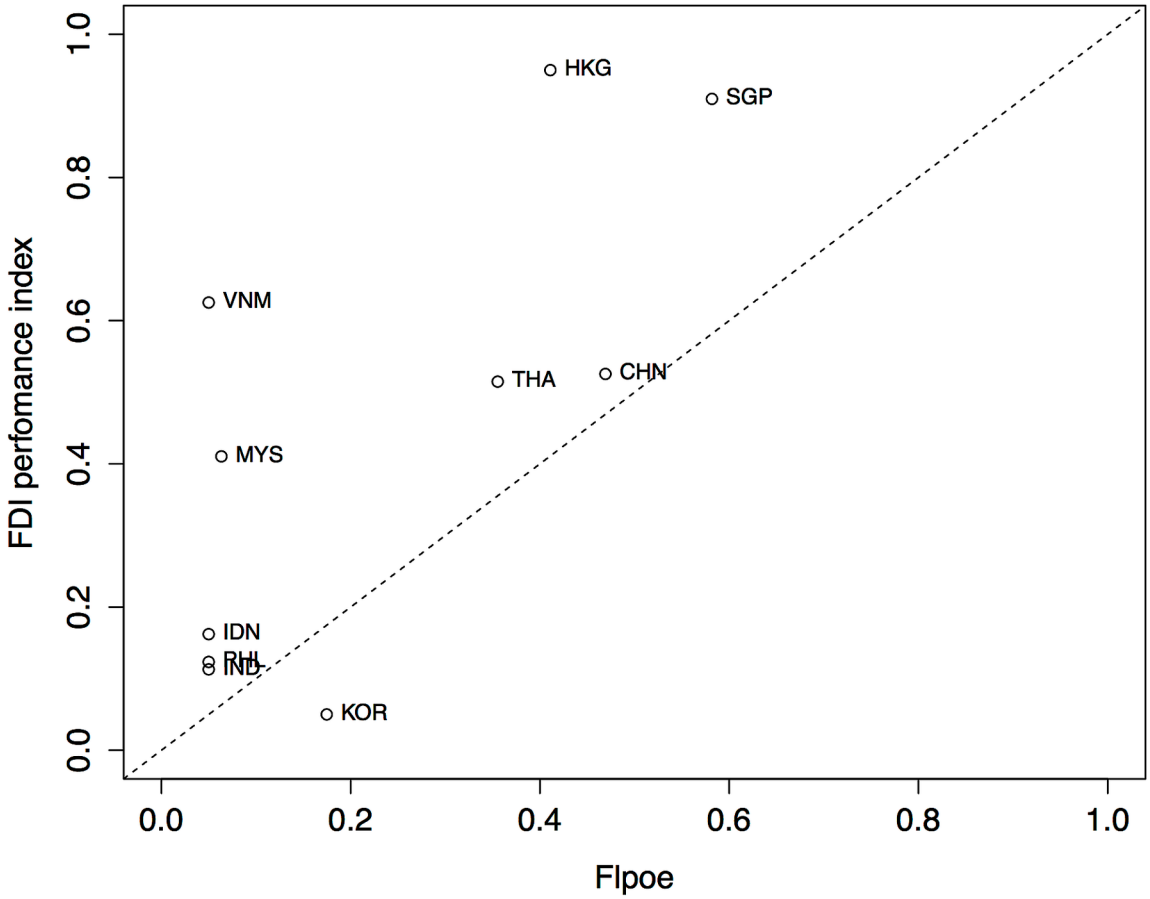
Based on this criterion in Figures 7 and 8, it seems that institutional configuration "Flpoe" fits well to Singapore, Hong Kong, China, and Thailand. They obtain higher scores for this configuration than the other one. For institutional configuration "FlpOE", the score for Thailand is quite high. This indicates that configuration "FlpOE" fits best to Thailand. As mentioned above, this economy is characterized by not only well-developed financial and deregulated markets, but also human capital formation.

Singapore fits best to the former path, characterized by a high level of trade openness and an excellent logistic management system, as well as a well-developed financial market, and deregulated labor and product markets. In fact, labor relations in Singapore are the most flexible among Asian economies. There is no legislation that prohibits the firing of workers and no minimum wage. These institutional conditions are considered as crucial for attracting FDI from MNCs. Therefore, such conditions that allow Singapore government and business to focus on international market are likely to be the key to good FDI performance. Thailand conforms to the second path that is characterized by institutional conditions focused on human capital formation, as well as a well-developed financial market and deregulated labor



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*Figure 7. Two different paths to "high FDI performance", Flpoe*




and product markets. These institutional conditions, especially human capital formation, have been the distinctive contributing factor to entice FDI for Thailand from advanced economies.

Given these institutional configurations, the path followed by Singapore can be referred to as an open market-oriented one, or as a liberal market economy (LME)-type[4], and the path in the case of Thailand can be referred to as one focused on human capital formation. Thailand's path may be unique since most resources devoted to social policies are allocated to building human capital formation—spending on education and health—which are apparently institutional characteristics specific to Asian welfare capitalism (Holliday, 2000; Holliday & Wilding, 2003).

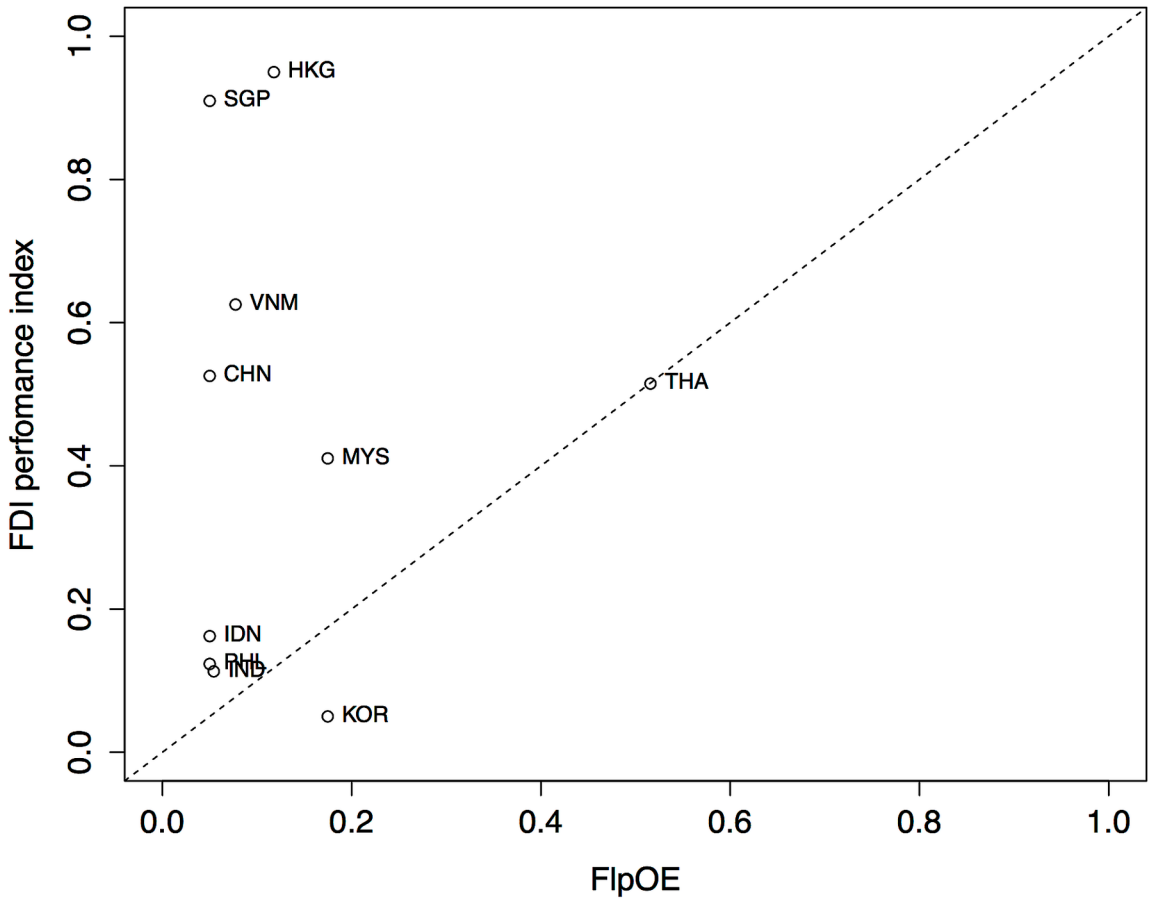
## Discussion

What can we infer from these findings? How do they contribute to the studies on FDI in Asian economies? Our analysis is different from the existing studies in two respects. First, we revealed institutional diversity of Asian economies based on MFA and fsQCA, which indicate that institutional complementarity matters, but not individual institutions, when investigating how FDI inflow is associated with institutions. Existing studies are more apt to search for one and/or best institution in order for host economies to at-



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*Figure 8. Two different paths to "high FDI performance", FlpOE*




tract FDI. In other words, they do not perceive the relationship between institutional configuration and FDI inflows, and hence, they tend to overlook multiple pathways to a good FDI performance resulting from institutions. We found three different institutional configurations in sample Asian economies by applying MFA and a cluster analysis to five institutional domains. However, not all the clusters are associated with a good FDI performance. While some institutional configurations seem to be associated with FDI inflows, others do not.

Second, the fsQCA analysis revealed two causal pathways that generate high level of FDI performance among sample Asian economies. Many previous studies emphasized the importance of deregulated markets (Alesina et al., 2005; Djankov et. al., 2002; Botero et al., 2004) ("ol" in our Boolean terminology), or alternatively financial market development (Alfaro et al., 2004) ("F" in our Boolean terminology). To be sure, our findings are consistent with the previous studies and show the significance of institutions for Asian economies to attract FDI; however, those institutional conditions alone are not sufficient to produce good FDI performance. The results of fsQCA demonstrate that they are sufficient only when combined with the absence of low level of international market orientation (o) and the absence of high level of human capital formation (e), and alternatively, when combined with the presence of low level of international market orientation (O) and the presence of high level of human capital formation (E).



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One of the two institutional configurations that have a high propensity for FDI inflows can be observed in Singapore. This economy is characterized by liberalized markets and a well-developed financial market. This implies that governments in developing Asian countries should put their policy focus on deregulating domestic product and labor markets, and creating a well-functioning financial market if they want to increase FDI inflows. This policy strategy could be referred to as LME-type.

More interestingly, there is another institutional configuration that is compatible with a good FDI performance. This pathway is followed by Thailand, whose institutional characteristics are the presence of low level of international market orientation and the presence of human capital formation. It implies that Thailand may focus on human capital formation with relatively protected domestic markets. This case indicates that liberalizing economies is not the only key strategy for developing economies to attract FDI. In short, Singapore's model relies more on institutional complementarities similar to LMEs, while Thailand focuses on human capital formation, largely seen as key characteristics in Asian welfare capitalism (see Tohyama, 2015).

## CONCLUSION

Asian economies have become increasingly attractive destinations for FDI and are likely to be the largest recipients of FDI in the future. Since the 1990s, FDI has played a major role in globalizing these economies. For low-income countries in the region, participation in MNCs' regional production networks is an effective way to build productive capacities, promote exports, further industrial development, and enhance economic growth. FDI and industrial upgrading have continued to evolve, thus creating new development opportunities. As advanced economies move towards more sophisticated value-added activities, more opportunities open up for their less developed neighbors; this allows developing countries to enter into a regional division of labor by increasing their investment in resource-based, labor-intensive activities. FDI has played a crucial role in this process, serving as a vehicle for transferring technologies and developing comparative advantages.

However, some Asian economies seem to be more attractive to MNCs than others. Several studies have addressed the question of what attracts FDI by focusing on institutions in host economies. Yet, these studies are inconclusive in determining which institutions matter, perhaps because they are in search of the "best" institution. For example, it could be an efficient legal system, entry barriers, the regulation of labor market, or investors' protection. They have empirically attempted to reduce the complexity of institutional systems by the computation of composite index for the regulation of labor market or legal system. They then test the way legal origins or the regulations impact FDI. One important outcome of their approach is that it provides a simple benchmark that can be easily adopted by policy makers.

These studies are based on the idea that difference in national institutions is due to the fact that some economies are closer from an institutional frontiers than others. The differences may be another expression of the development inequalities among economies. Development gap must be reduced through radical or gradual reforms towards the benchmark model. As a result, reforming regulations or institutions consists in guiding them towards the benchmark, i.e., the sort of institutional frontier given by some of the advanced economies' economic, legal and institutions. This approach allows us to measure institutional performance by a set of indicators and then to proceed to cross-national comparisons and ranking according to the benchmark.



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However, each economy can be characterized by a given set of institutions that might differ from the set that prevails in another country. No institution is likely to deliver its impact on economic behavior in isolations from remaining institutions of the system. Institutional configurations are heterogeneous set of linked institutions.

Thus, the previous studies rule out the possibility that there could be multiple pathways to high levels of FDI because of complementarity between institutions.

In contrast to these studies, we highlighted the importance of focusing on the complementarity between institutions, instead of individual institutions, when investigating the institutional conditions that attract FDI. We based our analysis on the VoC approach that allowed us to unfold multiple pathways to FDI inflows through institutions.

This chapter contributes to the existing literature by establishing a causal relationship between institutions and FDI as follows: First, MFA demonstrated a substantial variation in institutional configurations across Asian economies that successfully attracted FDI. The cluster analysis showed that Asian economies can be categorized into three clusters: Singapore and Hong Kong (cluster 1); India, Indonesia, China, and the Philippines (cluster 2); and Korea, Malaysia, Thailand, and Vietnam (cluster 3). These results suggested the possibility of a systematic relationship between institutional diversity of Asian economies and FDI inflows.

Second, and more importantly, fsQCA demonstrated that two institutional configurations have high potential for attracting FDI inflows. Of these, one relies more on institutional complementarities similar to LMEs, while the other focuses more on human capital formation, seen as a key characteristic of Asian welfare capitalism.

Our findings suggest that in order to attract FDI from MNCs, governments in developing Asian countries should deregulate domestic product and labor markets and create a well-functioning financial market. Alternatively, governments should focus on human capital formation with relatively protected domestic markets. In other words, institutional configurations in cluster 1 and cluster 3 are likely to be compatible with high inflows of FDI, while those in cluster 2 may be unattractive to MNCs.

A couple of questions will be left for further research. This analysis confined discussions on five socio-economic institutional domains. We excluded political factors, such as corruption, political stability, or political rights because we assumed that as markets develop and put pressure on agents in markets to comply with global and transparent rules, such factors will gradually disappear. However, particularly in developing economies, these factors may influence MNCs' decision to engage in FDI because of their concern for such factors.

Furthermore, our analysis is based on fsQCA. This technique is known to be useful when investigating a case that a given outcome may follow from different combinations of causal conditions, but it is not designed to examine the net effects (Eptesin, Duerr, Kenworthy, & Ragin, 2008; Ragin, 2008). Our future research interest is in identifying the impact of a particular institutional configuration on MNCs' decision making concerning FDI. In examining the net effects, we should take into account institutional configuration as well as individual MNCs' strategies.

Lastly, we acknowledge the need to exercise caution and not to mechanically utilize the results derived from fsQCA or MFA without drawing on theoretical and case knowledge. Given also that the availability of institutional data on Asian economies is limited, we need to reinforce our argument presented in this chapter by utilizing the results of descriptive and historical analyses.



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## KEY TERMS AND DEFINITIONS

**Asian Economies:** Northeast Asian countries such as China, Japan and South Korea and Southern Asian countries such as the member of ASEAN.

**Asian Welfare Regime:** A model of welfare system specific to Asian economies, different from a model of what can be seen in North America, Europe and Scandinavian.

**Foreign Direct Investment (FDI):** Investment from one country into another that involves establishing operations or acquiring tangible assets.

**fsQCA (fuzzy-set Quality Comparative Analysis):** A version of Qualitative Comparative Analysis, i.e., an analytic technique that uses Boolean algebra to implement principles of comparison, based on fuzzy set.

**Institutional Diversity of Asian Capitalisms:** Diversity of Asian economies in terms of such institutions as product market, labor market, financial market, education, social security, and international trade.

**Multiple Factor Analysis (MFA):** A method of Multivariate Analysis, which allows us to analyze the variance of observations described by several sets of variables.

**Varieties of Capitalism:** Market economies classified into different types of economies based on specific architecture of complementary institutions.

## ENDNOTES

1 See also Harada and Tohyama (2012), Walter and Zhang (2012), Tohyama and Harada (2013) (2015), and Witt and Redding (2013) for analysis of institutional diversity of Asian economies.

2 In this analysis, we use an R package for multivariate analysis (FactoMineR) (http://factominer.free.fr).

3 Note that coverage gauges only empirical importance, not theoretical importance. Therefore, although the second path exhibits low coverage, it still could be relevant to theory.

4 In liberal market economies, "firms coordinate their activities primarily via hierarchies and competitive market arrangements. … market institutions provide a highly effective means for coordinating the endeavors of economic actors" (Hall & Soskice, 2001, p.8).

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## APPENDIX

*Table 8. Data description and sources*

| Variable | Financial Market | Period | Source |
|---|---|---|---|
| fm1 | Market capitalization of listed companies (% of GDP) | 2001-2010 | World Bank, World Development Indicators |
| fm2 | Domestic credit provided by banking sector (% of GDP) | 2001-2010 | World Bank, World Development Indicators |
| fm3 | Domestic credit to private sector (% of GDP) | 2001-2010 | World Bank, World Development Indicators |
| fm4 | Strength of investor protection index (0 to 10) | 2005-2010 | World Bank, World Development Indicators |
| **Variable** | **Labor Market** | **Period** | **Source** |
| lm1 | Employing workers, difficulty of hiring index | 2004-2009 | World Bank, Doing Business |
| lm2 | Employing workers, rigidity of hours index | 2004-2009 | World Bank, Doing Business |
| lm3 | Rigidity of employment index (0=less rigid to 100=more rigid) | 2004-2009 | World Bank, Doing Business |
| lm4 | Difficulty of Firing Index | 2004-2009 | World Bank, Doing Business |
| **Variable** | **Product Market** | **Period** | **Source** |
| pm1 | Time required to start a business (days) | 2003-2010 | World Bank, World Development Indicators |
| pm2 | Start-up procedures to register a business (number) | 2003-2010 | World Bank, World Development Indicators |
| pm3 | Minimum capital for starting a business (% of income per capita) | 2005-1010 | World Bank, World Development Indicators |
| pm4 | Cost of business start-up procedures (% of GNI per capita) | 2003-2010 | World Bank, World Development Indicators |
| pm5 | Cost to enforce a contract (% of claim) | 2005-2010 | World Bank, World Development Indicators |
| **Variable** | **Openness** | **Period** | **Source** |
| op1 | Trade: Cost to export (US$ per container) | 2005-2010 | World Bank, World Development Indicators |
| op2 | Trade: Cost to import (US$ per container) | 2005-2010 | World Bank, World Development Indicators |
| op3 | Logistics performance index: Overall (1=low to 5=high) | 2007,2010 | World Bank, World Development Indicators |
| op4 | Trade (% of GDP) | 2001-2010 | World Bank, World Development Indicators |
| **Variable** | **Education** | **Period** | **Source** |
| ed1 | Public spending on education, total (% of government expenditure) | 2001-2010 | World Bank, World Development Indicators |
| ed2 | Public spending on education, total (% of GDP) | 2001-2010 | World Bank, World Development Indicators |
| **Variable** | **Human capital** | **Period** | **Source** |
| hd | Human Development Index | 2005-2010 | Human Development Report 2010 and 2011 (UNDP). |
| **Variable** | **Government** | **Period** | **Source** |
| gov1 | Total Government Expenditure (% of GDP) | 2001-2010 | ADB |
| gov2 | Government effectiveness | 2002-2010 | World Bank, Worldwide Governance Indicators |
| **Variable** | **FDI, GDP** | **Period** | **Data Source** |
| FDI | Foreign direct investment, net inflows (BoP, current US$) | 2001-2010 | World Bank, World Development Indicators |
| GDP | GDP (constant 2000 US$) | 2001-2010 | World Bank, World Development Indicators |



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# Chapter 44
# The Effect of Foreign Direct Investment on the Economic Development of Mongolia

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## ABSTRACT

*This article describes how foreign direct investment in Mongolia has reached 3.9 billion US$ mainly in the mining sector that amounted approximately 40% of the year's GDP. Even though FDI into Mongolia has been grown along with the country's economic development with trade openness to the world, a few studies have used regression analysis to analyze determinant factors of FDI. This article has estimated the determinants attracting FDI inflow into Mongolia by using two methods: applying single country (Mongolia) data using the determinants attracting FDI inflow into Mongolia from 1995-2014, and applying the determinants attracting FDI from the top investment countries using panel data, using random and fixed effects models from 2005-2013. The study results showed that GDP of Mongolia has a positive and significant effect on the FDI inflow. It was also revealed that the partner countries located either too far away from or too close to Mongolia pay little attention to and play a small investment role in Mongolian FDI.*

## 1. INTRODUCTION

Foreign direct investment is generally seemed as a way through which technology can spread from developed countries to developing ones. Although the evidence of relationship of foreign direct investment(FDI) with economic growth is not clear, several studies agree that absorptive capacity of host country does an important role of explaining FDI. For instance, it is stated that FDI is positively related and significant

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only for higher income countries and has no impact in lower income countries. And it is asserted that contribution of FDI for economic growth is determined by its interaction to the human capital level in host country. Mungunzul and Chang (2016) showed that FDI does a different role in growth procedure because of differing trade policy regimes. Even though there are different shapes of overseas capital flows, FDI has been research topics. FDI is an investment done abroad through establishing a new company in host country or through acquiring shares to have full managerial power of existing foreign company.

This paper's goal is to determine the factors affecting the FDI flows into Mongolia through answering the following questions: Firstly, how FDI influences on economic development of Mongolia. Secondly, which factors can be identified with regard to FDI. Thirdly, what recommendations could be applied to induce FDI flows into the country.

## 2. METHODOLOGY AND DATA ANALYSIS

### 2.1. Research Model

A gravity model is a way of explaining FDI, not only the flow of FDI, but the effect of distance in FDI and relationship between FDI and trade of related countries by using econometric measure of distance. A gravity model can explain the relative market sizes of related countries and their distance each other. Mungunzul (2016) asserted that distance could be accepted as a measure of management cost in handling foreign activities, for example, cost of transportation and communications, cost of dealing with cultural and language gaps, costs of dispatching personnel overseas and the information cost of institutional and legal matters. Tinbergen (1962) and Pöyhönen (1963) suggested first version of the model. It has been argued that export is positively related to income of the related countries and the distance of the countries affects export. Several contributions have recently been made to this early version. A gravity model has been generally used for analyzing determinants of FDI inflows. In simple form, gravity model for FDI suggests that FDI has positive relationship with GDP levels in host and investing countries and negative relationship with the distance between countries. A number of empirical studies analyze bilateral FDI flows through the framework of the gravity model. The determinants of FDI flows to emerging economies was examined by Frenkel, Funke, & Stadtmann (2004).

Gravity model classic equation:

$$X_{ijt} = A\frac{Y_{it}^{B}Y_{jt}^{C}}{D_{ij}^{D}} \tag{1}$$

where $Y_{it}$ is GDP of country *i* at time *t*, $Y_{jt}$ GDP of country *j* at time *t*, $D_{ij}$ distance between related two countries, and A, B, C, D constants. The left-hand side variable, $X_{ijt}$, is FDI flows country *i* to country *j* in time *t*. The gravity models have found application in the empirical literature for more than just inspecting FDI inflows. The relationship of gravity has been generally applied in trade flows area and similar relationship holds for large area of spatial economic interaction, for example, telecommunications, overseas equity holdings and technology transfer (Navaretti & Venables 2004).

Gravity type equation of the FDI study as follows:



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$$FDI_{ij} = b_0 + b_1 GDP_i + b_2 Pop_i + b_3 GDP_j + b_4 Pop_j + b_5 Distance_{ij} + b_6 Trade_{ij} + b_7 APEC + b_8 ASEAN + b_9 DAE + e_{ij} \quad (2)$$

where $FDI_{ij}$ and $Trade_{ij}$ represent reciprocal FDI and trade flows between related countries, and subscripts *i* and *j* represent home country and host country each. GDP is gross domestic product, Pop the population, and Distance the geographical distance between two countries *i* and *j*. APEC, ASEAN and DAE (Dynamic Asian Economies) are 3 dummy variables included in the estimation equations.

Pedroni (1999) suggested the test for two-stage panel co-integration to decide the long term FDI as follows:

$$Y_{it} = a_i + b_i X_{it} + e_{it}; \text{ t} = 1, 2, \ldots, \text{T; i} = 1,\ldots,\text{N} \quad (3)$$

where $Y_{it}$ represents FDI stock of country *i*, $a_i$ a constant term, $b_i$ a long-term coefficient, $X_{it}$ explanatory variables vector, and $e_{it}$ error term. The finding explained that the most important determinant of FDI was the market size, i.e., purchasing power of host country rather than the labor cost level. Bilateral trade and gross domestic product per capita had positive relationship with FDI.

The empirical model for gravity and FDI can be expressed as follows:

$$FDI^t_{ij} = f(GDP^t_i, GDP^t_j, dist_{ij}, trade^t_j, ULC^t_j, r^t_{ij}, risk^t_j) \quad (4)$$

where *t* is year, *i* the source country, *j* the host country, $GDP^t_i$ represents the size of the source country, $GDP^t_j$ the size of the host country, $dist_{ij}$ the distance between source and host country, $trade^t_j$ the openness of the host country, $ULC^t_j$ the unit labor costs in the host country, $r^t_{ij}$ is the interest rate gap between source and host countries, and $risk^t_j$ stands for the political risk of the host country.

## 2.2. Data Collection and Model Specification

The single panel data consist of yearly observations from 1995-2014. The data set has been collected from the World Bank. The data set consists of GDP, FDI inflows, and inflation measured by consumer price index. Trade openness is computed as the ratio of import plus export of commodity divided by GDP. The exchange rate is measured by currency value of related countries. The infrastructure development is measured by the infrastructure development index. Export is a measure of export of commodities divided by GDP.

The dependent variable is the FDI inflow and the independent variables that are expected to decide FDI flows were chosen, based on previous research and availability of data for the related period. The independent variables are market size, labor force and labor cost, geographical distance, GDP, inflation rate, trade openness level, real exchange rate, political stability index, infrastructure, and exports.

Log-linear regression method, which makes direct comparison possible between variables by using common measure, is applied to analyze relationship among independent(predictor) variables and dependent(criterion) variable. The fixed effects and random effects models are used for panel data of FDI flows from several developed countries into Mongolia. The panel data for 12 countries are used to analyze how the selected countries' FDI inflows are influenced through economic growth and other determinants factors by using annual dataset from 2005 to 2013.



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The primary aim of this work is to determine which variables affect FDI in Mongolia.

### 2.2.1. Market Size

Market size is a typical determinant factor of FDI flows. The gravity model analysis for FDI suggests that FDI is positively related with GDP levels in host and home countries. Market size is usually measured by GDP. Countries with large markets receive more FDI flows compared to countries with small market size.

### 2.2.2. Labor Force

Labor force is an important determinant of FDI inflows. Multinational companies investing in host countries not only seek location of low wage level, but require skilled laborer or high quality of labor as indicated by high wages. The theory that human capital is a factor the FDI flow has been applied in the empirical literature. It has been tested that insufficiency of human capital does not courage foreign investment into under developed countries. The skill and education level might influence not only FDI inflow volume but also activities multinationals undertaking.

### 2.2.3. Labor Cost

Higher labor cost raises the production cost and is expected to limit FDI inflows. Labor cost is generally measured by wage rate. A few studies have found that labor force determines FDI flows positively. However, Resmini (2000) could not confirm the significance of wages, possibly because they used wages that are uncontrolled for productivity and exchange rates (Bevan & Estrin, 2004).

### 2.2.4. Geographical Distance

A gravity model can catch market size of the home and host countries and distance between them. This distance can be used as a size of the transaction cost in managing foreign activities, i.e., costs of moving and communication, dealing of cultural and language gap, dispatching personnel overseas, and the information costs of institution and legal sources.

### 2.2.5. Infrastructure Facilities

An established and quality infrastructure plays an important role of FDI inflows. Good infrastructure facilities will attract FDI inflows. The availability of quality infrastructure can be estimated by considering electricity, water, transportation and telecommunications.

### 2.2.6. Trade Openness

Trade openness is a key determinant of FDI where much of FDI is export related and might also require import of complementary, intermediate and capital commodities. The trade volume is related with trade openness, and thus trade openness is expected to be positively and significantly related with FDI.



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### 2.2.7. Exchange Rate

Exchange rate is a determinant factor of FDI inflows. Froot and Stein (1991) found that a weak host country currency increased FDI inflows in an imperfect capital market as depreciation brings host country assets cheaper relative to currency in the home country. On the other hand, however, a strong real exchange rate might strengthen incentive of foreign enterprises to produce domestically, that is, the exchange rate behaves as a barrier to entry of the market that might lead to horizontal FDI flows.

### 2.2.8. Political Stability

The political environment of a country can be a major factor affecting the investment decisions of foreign investors. The political stability of receiving countries may increase the level of FDI inflow. Researches of investors have showed that political or macroeconomic stability is one main concern of incoming foreign investors. Schneider and Frey (1985) asserted that political instability significantly could affect FDI inflows. Firstly, good governance is related with higher economic growth, which would attract more FDI flows. Secondly, poor governance that fosters corruption lead to add to investment costs and decrease profits. Thirdly, the big sunk cost of FDI brings investors more sensitive onto uncertainty, with the political uncertainty that comes from poor governances.

### 2.2.9. Exports

FDI and trade are not only generally complementary and bilaterally supportive but more inseparable as two factors of the procedure of economic internalization. FDI inflows may stimulate exports of domestic companies by industrial linkage and spill-over effects. This effect creates a big demand stimulus of domestic enterprises and increases exports.

### 2.2.10. Inflation Rate

Buckley et al. (2007) found that a fluctuating and unpredicted inflation rate of the host country created uncertainty and discourages of multinational FDI activities. The high inflation rate devalues the domestic currency, and moreover reduces the real return of investment as a result. Therefore, the government launches policies aimed at reducing the inflation rate to reduce the risk in the investment environment. Therefore, stable, low, and predictable inflation rate is to stimulate the inflow of foreign direct investment.

## 2.3. Model Specification

### 2.3.1. Factors Affecting the Ability to Attract FDI in Mongolia Using by Log-Linear Regression

The basic equation is as follows:

$$Y(FDI_{it}) = \beta 0 + \beta 1(GDP_{it}) + \beta 2(EXR_{it}) + \beta 3(EXP_{it}) + \beta 4(INF_{it}) + \beta 5(INFRA_{it}) + \beta 6(Openess_{it}) + \beta 7(POLITIC_{it}) + \varepsilon_{it} \quad (5)$$



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where $FDI_{it}$ is the FDI in Mongolia in current US$ at time t:

- **$GDP_{it}$:** The GDP in current US$ of Mongolia at time t, and the measure of market size;
- **$EXR_{it}$:** The real effective exchange rate in Mongolia at time t, and the size of currency value;
- **$Openess_{it}$:** The trade openness in Mongolia at time t, and computed as ratio of imports plus export of commodities divided by GDP;
- **$INFRA_{it}$:** The measure of the infrastructure index in Mongolia;
- **$EXP_{it}$:** The measure of exports of commodities as percentage of GDP in Mongolia;
- **$INF_{it}$:** Measured by consumer price index showing annual percentage change of cost of the average consumer to acquire a basket of commodities that might be fixed or changed at a specified intervals, such as quarterly or yearly;
- **$POLITIC_{it}$:** The index of political and economic risk index in Mongolia measured by World Bank(from -2.5(weak), to 2.5(strong));
- **$\varepsilon_{it}$:** Is error term over time t.

### 2.3.2. Panel Data Analysis of FDI Inflows From the Selected Developed Countries to Mongolia by Using Fixed Effects and Random Effects Models

This section tests the factors deciding FDI flows from the several developed countries into Mongolia through using annual dataset of 12 countries from 2005 to 2013. The study used cross countries panel data and the variables are market size of related countries, trade openness in host country, and distance between home and host countries.

The basic equation is as follows:

$$Y(FDI_{ijt}) = \beta 0 + \beta 1(GDP_{it}) + \beta 2(GDP_{jt}) + \beta 3(DIST_{ijt}) + \beta 4(Openness_{jt}) + timedummies + \varepsilon_{ijt} \quad (6)$$

where:

- **$FDI_{ijt}$:** Is FDI in current US$ of country i at time t;
- **$GDP_{it}$:** Is gross domestic products in current US$ of country i at time t, and market size;
- **$GDP_{jt}$:** Is gross domestic products in current US$ of Mongolia at time t, and market size;
- **$DIST_{ijt}$:** Is the distance between Mongolia and country I;
- **$Openness_{jt}$:** Is the openness of trade in Mongolia at time t, and evaluated as ratio of imports and export of commodities divided by GDP;
- **Timedummies:** Is the dummy variable by year;
- **$\varepsilon_{ijt}$:** Is the error term in time t.

#### *2.3.2.1. Panel Data Regression*

Panel data consist of time series and cross section data. The time series variable observations are taken from 1995 to 2014. The cross-section data is taken from Netherlands, China(PRC), Luxemburg, Virgin Island(UK), Singapore, Canada, Rep. of Korea, U.S.A., Russia, Australia, Hong Kong(China) and Japan. The panel data are balanced without any missing observations.



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Two different models are chosen to analyze the panel data model: the Fixed and Random effects model. This study also estimates the two models to incorporate best fit of the estimation.

### *2.3.2.2. Fixed Effects Model*

The fixed effects model deals constant as a group (or section) specific. It allows for a different constant for each group. The fixed effects model is also called Least Squares Dummy Variables (LSDV) estimators, because it includes a dummy variable for each group.

The fixed effects model equation as follows:

$$Y_{it} = \beta_0 + X_{it}\,\beta + Z_i\gamma + \alpha_i + \mu_{it} \tag{7}$$

where $Y_{it}$ is dependent variable measured of individual i in time t, $X_{it}$ the time-variant regressor, $Z_i$ the time-invariant regressor, $\alpha_i$ the unobserved individual effect, and $\mu_{it}$ the error term. The fixed effects model deals unobserved heterogeneity where heterogeneity is constant in time and correlated to independent variables.

### *2.3.2.3. Random Effects Model*

The random effects method has same description, except that samples were randomly selected, so instead of handling coefficients as fixed, some of coefficients are random.

The Random Effects model equation is as follows:

$$Y_{it} = \beta_{0it} + \beta_1 X_{1it} + \beta_2 X_{2it} + \ldots + \beta_k X_{kit} + \mu_{it} \tag{8}$$

$$\beta_{0it} = \beta_{0i} + v_{i,}\, v_i$$

is a standard random variable of zero mean.

In panel data analysis, generally, fixed effects model agrees that respective country differs in terms of intercept, but random effects model takes that respective country differs in terms of error.

### *2.3.2.4. Difference Between Fixed Effects and Random Effects*

The fundamental difference between fixed and random effects is of inference. Fixed effects analysis support only inference in the group of measurements (subjects, ...), whereas analysis of random effects allows to explain something about population. The difference can be simplified as follows:

- Fixed effects assume that the individual-specific effect is correlated to the independent variable;
- Random effects assume that the individually specific effects are not correlated with independent variables.

### *2.3.2.5. Hausman Specification Test*

The Hausman specification test is used to choose either fixed effects or random effects model as suitable panel data model. The Hausman test is the econometric method where the null hypothesis asserts that preferred model is random effects whereas alternative is the fixed effects. It tries to testify whether



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unique errors ($u_i$) are correlated to regressors. If p-value < 0.05 (that is, significant), it is better to use fixed effects but if p-value>0.05, the random effects model is appropriate.

## 2.4. Empirical Results

### 2.4.1. Factors Affecting the Ability to Attract FDI in Mongolia by Using Log-Linear Regression

The data obtained from 1995-2014 were calculated through using SPSS and the results are spread as shown in Table 1.

The high magnitude of R-square validates the effectiveness of the regression and variables used. The adjusted R-square of 0.828 shows the strength of estimation. Table 1 shows that the estimated coefficient of GDP to the FDI is statistically significant in log-linear regression. As expected, its sign is positive.

### 2.4.2. Discussion of Empirical Results

#### *2.4.2.1. Relationship Between FDI and GDP of Mongolia is Positive and Significant*

The results reflect that FDI and GDP have a relatively positive and significant relationship. The estimated coefficient on FDI indicates that, with other variables held constant, FDI rises by 0.75% for a one percent increase in Mongolian GDP. The t- and p-values of 8.792 and 0.002, respectively, demonstrate the positive relationship. Table 1 shows results of the log linear regression model confirming the positive effect of GDP on FDI ($p < 0.01$). In line with our empirical result, many researchers also found that FDI and economic growth are positively and significantly related.

#### *2.4.2.2. Relationship Between FDI and Exports of Mongolia is Positive but Insignificant*

Through the empirical results, FDI and Exports have positive relationship (t-value=1.848) but insignificant (p-value =0.087). This insignificant effect of exports on FDI into Mongolia is explained as follows.

*Table 1. Regression results of factors affecting FDI inflows into Mongolia*

| Variables | Value | Standard error | t | Pr> \|t\| | Lower bound (95%) | Upper bound (95%) |
|---|---|---|---|---|---|---|
| LogEXP | 0.205 | 0.111 | 1.848 | 0.087 | -0.035 | 0.444 |
| LogINF | 0.054 | 0.104 | 0.515 | 0.615 | -0.171 | 0.279 |
| LogGDP | 0.747 | 0.197 | 8.792** | 0.002 | 0.322 | 1.173 |
| LogINFRA | 0.148 | 0.192 | 0.767 | 0.457 | -0.268 | 0.563 |
| LogPOLITIC | -0.043 | 0.112 | -0.382 | 0.709 | -0.285 | 0.200 |
| LogOpeness | 0.069 | 0.106 | 0.649 | 0.528 | -0.160 | 0.297 |
| R square : 0.882 | | | | | | |
| Adjusted R square : 0.828 | | | | | | |
| DW stat. : 1.56 | | | | | | |



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Being a landlocked country, Mongolia has just one destination place for its coal, the China, if there are not infrastructure developments easing access to third country markets such as Rep. of Korea, Japan, or India. Given that almost than 90% of Mongolian exports go to China, Mongolian mining exports are currently heavily dependent on the Chinese market.

#### *2.4.2.3. Relationship Between FDI and Political Stability of Mongolia is Negative but Insignificant*

The negative (t-value=-0.382) but statistically insignificant (p-value =0.709) effect of political unsteadiness related to FDI shows that government policy does not influence FDI inflows to the country. The political environment of a country is a major factor affecting the investment decisions of foreign investors. Searches of investors have showed that political or macroeconomic stability is one of its key concerns. The Mongolian Foreign Investment Law, established in 1993 and amended in 1998 and 2002, raised the country's image among multinational investors as one of the best favorable investment choices of Asia. However, political leadership of Mongolia has kept several crucial missteps, such as legislation directly opposing the interests of foreign investors and companies, those have drastically decreased recent FDI.

#### *2.4.2.4. Relationship Between FDI and Infrastructure Development of Mongolia is Positive but Insignificant*

FDI and Infrastructure are positively related (t-value=0.747) but insignificant (p-value =0.457). An expansive and high-quality infrastructure is an important determinant of FDI inflows. A country can further stimulate FDI inflows by expanding its infrastructure facilities. The infrastructure level of Mongolia is the rank 112 of 148 countries. This underdeveloped infrastructure raises transportation costs to the multinationals.

#### *2.4.2.5. Relationship Between FDI and Economic Stability of Mongolia is Positive but Insignificant*

The economic stability measured by inflation is positive (t-value=0.515) but insignificant (p-value =0.615) in determining the FDI inflows. When p-value of 0.615 and t-value of 0.515 were run though regression tests, it revealed a positive relationship with insignificant effect of economic stability on FDI into Mongolia.

#### *2.4.2.6. Panel Data of FDI Inflows From the Selected Developed Countries to Mongolia by Using Fixed Effects and Random Effects Models*

The regression analysis results presented in Table 2 show that the independent variable FDI is highly related with Mongolia's GDP. Such high correlation among the independent variables will induce the problem of multi-collinearity in the panel data estimation. The results of coefficients' sign and their significance levels of fixed and random effects are almost similar.

Both random effects and fixed effects models confirm the significance ($p < 0.05$) of Mongolia's market size (GDP). Both fixed effects (p=0.0495) and random effects (p=0.0503) models show a positive and significant relationship. The result shows that Mongolia's GDP is positively related and significant with FDI, whereas its trade openness is positively related but insignificant with FDI. The distance is also positively related but insignificant to FDI. The time dummy variables (dummy_t6 to dummy_t8)



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are highly related, with $p < 0.05$, to FDI in both fixed and random effects models, with adjusted R-square values of 0.80 and 0.89, respectively. The present study has aimed at choosing fixed or random effects model as the best appropriate panel data model. For this, the Hausman test was used with the null hypothesis that preferred model is random effects compared to the alternative of fixed effects. The Hausman test p-value of 0.0492628, revealed that the fixed effects model is slightly more efficient than the random effects model.

## 3. SUMMARY AND CONCLUSION

Since the centrally planned economy until 1990, Mongolia has transitioned from communism to democracy, leaving from centrally planned to free market-oriented economy. Mongolia has taken considerable steps to establish vibrant economy with a booming economic growth. Through its openness to FDI, foreign investors have been main determinants in the process of Mongolia's economic transformation and growth. During the period of very high FDI inflows from 2011-2013, Mongolia's endogenous economic growth was one of the fastest among developing countries worldwide. The rapid development of mining sector and strong increase of output made more jobs, raised average wages, increased exports, transferred knowledge and skills into Mongolia, and accounted for a significant portion of total tax revenue.

Both study results showed that FDI is highly related to economic growth of Mongolia. The first model results revealed that FDI inflow is highly related ($p < 0.01$) with GDP, if other variables are held constant. Exports are positively related with FDI but insignificant. Political stability is negatively related but insignificant. Trade openness, infrastructure and inflation are positively related but insignificant with FDI. The second study results showed that FDI is highly related ($p < 0.05$) with Mongolia's GDP. FDI inflow is positively related and significant with Mongolia's market size. The 9 time dummies, 2005 to

*Table 2. Panel data estimated by fixed and random effects models*

| | Fixed Effects Model | | | Random Effects Model | | |
|---|---|---|---|---|---|---|
| Variables | Coeffici-ent | t-Value | p-Value | Coeffi-cient | t-Value | p-Value |
| Const | 39.036 | 1.959* | 0.0495* | 29.558 | 1.985(*) | 0.0503(*) |
| $LogGDP_{jt}$ | 2.8910 | 2.060* | 0.0425* | 2.6074 | 1.949(*) | 0.0545(*) |
| $LogGDP_{it}$ | 0.2630 | 0.1906 | 0.893 | 0.840454 | 0.7985 | 0.4267 |
| $LogDIST_{ijt}$ | 0.084 | 0.173 | 0.863 | 0.0753 | 0.1596 | 0.8735 |
| $LogOpeness_{it}$ | 1.596 | 0.300 | 0.7647 | 0.1918 | 0.2293 | 0.8569 |
| Dumm_t1 | 2.4775 | 1.174 | 0.2439 | 0.2439 | 0.1808 | 0.884 |
| Dumm_t2 | 2.2856 | 1.332 | 0.1863 | 0.1863 | 0.1851 | 0.873 |
| Dumm_t3 | 1.7415 | 1.332 | 0.2291 | 0.446 | 0.3273 | 0.4267 |
| Dumm_t4 | 0.9095 | 1.211 | 0.4243 | 0.9106 | 1.136 | 0.2592 |
| Dumm_t5 | 1.0996 | 0.803 | 0.4336 | 0.8799 | 1.294 | 0.1991 |
| Dumm_t6 | 0.4363 | 0.461 | 0.6460 | 2.1326 | 2.247 | 0.0270* |
| Dumm_t7 | 2.44306 | 3.159** | 0.0022** | 3.8859 | 3.095** | 0.0026** |
| Dumm_t8 | 2.0902 | 2.695** | 0.0085** | 3.4533 | 2.518* | 0.0136* |
| Dumm_t9 | 1.832 | 1.135 | 0.254 | 1.4282 | 1.125 | 0.2638 |
| Adj. R square | 0.80 | | | 0.89 | | |
| No. of obs. | 108 | | | 108 | | |
| | Hausman test-Null hypothesis: Chi-square(9) = 0.92297 with p-value = 0.0492628 | | | | | |

Note: 1. The coefficient of variable is revealed first, followed by t-statistic in parentheses. 2. *, ** indicate significance levels of 5 and 1 percent, respectively. 3. (*) is denoted when t-value is almost equal to 2 and p-value to 0.05.



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2013, were used in the model. The result showed that 2010, 2011 and 2012 year's dummy variables are positively related and significant ($p < 0.05$) with FDI in the random and fixed effects models.

The Mongolian government needs to improve its infrastructure to attract further FDI into the mining industry, as demonstrated by Mongolia's low infrastructure ranking of 112$^{th}$ out of 148 countries. Further, the Mongolian government should revise its investment law, improve the investment environment and standard of services, strengthen the legal framework and maintain the economic and political stability.

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# Chapter 45
# Outward Foreign Direct Investments:
## Experience of Polish Companies

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## ABSTRACT

*Dynamic changes that have taken place on Polish, European and global markets for the last two decades shifted significantly the conditions in which companies operate. Globalization, liberalization of capital flows, participation in the European Union not only increased competition on Polish market, but radically boosted the competitive potential of Polish firms. This, in turn resulted in growing interest in expanding the activity on international scale in the form of Outward Foreign Direct Investments (OFDI). Therefore, the aim of the chapter is to discuss the most important stimuli, which impact competitive potential of Polish companies and increase their interest in foreign activity. Moreover, theoretical background of company's internationalisation are presented, as well as the scale and structure of Polish OFDI and incentives provided by Polish institutions.*

## INTRODUCTION

Dynamic changes that have taken place in Poland during the last 25 years shifted significantly the conditions in which companies operate. Polish economy emerged from half a century of state control, industries were privatized, and reforms enabling market-based competition were introduced. Within a few years, Polish GDP began to rise significantly, operating conditions became more favourable for business, which resulted in the mushrooming of dynamically developing firms. Accession to the European Union (EU) in 2004 delineated a development path that enabled the country to catch up with the most advanced economies of Europe (Bogdan, Boniecki, Labaye, Marciniak, & Nowacki, 2015).

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Recent two decades are marked with a clearly increasing potential of Polish enterprises, which is reflected not only in their increased activity in the internal market but, primarily, abroad. More and more often international expansion takes a form of outward foreign direct investments (OFDI), which (due to political and legal restrictions) practically did not exist before 1990. The Europe Agreement signed in 1994 and establishing an association between the European Communities and their Member States and Poland gave more freedom in the movement of capital. However, real investment boom took place only in the last decade.

The main research task of the chapter is to investigate the scale, structure, and directions of Poland's OFDI. Moreover, the authors present conditions, which increased the competitive opportunities of Polish companies and their interest in OFDI. The chapter consists of four major parts. Theoretical concepts, which explain internationalisation models for companies, are reviewed in the Background. The second part outlines Polish transformation experiences since 1989 and the main directions of the political and economic changes during the last 25 years, which have influenced the development of entrepreneurship in Polish firms. The third one discusses the conditions that encouraged Polish firms to start their FDI activity as well as the main motives behind the process. The fourth part presents the picture of Polish OFDI, their scale, structure, sectorial patterns and directions in light of the current theories and existing research.

The study uses statistical data obtained from the Central Statistical Office of Poland (in Polish: Główny Urząd Statystyczny (GUS)). Although data available from the National Bank of Poland ((in Polish: Narodowy Bank Polski (NBP)) cover a longer research period, data from GUS enable a more detailed analysis of the phenomenon in question.

## BACKGROUND

The process of internationalisation of enterprises is defined in various ways by scholars and academics. Mostly, the term "internationalisation" is connected with the expansion of enterprises to foreign markets, which is closely linked to progressing globalisation, including liberalisation of trade and capital flows and technological progress. It depends, inter alia, on the motivation or propensity of economic operators to go international and results from the engagement of their own resources or getting involved in various forms of cooperation with foreign partners. Thus, Wind, Douglas, and Perlmutter (1973) stress that internationalisation is a process where the specific conduct of enterprises is connected with subsequent stages in the evolution of international operations. Johanson and Vahlne (1977), Johanson and Mattson (1993), and Calof and Beamish (1995) understand internationalisation as a process of increasing international involvement and the adjustment of a company's operations to the specificity of the international environment.

Internationalisation is discussed from different angles, e.g., the theory of organisation, strategic management, international management, foreign trade, or regional development. Nowadays, definitions also take into account the relevance of R&D activities undertaken abroad. The approach is visible in Hollensen (2011, p. 41), who claims that one may speak of internationalisation when a company expands its production, sales, R&D, and other activities to foreign markets.

The literature most frequently highlights the evolutionary nature of internationalisation, although it is not always progressive or gradual (Jones & Coviello, 2005). The path of company internationalisation is firmly linked with the development of the industry in which the company operates (Andersson, 2004)



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and often depends on network ties (Sharma & Blomstermo, 2003) or resources and capabilities of the organisation (Sapienza, Autio, George, & Zahra, 2006).

In order to demonstrate the specificity of multinational enterprises many theoretical concepts have been used, such as classical, neoclassical and modern theories of international trade, or the FDI theories. Among the most important group of internationalisation theories, the models of stage internationalisation (e.g., the Uppsala model), early internationalisation theories (unconventional, accelerated internationalisation models) and network theories should be emphasized. Most of them identify key determinants of the engagement of companies with the foreign markets, justify the advisability of international expansion and highlight its major effects. Below the authors present only selected, the most relevant theoretical concepts and examples of empirical studies connected with firm's internationalisation.

Authors start with FDI theories. The multitude and diversity of theoretical concepts have resulted in their multiple classifications: 1) macroeconomic theories (Kojima's (1973) theory of relative shift in the cost of labour and capital, and Dunning's (1973) theory of investment position in international markets); 2) microeconomic theories (theory of oligopolistic reaction of enterprises by Knickerbocker (1973), Hymer's (1960) theory of ownership advantage, Buckley and Casson's (1976) internalisation theory); 3) mixed theories (Rugman (1980) or the eclectic theory of international production of Dunning (1979, 1980), the so called OLI paradigm[1]).

Some attention should be drawn also to the reasons behind FDI. Dunning divided them into four groups: market seeking, resource seeking, efficiency seeking, and strategic asset seeking (Dunning, 2000). In later studies (Dunning, 2003, 2004, 2006) he also stressed the importance of the political framework and business environment, i.e., institutions. It is worth mentioning that most of the determinants he identified are universal for countries or regions, although some of them, such as privatization policy, are more important to developing or transition economies.

Dunning and Lundan (2008) point to possible FDI motivation outside of the above described categories: 1) escape investment – made to avoid restrictive legislation or macroeconomic policies in the home country; 2) support investment – made with the intention of supporting the operations of a given enterprise, and 3) passive investment i.e., those which do not meet the criteria of the FDI definition.

In the internationalisation literature, the expansion of an enterprise to foreign markets is often explained in the context of subsequent phases of its internationalisation. Among the models that describe sequential entry into foreign markets, the Uppsala model is one of the most frequently emphasized. It is one of the earliest and most popular concepts, and the one which assumes an enterprise's gradually increasing involvement in a foreign market (Johanson & Wiedersheim-Paul, 1975; Johanson & Vahlne, 1977).

The weaknesses of the Uppsala model (Reid, 1983; O'Grady & Lane, 1996; Forsgren, 1989; Whitelock, 2002) and the changing circumstances of business operations in international markets resulted in development of the concepts of unconventional internationalisation. They challenge the sequential and cumulative nature of internationalisation by highlighting a possibility to skip some of its stages (leapfrogging) and that of pursuing simultaneous operations in many foreign markets. Firms may simultaneously enter many markets under various internationalisation arrangements (Sharma & Blomstermo, 2003). When making their choices they reflect a great deal of flexibility (Rialp, Rialp, & Knight, 2005) and easily adapt to customers' needs and the requirements of the competition. In the internationalisation literature, such enterprises are referred to as born global, global/early start-ups. They can offer unique and highly specialised products/services and use original know-how and knowledge. In some technology-intensive sectors, like electronics or ICT, products have specific characteristics (e.g., scalability), which



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may facilitate rapid internationalisation of enterprises (Cannone & Ughetto, 2014). The literature on models and paths of unconventional internationalisation is abundant (Gabrielsson & Gabrielsson, 2011; Cannone & Ughetto, 2014; Monferrer, Blesa, & Ripollés, 2015). This strand of research continues developing dynamically.

Another group of models trying to explain enterprise internationalisation is the so-called network approach. Business networks are often defined as a system of two or more connections between market participants who interact with each other and develop mutual inter-dependencies (Anderson, Håkansson, & Johanson, 1994), which evolve according to the changes in the economic environment (Johanson & Vahlne, 2009, p. 1414).

The literature highlights the relevance of networks in the internationalisation of enterprises, in particular to born global firms and to small and medium sized enterprises (Johanson & Vahlne, 2009; Kontinen & Ojala, 2011, 2012). Empirical studies confirm the theory demonstrating that firms, be they in developed or emerging markets, use networks to identify or exploit the possibilities to expand to foreign markets. Network is also used for the accomplishment of internal goals (Ciravegna, 2011; Kontinen & Ojala, 2011).

Studies of Polish foreign investment are relatively scarce. The broadest studies were conducted by Karaszewski (2013), Umiński (2010), Witek-Hajduk (2010), Jarosiński (2013), Buczkowski, Kłysik-Uryszek, Kuna-Marszałek, and Świerkocki (in press). These studies have led to similar conclusions: Polish enterprises most frequently choose a stage path of international expansion but most of them are not very advanced in the process. The dominant motivation is a wish to gain new markets resulting from the gradual saturation of the domestic market and the conviction that the quality of offered products is high (especially with respect to the price-quality ratio). Expansion directions are dominated by the markets of neighbouring countries, not only due to their geographical but also cultural proximity. The most frequently mentioned models which describe the internationalisation path of Polish enterprises are the Uppsala model (Kłysik-Uryszek & Kuna-Marszałek, 2015), but also the early internationalisation models (born global). Expansion through the development of network relationships was not particularly popular with Polish enterprises, which may result from the low degree of their internationalisation and little experience in the process (Kłysik-Uryszek & Kuna-Marszałek, in press). In fact, Polish entrepreneurs are still not very aware of the opportunities offered by becoming part of an international division of labour (also within cooperation networks and capital linkages).

Aside from the strand of studies focused on the general condition of the internationalisation of Polish enterprises, the authors also need to note writings on selected aspects of internationalisation, e.g., the role of cluster initiatives in the internationalisation of enterprises (Gorynia & Jankowska, 2007), early internationalisation of small and medium-sized enterprises (Daszkiewicz, 2004), impact of internationalisation upon the choice of marketing strategy in enterprises (Pietrasieński, 2004).

Most of the above-mentioned studies, however, concern internationalisation in a broader context (all stages, starting with exporting) rather than only direct investments made by Polish enterprises. Thus, the current study seems to fill, at least to certain extent, the existing gap.



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## MAIN FOCUS OF THE CHAPTER

### The Experiences of Polish Transformation: Impact on Entrepreneurship Development

Before 1989, Poland as well as other communist countries in the Central and Eastern Europe (CEE) had been a centrally planned economy. The state administration activities at various levels and enterprises (mainly state-owned) had been strictly controlled. The reconstruction of market system in Poland after fifty years of central planning was difficult, exhausting, and time consuming. Poland underwent macroeconomic reforms, which were introduced the earliest and the fastest among the post-communist states. At the beginning, they consisted in implementing a tight monetary policy and market-economy rules, necessary in view of the total macroeconomic imbalance at the outset of transformation. New legal system had to be built from scratch.

In the 1990s, the so-called "Balcerowicz Plan" or more formally "The Economic Transformation Program" was introduced with the support of the International Monetary Fund. Numerous actions had to be undertaken, and the so-called "shock therapy" started[2]. Market prices were liberalized from state control, domestic market was opened up for foreign trade, and trade requirements were simplified. Public finance reform was launched and full convertibility of the Polish zloty (PLN) was introduced. Poland remodelled the important social-safety net (e.g., pension scheme, social insurance, education) and introduced a program of privatization of state-owned enterprises. Besides, a series of legal changes was introduced which led to the emergence of a financial and capital market sector, relevant mostly due to the role it played in the creation of a viable stock market.

The first outcomes of social and economic reforms were linked to negative phenomena, such as hyperinflation (in 1989 inflation reached some 900%), devaluation of the Polish zloty, multi-fold increase in interest rates on loans, drastic drop in production, and deterioration in living standards. The policy pursued at that time led to the reduction of social functions of the state, which was reflected by their partial commercialization and privatisation. It resulted not only from the fiscal pressures, but also from the dominant conviction of politicians regarding the public sector inefficiency and the necessity to reduce its scope. Moreover, privatisation adversely affected the labour market by increasing the unemployment from 3.4% in 1990 to 16.5% in 1994 (Główny Urząd Statystyczny, 2015). Over the years 2002-2004, the unemployment rate ranged between 19.0% and 20.0%. Amongst other serious issues, a permanently negative balance of trade was the problem. While in 1990 Poland recorded a trade surplus of $4.8 billion, since 1991, it experienced an acute trade deficit.

Systemic changes were of fundamental importance to entrepreneurs. In a centrally planned economy, the private sector was tolerated and marginalised by the dominant state sector. After 1989, everyone could start a business, and many Poles took advantage of this opportunity. That became feasible following amendments made to regulations and creating a climate conducive to the enhancement of the entrepreneurial spirit. Many new provisions entered into force that regulated economic activity, e.g., the commercial law, tax code, and the banking law. After fifty years of the centralised economy, private sector has finally been catching up with its developments.

Micro and small enterprises, practically right from the outset of the transformation until to date, have represented the vast majority of firms in Poland. Micro firms are the most numerous; almost 95% of enterprises employ less than 10 workers. However, within the last two decades the share of the smallest firms decreased while the share of medium-sized companies rose. The number of large companies



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is shrinking as old post-communist giants have been privatised, commercialised, closed down or went bankrupt, and their assets have been introduced into the private sector. Only a handful of them are still in operation in some specific sectors in mining, fuel, energy, and defence industries. According to Bąkiewicz (2012), private sector in Poland evolves towards the structure typical of mature economies.

Entrepreneurship development was facilitated by political decisions on the accession to the EU structures. After several years of intense diplomatic and political summitry, accession negotiations were completed, and Poland and nine other countries formally joined the EU in 2004. Accession created new challenges and quality for economic transformation in Poland and had its impact upon the enterprise sector. Polish exports to the EU have literally soared from the moment of accession, especially to the countries in geographic proximity.

With the benefit of hindsight, it can be seen that free movement of goods has been a well-taken opportunity by Polish firms. Within ten years following the accession, they exported to the EU goods worth almost PLN 3.5 billion. This is twice the value of Poland's GDP (Ministry of Foreign Affairs of the Republic of Poland, 2014). Over the period 2004-2013 Polish exports to the EU increased almost threefold compared to 2003, while imports grew significantly slowly. The only exception was 2009 when trade turnover with the EU decreased because of the crisis. Poland experienced an export boom and an increase in productivity: number of exporting firms grew twice as fast as the total number of companies. As a result, in 2013 Polish companies earned one fifth of their revenues from export. It is also worth stressing that within a relatively short period of time Poland has become one of the leading European producers and exporters in key industrial sectors (such as automotive industry, electronic and home appliances sectors, or furniture sector). Besides, Poland has also become an important service provider in the EU market.

Dynamic growth of sectors of industry controlled by foreign capital is another interesting outcome of the transformation in Poland. At present, Poland is one of the countries with the highest share of foreign capital in the economy. Using the synthetic measure encompassing basic economic parameters and outcomes, in 2012 its share could be estimated at 47% in industrial manufacturing and 23% in the remaining industries. In the financial sector, the engagement of foreign capital is even higher (Cieślik, 2015). The cumulated value of FDI in Poland reaches almost 50% of GDP. Over the last several years, including the times of crisis and economic downturn, Poland (from among the countries of CEE) was one of the most preferred destinations for foreign investors.

Transformation of Polish economy was a long lasting and complicated process. After 25 years, many economists consider it is still not completed. Continuation of reforms started in the 1990s brought generally positive results, which provided growing competitiveness and sustainable base for further economic improvements. GDP growth was maintained, and over the years 2002-2014 Poland often outperformed other countries in the region (Eurostat, 2015). Real GDP has been increasing cumulatively by 19% since 2008, which, according to the report of the European Commission (2015), has been an unparalleled performance among all the EU member states. Poland's GDP per capita in 1995 represented 43% of the EU average, in 2000 – 48%, in 2013 – 67%. It means Poland is catching up, in terms of wealth, with the Western EU countries.

In the first years of the EU membership, Poland experienced investment and consumption boom, which, in turn, resulted in structural changes. The major ones include: increase in the share of services in the GDP with simultaneous drop in the share of agriculture, increase in the efficiency of the economy as a result of technological progress and intensified competitiveness in the internal market, increases in the production levels of medium- and highly processed goods, and an increased share in global trade



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(Ministry of Foreign Affairs of the Republic of Poland, 2014). Effects of these changes are visible in annual competitiveness rankings, in which Poland slowly but systematically improves its position. For example, between 2004-2015, Poland's location in the Global Competitiveness Index ranking improved from 60 to 43 (Schwab, 2015).

Macroeconomic stabilization and economic liberalisation have also brought positive effects in the microeconomic sphere. Polish private sector became efficient and competitive. Its output increased along with its production capacity; more and more enterprises embark on the path of internationalisation. That is also true of small and medium-sized enterprises.

However, despite many positive changes in the Polish economy it exhibits certain cyclical and permanent problems, e.g., increasing public debt, high unemployment, increased gap between rural and municipal areas, and relatively low wages. At present, wages in Poland are far behind the EU average. Recommendations included in the reports of international institutions point to the need of structural reforms connected with the fiscal policy and changes with respect to the labour market. Attention is also drawn to the need to increase R&D outlays and to improve support schemes and mechanisms addressed to small and medium-sized enterprises.

## Sources of International Competitiveness and Investments Motives of Polish Companies

The first decade of the 21st century witnessed a significant change in the share of Poland in international flows of long-term capital. Even though Poland remains a net importer of FDI and is perceived as an attractive investment location, export of capital has increased seriously. 25 years after transition and a decade after joining the EU, Polish economy enters a stage of active internationalisation reflected in FDI[3]. Increasing international activity of Polish companies seems a natural consequence of economic development.

However, increased scope of international expansion of companies is influenced by several factors. Firstly, globalisation and liberalisation of capital flows, which considerably change business environment in Poland. Nowadays it is much easier to relocate production in a search for new, better conditions for business activity. On top of that, differences in prices of production factors between neighboring countries instigate specialisation and trigger OFDI. Poland's integration with the EU provides additional encouragement for firms to expand their activity abroad. Due to the EU membership Poland's investors are perceived as reliable partners providing world-class products, especially when investing in the eastern markets, where they have competitive advantage in products and services.

Secondly, economic development and structural changes in the economy over past 25 years, technological progress, increasing competition, and capital accumulation shift competitive advantages of Polish firms. Dominant labour and resource-intensive industries have been partly replaced by technologically advanced manufacturing. These changes improve market position of firms and their competitiveness, therefore, in accordance with the OLI paradigm (Dunning, 2000), facilitate effective internationalisation.

Thirdly, increasing openness of Polish economy already for over two decades has intensified the inflow of FDI to Poland. Hence, Polish companies have been competing on the domestic market with strong multinational companies for years, and the successful ones are fully prepared to compete also on foreign markets. When a new competitor enters the domestic market, a part of the market share is always lost to the new entrant. Seeking new growth opportunities abroad comes as a natural consequence. Thus, opening the market to FDI mobilises the strongest local companies to work out new ownership advan-



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tages, which help them operating effectively also at international level. Their marketing, organisational and often technological capabilities become substantial. However, technological advantages of Polish firms should not be interpreted as absolute domination over all actors on the market. Strong position in an industry suffices. Poland enjoys long-lasting, strong comparative advantages in labour-intensive industries, therefore in traditional sectors companies perform very well internationally. Few Polish companies get involved in international competition in modern hi-tech sectors.

Location factors are subsequent incentives for Polish companies. For industrial and trade investments they choose mostly neighbouring countries. That is in line with the Uppsala model conclusions (Kłysik-Uryszek & Kuna-Marszałek, 2014). The model suggests that in the initial stages of internationalisation, investors opt mostly for markets close to their home location. The reason is not just geographical proximity but mainly the psychic distance defined as social and cultural proximity. It facilitates "adaptation" of a company in a new location, understanding market mechanisms, business environment and interpersonal relations, which are the most important in economic activity. Many Polish entrepreneurs combine knowledge and experience, acquired in the course of 25 years of transformation, and they are able to work in a less stable and supportive institutional environment. They show relatively high flexibility due to the smaller size and shorter decision-making chains, so they are able to respond promptly to changing market conditions and to adapt their products to the current market situation. Consequently, they have clear advantage in less developed countries, which are still undergoing economic transformation, over the competitors from Western countries (Petru & Walewski, 2012). Moreover, Russia and Ukraine offer a huge market potential for Polish ventures with relatively cheap labour and growing demand. That seems extremely important, as Polish firms which embark on international expansion are guided mostly by market and resource-seeking (cost) motives. Empirical studies (Karaszewski et al., 2012; Stępniak & Zabłocka, 2009; Petru & Walewski, 2012) indicate "market seeking"[4] as a main motivation for Polish companies. It should be considered a good sign as it means that Polish products are already attractive for international markets, and companies are able to compete effectively.

Domination of market-related motives does not mean Polish companies are not guided by more "advanced" motivation. On the contrary, they seek efficiency and strategic assets although these motives are characteristics of more experienced investors (e.g., for multinational and innovative high-tech companies of the born global type). Polish entrepreneurs try to improve profitability and global efficiency seeking favourable tax arrangements or business environment on foreign markets. Large portion of those investment ventures are located in the countries offering favourable regulatory and tax systems, which significantly reduce fiscal burden. Specific attention should be paid to a few young innovative companies looking for knowledge and other strategic assets on international markets, which invest in global IT centres. Software Company Mobica which is about to open its office in San Jose, in the Silicon Valley, USA is one among the latest examples of such firms.

Finally, increased engagement in outward FDI arises from the operations of the foreign-owned branches and subsidiaries of multinational companies located in Poland. As they are perceived as Polish residents, their investments are reported in the statistics as Polish OFDI. That is misleading as the investment has got nothing to do with competitive advantages of Polish entities but results from ownership advantages of the multinationals. Hence, it may be independent of economic development and current economic situation in the country. International expansion of global corporations via their subsidiary companies located in different countries is a common phenomenon. For example, in Austria a substantial part of OFDI is made of investment by international capital groups rather than domestic companies with local



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capital (Gorynia, Nowak, & Wolniak, 2007), and the majority of investment by U.S. corporations in Europe takes place via their subsidiaries in the Netherlands.

As for the effects of internationalisation, many Polish companies have pointed out that thanks to OFDI they could maintain or even increase sales, what often would not be possible without entering new markets and creating new production capacity. They also achieved higher stability by becoming less dependent on the situation at domestic market and got wider access to raw materials. OFDI has been the way to diversify the market risk, related to the demand for company's products and services, and related to the security of supply chains (Buczkowski, 2013). The main challenges and barriers faced by investors are cultural differences, corruption, organizational and administrative burdens in the host country, language barriers, distribution problems at local market, lack of qualified workers, and high operating costs (Petru & Walewski, 2012).

## The Picture of Polish OFDI: Scale, Structure, and Directions

Despite intense economic transformations, uninterrupted growth and economic development, Polish OFDI are a relatively new phenomenon. Poland's accession to the EU apparently marked the turning point. Before that moment, the cumulated OFDI value represented only 1% of GDP. Since 2004 investments have soared up to almost 12% of GDP in 2012 (Figure 1).

According to information included in the balance of payments, the total value of Polish OFDI was $55.2 billion (PLN 166.2 billion) in 2013 but the record-breaking year was 2012 – $57.4 billion (PLN 180 billion). These values include all FDI flows between residents and non-residents in all sectors of the economy. Unfortunately, data from the balance of payments statistics are little detailed with respect to the effects of the involvement of Polish entrepreneurs abroad. That is why the authors based their analyses on GUS data. It enabled them to provide the number of investors, foreign affiliates, employment, revenue, and trade. However, GUS data do not include the investments of the financial sector, which account for a substantial portion of all Polish investments. That is why the authors were not able to compare the values from Figure 1 with further presented data. On top of that, GUS data come from the statements submitted by enterprises, hence the revenues and sales are quoted only in Polish zloty. Another drawback is the time scope of available GUS data. Due to the relatively limited scale of OFDI regular questionnaire based studies have been conducted since 2008 and comparable data have been available since 2009. Nevertheless, despite such a short research period certain relevant tendencies in the scale, structure and geographical directions of Polish OFDIs may be observed.

In spite of the difficulties caused by the global economic crisis, over the period 2008-2013, Polish enterprises significantly increased their direct capital engagement in the foreign markets. In 2008, 1,106 operators declared having foreign affiliates, in 2013 their number increased to 1,588 (Table 2). The year of 2012 was less favourable for the expansion of Polish foreign investors as their population shrank to 1,437. Nevertheless, the number of foreign affiliates was regularly increasing from 2,541 in 2008 to 3,366 in 2013 (Figure 2).

The share of industrial manufacturing operators oscillated around 30-35%, construction –10-13%, and trade – 21-26%. Companies involved in professional, scientific and technical activities (mainly operations by headquarters, special purpose companies and management consulting) represented 8-9% (Table 1). In the industrial sector manufacturers of metal products, food (both food processing and beverages), rubber and plastic products as well as machinery and equipment were the most internationally active. Many foreign affiliates were owned by several producers connected with producers of coke and refined



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*Figure 1. Cumulated OFDI/GDP ratio in Poland*
*Source: Authors' calculations based on Narodowy Bank Polski (2015) and Główny Urząd Statystyczny (2015)*

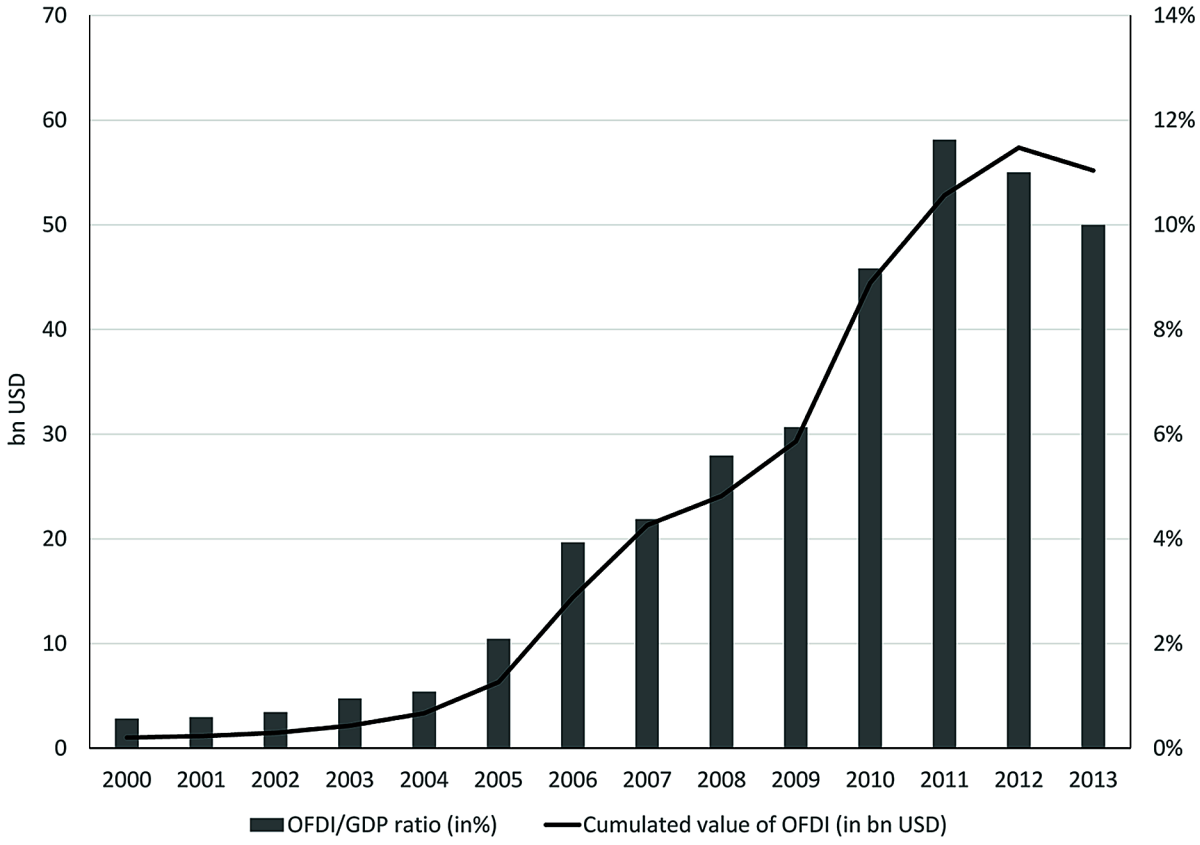
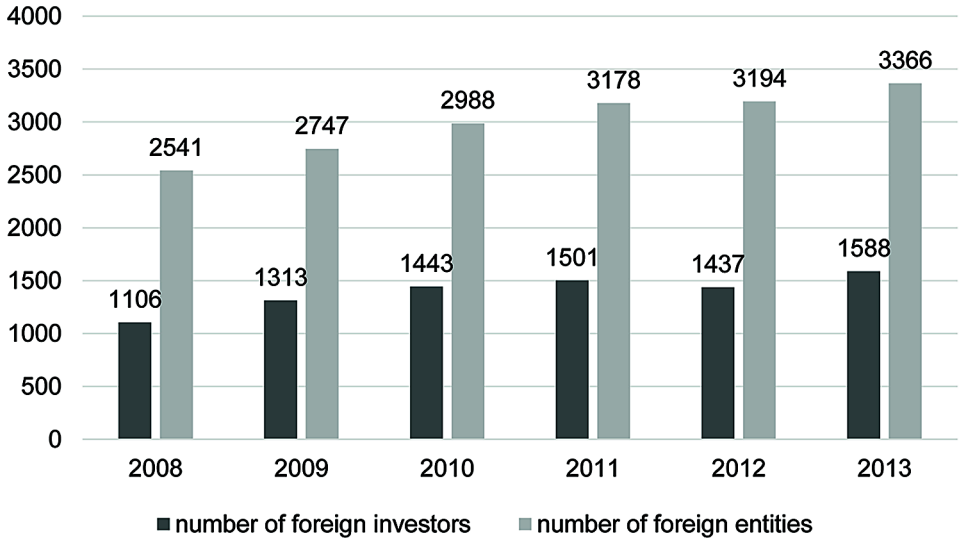



*Figure 2. Number of Polish foreign investors and their foreign affiliates*
*Source: Authors' calculations based on Narodowy Bank Polski (2015) and Główny Urząd Statystyczny (2015)*






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*Table 1. Number of Polish foreign investors and their foreign affiliates by investor's NACE* section*

| NACE Sections | No. of Enterprises with Foreign Affiliates | | | No. of Foreign Affiliates (by INVESTOR'S NACE SECTion) | | |
|---|---|---|---|---|---|---|
| | 2009 | 2011 | 2013 | 2009 | 2011 | 2013 |
| **Total** | 1,313 | 1,501 | 1,588 | 2,747 | 3,178 | 3,366 |
| Manufacturing | 456 | 522 | 555 | 839 | 1,016 | 1,103 |
| Trade | 316 | 314 | 337 | 716 | 688 | 728 |

Nomenclature statistique des activités économiques dans la Communauté européenne (Polish abbr. PKD)
Source: Authors' calculations based on Główny Urząd Statystyczny (2015)

petroleum products[5] (these are mainly one or two big investors, classified among the biggest Polish companies – ORLEN S.A. and KGHM S.A.).

Investors most frequently established independent companies abroad. That business arrangement was identified for 86% of all foreign affiliates. They were mostly subsidiaries with 100% share of investor's capital, and, less frequently, they were related companies with the investor's majority shareholding. Only every tenth entity was established as a branch and every thirtieth as a plant.

Over the period covered by the study, 80% of all investing enterprises were members of capital groups, which is indicative of their stronger market position. Considering the substantial share of foreign investors in Poland, it seems surprising that only slightly more than 1/3 of enterprises engaged in FDI were members of foreign capital groups (with the dominant company based outside of Poland). Other entities declared membership of groups with Polish companies as dominant actors.

It must also be stressed that investors not always pursue the same economic activity abroad as they do domestically (Table 2 and Table 3). Activities identical with those of the parent company were declared by less than 60% of operators with over 40% performing other activities. The latter were mostly trade and professional, scientific and technical services (which most often means delocalisation of headquarters, establishing special purpose affiliates or advisory entities – in order to reduce the tax burden).

At this point, it is worth remembering that according to the studies, Polish enterprises are at initial stages of active internationalisation. That is confirmed, inter alia, by the structure of foreign affiliates related to industry. In 2009 45%, and in 2013 as many as 55% of them were involved in services and more than 2/3 out of them dealt with trade, focusing on support to exports. Business support entities (management, administration) also enjoyed a big share.

*Table 2. Foreign affiliates (broken down by affiliate's NACE section)*

| NACE Sections | No. of Foreign Affiliates | | |
|---|---|---|---|
| | 2009 | 2011 | 2013 |
| **Total** | 2,747 | 3,178 | 3,366 |
| Manufacturing | 487 | 559 | 608 |
| Trade | 912 | 1,020 | 1,065 |

Source: Authors' calculations based on Główny Urząd Statystyczny (2015)



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*Table 3. Structure of foreign affiliates by investor's NACE section and affiliate's NACE section*

| Investor's NACE Section | Affiliate's NACE Section | | | | | |
|---|---|---|---|---|---|---|
| | Total | Manufacturing | Construction | Trade | Professional, Scientific and Technical Activities | Other Sections |
| **Total** | 3,366 | 608 | 358 | 1,065 | 303 | 1,032 |
| Manufacturing | 1,103 | 494 | 31 | 409 | 69 | 100 |
| Trade | 728 | 59 | 5 | 566 | 16 | 82 |

Source: Authors' calculations based on Główny Urząd Statystyczny (2015)

Over the period covered by the study, employment generated by Polish entrepreneurs abroad was increasing systematically from almost 130 thousand people in 2009 to 150 thousand in 2012, and then dropped by over 7% to fewer than 140 thousand in 2013. Employment increased in both manufacturing and trade. Drop was mainly due to the reduction of the employment in other sectors of the economy (Table 4). Out of industrial investors, producers of coke and refined petroleum products, food, metal products, and furniture created the biggest number of jobs abroad. Over the entire examined period, average size of employment in foreign affiliates connected with Polish investors was 40-50 people.

The revenues generated by foreign entities increased over the same period from PLN 107 billion to almost PLN 150.7 billion (Table 5). Its biggest part came from entities owned by industrial investors (their share accounted for 60% of the total revenue in 2009, almost 73% in 2011, and 67% in 2013), mainly manufacturers of coke and refined petroleum products. The latter achieved total revenue from foreign operations exceeding PLN 72 billion in 2011, which represented almost 3/4 of the revenue generated by industrial investors and more than a half (53%) of the total revenue generated by all Polish FDI.

*Table 4. Employment in foreign affiliates by investor's NACE sections*

| Investor's NACE Sections | Employment in Thousands | | |
|---|---|---|---|
| | 2009 | 2011 | 2013 |
| **Total** | 129.8 | 145.8 | 139.2 |
| Manufacturing | 41.3 | 44.7 | 51.3 |
| Trade | 25.6 | 24.8 | 30.6 |
| Professional, scientific and technical activities | 34.8 | 39.2 | 8.9 |

Source: Authors' calculations based on Główny Urząd Statystyczny (2015)

*Table 5. Total revenue and revenue from exports in foreign affiliates by investor's NACE sections*

| Investor's NACE Sections | Revenue in PLN Billion | | | Export-to-Revenue Ratio (in %) | | |
|---|---|---|---|---|---|---|
| | 2009 | 2011 | 2013 | 2009 | 2011 | 2013 |
| **Total** | 107.1 | 134.0 | 150.7 | 23.6 | 29.6 | 28.5 |
| Manufacturing | 63.9 | 99.7 | 101.0 | 32.4 | 34.7 | 34.3 |
| Trade | 12.8 | 15.7 | 21.1 | 14.8 | 15.3 | 12.8 |

Source: Authors' calculations based on Główny Urząd Statystyczny (2015)



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To complete the analysis of Polish investors' operations abroad the attention should be drawn to affiliates' exports and imports. They may measure the level of competitiveness of a given enterprise and give information about how the investment was used as a platform for further international expansion. The share of intra-group trade in revenue may measure the degree of vertical integration within a capital group, the scale of using network production linkages and an attempt to improve the overall performance of the corporation.

Over the period 2009-2011, exports of foreign affiliates increased from PLN 25 billion to PLN 43 billion (Table 6), which accounted for almost 25-30% of the total revenue (Table 5). 4/5 of that was generated by affiliates of industrial companies, and here the export-to-revenue ratio was the highest. Nevertheless, it needs to be stressed that generally low share of export sales in total revenue is indicative of investors' intentions, who decided to make FDI mainly to win the markets, not to improve the efficiency or seek possibilities to reduce the costs of production due to the effect of globalisation.

The tendency observed in industry is even clearer for affiliates related to investors dealing with trade, which export only 13-15% of their output. In the remaining sections of economic activities the index was even lower (in construction it did not exceed 8%).

The scale of vertical linkages in foreign trade of the analysed operators gradually increased. On average, 25-35% of exports targeted parent companies or other related entities within a capital group. In affiliates of manufacturing companies, the percentage was a bit lower, but it also increased over the analysed period. The biggest vertical export was recorded by construction companies and affiliates of operators involved in professional, scientific, and technical activities. As for the latter, the authors may associate it with the provision of services to related companies within a capital group by affiliates based in countries offering more favourable legal and tax arrangements[6].

From the viewpoint of investors, an increased share of vertical trade may be considered a positive change. Strengthening vertical integration of the value chain may evidence the active seeking of opportunities to reduce costs, purposeful allocation of factors to locations offering transnational benefits, and improvement of the global competitiveness of the corporation. However, from the point of view of the Polish economy, the assessment is not so unambiguous. Substantial imports from foreign affiliates may substitute domestic production and reduce employment in the parent company.

Detailed outcomes could be examined by including the structure of trade flows. Import to Poland of final goods manufactured in foreign affiliates produces the effects different from import of materials and semi-finished products or investment goods. Unfortunately, the available data do not enable such an analysis.

*Table 6. Exports by foreign affiliates total and to related companies (vertical export) by investor's NACE sections*

| Investor's NACE Sections | Export in PLN Billion | | | Vertical Export-to-Total Export Ratio (in %) | | |
|---|---|---|---|---|---|---|
| | 2009 | 2011 | 2013 | 2009 | 2011 | 2013 |
| **Total** | 25.3 | 39.6 | 43.0 | 24.7 | 30.2 | 34.1 |
| Manufacturing | 20.7 | 34.6 | 34.6 | 22.6 | 28.0 | n/a |
| Trade | 1.9 | 2.4 | 2.7 | 27.2 | 25.5 | n/a |

Source: Authors' calculations based on Główny Urząd Statystyczny (2015)



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Much higher index of vertical linkages can be identified for imports by foreign affiliates. In the period covered by the study, 80-90% of foreign purchases originated from parent companies and other related entities. The highest indices were recorded in manufacturing (for foreign affiliates of manufacturers of pharmaceuticals, metal products and electrical devices it was close to 100%). Taking account of the generally increasing value of imports by foreign affiliates (Table 7), the phenomenon should be considered as positive for the Polish economy as it stimulates domestic production (irrespectively of the fact whether they import intermediate or investment goods).

Polish enterprises have invested their capital in almost 100 countries, however, a detailed analysis of the geographical breakdown of their investments clearly indicates that European markets, in particular those in neighboring countries, were especially attractive to Polish enterprises. Almost 85% of all foreign affiliates are based in Europe (and 88-90% of affiliates owned by manufacturing companies) while almost 63% in the EU countries. Over a half of foreign affiliates of Polish companies (and slightly more than 60% of manufacturing companies) were located in the immediate neighborhood (Germany, the Czech Republic, Slovakia, Ukraine, Belarus, Lithuania, and Russia) (Table 8). Neighboring non-EU countries were more interesting to industrial companies than other EU member states which do not share borders with Poland. Considering the fact that investors were mainly interested in seeking markets in the host countries, it may confirm the thesis that Polish enterprises follow the internationalisation strategy in line with the assumptions of the Uppsala stage model.

The majority of foreign affiliates are located in Germany. Their number increased from 372 in 2009 to 469 in 2013. Further down the list there are Ukraine (however the number of entities dropped there), the Czech Republic, Russia, Romania, Cyprus, Slovakia, Lithuania, and Hungary. At the end of the top-ten list, there is the Great Britain with 87 affiliates in 2013.

On average 1/3 of all ventures were undertaken by manufacturing companies but in some countries their share very much diverged from the average. Manufacturers willingly located their affiliates (not necessarily production plants but trade entities as well) in Germany, Ukraine, the Czech Republic, and Russia, where they accounted for 40% of all affiliates owned by Polish investors. In Belgium affiliates of industrial companies represented almost 52% of all businesses, in which Polish capital was involved, and in China – 50% (out of which 1/4 were metal products manufacturers and 1/5 manufacturers of machinery and equipment). Cyprus, Malta, Luxembourg, and the Netherlands turned out to be the least attractive for manufacturers, as investments in these countries did not exceed several percent of all foreign investments by Polish enterprises. Small countries offer attractive legal and tax solutions mostly to service providers (in particular in finance and business process outsourcing).

*Table 7. Imports of foreign affiliates by investor's NACE sections*

| Investor's NACE Sections | Import in PLN Billion | | |
|---|---|---|---|
| | 2009 | 2011 | 2013 |
| **Total** | 34.4 | 62.1 | 62.6 |
| Manufacturing | 27.7 | 54.6 | 50.8 |
| Trade | 5.6 | 5.7 | 8.3 |

Source: Authors' calculations based on Główny Urząd Statystyczny (2015)



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*Table 8. Polish investors' foreign affiliates and employment broken down by host countries*

| Countries | No. of Foreign Entities | | | Employment | | |
|---|---|---|---|---|---|---|
| | 2009 | 2011 | 2013 | 2009 | 2011 | 2013 |
| **Total** | 2,747 | 3,178 | 3,366 | 129,783 | 145,805 | 139,220 |
| Belarus | 84 | 78 | 79 | 3,993 | 4,859 | 5,941 |
| Czech Republic | 228 | 270 | 263 | 13,674 | 11,525 | 12,996 |
| Germany | 372 | 427 | 469 | 18,807 | 24,797 | 27,544 |
| Hungary | 111 | 118 | 113 | 1,961 | 2,088 | 2,701 |
| Lithuania | 109 | 116 | 123 | n.a. | n.a. | n.a. |
| Russia | 210 | 242 | 260 | 11,036 | 12,792 | 18,029 |
| Romania | 131 | 159 | 165 | 5,324 | 6,497 | 6,218 |
| Slovakia | 122 | 150 | 143 | 3,307 | 3,781 | 4,444 |
| Spain | 29 | 44 | 37 | 453 | 2,449 | 2,680 |
| Ukraine | 348 | 355 | 339 | 14,779 | 14,562 | 16,977 |
| Great Britain | 62 | 67 | 87 | 636 | 517 | 3,589 |

Source: Authors' calculations based on Główny Urząd Statystyczny (2015)

It is also worth drawing attention to geographical differentiation of entities according to their principal line of business. Manufacturing entities (i.e. production plants) dominate in less developed countries, which offer cheap labour, e.g., Belarus (almost 100%), Romania (75-80%) or China (almost 100%). In Russia, Germany, and Ukraine 60-70% affiliates of Polish manufacturing companies were involved in manufacturing (the rest were mainly trade oriented). In small countries neighboring Poland, the proportions were reversed. In Lithuania, Slovakia, Hungary, and the Czech Republic the share of manufacturing affiliates did not exceed 40% of all subsidiaries established by Polish industrial investors.

Types of pursued activities closely relate to the demand for labour, which is definitely the highest in manufacturing and trade. In 2013, Polish investors created the highest number of jobs in Germany, Russia, Ukraine, and the Czech Republic. Relatively many jobs were also created in Belarus and Slovakia, i.e., in countries where these activities dominate. Labor intense activities were settled in China and Kazakhstan in 2012: (in the former) more than 1,600 people were employed in 45 Polish entities and (in the latter) more than 2,000 employees worked for 33 Polish entities. Cyprus, Malta, Luxembourg, and Switzerland are targeted by special purpose entities[7], which benefit from the tax optimisation strategy in the parent company and/or finance-related investment. These activities do not require big plants and their employment is minor, 1-2 people per affiliate.

As for the income of foreign entities owned by Polish investors, its total value was constantly increasing throughout the period between 2009-2013 from almost PLN 108 billion to PLN 151 billion. The highest revenue was earned in German and Czech markets (Table 9). Affiliates in these countries generated 40% of the total revenue earned by Polish entities abroad. Moreover, the concentration rate increased from 38% in 2009 to 45% in 2011 and 43% in 2013. Russia came third but the revenue earned there was almost three times lower than in the Czech Republic. High dynamics of revenue increases in the affiliates in Russia, since 2009 the market has significantly "caught up" with the top runners.



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When analysing the revenue of foreign affiliates, exports and share of exports in the revenue should be taken into account. In the examined period export increased at greater rate than the revenue, which resulted in higher export-to-revenue ratio, which, however, did not exceed the threshold of 30%. It proofs that the FDI was predominantly motivated by market seeking reasons. The best examples are the German and Russian markets where the ratio accounted for less than 10%. Slightly higher share of exports in the revenue was recorded by Czech affiliates (with practically all exports from the Czech Republic generated by affiliates of oil manufacturers and processing enterprises, i.e., related with PKN Orlen). Interesting developments can be observed in Cyprus and Malta, i.e., in the host countries for special purpose investments (for instance entities which enable parent companies to avoid or optimize their tax burden). These investments generate revenue mostly from selling services or legal rights to affiliated companies; therefore, the export-to-revenue ratio is outstandingly high. Exports were also relatively high for affiliates of manufacturing enterprises in Scandinavian countries (Norway, Sweden, and Denmark) and in Serbia. Nevertheless, the total revenue from sales in these countries was low, so high ratio may result from strategies pursued by individual entities.

## SOLUTIONS AND RECOMMENDATIONS

Overall performance of Polish companies abroad in the form of OFDI proves the rising competitiveness of Polish economy on the international scale. The analysis show that – regardless some theoretical considerations (which point out that OFDI may deteriorate the welfare in the home economy[8]) – foreign activities of Polish companies effectively stimulate domestic output and protect jobs. Therefore, to strengthen the performance of companies abroad and to help them to overpass to more advanced forms of internationalisation, some set of support tools should be introduced. Currently the system of incentives offered to

*Table 9. Revenue and exports-to-revenue ratio of foreign affiliates of Polish enterprises*

| Countries* | Revenues of Foreign Affiliates (in PLN Million) | | | Exports-to-Revenue Ratio (in %) | | |
|---|---|---|---|---|---|---|
| | 2009 | 2011 | 2013 | 2009 | 2011 | 2013 |
| **Total** | 107,086 | 136,995 | 150,745 | 23.7 | 28.9 | 28.5 |
| Belarus | 411 | 1,098 | 1,500 | 30.9 | 35.7 | 24.0 |
| Czech Republic | 19,702 | 28,876 | 26,543 | 17.7 | 22.0 | 24.4 |
| Germany | 21,120 | 32,137 | 38,348 | 6.2 | 8.4 | 9.5 |
| Hungary | 1,101 | 1,197 | 1,187 | 4.3 | 5.9 | 5.6 |
| Russia | 4,632 | 6,878 | 9,777 | 3.2 | 2.4 | 3.4 |
| Romania | 1,846 | 2,785 | 2,613 | 19.2 | 24.4 | 22.8 |
| Slovakia | 2,167 | 2,900 | 3,970 | 5.8 | 4.0 | 6.1 |
| Spain | 305 | 834 | 1,101 | 9.9 | 8.8 | 12.2 |
| Ukraine | 2,937 | 3,748 | 3,925 | 26.9 | 16.6 | 15.0 |
| Great Britain | 1,119 | 1,236 | 4,022 | 22.9 | 16.2 | 56.7 |

*Latvia and Lithuania were excluded due to the lack of data for these countries
Source: Authors' calculations based on Główny Urząd Statystyczny (2015)



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companies in Poland is mostly focused on facilitation of export activities and information and promotion services. Support directed to OFDI is usually just the development of the tools offered to exporters. Only in recent years due to the availability of the EU funds, some financial incentives especially for foreign investors have been implemented. However, many entrepreneurs are critical about the effectiveness of activities of public institutions and claim they have little business background and limited knowledge of economic reality. Therefore the authors should hope that in the years to come support offered to investors will evolve to match real needs of business people and to facilitate FDI decisions to Polish firms.

## FUTURE RESEARCH DIRECTIONS

Due to the limited scale of Polish FDI, the subject has not been so far vastly researched in economic literature. Recent years have witnessed an increase in scientific publications in this area. However, it seems that still there are areas, which need to be analyzed more deeply.

Hence, it seems justified focusing future research directions on strategies implemented by Polish investors in the third markets, in particular in the context of network approach or born globals. Besides, the evaluation of the sources of competitive advantage of Polish enterprises and the impact of OFDI upon the parent company also seem interesting fields of analysis. Detailed analyses are also required to assess and measure the influence of Polish OFDI on the economy of the home country (region) by evaluating the scale and effects of technology and knowledge transfer to other firms in the same sector and to find out how the development and internationalisation of these enterprises have mobilised the economy. Better understanding of the above mentioned issues would facilitate the tasks of local and national authorities and business environment institutions connected with the development of effective schemes designed to support the internationalisation of enterprises in line with the interest of the entire economy. While the impact of OFDI upon the competitive advantage of the parent enterprises or the home countries is often examined for developed economies, these subjects are extremely rarely addressed in the context of developing countries or emerging economies.

## CONCLUSION

The above analysis of foreign direct investment by Polish enterprises has helped the authors to draw some main conclusions:

1. Polish OFDI may be considered as a natural effect of economic growth of the economy following the systemic transformation. For years, Polish enterprises have been exposed to fierce competition of multinational enterprises on home market, so they have systematically reinforced their position. The economy experienced dynamic transformation from a centrally planned system to a free market economy.
2. Polish enterprises most often follow a stage path of international expansion (according to Uppsala model) but most of them are not too much advanced in the process. Expansion through the development of network links was not very popular among Polish enterprises, which may result from their little internationalisation and experience in the process. Still Polish entrepreneurs are little aware



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of the opportunities that opened up to those who are engaged in international division of labour (also within cooperation networks and capital links).
3. Internationalisation is predominantly driven by market seeking motives as the domestic market is getting saturated and quality products offered by Polish companies are good enough. Polish investors tend to establish a trade representative office abroad rather than production plants.
4. Neighbouring countries are major recipients of Poland's OFDI not only due to their geographic but also cultural proximity.

International expansion of Polish investors does not threat their domestic production. High index of vertical linkages on the side of imports both to manufacturing units and to trade subsidiaries induces domestic production.

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## KEY TERMS AND DEFINITIONS

**Economic Development:** Quantitative and qualitative changes in the structure of the economy leading to the GDP and total welfare growth. It involves advancement of technology, human and social capital formation and competitiveness increase.



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**Economic Transformation:** Change of an economic system, in particular shifting from a centrally-planned to a market economy, based on a functioning free market, competition, and private business.

**FDI Incentives:** A range of different support tools offered by public or private institutions during the process of internationalisation. May take a form of financial or advisory support as well as the promotion and marketing on foreign markets.

**FDI:** Foreign direct investment (outward – OFDI; inward – IFDI), the most advanced form of internationalisation of companies; FDI are undertaken to exercise a long-term capital supervision over an entity located abroad (branches or subsidiaries). Investors may create independent economic enterprises from scratch (greenfield investments) or take control over an already existing company (acquisitions and mergers).

**Internationalisation of Enterprises:** Process, through which a firm moves from operating in a domestic marketplace to international markets.

**OLI Paradigm:** The major FDI theory, which was presented by Dunning. It combines micro and macroeconomic approaches and synthesises many works devoted to this kind of internationalisation. The OLI (Ownership, Location, Internalization) theory explains that the FDI decision is a result of meeting three conditions: a firm enjoys ownership advantages (oligopolistic advantages); there are favourable location factors (host country advantages); the advantage of internalisation over market transactions.

**Uppsala Model:** The "stage model" presupposing that internationalisation is a slow and long-term process driven by experience and knowledge acquired by a company firstly on domestic market, than on the markets of countries in geographic proximity representing similar culture.

## ENDNOTES

1 The OLI paradigm has been supplemented and modified on numerous occasions by the author himself as well as by other researchers (Hill, Hwang, & Kim, 1990; Guisinger, 2001).

2 Shock therapy ("big-bang") is a radical and comprehensive economic program, in which macroeconomic stabilization, market liberalization, and fundamental institutional restructuring are quickly implemented (Balcerowicz, 1995; Wei, 1997).

3 Results of studies indicate that Polish economy is at the end of stage 2 or at the beginning of stage 3 both in the IDP J. H. Dunning model and in T. Ozawa model (Gorynia, Nowak, & Wolniak, 2009; Wysokińska, 2008).

4 Polish companies prioritized incentives for OFDI as follows: 1) access to the local market; 2) increase in sales and in global market share; 3) blocking competition; 4) imitation of what the competition is doing; 5) access to local brands, local technology and to global market; 6) weaker competition than in Poland; 7) product portfolio diversification; 8) lower cost of labor; 9) better business environment than in Poland; 10) optimization of supply chain (Petru & Walewski, 2012).

5 The sector does not have a numerous representation in the Polish economy but it is dominated by large, strong players with substantial ownership advantages, which have already been internationally active for many years (PKN Orlen, KGHM). Their investments are primarily linked with exploitation of natural resources in various parts of the world or with acquisition of foreign competitors and markets.



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[6] Increasingly more firms pay attention to the problem of tax optimisation, which may be reflected in locating business activities in countries that offer tax preferences (tax havens) although this is not the priority reason followed by Polish investors in their expansion abroad.

[7] At this point, it is worth remembering that manufacturers, when establishing their affiliates abroad in these countries, usually pursue non-manufacturing operations there. It improves their overall effectiveness and optimises taxes. An example may be the case of LPP S.A., a company which opened its subsidiary in Cyprus to transfer ownership rights to owned trademarks (apparel brands) there. In Cyprus, managing trademarks is covered by a reduced, preferential tax rate, thus what LPP has done may be considered an efficient element of tax optimisation strategy.

[8] Theoretically, it may happen due to the outflow of capital, which – despite the increase in the remuneration of capital owners – may reduce the production capacity of a country significantly. Besides, as know-how and technology are transferred abroad also employment may shrink together with the income of labour force.

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# Chapter 46
# Chinese FDI Activity in Europe:
## Trends, Impacts, and Challenges

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## ABSTRACT

*Today, China has become one of the major exporters of capital in Europe. It is expected that China's liberal policy and growth model will soon make China a major provider of cross-border investment. This process is expected to have significant impact on host European countries of Chinese investment. Europe needs to change its policies and position itself strategically to not only reap the benefits of this massive influx of Chinese investment but also minimize potential risks that European countries face due to their historical linkages with China for trade and investment. The objective of this chapter is to review Chinese FDI in Europe to identify its impact on Europe's economy and suggest some measures for European economies to optimize the benefits of Chinese FDI for their national competitiveness and economic growth.*

## INTRODUCTION

China's outbound foreign direct investment (ODI) may exceeded inbound foreign direct investment (FDI) for the first time in 2014, making China a net exporter of FDI. This is surprising given the country's stage of development as well as its relatively low share of global ODI stocks. Figure 1 shows the trend of Chinese ODI by July 2016.

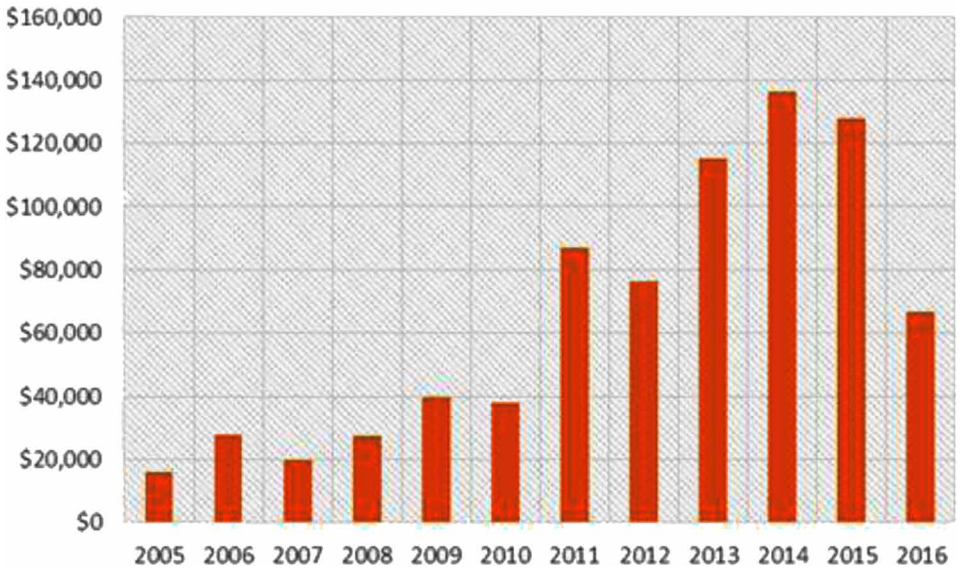
It appears that a very significant portion of Chinese ODI is focused on developed world. Out of top twenty recipients of Chinese ODI, eleven were developed countries. Figure 2 shows the top recipients of Chinese FDI. It seems that focus of Chinese ODI is not the region but the sector-wise strategic priorities. Within the same region, the amount of Chinese ODI in various countries varied significantly. One good example is middle-east region where Qatar received the least amount of Chinese ODI. The Figure 3 shows the countries that received the least amount of Chinese FDI.

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*Figure 1. Trends of Chinese ODI*
*Source: (American Enterprise Institute, 2016)*
*(Figures are in Millions of US dollar)*




The increasing influx of Chinese FDI continues to impact European economies. The amount of Chinese FDI in Europe has exceeded $100 billion per annum and quickly shifting its focus towards more advanced European economies. Some of the most attractive sectors for Chinese investors include energy, transport, real-estate and technology. Both private and state-owned enterprises of China are actively making significant investments in Europe. Germany ranks no. 2 in the list of Chinese FDI recipients with total Chinese investment of €6.9 billion by the end of the year 2014 (UNCTAD, 2015). The advanced manufacturing capabilities of the more developed European economies are the major focus of the Chinese investors. The total Chinese investment in automotive and industrial equipment sectors of Germany alone accounts for more than two-third of the Chinese investment in Germany. With time, Chinese investment portfolio has diversified to include IT, finance, and consumer products sectors. In more developed European economies, the focus of Chinese investment is small-to-medium sized takeovers.

The objective of this chapter is to provide a comprehensive analysis of the outward direct investments by Chinese companies in the Europe region. After introduction, section 2 provides a discussion of the existing landscape of Chinese FDI in Europe. Section 3 discusses how new Chinese FDI would impact European economies and possible responses of European economies towards this FDI. Section 4 would discuss various concerns of stakeholders with respect to emergence of China as a new major FDI provider for Europe. Section 5 provides implications and recommendation for European policymakers for maximizing the benefits while addressing concerns discussed in section 4. Concluding remarks are provided in section 6.



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*Figure 2. Top 20 Recipients of Chinese ODI*
*Source: (American Enterprise Institute, 2016)*
*(Figures are in Millions of US dollar)*

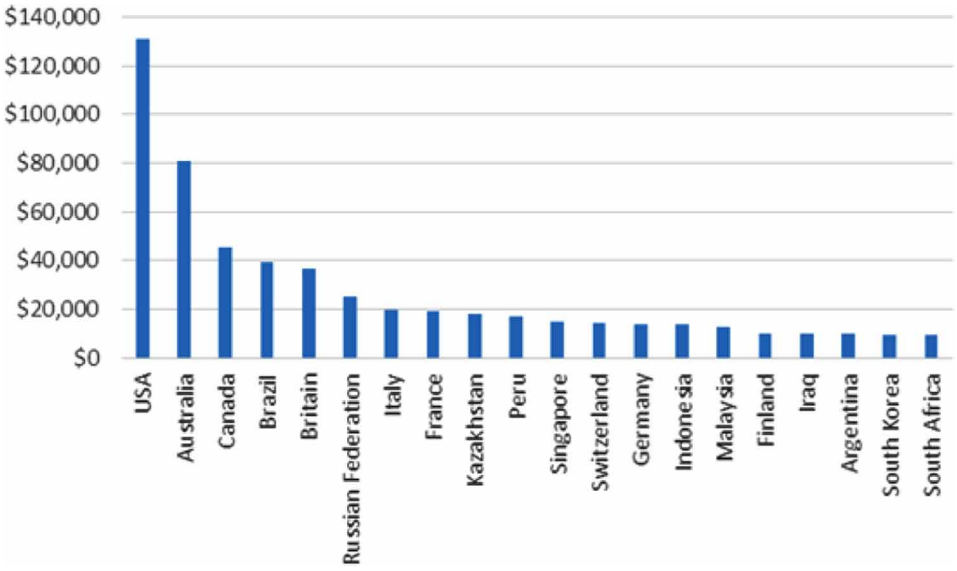
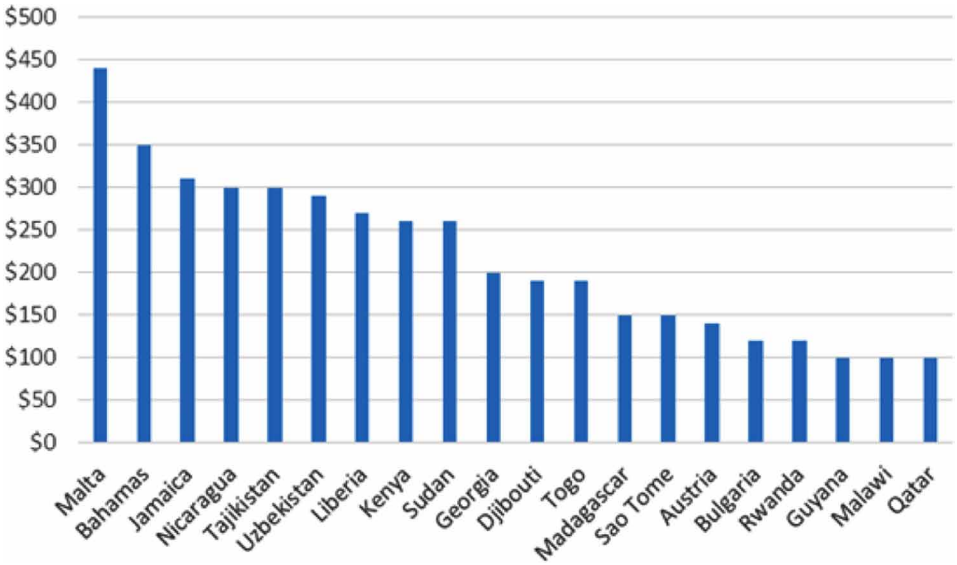



*Figure 3. Bottom 20 recipients of Chinese ODI*
*Source: (American Enterprise Institute, 2016)*
*(Figures are in Millions of US dollar)*






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## EXISTING LANDSCAPE OF CHINESE FDI IN EUROPE

During the last decade, Chinese FDI has focused on European nations especially the Southern and Eastern European nations(Le Corre, 2016). Figure 4 shows distribution of Chinese FDI.

Majority of Chinese investment (more than 50%) was made in advanced European economies (such as UK and Germany). Eastern European economies are attracting Chinese capital in manufacturing, agriculture and infrastructure and accounts for 8% of total Chinese investment value (Hanemann & Huotari, 2015).

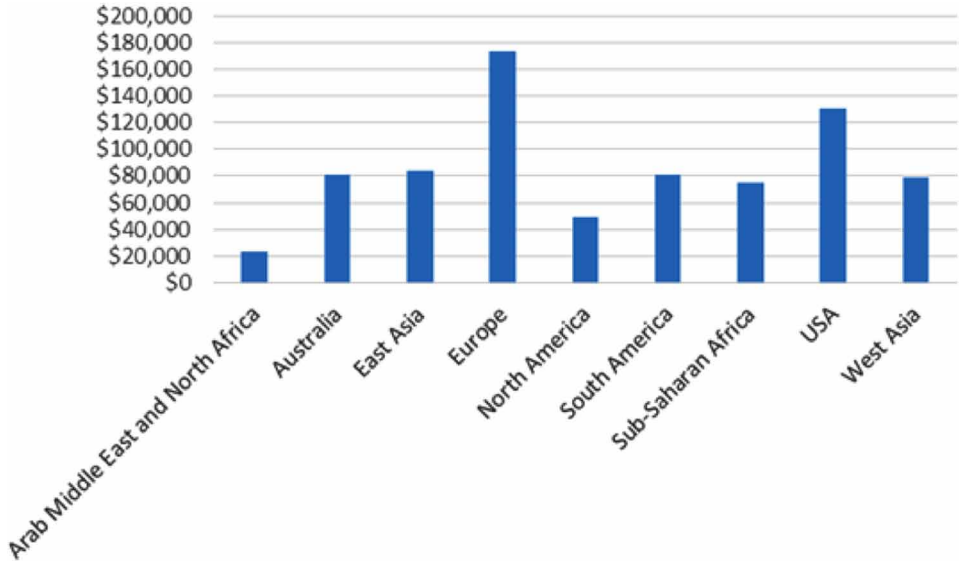
Chinese investors appear interested in a more diverse mix of industries. Energy is the number one sector where €13 billion of Chinese investment has been made. This trend appears to be uniform in Chinese global ODI and Chinese ODI in Europe. Figure 5 and 6 shows the sector-wise distribution of Chinese ODI in the World and in the Europe respectively.

The other important recipients of Chinese investments include automotive, machinery and information technology. In service sector, Chinese investment is focused on transportation, biotech, and finance. The two other important sectors growing rapidly are agriculture, finance, and real estate (Evans, 2016).

## IMPACTS OF CHINESE FDI ON EUROPEAN ECONOMIES

Chinese investment in Europe is growing fast. However, it is still unclear how this new FDI will impact European economies and how European economies should respond. All EU member nations follow the principle of openness when it comes to FDI. Under this principle, each member state provides each foreign investor fair and equal treatment (European Commission, 2014; Hanemann & Huotari, 2015). Chinese FDI opens up a unique opportunity to reap the associated benefits. However, Europe needs

*Figure 4. Region-Wise Distribution of Chinese ODI*
*Source: (American Enterprise Institute, 2016)*
*(Figures are in Millions of US dollar)*






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*Figure 5. Sector-wise Distribution of Chinese ODI Worldwide*
*Source: (American Enterprise Institute, 2016)*
*(Figures are in Millions of US dollar)*

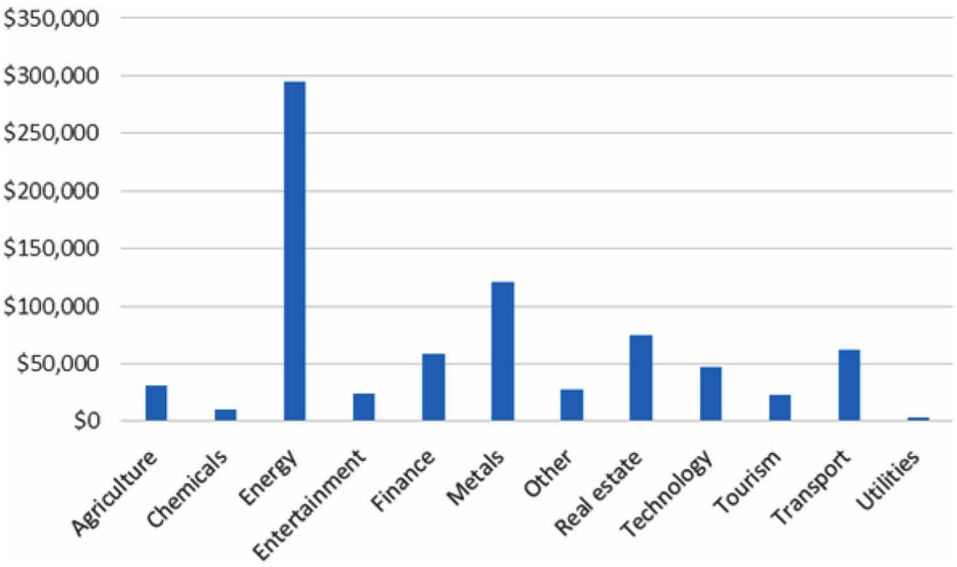
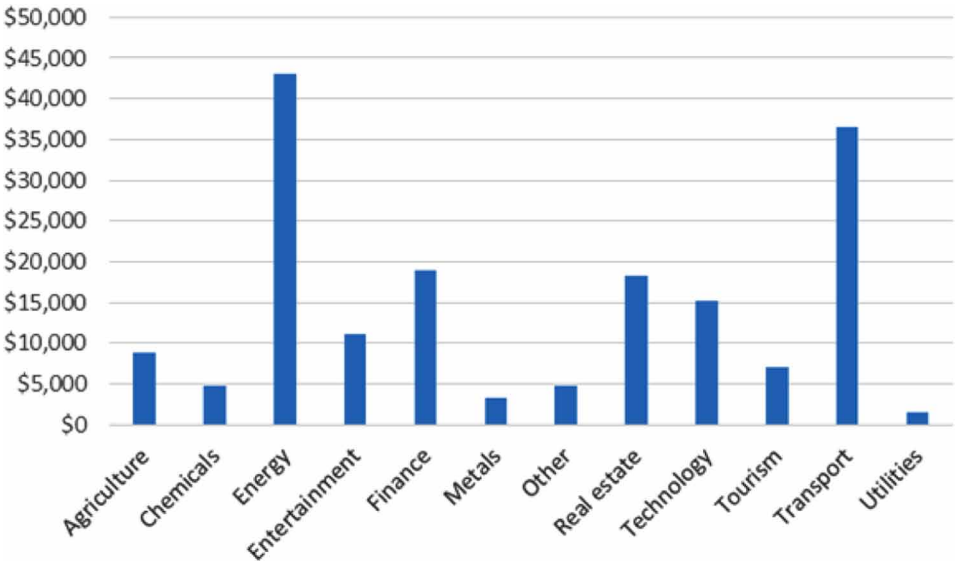



*Figure 6. Sector-wise Distribution of Chinese ODI in Europe*
*Source: (American Enterprise Institute, 2016)*
*(Figures are in Millions of US dollar)*






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careful evaluation of various risks associated with Chinese FDI that can arise due to some particular characteristics of Chinese economy. The following section discusses the potential benefits and associated risks of Chinese FDI for Europe.

## Urgently Needed Massive New Source of Global Investment

Chinese FDI has brought EU member nations an increased level of investment and projected to become the single largest flow of capital in the years to come (Arnett, 2014). It is expected that the current pace of Chinese FDI will sustain in the future to come due to recent changes taking place in China. These changes have brought more favorable policies towards ODI (Hanemann & Huotari, 2015). As a result, Chinese economy is becoming an efficient economy driven by market forces and innovations. The changes taking place in Chinese marketplace are pressuring Chinese firms to establish their offshore presence (Skeldon, 2011). China has implemented a series of policies (e.g. the deregulating controls over outbound investment and making state companies more competitive internationally) to further support firms' internationalization. Private Chinese companies are taking benefit of the new Chinese economy and actively making huge investments overseas. Chinese companies are expected to become a key driver of FDI activities in Europe. New Chinese institutional investors are increasingly using outbound investment to diversify their investment portfolio. It is expected that China will become one of the world's biggest cross-border investors by the end of this decade, with global offshore assets tripling from $6.4 trillion now to nearly $20 trillion by 2020 (Anderlini, 2015). This timing of increased Chinese FDI coincides with the time when FDI inflows to Europe are decreasing. These depressed levels of FDI, especially in smaller economies, have dampened growth prospects (World Bank, 2016). FDI that can help grow economy (by creating jobs and providing much needed cash to important cash-strapped parts of the economy) is a pressing need of Europe (Das, 2014). FDI, being a less volatile and non-cyclical capital flow, can help different sector of Europe's economy to develop and stabilize (Quak, 2008).

## Expanding Market Access and Linkages

FDI can also help expand market access and link markets of host countries with overseas markets and to the world economy. This expansion of market access and connection to the world economy can help companies in host countries to integrate their production and supply chain networks with the global supply chain networks (Hanemann & Huotari, 2015). This is especially useful for smaller European companies that do not have the knowledge and skills to tap into the Chinese markets. With FDI, the local firms can have a Chinese partner with share in their equity. It appears that Chinese investors are more interested in buying a dominant share in the companies where they are investing. This trend is more visible in Europe. Figure 7 and 8 shows the equity stake acquired by Chinese investors worldwide and in Europe respectively.

This can provide better opportunities for companies in host economies to gain access to and fully understand Chinese markets. With this knowledge, these companies can reap benefits of huge export opportunities to the massive Chinese market. One example of such linkage is the case of Putzmeister's strategic merger with Sany. Putzmeister was a German firm that used this merger to expand into Chinese markets. (Markets, 2016).



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*Figure 7. Chinese ODI and Equity Stake Acquired by Chinese Investors (Worldwide)*
*Source: (American Enterprise Institute, 2016)*
*(Figures are in Millions of US dollar)*

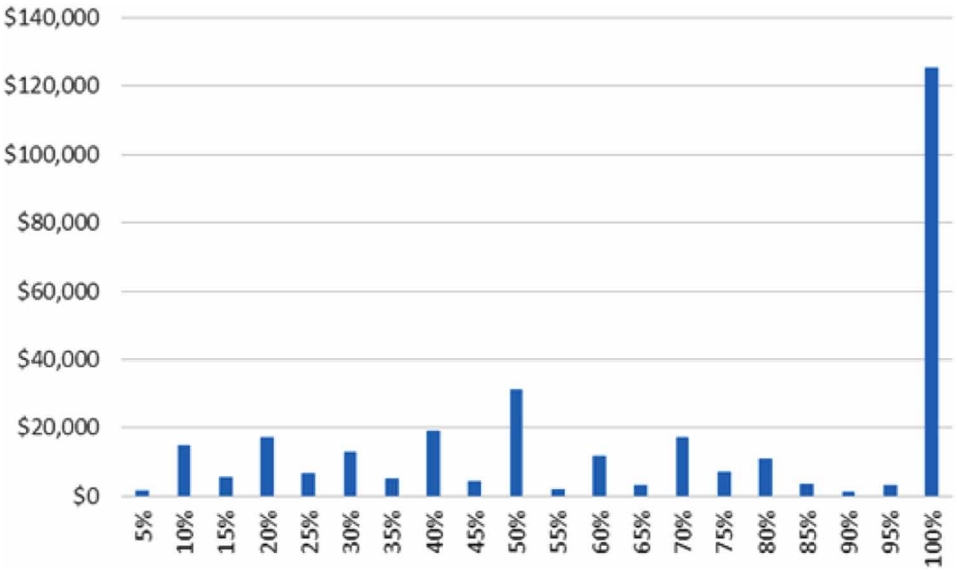
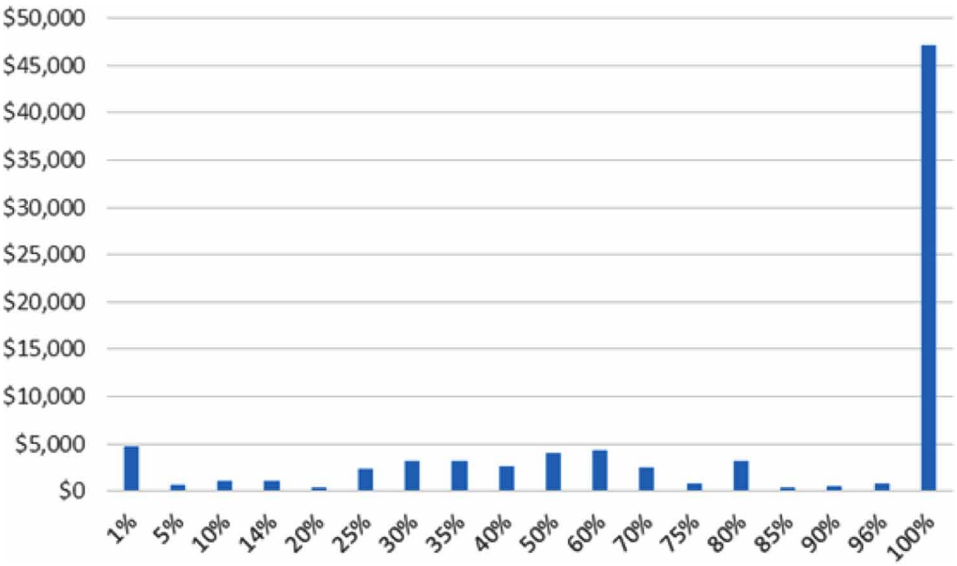



*Figure 8. Chinese ODI and Equity Stake Acquired by Chinese Investors (Europe)*
*Source (American Enterprise Institute, 2016)*
*(Figures are in Millions of US dollar)*






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### Specialization and Innovation

Companies in host economies can use FDI to increase their knowledge and build capacity to innovate in order become more productive (Erdal & Göçer, 2015). This can happen in many ways. Foreign companies can provide advanced level training to local workforce, contribute in local expenditure on R&D activities, and bring advanced technologies to the host countries. Chinese firms are making headways in many industries by continuously bringing innovations. With such strong emphasis on R&D, these firms are investing significant amounts of money in local research and development in Europe. The Chinese firm Huawei made standalone investment to set up more than twenty research and development facilities across Europe (McKinseyChina, 2015). Two other Chinese firms, Sany and CSR, topped the list of large R&D spenders in Europe. Chinese firms have the ability to innovate in many areas and have proven ability to bring new standards, models, and innovative approaches in business (Steinfeld, 2015; Hanemann & Huotari, 2015).

## CHINESE FDI: MAJOR CONCERNS AND THEIR REMEDIES

For Europe, Chinese FDI is a unique opportunity to increase future capital flows and benefits associated with this increased flow of capital.While many Chinese-backed projects in Europe didn't produce the desired results on economy, it is early to say that Chinese investments are more likely to not achieve their desired objectives. There are, however, many concerns of host countries related to China's economy, political system, and world standing that warrant a reassessment of risks associated with Chinese investment. These concerns include macroeconomic volatility; asymmetry in market access; subsidies; technology transfer; national security; and a regulatory race to the bottom (Hanemann & Huotari, 2015).

### Macroeconomic Volatility

From investment point of view, macroeconomic volatility refers to instable investment levels and large changes in asset prices. It is a long held concern that FDI can bring macroeconomic volatility and result in instable economic conditions and decreased economic growth. This volatility can produce highly volatile investment flows. Such volatility can be detrimental for smaller economies where large amount of foreign money is invested in extractive sectors (such as oil and gas) are more vulnerable against such volatility. China is the world's second largest economy that is providing very large amounts of capital outflows. Being an emerging economy, China is in the process of internal and external financial and economic reforms that are expected to bring major swings and volatility in coming years and the recent boom and bust cycle of Chinese investments in global extractive sectors is one clear example of this phenomenon (Pigato & Tang, 2015; Hanemann & Huotari, 2015). Clearly, the countries with high levels of Chinese FDI will be more exposed to potential risk of boom and bust cycles.

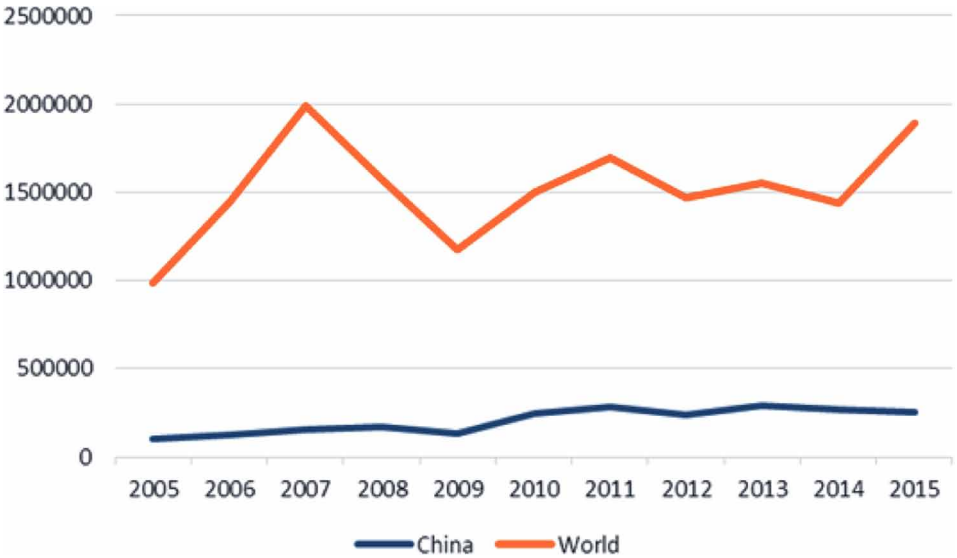
A comparison of inward FDI in EU across all sectors show that Chinese inward FDI stock is still a small portion of the total inward FDI stock in Europe (See Figure 9).

The economic diversity that exist within EU and the non-reliance of EU on highly cyclical sectors (such as natural resources extraction) means that the concerns of macroeconomic volatility may not be that high as of now. However, the recent increase in OFDI from financial companies in EU is expected to reach very high levels in coming years. The focus of this outward FDI so far is limited to few indus-



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*Figure 9. Comparison of Inward FDI to Europe*
*Source: (OECD, 2016)*
*(Figures are in Millions of US dollar)*




tries (such as real estate). However, this outward FDI can result in increase in asset prices across Europe (Rhodium Group, 2015) and situation would become serious if there is an increase in non-FDI capital flows (such as bank lending and portfolio investments) in Europe. EU, especially smaller EU economies, needs monitoring of Chinese investment to identify any potential macroeconomic volatility. Identification of these macroeconomic volatilities is important because they can quickly spill over to affect all economies in EU. It is also important given that China is becoming one of the major FDI providers in EU. The EU data of inward data on capital flows should be made more transparent because United States has already implemented a system called Treasury International Capital (TIC) that provides US government information on foreign nationals' holdings of US government securities (Morrison & Labonte, 2013).

## Asymmetric Market Access

Another major concern related to FDI is the distortion of market access in the favor of companies whose origin is the country making large investments in a country. This asymmetry in market access is not just fair but also leads to distorted and politically influenced allocation of foreign investment between two countries. Historically, bilateral agreements between the countries or multilateral and regional agreements have been commonly been used to address these concerns related to market access. One example of regional agreement is General Agreement on Trade in Services (GATS). These agreements guaranteed a certain degree of reciprocity in openness (WTO, 2016). Recently, emerging economies, especially China, have become significant exporters of capital. As such, the concerns over market access have once again gained focus of attention, especially in Europe. Since, 1980, foreign investment is the most important economic reform China has been using for generating opportunities of growth, innovation and employment. In contrary, China doesn't offer the similar level of openness to FDI. In terms of formal restrictions to FDI, China is considered one of the least open countries among the G20 economies and



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informal discrimination against foreign companies is commonplace (Anderlini, 2015). The China might be justified in doing so because of its position as a major capital exporter in the world and extended access of Chinese firms to the most advanced markets of the world. In contrast, EU countries abide by the openness principle when dealing with inward and outward flow of capital. This principle provides fair and equal treatment of all FDI providers including China. The extensive investment by Chinese companies in European markets is evidence of the practice of this principle in EU. However, European companies do enjoy the similar treatment in China and face tough market barriers in China especially in advanced manufacturing and services sectors where they have competitive advantage (European Union, 2014). For more developed EU economies, such as Germany, this situation is highly undesirable because German firms have huge stakes in currently restricted sectors of Chinese economy(Vetter, 2014). It is early to say if that current imbalance can result in systemic market distortions in near future. However, it does create an environment where this strong sense of unfairness can make it difficult for governments of EU countries to make a strong case for greater investment integration with China. The governments of EU countries will have to ensure that European companies are provided a level playing field in China to strongly defend the principle of market openness that Europe has been practicing for a long time. China realizes the gravity of the situation and importance of FDI in its greater agenda of economic reforms. In early 2015, China decided to formally abolish the current restrictions and implement a modern FDI regime that would provide expanded investment opportunities for foreign countries (Davies, 2013; Hanemann & Huotari, 2015). However, the uncertainties are still there.There is no defined timeline for implementation and the unclear scope of this policy leaves plenty of room for potential informal discrimination. EU countries cannot just wait and see rather take active role in finalizing and implementation of this modern FDI regime in China. EU can seek to negotiate bilateral investment agreements (BIAs) with China under Lisbon Treaty of 2008. These agreements can providethe necessary rights for European companies to receive fair and equal treatment in Chinese markets. Such as initiative can be a big step to facilitate the implementation of broader FDI reforms in China. These agreements can also help develop new standards of openness. Three major global economies (United States, European Union, and China) provides 60% of GDP and more than two-third of global outbound FDI (UNCTAD, 2015). EU should start a dialogue with China for a multilateral investment agreement in a bid to set new global standards for openness of cross-border flow of capital and regulatory practices to safeguard national interests of EU countries. EU countries can also play important role to achieve greater symmetry in market access with China. That would help align interests of individual member countries with European interests and large EU member states (e.g. Germany) can use their influence to force China expedite implementation of its new FDI regime. EU member countries have many tools that could be used for that purpose including competition policy, disclosure requirements, public procurement etc..

## Subsidies and Non-Commercial Advantages

Subsidies and other non-commercial advantages can arise from unfair competition in global FDI arena and lead to distortion in global markets. These disadvantages can limit the abilities to compete in the absence of any preferential access to resources. These concerns have gained importance in EU since the rise of emerging economic economies as the major sources of FDI. Many global Chinese firms, both state-owned and private firms, are supported by China's local and federal governments. These companies and receive extra benefits not available to other Chinese firms. In 2015, out of EUR 46 billion Chinese investment worldwide, EUR 31 billion investment was made by state-owned Chinese compa-



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nies (UNCTAD, 2015).In contrast, EU rules do not allow European firms to receive any aid from state. At the same time, these firms compete with Chinese firms that get privileged access to many facilities from their local/federal governments. However, recently we see some signs that show shift in China's policy of preferential treatment of Chinese firms (Hanemann & Huotari, 2015). The recently announced Chinese structural reform program aimed to transform Chinese economy a market-driven economy. For EU, it is important that Chinese government should be supported to implement this exhaustive program of structural reforms. At the same time, EU should demand that China should make rapid progress on priority basis to implement this reform agenda. Since long, Europe has been modernizing its own state companies. Modernization of state companies is also on the agenda of Chinese structural reforms. Europe can also share its experience with China. It is still unclear how long it will take for successful implementation for these structural reforms in China. The situation is risky and there exists strong conflicts of interest of large powerful stakeholders in China. EU policymakers need a careful analysis to come up with a strategy to how best help Chinese government in supporting investment by Chinese state-owned companies under new rules. At the same time, Chinese government needs to ensure that types and scope of government support for specific investments should be clear.

## Technology Transfer and Value-Added Economic Activities

Technology and other value-added economic activities can move out of host economies to the country providing FDI. For Europe, the emergence of China as the single most FDI provider has raised this concerns for a variety of reasons. First, China is an emerging economy and technology excellence is one core objective of this FDI. The strong industrial policies of China has a strong R&D focus (45). Many European firms enjoy leadership positions in their respective sectors and Chinese FDI is one way to get access to this knowledge and technology. Most Chinese investment in technology-related sectors is less than 5 years old and such a short track-record is not enough to support the hypothesis that the objective of Chinese investment in these sectors is transfer of technology from EU to China (Hanemann & Huotari, 2015). On a positive note, it is encouraging that Chinese companies have now changed their thinking and switching to gain access to technology by following an open and market-based mechanism. This indicates that China has made innovation and technology as one key element of its growth model. Chinese firm investing in European technology firms are increasing their R&D presence and strengthening the local workforce. Looking at the evidence available it appears that the thinking of Chinese investors about global R&D is no different from other investors in this sector. EU should develop policies that attract this large influx of Chinese investment in global R&D field. Both EU and its member states should develop strategies as to how this massive Chinese investment can be used to develop the national and regional innovation capacity and accelerate collaboration of European and Chinese firms. To better understand the probable negative impacts of technology seeking Chinese FDI, EU needs to carefully evaluate such investments in medium to long term. In particular, EU should assess, the trends of technology seeking Chinese FDI in sectors where China has implemented strong industrial policies and provide government support to its firms.

## National Security Issues

Host countries may have some national security concerns when a country make inward FDI. One concern is that the by giving ownership of national assets to foreigners, the functioning of economy can



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be affected. This is because such ownership can restrict access to those goods and services required for proper functioning of economy. Another concern is that foreigners can gain access to the channels of infiltration and surveillance into critical infrastructures (such as utilities). A foreign firm may transfer or deploy technology obtained from the host country in a way detrimental to the national interest of the host country. Most trade-cum investment agreements include a common condition is that there would be no security- related reviews and free capital flow would be guaranteed (Hanemann & Huotari, 2015).

With few exceptions, all major FDI providers in Europe were market economies with democratic political systems. China is the world's second largest economy and ranked among top five FDI providers in the world. China is an authoritarian regime with weak security ties with many of Chinese FDI recipient countries. Considering these facts, Chinese FDI presents new national security challenges for host countries in Europe (48). For Europe, screening Chinese investments is important to ascertain any risks to national security to EU countries. If considered necessary, mitigation measures should be taken and if that is not possible investments should be blocked. These screening mechanisms are a prerequisite to appropriately monitor and address national security threats. Most EU member countries already have appropriate and operational review processes but they vary from country to country (Hanemann & Huotari, 2015). Many countries still do not have investment reviews. For EU, Chinese FDI is a unique national security scenario and an overhaul of the fragmented security reviews in EU is needed to develop a more coordinated approach of security reviews. This overhaul is important for two reasons. Chinese European investments are now covering assets with both national and regional security implications (such as utilities). Second, the future Chinese investment in Europe is projected to increase to levels where a proper review of investment opportunities by small EU countries would be impossible. Three, EU needs close coordination with source countries to prevent the possible politicization of the investment opportunities. EU can use OECD's principles of investment reviews to develop best practices for screening investment opportunities for any national security threats. These best practices can help improve shared understandings of national security threats. Investment deals that could provide cross-border impact require more collaboration and exchange of information among EU countries. Another option to mitigate national security threats arising from investment opportunities is to make public basic information related to investment opportunities. This transparency is important given that over use of national security exceptions for approving inward investment have brought some significant security risks. Keeping in view these risks, many countries including China have developed national security screening frameworks.

## Deteriorating Standards and Work Practices

Another concern is that FDI, especially from emerging economies, can bring bad practices and deteriorate existing labor, environmental and other standards. This deterioration of standards and practices occur because the institutional and regulatory environment of emerging economies, in general, not well regulated. There are examples, such as the Chinese entrepreneurs' COSCO's operations in Italy and COVEC in Poland. EU needs to make sure that member states devise and enforce robust regulations to prevent the probable deterioration of work standards and practices due to FDI. Non-complying foreign companies should be subject to penalties and litigation. Doing so, EU can ensure that foreign firms, including Chinese firms, adopt work standards and practices of advanced more regulated economies regulatory. This would also ensure that EU member states would be able to subject non-complying firms to litigation.EU also needs to develop harmony in various standards (labor, environmental and other regulatory standards) of its member states.



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## POLICY IMPLICATIONS/RECOMMENDATIONS

### Better Data

China is a unique case of FDI and at the same time creates unique opportunities for Europe because of the size, growth and complementarities of Chinese economy. At the same time, some specific concerns that are related to the nature of China's political and economic system create some unique challenges. These concerns need addressed so that Europe can maximize the benefits of Chinese FDI while addressing all the concerns discussed so far. Following are some recommendations in this regard. China has emerged as a huge and relatively opaque investor and the current available data of Chinese FDI is inadequate. To understand extent, direction and trends of global capital flows, EU needs develop its national statistical agencies by adequate resources to improve data collection. EU can seek help from organizations such as the IMF, OECD and UNCTAD that are well equipped and resourceful. These organizations can help EU in real-time analysis of capital flows and improve the transparency of FDI.

### Investment Promotion System

Many EU member states have rich and effective investment promotion systems in place. Since China is a unique case of FDI for Europe, it important that existing European investment promotion systems are reviewed to identify the unique requirements for these systems. EU needs to identify and remove China-specific regulatory restrictions. A major focus of these investment promotion systems should be on innovation-based industries and post-acquisition expansions of the firms.

### Principle of Investment Openness

For Europe, it is important to keep following principle of investment openness to gain more Chinese investment by providing Chinese investors fair and equitable treatment. Growing Chinese FDI may trigger populist backlashes but government in Europe must defend liberalization of investments. Some countries, such as Canada, have introduced stricter laws and regulations especially for Chinese FDI (Hanemann & Huotari, 2015). There have been examples of politicization of Chinese FDI. One example is the takeover of US oil company Unocal by China National Offshore Oil Corp (CNOOC) in 2005. The deal failed due to harsh political reaction in the US against selling a majority stake of a US Company to Chinese state-owned enterprise. It is important for EU nation states to devise mechanisms to avoid such politicization that could hurt the reputation of the host countries in the eyes of potential large investors.

### Structural Reforms

Europe-wide implementation of structural reforms is needed to kick-start economic growth and continue to attract the massive Chinese investment in future. Ongoing crisis in euro region, a slow economic recovery, and structural deficiencies are some impediments that are diminishing the attractiveness of Europe. Besides fire sale opportunities, such as in Greece, EU member states should create the institutional and commercial environment needed to ensure Chinese firms investing in local firms should utilize the local factors of production in way that provides long-term economic growth and competitiveness of both member states and EU.



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### New Strategies for Investment Promotion Efforts

To realize the full potential of future Chinese FDI, EU needs strategically position the investment promotion efforts. Due to lack of experience, many Chinese firms needs different type of local support. A different type of investment promotion strategy is needed to attract investment from these firms. EU member states can use elements (such as high-level political support, post FDI support, local incentives etc.) in their investment promotion strategies.

### Investment Approaches for New Areas

Strong European economies need to accommodate specific Chinese needs especially in research and development and other innovation- intensive activities. These economies can improve their efficiency further by using targeted outreach based on investment patterns. Close collaboration among government officials at various levels and Chamber of Commerce of host nation and China would also help.EU can also explore cross-border projects in Europe attract more Chinese FDI.

## CONCLUSION

The new wave of Chinese FDI, characterized by a policy of liberalization and growth, is helping China become a driving force in global cross-border investments. This situation require European governments to adjust their economic policies towards China in order not only reap the benefits of this new source of capital but also to minimize potential new risks peculiar to European economies now intimately linked up with China for trade and investment. This policy change will also require European countries to have greater coordination, collaboration, and cooperation within and among nation states. Running state of affairs as it is now will mean Europe miss exciting new opportunities arising from this new era of Chinese FDI and undermine European interest. This, in turn, could trigger populist backlash against Chinese FDI but EU countries should be prepared to defend the liberalization of investments and Europe's economic integration with China.

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## KEY TERMS AND DEFINITIONS

**China:** It is a populous nation in East Asia whose vast landscape encompasses grassland, desert, mountains, lakes, rivers and more than 14,000km of coastline. The country is one of the highly emerging countries in the world chasing United States in its GDP and per capita income.

**Economic Development:** Economic development is the process and policies by which a nation improves the economic, political, and social well-being of its people.

**European Union:** The European Union is a politico-economic union of 28 member states that are located primarily in Europe.

**FDI:** Its full form is foreign direct investment. It is an investment made by a company or individual in one country in business interests in another country, in the form of either establishing business operations or acquiring business assets in the other country.



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**Global Integration:** Global integration can involve the processes of product standardization and technology development centralization.

**Global Markets:** A global market refers to the activity of buying or selling goods and services in all the countries of the world.

**Investments:** Investments are the action or process of investing money for profit.

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# Chapter 47
# An Investigation of the Return Risk and Liquidity Measure for Chinese Open-Ended Funds

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## ABSTRACT

*So far, the fund industry has become one of the four backbones of the Chinese financial system, together with the banking industry, the security industry and the insurance industry. In addition, open-ended fund shares are the mainstream of the fund industry, and the product characteristics and operational characteristics of open-ended funds will lead to an unavoidable risk of return with liquidity measure. Therefore, based on the theories of financial investment, this research profile the risk return and liquidity characteristics of three different open-ended funds in China, which are helpful to making rational investments. This article selects three different kinds of funds with the relevant data from 2012to 2017 from the Huaxia Fund Management Co. Ltd., for each fund, the authors report the beta, Sharp Ratio, Information ratio and illiquidity. These risk-return features are discussed in the context of the different asset classes that each fund has invested, thus eventually obtaining a fund which has smaller relative liquidity risk and higher return after comparing. Hence, the investor can make the rational investment from the analysis of empirical results.*

## 1. INTRODUCTION

China is a developing country with high saving rates, however, the low interest rates of banks are difficult to satisfy the requirements of investors for increasing values in loans and investments (Li, 2014). When it is compared with the foreign financial securities market, it has been discovered that the Chinese securities market has a shorter development history and the Chinese government treasury bonds have a higher safety, lower return and poorer liquidity. Moreover, open-ended funds can make up for the deficiencies of the above-mentioned investment methods, thus being popular among a number of investors

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in Chinese financial market. With the popularization of open-ended funds, its research is becoming more and more intensive. The focused attention is gradually evaluated through the performance evaluation, which is extended to risk control. Because investors can redeem the fund, the open-ended funds will keep a certain ratio; however, the assets with the high liquidity usually have the lower return and less income of the funds. Besides, the decrease of fund return will lead to further redemption and higher liquidity risk. Therefore, the core issues for fund management lie in how to coordinate the contradiction between return and liquidity.

In terms of the theoretical significance, there are relatively more relevant analysis and research on the stock return and liquidity in the financial filed. However, the researches on the fund return and liquidity are much fewer than those of the stock. Firstly, the investigations of open-ended funds have a certain research significance in China. Secondly, a number of scholars have various researches on the liquidity risk or the risk return for the stocks and funds, while there are few researches about the impact of the combination of risk return and measure of liquidity on the open-ended funds. Therefore, this study has accuracy significance on the research and analysis of the investment for open-ended funds. In addition, this paper selects three funds for keeping ceteris paribus and avoiding other uncertain factors. The factors of risk return, and measure of liquidity being addressed in the research could make shareholders and corporations take different measures briefly. Furthermore, it is helpful for the researchers to grasp the evolution law from studying the liquidity measure and risk return of Chinese open-ended funds.

This paper focuses on the liquidity measure and risk return of three specific and special open-ended funds (Huaxia Market Selection Mixed Fund, Huaxia CSI 300 ETF Fund and Huaxia Suelly Fund) in the Chinese fund market. Moreover, the research objectives of this module are to explore the different factors (Sharp Ratio, Beta, Information Ratio) of risk return combing with liquidity measures which have different influences on the three Chinese open-ended funds and explain which fund is significant for investors to make a valuable investment. In particular, it will address the following research questions:

1. As for the three different kinds of funds, whether the stock fund-Huaxia CSI 300 ETF Fund has a higher Sharp Ratio, Information ratio and Beta than the hybrid funds and bond funds;
2. To some extents, whether a higher Sharp Ratio, Information ratio and Beta have positive influence for the risk return of each fund in the two periods or not;
3. Combing the liquidity measure and comparing with other two funds, whether the Huaxia CSI 300 ETF Fund is the rational investment fund for the investors or not.

After that, the analysis results of Beta from the regression and Sharp Ratio, Information ratio from the formulation will be used. Combing the measurement of liquidity (ILLIQ), the three funds will be ranked based on single-sort for each factor. It is required to assign a score of 3 to the best, 2 to the middle and 1 for the lowest, so as to rank the funds. Afterwards, we will do this separately for each of the four characteristics and simply add up all the scores and see which fund has the highest score. Finally, we will select a fund with a higher return and a lower risk which is more conducive to investment.

This paper proceeds as follow. Section 2 provides a lit review and description of the funds and data. We outline the methodology in Section 3. Results are discussed in Section 4. Section 5 concludes.



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## 2. LITERATURE REVIEW AND DATA DESCRIPTION

### 2.1. Literature Review

In recent decades, the fund holders must be held in the hands of assets into capital at the same time with constant change and fluctuation of market price, which is very likely to result in loss of liquidity risk (Foran & Sullivan, 2014). The definition of liquidity is the time and cost which are related to the transition for the asset position in the cash and the vice versa (Brandon & Wang, 2013). Sathish & Srinivasan (2016) have stated if the Beta value is lower than 1, it means that the reactions of fund are lower than the market reacts. As to the standard deviation, a higher standard deviation stands for a higher risk while a lower standard deviation means a lower risk. Some scholars have interpreted the liquidity risk factors that have different influences on the open-ended funds. The betas are the liquidity risk factor, which has the significant and positive relationships with economy. Moreover, there are some economically significant alphas for the strategies of a number of hedge funds (Brandon & Wang, 2013). However, it has been demonstrated that there is a weaker influence of the liquidity risk for the non-equity hedge funds in this article. Therefore, this specific article has an obvious significance to explain the factors for liquidity risk which have stronger or weaker effect on these hedge funds through the empirical results. In addition, the six risk factors and the extended versions are evaluated in the performance of the optimal portfolios which are related to the different types of investors. Moreover, the value-weighted Standard & Poor's 500 index has been used as the benchmark factor for the excess return in the article, which is to be derived from the optimal portfolios and to compare the empirical results with the previously studies (Brandon & Wang, 2013). Although these studies explored a number of the fund portfolios and the excess return of the emerging markets which are related to equity market neutral, the influence of the liquidity risk is less strong on the strategies fund portfolios, indicating that the liquidity risk betas ($\beta$) are more insignificant and the alphas ($\alpha$) are the mostly significant. Therefore, the findings of the hedge funds may still be applied to the situation in the Chinese open-ended funds (Brandon & Wang, 2013).

Afterwards, if the liquidity risk declines below 5%, the redemption of the shares may be suspended temporarily. Moreover, similar findings have been found that there are some attractive classifications, which have a relationship with other assets with fewer risks and lower correlations; in addition, the NAV (net asset value) has been discounted over 20% through the market prices (Foran & Sullivan, 2014). Nevertheless, this article has clarified that the OPFs are preferred as the alternative investment on the real estate shares in German, which is a contrast with a number of other countries (Haß et al., 2012). Therefore, there are relatively scarce studies on the factors of liquidity risk that influence the open-ended funds. In terms of the other sections of these studies, the scholars have shown that the methodology used in analyzing is to recompute the return series for the result of free for the auto-correlation. Furthermore, the arbitrary autocorrelation structures could be detected, and the annual reappraisals will be handled (Foran & Sulliva, 2014). Additionally, Haß et al. (2012) have expressed the view that there is a positive skewness of OPFs which has been established through the empirical tests. In addition, the assumption of the normal distribution for the monthly returns have been rejected when the integrated sample is taken into account. Although there are a number of studies which have investigated the liquidity risk and open-ended funds, it seems that more researches should focus on the specific and particular kinds of the funds in different fund markets in various countries (Foran & Sulliva, 2014).



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However, O'Hara (2003), a well-known scholar, has pointed that price discovery and liquidity were two fundamental functions of financial market; also, good liquidity does not always exist in financial market and market liquidity suddenly disappears during the crises. Transaction expenses would increase significantly when the securities price decreased sharply and other responds leading to the failure of financial market emerged (Li, 2009). In 1952, Markowizt introduced the concepts of expectation and variance in statistics of portfolio research and used the variance of yield to measure the risk of securities investment for the first time. Because of its simplicity and wide application, the variance method has been widely accepted and applied by the theoretical circles and the financial industries (Li, 2009). Many scholars have tried to introduce liquidity cost into the model of value variance, so as to measure the liquidity risk with flat variance. Thus, the core of the theory from portfolio investment based on mean variance analysis is established on the modern financial theory (Li, 2009).

The liquidity discussed in this paper refers to the liquidity of the security and stock markets on the microeconomics level. Since Amihud (2002) has suggested a topic about asset pricing and sale spread, which was published in the Journal of Financial Economics, the author drives the market for the market investors and uses the different price in this paper. Then Lou& Shu (2016) have studied the Amihud (2002) measure's pricing from the new perspective of close link through the Amihud measure and trading volume. After that, they also used the return factors to examine whether the pricing of Amihud measure could explain its trading volume factor or not. The approach used in the paper has the same spirit with the approach being used for the SMB factor, for example, to examine whether the portfolio's abnormal returns could be attributed to the size factor or not (Lou & Shu, 2016). To solve the problem if high-frequency liquidity benchmarks can illustrate the pricing of the volume factor for the Amihud measure, Lou& Shu (2016) estimated Fama-MacBeth regressions of return on the constant Amihud measures, which are also the command for $\lambda$ and other liquidity factors. In addition, the research included the usual control variables such as size, book-to-market ratio and past returns, which control the momentum and short-term return reversion (Lou & Shu, 2016).

This research has less limitations. However, it is obviously necessary to include the factors of liquidity risk and the influence on the Chinese open-ended funds into the research. First of all, according to the particular characteristics and nature of the three funds and the different kinds of risk return factors for this research, the main three specific open-ended funds in the market may be influenced by the various risk return factors to different extends. Secondly, the significant or insignificant and stronger or weaker effects of the risk return on the three types Chinese open-ended funds which combined the specific measure of liquidity should be focused in this research.

## 2.2. Institutional Background and Data

This module selects three different open-ended funds from Huaxia Fund Management Co., Ltd. The company was founded in April 9th, 1998, which is one of the firstly established national fund management companies under the permission of the China Securities Regulatory Commission.

The company stands for a comprehensive and omnipotent fund management company. Its services cover a number of asset classes, industries and regions. Furthermore, it has constructed a diversified asset management platform based on public funds and institutional businesses. Huaxia Fund Management Co, Ltd. has been operated steadily and maintained the leading position in the industry with strong comprehensive strength. In terms of the public fund, Huaxia Fund Management Co, Ltd. has established a perfect product line. There are more than 110 kinds of public funds, so as to meet the various invest-



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ment demands of different investors. The main types of active management fund include 5 primary funds (currency funds, finance funds, bond funds, hybrid funds and stock funds) and other risk return assets. In the passive management, the company has built a complete product line, which contains the comprehensive coverage index, the weight stock index, small cap index, industry index and overseas market index. Furthermore, at the end of September 30th, 2017, the company has provided services for more than 40000 institutions and customers as well as more than 47 million public shareholders in China.

The open-ended fund is a kind of fund established by the fund sponsors and the fund units. Compared with the closed-ended funds, its total size of shares is not fixed. Additionally, the investors sell fund units or shares and could be a mode of operation of the fund investors' redemption. Yang & Hou (2016) have taken some advantages of management contracts with the obvious PPS information for closed-ended funds and studies, which has relationship with fund risk-taking behavior and fund PPS are correlative with the closed-ended fund industry. In contrast, ceteris paribus, the Huaxia Market Selection Mixed Fund is a hybrid fund in the open-ended funds; Huaxia CSI 300 ETF Fund represents the stock funds and Huaxia Suelly Fund stands for the bond funds in the open-ended funds. First of all, selecting the main three different kinds of Chinese open-ended funds in the WIND database from the same fund management company Huaxia Fund Management Co., Ltd.: Huaxia Market Selection Mixed Fund, Huaxia CSI 300 ETF Fund and Huaxia Suelly Fund. in which, Huaxia Market Selection Mixed Fund is a hybrid fund, Huaxia CSI 300 ETF Fund is a typical stock fund and Huaxia Suelly Fund is illustrated as the bond fund in the Chinese fund Market. Afterwards, the daily data from January 1st, 2012to September 30th, 2017 is used to do the empirical tests for the three funds, excluding days for which no number are quoted (weekends, legal holidays, etc.). Furthermore, the data is divided into two periods (2012-2014 is the first period, 2015-2017 is the second period). Then the average Beta, Sharp Ratio and Information ratio are calculated by doing the regression analysis of the three funds. Furthermore, the measure of liquidity risk (ILLIQ) is discussed in the empirical tests. The specific natures of the three funds are introduced in the following sections.

### 2.2.1. Investment Strategies

Therefore, it can be found that the investment strategies of the three funds have both similarities and differences. The same point of them is to gain the lower risk and higher return. However, as for the differences, Huaxia Market Selection Mixed Fund (000011) has been combined with some features of stock fund investment strategies for a long-term period, which is more complex than the other two funds. At the same time, Huaxia CSI 300 ETF takes the index information into consideration for the reaction of investment, which has shorter and more fluctuated strategies than the other two funds; Huaxia Sulley Fund has developed a long-term similar strategy, which is mainly based on bonds investment strategies. Table 1 shows the investment strategies of the three funds.

### 2.2.2. Asset Classes

Huaxia Market Selection Mixed Fund (Figure 1) (000011) is a leaning stock fund in the hybrid open-ended fund, which includes growth stocks, income stocks, mutual funds, bonds and other fixed income investment in the portfolio. The aim of hybrid fund is to allow investors to choose various funds through the diversification of investment without the need to purchase stock funds, bond funds and currency funds with different styles separately.

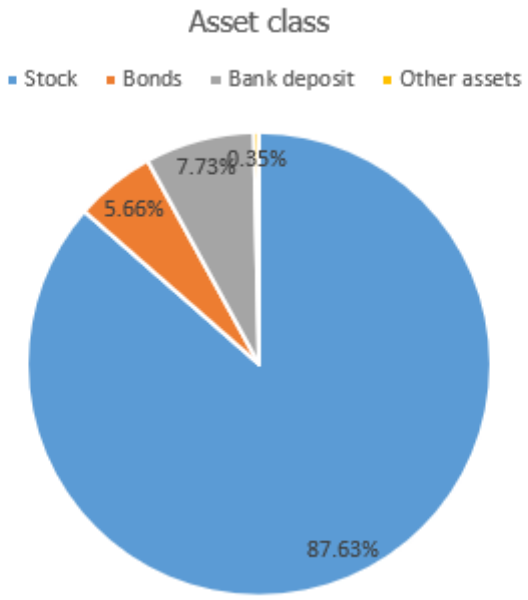


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*Table 1. Investment strategies of the three funds*

| Funds | Investment Strategies |
|---|---|
| Huaxia Market Selection Mixed Fund (000011) | The fixed proportion investment is used to pursuit of long-term value-added fund assets with the long-term smaller risk. In addition, the fund mainly adopts stock selection strategy "from bottom to top" according to the financial analysis and meticulous research of the listed companies. Then, it selected the well growth prospects and the market value was relatively undervalued of stock performance for the investment goals. The aim of this fund is to avoid the market risk and the risk borne by the fund. |
| Huaxia CSI 300 ETF Fund (000051) | The indexed investment is tried to be used to achieve the pursuit of benchmarking and the effective tracking of the index. In addition, it mainly purchases and redeems investment in ETF shares through exchange traded. The investors can also track the underlying index through buying underlying standard. The fund can also take part in trading, purchasing and redemption arbitrage of a moderate ETF fund share with the aim to increasing the return of the fund. |
| Huaxia Sulley Fund (000014) | The strategies to control of the premise of risk and achieve investment goals are mainly adopted, which contain debt allocation, long-term management strategy, yield curve strategy, buy back amplification strategy, credit bond investment strategy, SME private equity investment strategy, and other investment strategies. |

*Figure 1. Huaxia market selection mixed fund weights in various asset class*



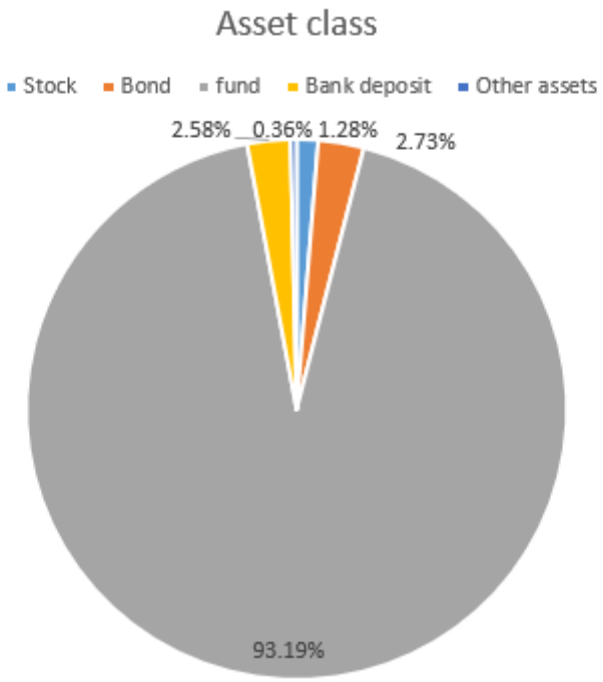

Additionally, it combines with the stock (87.63%), bonds (5.66%), bank deposit (7.73%) and other assets (0.35%), in which, the stock has the main portion in the asset class. It was issued to the public in Shanghai Stock Exchange in August, 2004in the amount of around 2 billion.

Huaxia CSI 300 ETF fund (000051) is an ETF fund in the stock open-ended fund (Figure 2). It combines with the stock (1.28%), bond (2.73%), fund (93.19%), bank deposit (2.58%), purchase of resale securities (0.14%) and other assets (0.22%). It was issued to the public in Shanghai Stock Exchange in 2009 in the amount of 25 billion.



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*Figure 2. Huaxia CSI 300 ETF fund weights in various asset class*




Stock fund refers to the fund investment in the stock market. According to the subject of investment industry, it can be divided into various industry funds. In addition, ETF funds are commonly known as exchange traded funds (Exchange Traded, Funds, ETF). They belong to a kind of Listed Open-end Fund containing a variable exchange traded fund shares. Furthermore, it is a special fund which combines the advantages of both closed-ended funds and open-ended funds. Therefore, investors and the fund managers cannot only purchase or redeem the fund shares, but also can trade the ETF shares at market prices in the stock market as closed-ended funds.

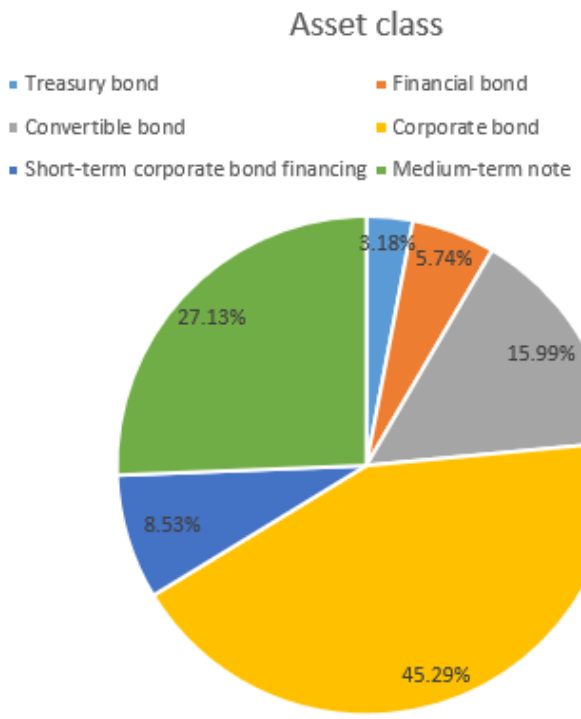
Huaxia Suelly Fund (000014) is a bond open-ended fund, which combines with the treasury bond (3.18%), financial bond (5.74%), convertible bond (15.99%), corporate bond (45.29%), short-term corporate bond financing (8.58%) and medium-term note (27.13%) (Figure 3). It was issued to the public in Shanghai stock Exchange in 2013 with the total amount of 4 billion. The bond fund is an investment in the bond fund, it also forms a portfolio (fund bonds, financial bonds and other fixed income instruments) of bonds as the main investment targets. In addition, because of its relatively stable earnings, it is known as the "fixed benefit fund."

Hence, the asset classes of three different funds are four, five and six, respectively. Because Huaxia Market Selection Mixed Fund is a leaning-stock fund, the main investment stock portfolio will be introduced below in details. However, Huaxia CSI 300 ETF Fund is a stock fund, it has some percentages of ETF Index, which influences that the fund to a certain proportion. In terms of Huaxia Suelly, it has the most asset classes in the three funds, which contain corporate bond, convertible bond and financial bond etc.



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*Figure 3. Huaxia Sulley fund weights in various asset class*




## 2.2.3. Portfolio Weight

Portfolio Weight is the fraction of the total investment in the portfolio for each individual investment in the portfolio. The detailed portfolio weight of each fund is stated in detail as follows.

Because the fund is a leaning-stock fund in the hybrid open-ended fund, which includes 41.69% stocks, 5.92% bonds, and some other financial assets. Furthermore, the investment institutions gradually become diversified with corporations and the policy bank bonds as the main investment institutions. Qingdao Haier, Midea Group and Wuliangye are the main three stock investment corporations for this fund; Agricultural Development Bank is the largest bond investment policy bank for the fund. Table 2 shows the portfolio weight of Huaxia market selection mixed fund.

Table 2 shows that Agricultural Development Bank and Qingdao Haier group occupy the largest percentages of holding bonds and the largest proportions of holding stocks for this fund. Furthermore, because Agricultural Development Bank is a Chinese policy bank and Qingdao Haier Group is a listed company ranked the top 500 in the world, the issuance bonds and stocks of these institutions are more stable and may have a better return. Therefore, the largest proportion of these institutions for the fund will have a certain impact on the risk and the return.

Since Huaxia CSI 300 ETF Fund is a stock fund, which contains ETF index and includes 0.28% stocks and some other financial assets (fund, bank deposit). In addition, its investment institutions are mainly corporations and commercial banks, in which, the PIN AN Insurance, Midea Group and SPDB are the main three institutions (Table 3).



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*Table 2. The portfolio weight of Huaxia market selection mixed fund*

| Bond and Stock | The Ratio of the Net Value |
|---|---|
| 15 Agricultural development bank 01 | 3.81% |
| 13 Agricultural development bank 06 | 1.27% |
| 17 China development bank 04 | 0.84% |
| Qingdao Haier | 6.05% |
| Midea Group | 5.12% |
| Wuliangye | 4.47% |
| Shanghai airport | 4.29% |
| Luzhou old cellar | 4.07% |
| CMBC | 4.05% |
| SAIC | 3.55% |
| KDX | 3.41% |
| CSCEC | 3.36% |
| OCT A | 3.32% |
| Total | 47.61% |

*Table 3. The portfolio weight of Huaxia CSI 300 ETF fund*

| Stock | The Ratio of the Net Value |
|---|---|
| Pin An Insurance | 0.05% |
| Midea Group | 0.04% |
| SPDB | 0.02% |
| Vanke A | 0.03% |
| PING AN Bank | 0.02% |
| CMCB | 0.02% |
| BOE A | 0.02% |
| Total | 0.28% |

Table 3 shows that Pin An Insurance is the largest proportion of holding stocks for this fund. Furthermore, because Pin An Insurance is Chinese policy bank and Qingdao Haier Group is a listed company ranked the top 500 in the world, the issuance stocks of this institution are more stable and may have a better return. Therefore, the largest proportion of these institutions for the fund will have a certain impact on the risk and the return (except other characteristics).

Since Huaxia Sulley Fund is a bond fund, which contains 33.91% bonds and some other financial assets (Table 4). In addition, its main investment institutions are corporate securities and bank securities, in which, the Jinyu Group, F referendum securities and Lianyungang securities are the main three investment institutions.



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*Table 4. The portfolio weight of Huaxia Sulley fund*

| Bonds | The Ratio of the Net Value |
|---|---|
| 16 Jinyu bonds 02 | 9.04% |
| 13 F referendum MTN1 | 5.62% |
| 17 Lianyungang CP001 | 5.36% |
| 15 Ex-im bank 09 | 4.28% |
| Vanke 3A1 | 0.07% |
| PR Far Eastern Group 5A | 1.41% |
| PR Jusi bonds A1 | 0.07% |
| Total | 33.91% |

Table 4 shows that Jinyu Group is the largest percentage of holding bonds for this fund. Furthermore, because Jinyu Group is a listed company ranked the top 500 in the world, the issuance bonds of this institutions are more stable and may have a better return. There are also other bonds of larger listed company for the holding bonds. Therefore, the largest proportion of these institutions for the fund will have a certain impact on the risk and the return.

Finally, the following is the detailed investment benchmarks of the three funds (Table 5).

Table 5 has shown that the benchmark of Huaxia Market Selection Mixed Fund (000011) has the relationship with the hybrid nature and can help the investors to make investment decisions. In addition, Huaxia CSI 300 ETF fund (000051) is the basic index in the Chinese stocks and funds market; Huaxia Suelly Fund (000014) is the less risky and stable rate in the financial market. These benchmarks separately have different effects on each fund.

## 3. EMPIRICAL METHODOLOGY

The broad methodology that will be used in the research is the empirical test. The methodology of this research will help readers understand the definitions of liquidity risk and open-ended funds easily. In addition, the aim of this research will be clarified through the methodology. The research will investigate whether risk return factors and liquidity measure have positive or negative influences on different kinds of Chinese open-ended funds. The detailed descriptions can be seen below.

*Table 5. The investment benchmark of three funds*

| Funds | Investment Benchmark |
|---|---|
| Huaxia Market Selection Mixed Fund (000011) | FTSE China A200 Index * 80% combine with FTSE China National Debt Index * 20%. |
| Huaxia CSI 300 ETF fund (000051) | Shanghai and Shenzhen 300 Index Yield * 95% + 1% (refers to the annual rate of return, the evaluation should be made by period conversion). |
| Huaxia Suelly Fund (000014) | One-year time deposit rate (tax after) + 1.2%. |



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## 3.1. Regression Specification

The Linear Regression is the statistical technique which identifies the best-fitting line through a series of points. The specific equation is as follows:

$$(Ri - rf) = \alpha i + \beta i(RMkt - rf) + \varepsilon i$$

- $\alpha i$ is the intercept term of the regression;
- $\beta i(RMkt - rf)$ represents the sensitivity to market risk. When the market's return increases by 1%, the security's return increases by $\beta i$%;
- $\varepsilon i$ is the error term and represents the deviation from the best-fitting line. It is zero on average;
- $\gamma_f$ is the risk-free return which comes from the one-year deposit rate of the latest interest rate benchmark issued by The People's Bank of China in Chinese financial market, $\gamma_f = 1.5$ in 2017;
- RMkt is the market return which is the fund index in the Shanghai Stock Market.

The beta is the weighted average beta of the securities in the portfolio and acts as the measure of sensitivity to systematic risk. In addition, unlike volatility which measures total risk includes systematic risk and unsystematic risk, beta is a measure of only systematic risk. Since beta is the sensitivity to market risk of assets and the measure of excess returns, a higher value explores a higher risk and return. This research separately selects the covariances and the variances of the three funds. In addition, the period from 2012 to 2017 is divided into two stages. Additionally, the average six betas and the values of t-test are calculated respectively.

Furthermore, the most common test for the regression is the t-test which can be used to test a single restriction. Firstly, supposing the null hypothesis is $\beta_k = q$ for some given value q and considering the test statistic $t = (b_k - q)/se(b_k)$. Supposing the researcher wants to test the null hypothesis ($H_0$) that the true coefficient is $\beta_k = 0$, it will reject the null hypothesis if the absolute value of t(the ratio) is 'too large'(1.64 at 10%, 1.96 at 5% and 2.58 at 1% confidence level).Supposing it tests with 95% confidence, the researchers may reject the null hypothesis if the absolute value of t is larger than 1.96.

The ratio $t = (b_k - q)/se(b_k)$ is the t-value and is routinely supplied by any regression package with null hypothesis that $\beta_k = 0$. In addition, In case of being rejected, it is said that "bk differs significantly from zero" or "the corresponding x variable has a statistically significant impact on y" or simply "the ' variable is statistically significant." It is important to also look at the magnitude of beta (economic significance).

## 3.2. Measure of Liquidity (ILLIQ)

The Martin index measures the flow of the daily rate change to the ratio of the daily transaction. The trading volume and the pricing change are included in the measure of liquidity, which is related to the price impact. In terms of Amihud measure, the transaction cost dimension can probably be grasped by the difference of sale price; the dimension of the price impact can also be reflected. The measure is a better and low frequency indicator in the stock market. The specific equation is as follows:

$$ILLIQ = Rt/Vt$$



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- Rt stands for the daily price change value of assets;
- Vt refers to the daily trading volume of assets.

From a certain point of view, these features indicate this measure. It means the bad characteristics for the fund return and the poor liquidity contributes to the risks in the securities market. This research separately selects the monthly trading volume and the monthly transaction price of the three funds, and the period from 2012 to 2017 is divided into two stages. Furthermore, the average six indexes of ILLIQ are calculated respectively.

## 3.3. Sharp Ratio

The purpose of Sharp Ratio is to calculate the amount of excess return for each portfolio to bear the total risk. The ratio is based on the concept of Capital Allocation Line (CAL), which is the most common measurement ratio in the market. In equilibrium, the capital asset prices have been adjusted, so that if the investors follow rational procedures (primarily diversification), they could achieve any desired point through a capital market line. This possibility also suggests both a plausible interpretation of the implication which contains all efficient combinations will be perfectly correlated and an interpretation for the relationship between expected return and the risk of investors assets (Sharpe, 1964).

The Sharp Ratio is applied when the assets of the portfolio are whole risky assets. Additionally, the index means that investors can get some extra returns when they take every risk. If the ratio is positive, the return of the fund is higher than the fluctuation risk; if the ratio is negative, the operation risk is greater than the return of the fund. As a result, each portfolio can be calculated with Sharp Ratio to estimate the return ratio on investment combing with multiple risk. The Sharpe theory has explored that investment should take the smaller risk for the larger return as much as possible in a scientific way, therefore, investors should become mature and try to avoid worth less risks. At the same time, when investors who lack investment experience and prefer to invest in portfolio, Sharp Ratio can be the professional index helping the investors to establish a suitable risk minimization portfolio. These portfolios can be measured by Sharp Ratio to estimate the proportion of risk and return. It is the measure the ratio of reward-to-volatility provided by a portfolio. The specific equation is as follows:

$$\text{Sharp Ratio} = \frac{PortfolioExcessReturn}{Portfolio\,Volitilaty} = \frac{E\left[Rp\right] - Rf}{SD\left(Rp\right)}$$

- E[Rp] is the excess return of each asset;
- Rf is the risk-free return which is the risk-free return which comes from the one-year deposit rate of the latest interest rate benchmark issued by The People's Bank of China in Chinese financial market, Rf = 1.5 in 2017;
- SD is the average standard deviation of each asset.

This research separately calculates the average excess return and average standard deviation of the three funds, and the period from 2012 to 2017 is divided into two stages. After that, the six average Sharp Ratios are calculated respectively through risk free rate and equation. This characteristic is related to the Sharp Ratio which will be discussed in detail as follows.



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## 3.4. Information Ratio

The information ratio divides the alpha of the portfolio by the nonsystematic risk which could be eliminated by diversification. The calculation method is similar to the Sharp Ratio, while the factors of performance comparison are introduced. The equation which is in detailed as follows:

Information Ratio = $\alpha p / \sigma(ep)$

- $\alpha p$ is the Alpha for the portfolio;
- $\sigma(ep)$ is standard deviation for the portfolio.

Information ratio is the excess return corresponding to unit tracking error; the larger information ratio indicates the fund can get more excess returns at the same tracking error level. As for the measure of portfolio performance, the Sharp Ratio, Jansen index and Treynor index are known to investors for the risk measure. However, the Information Ratio is also known as "performance evaluation index" (Appraisal Ratio). In short, it is a measure of the funds and can get excess returns which used to measure the unsystematic risk per unit .The Sharp Ratio has the clear client point of view with the proportion of return, if the Sharp Ratio has the high proportion, it means the investors can decrease the absolute return for higher returns as long as the leverage and the risk is relatively small. However, the information ratio shows that the risk return has the relationship with a benchmark rather than cash due to active managers, so the significance of the information ratio is that it is one of important investment characteristic to the managers and investors.

This research separately selects the covariance and the variance of the three funds, and the period from 2012 to 2017 is divided into two stages. Furthermore, the average six Betas and the values of t-test are calculated respectively.

## 4. EMPIRICAL RESULTS AND LIMITATION

As the fund size increases, the investors are believed to have confidence on that obviously increasing fund and the corresponding fund return. And the factors have some negative and insignificant impacts the return, just as the liquidity and load fee (Rehman & Baloch, 2015). As for this research, this section analyzes the empirical results of data based on the characteristics and methodology which are described in the above parts. Moreover, the research assigns points to each ranking outcome and adds up all the points to see which fund has the highest point value (high means the score is 3, medium means the score is 2, small means the score is 1). After that, limitations on doing this research will be explored, with details listed in the following paragraph.

## 4.1. Beta and T-Test

First of all, the six $\beta$ values and the t-test values are observed from doing the regression of the three funds daily net value index in 2012-2014 and 2015-2017 two periods. The results in the table are in details as follows (Table 6).



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*Table 6. The beta of three funds*

| β | 2012-2014 | 2015-2017 |
|---|---|---|
| Huaxia Market Selection Mixed Fund (000011) | 0.75230226<br>(2.83) | -0.909148936<br>(-8.38) |
| Huaxia CSI 300 ETF Fund (000051) | 1.019293785<br>(1.11) | 1.069331307<br>(0.43) |
| Huaxia Sulley Fund (000014) | 0.0032080378<br>(13.72) | 0.0040075988<br>(12.48) |

As the above table indicates, according to the natures of the three different funds, except the β of Huaxia Market Selection Mixed Fund (000011) in the second stage is negative, all βs of these three funds are positive and different from each other. Huaxia CSI 300 ETF Fund (000051) has the highest β in the two periods and Huaxia Sulley Fund (000014) has the lowest β which is far from the other two funds. However, the β of Huaxia Market Selection Mixed Fund (000011) in 2012-2014 is medium among these three funds, which are different from the other two funds. Moreover, the β of Huaxia CSI ETF Fund (000051) is insignificant according to the t-test. The analysis and explanation of β and t-test values are indicated as follows in details.

In terms of the β value, because the asset class of Huaxia Market Selection Mixed Fund (000011) includes some percentages of stock and it is a leaning-stock fund in the hybrid funds, its β value is lower than that of the stock fund-Huaxia CSI ETF Fund (000051) and higher than that of the bond fund-Huaxia Sulley Fund (000014). Since the economic situation is relatively stable and the fund management corporation takes some different measures on this fund in 2015-2017, the β value of Huaxia Market Selection Mixed Fund (000011) has significant to do something with the risk return in the second stage. Besides, the t-test value of Huaxia CSI ETF Fund (000051) is lower than 1.96, reject the null hypothesis (except the reason for the smaller number of samples), β value may cannot explain something for the risk return of this fund. Then the β value of Huaxia CSI ETF Fund (000051) has not changed obviously in two stages because this fund is a stock fund of higher risk and higher return, which has been affected through some similar nature of the stock assets. The fund management corporation may have not taken some different measures on this fund in the two periods. As for the bond fund-Huaxia Sulley Fund (000014), the reason for its extremely lowβ value is because this fund is a bond fund, which has a relative stable asset class contains financial bond, convertible bond and the risk and the return is lower than the stock portfolio. Moreover, because the overall asset scale is smaller than the other two funds and the time of being issued is later than them. Additionally, the t-test value of β value is significant, which may have the significant explanation of the risk return for this fund and a better reference characteristic. The t-test value of β value for Huaxia Market Selection Mixed Fund (000011) in 2015-2017 is also significant.

Because β has something to do with the risk return, a higher β has a higher risk and a higher return while a lower β has a lower risk and a lower return. The stock fund-Huaxia CSI ETF Fund (000051) may have a higher risk and a higher return while there might be no more influence on the risk and return. The bond fund-Huaxia Sulley Fund (000014) may have the lowest risk and lowest return among these three funds. Huaxia Market Selection Mixed Fund (000011) may have the medial risk and return. Because β measure means the sensitivity for the risk, which is not a good value for this study, therefore, if the



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value is higher, the score will be lower. Huaxia Sulley Fund (000014) is the most stable with 3 scores; the Huaxia Fixed Market Selection Fund (000011) is scored 2; Huaxia CSI ETF Fund (000051) is scored 1 combining with because of the significant β value.

## 4.2. Measure of Liquidity(ILLIQ)

Furthermore, the average six ILLIQ measures of three funds through the monthly pricing change and the monthly trading volume of each fund in 2012-2014 and 2015-2017 two periods are calculated. The average results are in details as shown in Table 7.

As Table 7 displays, according to the natures of three different funds, the whole six measures are positive in these three funds and different from each other. Huaxia Sulley Fund (000014) has the highest value in the two periods, and Huaxia CSI ETF Fund (000051) has the lowest value which is far from other funds. Therefore, the ILLIQ has something to do with the illiquidity. Because a higher ILLIQ brings about a higher risk while a lower ILLIQ results in a lower risk, the hybrid fund - Huaxia Market Selection Mixed Fund (000011) may have the medium risk; the bond fund Huaxia Sulley Fund (000014) may have the highest risk among the three funds; the stock fund Huaxia CSI ETF Fund (000051) may have the lowest risk.

The nature of bond fund- Huaxia Sulley Fund (000014) is a little different from the other two funds. Although the main asset class of this fund is steady bond, the small-sized publish scale and the later time of issuance may have some impact on the liquidity of this fund. The highest ILLIQ value among the three funds means that Huaxia Sulley Fund (000014) has the highest liquidity risk. In addition, the ILLIQ value of Huaxia CSI ETF Fund (000051) is the lowest in these three funds due to the proper management measures of fund manager, the largest issuance scale among the three funds and less uncertain shares of redemption. The medium ILLIQ value for Huaxia Market Selection Mixed Fund (000011) are caused by its nature of hybrid fund and the longest publish time among the three funds. Therefore, the ILLIQ means the illiquidity of the securities, which is not the good measure for the liquidity and risk return. If a higher value will lead to a lower score. Huaxia Sulley Fund (000014) is the highest with 1 score; Huaxia Market Selection Mixed Fund (000011) is scored 2 in the middle; Huaxia CSI ETF Fund (000051) is scored 3 with the lowest ILLIQ value.

## 4.3. Sharp Ratio

In addition, the average SR (Sharp Ratio) of three funds through the average excess return and average standard deviation of each fund in 2012-2014 and 2015-2017 two periods will be calculated. The average results are indicated in detail as shown in Table 8.

*Table 7. The ILLIQ of three funds*

| ILLIQ (Sharp Ratio) | 2012-2014 | 2015-2017 |
|---|---|---|
| Huaxia Market Selection Mixed Fund (000011) | 4.1309056 | 3.91219653 |
| Huaxia CSI ETF Fund (000051) | 2.020012267 | 2.036302133 |
| Huaxia Sulley Fund (000014) | 6.151964367 | 5.1226521 |



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*Table 8. The sharp ratio of three funds*

| SR (Sharp Ratio) | 2012-2014 | 2015-2017 |
|---|---|---|
| Huaxia Market Selection Mixed Fund (000011) | 0.900706215 | 1.749422492 |
| Huaxia CSI 300 ETF Fund (000051) | 0.473347518 | -1.567335375 |
| Huaxia Sulley Fund (000014) | 1.94471111 | 2.36271825 |

Table 8 shows that the Sharp Ratios of the three funds are different in the two periods. Huaxia Market Selection Mixed Fund (000011) still has the medium value in the three funds; Huaxia Sulley Fund (000014) has the largest and significant value in the two stages; Huaxia CSI 300 ETF Fund (000051) has the lowest ratio of the three funds and the negative value in 2015-2017 period. Moreover, if the Sharp Ratio is higher, the volatility of the investment return will become smaller. Huaxia Sulley Fund (000014) is the most stable and has the smallest volatility in the three funds. However, Huaxia CSI 300 ETF Fund (000051) has the greatest volatility of them and Huaxia Market Selection Mixed Fund (000011) has the medium volatility in the three funds. As for the reasons of higher, lower and negative Sharp Ratios, it can be seen and summed up as below.

Sharp Ratio means the ability to resist fall of each fund and it is estimated by using the regenerated sample, the risk-free rate and the conservative yield rate. With the negative value, it means that Huaxia CSI 300 ETF Fund (000051) has a significant and poor ability to resist fall and higher risk in 2015-2017 because it has the nature and fluctuate investment strategy of the ETF index fund in the stock fund. Moreover, since Huaxia Sulley Fund (000014) is a bond fund, which contains stable, less risky and rather safe bonds in the asset class, it has the smallest Sharp Ratio with smaller standard deviation and has not been changed significantly in the three funds. As a contrast of this fund, the holding stock price for Huaxia CSI 300 ETF Fund (000051) has obvious greater volatility than the other two funds and the asset class includes the higher risk stocks and liquidity index assets. That's why the Sharp Ratio of this fund has the significant change with the relatively great standard deviation and has the negative value in the second period. Because Huaxia Market Selection Mixed Fund (000011) is a leaning-stock in the hybrid funds and the manager of this fund holds a long-term and moderate investment strategy, the Sharp Ratio of this fund is medium with the obvious change in the two periods with the same reason (the change of manage measure for this fund in 2015-2017 period) in the section of beta analysis.

Hence, the Sharp Ratio means the relationship with the excess return of the securities, which is the better characteristic for measuring risk return. If the value is higher, the score will also be higher accordingly. Huaxia Sulley Fund (000014) is the highest with 3 scores and the Huaxia Market Selection Mixed Fund (000011) is also scored 2 as the medium, Huaxia CSI ETF Fund (000051) is scored 1 with the lowest Sharp Ratio in these three funds.

## 4.4. Information Ratio

Finally, observing the six Information Ratio value from doing the three funds daily net value index in 2012-2014 and 2015-2017 two periods; the results in the figure are in detail as shown in Table 9.

As the figure showed, the Information ratio has the different results of three funds in the two periods. In addition, Huaxia Market Selection Mixed Fund (000011)has the higher value in the three funds and Huaxia Sulley Fund (000014) has the low and significant negative value in the two stages while Huaxia



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*Table 9. The information ratio of three funds*

| IR (Information Ratio) | 2012-2014 | 2015-2017 |
|---|---|---|
| Huaxia Market Selection Mixed Fund (000011) | 0.148677686 | 0.187470238 |
| Huaxia CSI 300 ETF Fund (000051) | 0.067561983 | 0.074826915 |
| Huaxia Sulley Fund (000014) | -0.060022989 | -0.154657738 |

CSI 300 ETF Fund (000051) has the medium ratio of three funds and the negative value in 2015-2017. Moreover, if the information ratio is large, the excess return of the fund will become higher; Huaxia Market Selection Mixed Fund (000011)may have the higher excess return in the three funds and Huaxia Sulley Fund (000014)may have lower excess return in the three funds. The detailed reasons of higher, lower and negative information ratio can be seen below.

There is a problem of information ratio. If the value is negative, the fund manager of this fund may not be able to make the largest excess returns with the relatively smaller excess risk. Therefore, the fund manager of Huaxia Sulley Fund (000014) may take some improper management measures to this fund, which add the smallest published scale and the latest issuance time through these funds. The information ratio of this fund is the smallest in the three funds and has no obvious change in the two periods. Additionally, the information ratio of Huaxia Market Selection Mixed Fund (000011) is the highest in the three funds and also has no obvious change due to the nature of this fund, the proper management measures of fund manager in the two periods and the measure of excess returns. The information ratio of Huaxia CSI 300 ETF Fund (000051) is the medium value in these funds and almost has no changes in 2012-2014 and 2015-2017 periods, which have some reasons that are not steady investment strategy as the Huaxia Market Selection Mixed Fund (000011).

Hence, the information ratio refers to the relationship with the Sharp Ratio of the securities, which is the better characteristic for the measure of risk return. If the value is higher, the score will also be higher. Huaxia Market Selection Mixed Fund (000011) is the highest with 3 scores; the Huaxia CSI ETF Fund (000051) is scored 2 as the medium; Huaxia Sulley Fund (000014) is scored 1 with the negative information ratio in these three funds.

## 4.5. Estimation and Limitation

From the analysis above, there are some estimation and limitation of this research, which will be explored in detail as follows.

### 4.5.1. Estimation

Considering all the characteristics and measures above, as indicated in Table 10, Huaxia Market Selection Mixed Fund (000011) has the highest scores (9) in the three funds. In addition, Huaxia CSI 300 ETF Fund (000051) has the lowest scores (8) in these funds while Huaxia Sulley Fund (000014) has the medium scores (7) in them. In terms of the rational investment for three funds, the investors are sug-



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*Table 10. The summary scores of three funds*

| Funds | Beta | ILLIQ | Sharp Ratio | Information Ratio | Total Score |
|---|---|---|---|---|---|
| Huaxia Market Selection Mixed Fund (000011) | 2 | 2 | 2 | 3 | 9 |
| Huaxia CSI 300 ETF Fund (000051) | 1 | 3 | 1 | 2 | 7 |
| Huaxia Sulley Fund (000014) | 3 | 1 | 3 | 1 | 8 |

gested to combine the risk return theory with the risk-aversion theory of funds. The development of the theoretical relationship between risk and expected return are built on two economic theories: portfolio theory and capital market theory. Table 10 shows the summary of the three funds.

Portfolio theory deals with the selection of portfolios to maximize expected returns consistent with individually acceptable levels of risk. It covers how do investors under assumed conditions select the assets to be included in a portfolio. However, the failure to quantify these important measures made constructing a portfolio of assets highly subjective and provided no insight into the return investors should expect. In terms of the capital market theory, it deals with the effects of investor decisions on security prices and shows the relationship existing between security returns and risk. If investors construct portfolios as indicated by portfolio theory, the portfolio theory and capital market theory yield a framework to specify and measure investment risk then develop an equilibrium relationship between risk and expected return. With regards to the risk-aversion theory, the attitude of different people toward risk is different. Some people may have interest in the stimulation while others might be more willing to be stable. The investors are divided with three types: risk-preference, risk-neutral and risk-aversion types. As the theorem of Arrow shows that if an investor becomes less risk-averse with higher wealth in terms of absolute risk aversion, he/she will invest more in the risky asset. In case of having the same return, they prefer to the assets with low risk and are interested in assets with high expected return for the assets with similar risk. Contrary to the risk-aversion, the risk-preference investors usually think the benefit of the volatility is better than the stability and seek the risk. The risk neutral investors usually do not avoid risks and pursue risks. Regardless of the risk conditions, they just consider the size of expected returns for the assets.

First of all, the conservative investors of fund who are risk-aversion may prefer to Huaxia Market Selection Mixed Fund (000011) and Huaxia Sulley Fund (000014) as the rational investment portfolio, which have fewer risks and more stable returns. After that, neutral investors of fund who are risk-neutral may have the interest in these three funds as the rational investment portfolio, which have relatively fewer risks and more returns in the three funds. As for aggressive investors of fund who are risk-preference may prefer to Huaxia Market Selection Mixed Fund (000011) and Huaxia CSI 300 ETF Fund (000051) as the rational investment portfolio, which has the highest risks and most returns in the three funds.

### 4.5.2. Limitation

This study takes into the comprehensive consideration of the data choosing and estimation analysis as much as possible. However, there are still some limitations. First of all, as for the selection of the data, the coverage may not contain all types of funds, such as currency funds, leaning-bond funds in hybrid funds. Therefore, the empirical results only depend on the selected data. Secondly, there are only data



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of three funds in this research while it has no methodology to do more models and analysis due to the data restriction. Thirdly, the published time (2013) of Huaxia Sulley Fund (000014) is later than other funds, which may have some negative influence on the data select.

In addition, the characteristics of risk return, and measures of liquidity are not entirely selected in this research, such as Alpha, turnover rate and some other measures. Except the regression specification, there are no more models and analysis methodology in this module, such as the Capital Asset Pricing Model and Fama French three factors Model. Also, some characteristics need to be further explored by the analysis of data.

Therefore, if this research considers these limitations, it may have more specific and accurate results, so as to draw more suitable and rational investment suggestions for the investors.

### 4.5.3. Future Research Directions

Chang (2014) presented the "Business Intelligence as a Service" to demonstrate how financial analysis can be conducted in real time. If our financial analysis can be performed in real-time, it can effectively enhance the functionality of our financial services. Maintaining a high security and privacy is also important to ensure all data can be protected from large-scale hacking (Chang and Ramachandran, 2016). Additionally, having all our services and data presented in analytics can allow decision-makers and users to understand the implications and meanings of their services (Chang, 2017). What's more, how to prevent tax avoidance and tax invasion has become increasingly more important. Newman et al (2018) introduced ways to measure tax avoidance and invasion. In this way, it can enable our proposed recommendation to become more robust since we can detect any suspicious and criminal activity. In summary, all these will be relevant to the future trends, so that our future work can be developed on top of the combination of these three areas.

## 5. CONCLUSION

In the first place, as for the research questions and hypothesis for this module, the stock fund-Huaxia CSI 300 ETF Fund (000011) has the higher Sharp Ratio and Beta than the hybrid fund-Huaxia Market Selection Mixed Fund (000011) and bond fund-Huaxia Sulley Fund (000014), while this fund has no higher information ratio through these funds. To some extents, higher Sharp Ratio and Information ratio have positive influence on the risk returns of each fund in the two periods while higher Beta has negative effect on the risk return for these funds. After analyzing the three funds in this research, the conservative investors of fund who are risk-aversion may prefer to Huaxia Market Selection Mixed Fund (000011) and Huaxia Sulley Fund (000014) as the rational investment portfolio; neutral investors of fund who are risk-neutral may have the interest in the three funds as the rational investment portfolio. The aggressive investors of fund who are risk-preference may prefer to Huaxia Market Selection Mixed Fund (000011) and Huaxia CSI 300 ETF Fund (000051) as the rational investment portfolio.

Furthermore, the data of this research comes from the Chinese fund market and the Chinese fund management company, which can be used for the reference with the development of Chinese fund market and the rational choice with higher income and lower risk of investors and investment institutions.



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Compared with the whole financial market in the world, the western fund market and financial market have different situations with the Chinese market, which are affected through a series of factors. However, the financial market follows the same economics theory in various areas, such as the capital market line model, the regression and t-test theory etc. Therefore, this research also has reference for the western financial market and fund market to some extent.

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# Chapter 48
# Trade and Economic Integration in BRICS:
## Towards Multi-Polarity

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## ABSTRACT

*This chapter examines the existing pattern in the area of trade and economic integration among the BRICS countries which was tended to be neglected and to which there have been few original or significant contributions until now. The research results indicate the presence of the long-run sustainable equilibrium relationship between Foreign Direct Investment (FDI), trade and economic growth. It is thus important that policymakers have to remove obstacles to FDI inflows and improve the respective absorptive capacity of national economies in order to maximize positive growth effects. This study also discusses how China performed well through attracting FDI inflows and maintained trade balance.*

## INTRODUCTION

The balance of economic power from the West (which dominated during the last four-five centuries) has been dramatically shifting to the East since 2007 when major capitalist developed countries including the USA faced economic recession. As an emerging regional block, BRICS (Brazil, Russia, India, China, and South Africa) plays a significant role through acquiring technological capacity, internalizing capability to exploit resources, and developing infrastructure. The gap between demand and supply is reducing through improving production capacity and distribution networks with the principles of collective self-reliance at the South-South level. BRICS countries have increased their trade, financial and technical cooperation and established distinct ways and means of economic cooperation, especially through south-south cooperation with three continents, namely Africa, Latin America, and Asia. BRICS countries are striving for more economic and political influence, thereby challenging western-dominating "global economic order", which has maintained currency supremacy of US dollar and Euro through international financial agencies like the World Bank and the International Monetary Fund (IMF) since the Second World War.

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Russia hosted the seventh BRICS summit on July 9–10, 2015, in Ufa, the capital of the Republic of Bashkortostan, gathering the heads of state of the five countries.

Expanding investment cooperation and exploring a strategy for multilateral economic cooperation were the centerpieces of Russia's 2015 agenda in the framework of BRICS. At the 2014 Fortaleza summit, BRICS countries decided to establish the New Development Bank (NDB) and the Contingency Reserve Agreement (CRA). The CRA is especially relevant for addressing the shrinking foreign reserves of Russia.

BRICS has an enormous potential of consumer market, large middle-class, abundant supply of natural resources, well-developed financial parameters, good communication and networks, sound legal system, and modern infrastructure supporting an efficient distribution of goods and services among member states and other developing countries (Vijayakumar, Sridharan, & Chandra Sekhara Rao, 2010).

In terms of combined GDP, BRICS economies put together are already larger than the USA and the European Union (Naude, Szirmai, & Lavopa, 2013). BRICS economies are stable with high growth rates, economic potential and demographic development, and intensified economic cooperation linkages with other developing countries not only with regard to trade and financial flows but also as emerging donors. Europe and the USA were drivers of economic and trade growth in the 19th and 20th centuries, respectively (Sajal, 2013).

BRICS encompasses over 25% of the world's land coverage with 43% of the world's population; holds a combined GDP (PPP) of $24,000 billion (which increased more than three times in the last fifteen years). Over the past ten years, BRICS countries increased their share of global gross domestic product from 18% to 28%. BRICS' share in global exports is also expected to grow from 12.4% to 20.1% in 2014. BRICS countries hold $3.93 trillion of foreign reserves, which is over one-third of the global reserves. The overall BRICS focus of development cooperation lies on regional integration and technical assistance with various regional groups in Latin America, Association of Southeast Asian Nations (ASEAN), Asia-Pacific region in Asia, and in African countries. From a purely demographic point of view, India and China have the highest economic prospects due to their huge population and sufficient capital accumulation, which favor and support the BRICS agendas.

However, trade and the current foreign direct investments (FDI) inflow into BRICS are extremely complex. They are subjects to various factors related to the competitive environment. This study intends to examine the patterns of trade, economic growth, as well as the major determinant factors of FDI inflow-outflow. Currently, domestic investment ratios are around 40% and 30% of GDP in China and India, respectively. Investment ratios of Brazil, Russia, and South Africa account to 20-23% of GDP.

The central premise of this study is to investigate FDI and trade both between BRICS countries and internationally, and to assess their combined impact on economic growth within BRICS. There are several studies contributing to the economic literature on the subject. The existing literature includes a number of surveys, case studies, and some empirical studies, which formulate cross-sectional analysis and discover a set of explanatory variables that determine FDI, trade and growth of BRICS. However, some earlier studies investigated the relationship between FDI, trade, and economic growth for transition economies and developing economies as well as for groups like ASEAN and the European Union. Nevertheless, the available research literature pertaining to BRICS countries is still limited. In this context, author's study intends to examine the role of FDI flows and trade in BRICS's economic growth by employing long recent data. Author hopes, that this actual study will contribute largely to the literature on incoming FDI, trade and economic growth in BRICS, and can be extended to other countries as well.



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## BACKGROUND

BRICS' significance in terms of trade flows has risen sharply in recent years since the economic crisis. Outward investments are concentrated in the sectors where the home economy has relatively well-developed capabilities. Outward investments are also important for the further development of those capabilities. FDI represent a major source for capital-intensive projects from multinational companies (MNC) worldwide. Due to the global economic recession since 2007 developing countries like Mexico, Indonesia, Nigeria, and Turkey (called MINT), India, China, Asia-Pacific countries, and other East and Southeast regions became the most competitive hosts of foreign capital. Empirical studies regarding the link between FDI, trade, and economic growth in BRICS are not sufficient.

In addition, financial services and pharmaceutical cases underline that there are important complementarities in key sectors supporting capability development and internationalization of firms when BRICS countries are both home and host economies (Gelb, 2014). The study of Ho, Ahmad, and Dahan (2013) also analyzed that trade between BRICS countries and the rest of the world has grown expressively with China and Brazil being the world's quickest rising economies. As international consumption and international production shifted to emerging economies (BRIC), MNCs are increasingly investing in these countries. In order to utilize this trend of FDI it is important to look back and consider the status of India's FDI attracting position among other BRICS countries (Mathipurani & Rachel, 2014). This study is likely to contribute to the literature on BRICS. This study used a technique for analytical and empirical study in depth on the commodity trade and FDI, and focused on other variables too. The author used graphs and tables to explain the data accordingly. The data used in this study are taken from the World Development indicators 2014 (World Bank, n.d.).

## MAIN FOCUS OF THE CHAPTER

### Global FDI and Trade in BRICS

Incoming FDI worldwide increased by 11% and accounted $1.46 trillion in 2013. FDI inflows to developing countries reached $759 billion, accounting for 52% of the total volume of FDI (United Nations Conference on Trade and Development, n.d.). Developed countries, however, were "trapped in a historically low share" (39%) for the second consecutive year. Global inflows of FDI progressively rose to $1.6 trillion and $1.8 trillion in 2014 and 2015, respectively. Inflows of FDI into developed economies increased by 12% and reached $576 billion, with such investments into the EU growing, while inflows to the USA continued their decrease. The USA received $159 billion of FDI inflows in 2013.

BRICS now accounts for over one fifth of global inward FDI with 22% (21% in 2012). Continued inflows of FDI testify a long-term confidence in the BRICS economies among foreign investors, which provides those countries with a measure of insulation from the global credit crunch. However, global FDI surged by a projected 10.94% from $557.58 billion in 2012 to $618.62 billion in 2013. China was the highest ranked country internationally with $64.1 billion worth of FDI announced in 2013.

Western Europe was the top source for FDI in 2013. It accounted for 34.94% of all announced outward FDI in 2013 and experienced a 10.38% increase in 2012. Estimated capital investment from North America increased by 9.57% in 2013, and the region maintained a global market share of about 20%.



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There was a decline in the number of outward FDI projects coming from the region of North America (2,951 in 2013 compared to 3,287 in 2012) (Financial Times, n.d.).

Business services, coal, oil, natural gas, communications, renewable energy, and real estate were the top sectors of capital investments in 2013, accounting for 47.26% of FDI worldwide. Out of them, real estate was the only one sector, which experienced a decline by 27.03%, down to $46.74 billion. FDI activity in construction grew with hotels and tourism increasing by 36.3%, up to $18.98 billion in 2013 and building and construction materials increasing by 88.39%, up to $9.69 billion. In 2013, FDI markets recorded 762 investments in the communication sector totaling $61.59 billion. This represents an increase by 82.2% in 2012 and the highest ever capital investment since 2003 (Financial Times, n.d.).

## Intra-BRICS Trade and FDI

Intra-trade of BRICS countries accounted to $230 billion in 2013. It reached $300 billion in 2014 from only $27.3 billion in 2002. It is expected that intra-trade within BRICS will exceed $500 billion in 2015. BRICS' aggregated share in international trade is currently 18%. It is predicted that BRICS may account for 41% of the world's market capitalization by 2030. South Africa outperformed other BRICS countries, with FDI inflows rising by 126%. Inflows to China are about $127 billion – including both financial and non-financial sectors. China is ranked second in the world on the volume of inward FDI, closing the gap with the USA to some $32 billion. Almost 70% of the China's incoming FDI go to manufacturing sectors (automotive, consumer durables, garments, microelectronics, and telecommunications), solidifying China's status of the world's manufacture platform. Chinese foreign investments excited incoming FDI in financial services, real estate, construction, and other non-manufacturing sectors. FDI to Brazil – the largest recipient of FDI in Latin America – accounted $63 billion in 2013, which was the 7th position among the top-20 host economies in 2013. Brazilian biofuel industry, which has become the world's leader amid growing demand for renewable energy products, is also garnering significant attention from foreign investors. Figure 1 shows the economic performance of BRICS countries in terms of GDP.

## Growth Slowdown in the BRICS

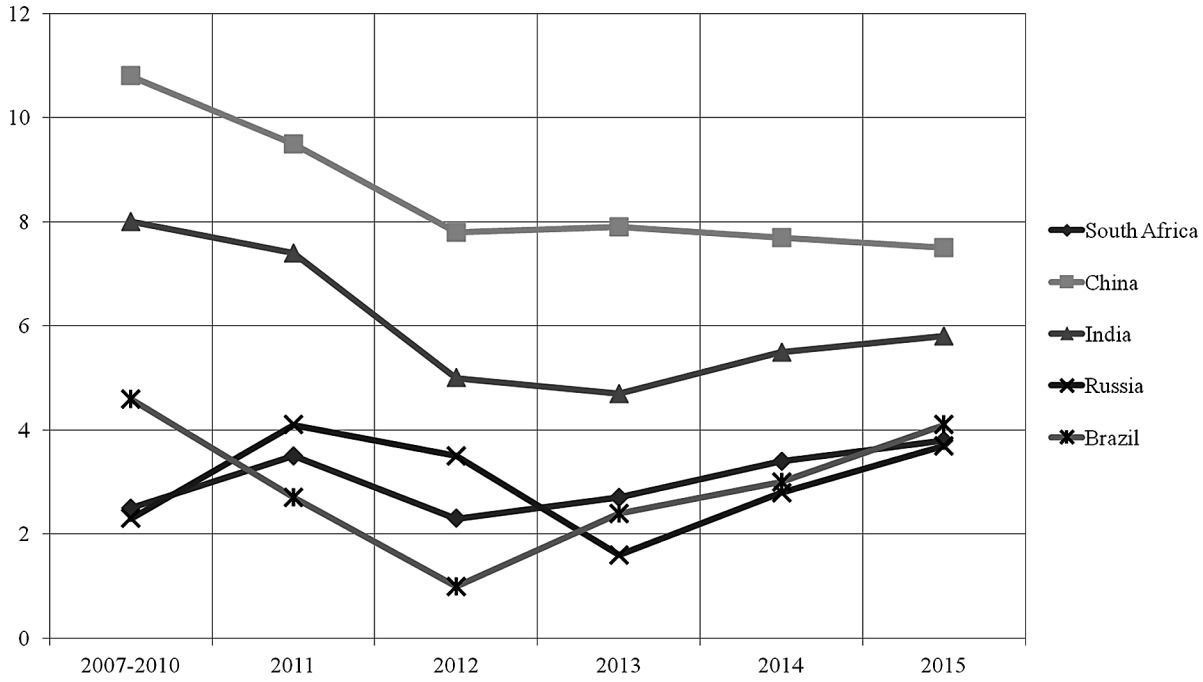
In many large developing countries, including BRICS, economic growth has weakened considerably over the past two years and is now well below the pre-crisis level. In 2013, weighted GDP growth in BRICS was 5.6%, down from an annual average of about 8% during the period 2000-2008. India and South Africa recorded trade deficits and lack of competitive advantages, while China and Brazil, and to a lesser extend Russia, have large trade surpluses and obvious comparative advantages. Further, according to UNCTAD statistics online reports, before the economic crisis, Russian export followed by those of Brazil and China has significantly exceeded import flows. As a result, in this first period, total trade of countries showed the uneven development within the BRICS group.

In 1997, aggregated share of BRICS countries in world trade in goods was 6%. Since 2004, the five states have maintained relatively stable growth (between 20-30%). The analysis of data from the period 2001-2007 reflects the characteristics and national trade level of BRICS countries. In these years, the five countries experienced high growth trend, especially in living standards (India), meaning a strong development momentum. In addition, the author finds that the growth rate of trade maintained a high level until 2008 when the economic crisis started. As an example, the growth of China and India compared to other countries was faster, followed by that of Russia, South Africa, and Brazil. The explanation for



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*Figure 1. BRICS economic performance in terms of GDP (in %)*
*Source: Author's own development based on World Bank (n.d.)*




China′s case consists in the early process of gradual reforms and introduction of the "openness" policy in 1978 compared to Russia (1991) and Brazil (1994). BRICS states are increasingly dependent on foreign trade. According to the World Bank experts, in regards to their dependence on foreign trade BRICS countries may be mentioned in the following order: China, South Africa, Russia, India, and Brazil (China being the less dependent) (World Bank, n.d.). Regarding imports, the leading importer is South Africa, followed by China, India, Russia, and Brazil. Consequently, large commercial dependence leads to the irrational domestic production, consumption and structure of foreign trade, affecting GDP because of trade volatility (case of South Africa).

## Impact of Foreign Direct Investment

Multinational companies (MNC) shifted from highly industrialized countries to such emerging markets as Brazil, China, and India (4,000 MNCs). However, on the other hand, private corporations from these emerging countries (China, India, and Russia) operate abroad. For example, over 700 Chinese corporations operate in Africa. Moreover, subsidiaries in BRICS evolve in parallel with expansion of the whole group and its increasing importance on the global market. Therefore, the author states that expansion abroad is an opportunity to acquire existing capacities in case of MNCs that operate on a developed market (see the data in Table 1 and Table 2).

FDI inflows in BRICS can be identified by two groups of countries, some focusing on manufacture (China and Brazil) and energy (Russia), while the others – on services (India, with emphasis on communication and information, and Russia). China and India are followed by Russia, Brazil, and South Africa. India, for example, attracted huge investments starting from the beginning of the 21st century



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*Table 1. Intra-BRICS balance (outflow-inflow) of FDI, in $ million*

| | Brazil | China | India | Russia | South Africa |
|---|---|---|---|---|---|
| FDI forwarded to other BRICS countries | 2,628 | 41,133 | 22,082 | 12,365 | 10,013 |
| FDI received from other BRICS countries | 17,806 | 25,891 | 20,286 | 15,637 | 8,601 |
| Net result | -15,178 | 15,242 | 1,796 | -3,272 | 1,412 |

Source: Financial Times, n.d.

*Table 2. Bilateral FDI among BRICS countries (January 2003 – July 2013, in $ million)*

| Source country | Brazil | China | India | Russia | South Africa | Total |
|---|---|---|---|---|---|---|
| Brazil | | 1,613 | 462 | 528 | 25 | 2,628 |
| China | 12,769 | | 14,273 | 12,272 | 1,818 | 41,133 |
| India | 3,568 | 10,622 | | 2,511 | 5,381 | 22,082 |
| Russia | 117 | 5,895 | 4,976 | | 1,377 | 12,365 |
| South Africa | 1,352 | 7,761 | 574 | 326 | | 10,013 |
| Total | 17,806 | 25,891 | 20,286 | 15,637 | 8,601 | 88,220 |

Source: Financial Times, n.d.

due to major reforms on opening the economy towards the world market. Both India and China have two competitive advantages which are cheap labour costs and low country risks. Increase of FDI flow in China is mostly due to the large domestic market and close international trade ties with OECD (Organisation for Economic Co-operation and Development) countries. Regarding investments abroad, in case of China they are considered as the tools of access to technologies and natural resources. In these circumstances, the author considers that before the financial crisis of 2008 rapid growth of BRICS countries accounted a major share of global economic growth. However, the world economic crisis has affected BRICS members, though to a lesser extent, than it hit some of the developed countries. Both import and export volumes fell in Russia (by 65%), Brazil (52%), China (41%), South Africa (32%), and India (23%). However, compared to the G-7, the impact of the crisis on BRICS countries in terms of trade was not dramatic (Popa & Carp, 2013). Compared to other emerging countries, China continued its upward trend (with 8%/year). Thus, the author believes that China is an engine of global economic growth, alleviating somewhat the regress of the rich world.

## China-Russia Economic Corridor for De-Dollarization

On May 21, 2014, Russia entered into a $400 billion agreement with China on supplying gas over the next thirty years. The significant feature of the deal is that the payment will be made not in US dollars. This substitution of other currencies for the reserve currency, which in today's world is essentially presented by the US dollar, is what the Russians call "de-dollarization". Therefore, "de-dollarization" can become a prelude to a new conjuncture entailing severe crisis and destabilization in the capitalist world, and leading to a loss of the USA's hegemony. Figure 2 and Figure 3 portray the trends in GDP growth rates and world output and trade respectively.



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*Figure 2. Trend in GDP growth rates*
*Source: Author's own development based on World Bank (n.d.)*

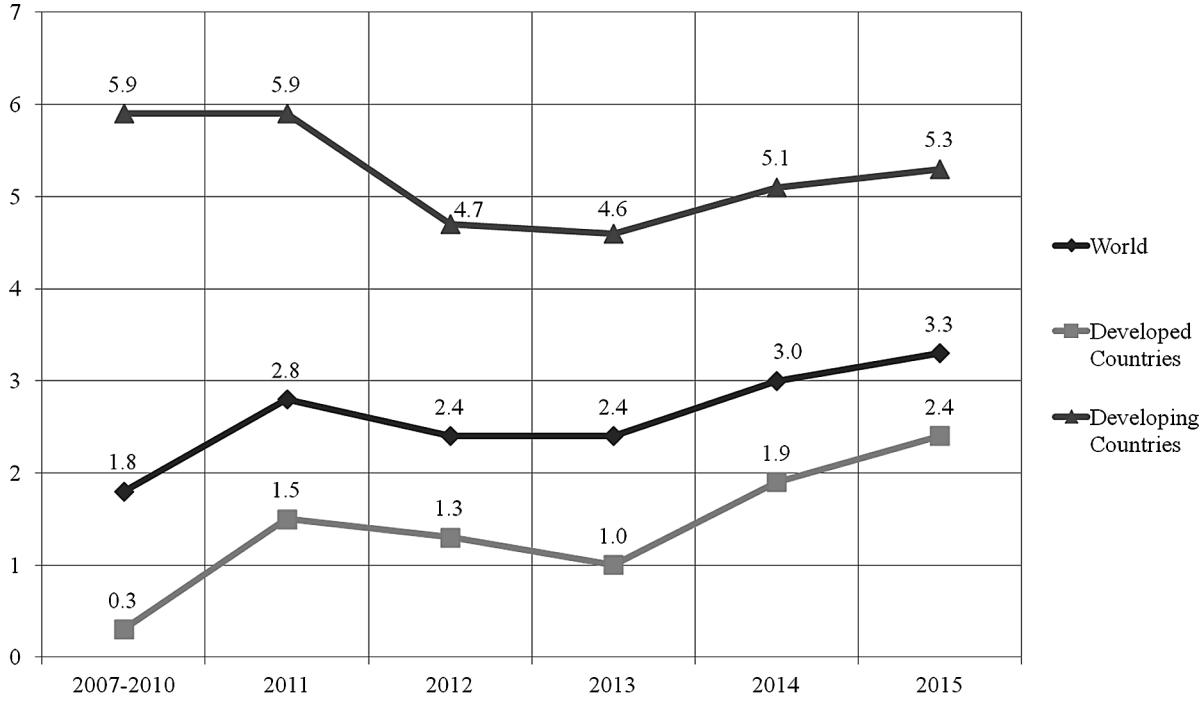
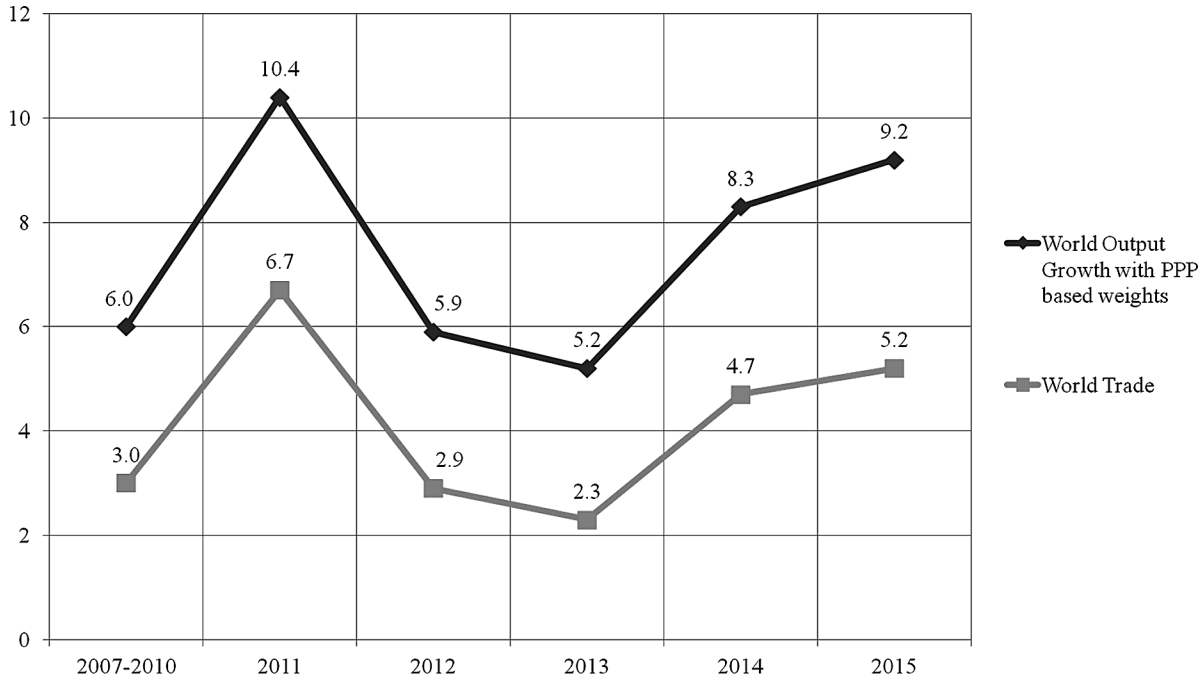



*Figure 3. Trend in world output and trade*
*Source: Author's own development based on World Bank (n.d.)*






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## Evolution of International Trade of Emerging Economies

Statistic data from international organizations show an increase of trade of emerging economies from one year to another. China is the leading exporter and importer among BRICS countries. However, it recorded large trade deficit because of which services continued to have a small share in trade. The same feature is true for Russia and Brazil. In case of India, services accounted for approximately 37% of total national export (goods plus services) and 24% of total national import. These are higher values than those recorded by the USA (Popa & Carp, 2013). Due to a poor basic infrastructure and lower investment, India's share in world's export in 2013 was only 1.7%, while China had 11%. Three factors determine industrial patterns of FDI inflows in BRICS, namely development directions, availability of resources, and business environment. For this reason, the author considers that in Brazil, Russia, and India the tertiary sector attracted FDI the most among other sectors of economy in recent years, the primary sector – only a few millions of dollars, while the results of the secondary sector were somewhere in the middle. China's secondary sector was and remains dominant in terms of attracting foreign capital, what cannot be said about the primary and tertiary sectors. Compared with other BRICS members, Russia does not attract many FDI. A number of barriers, such as administrative ones, infrastructure issues, and enforcement of intellectual property rights are the major obstructions to FDI inflows to Russia.

However, studies have shown a relationship between GDP and FDI inflows in BRICS states that can be approximated to a linear equation with a positive slope (Nandi, 2012). Further, despite certain domestic obstacles, economies of Brazil, Russia, India, China, and South Africa seem to form the world's largest economic group on increasing attraction of FDI flows and their rapid development in the mid-twentieth century. They now continue their efforts in the 21st century. All macroeconomic indicators show that the five members continued their upward trend of yesteryear (it is true, in lower percentages). In this context, the possibility for China to become as large as the USA by 2027 and even exceed it by 2050 became a heated and controversial subject of debate among researchers.

## BRICS-Africa Cooperation

Growing economic linkages of Africa with BRICS go through three key channels: trade, investment, and development assistance. Africa's trade with BRICS has grown faster than with any other region in the world. Foreign trade turnover between BRICS and African countries doubled to $340 billion in 2012 in comparison with 2007. It is projected to reach $500 billion in 2015 (United Nations Economic Commission for Africa, 2013). BRICS countries are now becoming a larger feature on the global and African market. Their economic, political, and strategic position in global affairs is a manifestation of the potential of South-South Cooperation.

Africa's resource endowments create opportunities to leverage Africa-BRICS cooperation for embarking on an industrial strategy to maximize backward and forward processing linkages with the commodity sectors. Such linkages potentially offer major benefits for commodity producing countries, among which is a decent employment. Cooperation of African countries with BRICS can capitalize and develop such sectors as agriculture and manufacturing, which could boost growth and give employment through these linkages, as well as other channels. Success of BRICS is to promote inclusive growth, employment and structural transformation, which will lead to reduction of poverty and inequality in Africa.

The largest FDI come to Africa from BRICS (until 2002 their FDI inflows were dwarfed by those from the Western countries). FDI flows to Africa from India, China, and Brazil rose from 18% of the total



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volume of FDI in 1995-1999 to 21% in 2000-2008 to meet the requirements of Africa for infrastructure development. BRICS' financial aid was forwarded to Africa through project aid (mainly to improve infrastructure, complementing aid, concessionary loans and credits, as well as grants).

## SOLUTIONS AND RECOMMENDATIONS

Based on the findings of the current study, "South" can achieve the goal of "Bandung Consensus" through regional integration, and support each other at all levels: investment, technological transfer, trade and economic cooperation, etc. Moreover, BRICS policy makers need to formulate appropriate and effective policy in order to encourage FDI, expand trade volume and further stimulate economic growth.

## FUTURE RESEARCH DIRECTIONS

For future research it is suggested that cross-country analysis, long period data, and more sophisticated econometric techniques, covering the main determinants of FDI, investment, trade, technical and production cooperation will certainly give more robust results and largely help policy makers in the context of BRICS.

## CONCLUSION

Global economic recession and instability gave an opportunity to forge new mutually beneficial partnerships in the fields of economic, trade, energy security, and technology. It will ultimately act as an engine of economic growth and socio-economic development among the developing countries. The quest for exploration of the newer paradigm led to the birth of an idea called BRICS. It is about the tremendous force of solidarity, which can help to overcome even the biggest challenges confronting the world. It has potential to bridge the technological gap in order to improve capability; ensure equal distribution of resources, opportunities and freedom; abolish foreign currency domination (like dollar and euro) and imperialist military domination, which would ultimately achieve the goal of self-reliance. With the influential and remarkable progress through promoting local currency (for de-dollarization), regional foreign direct investment, and regional trade, BRICS economies have emerged and took a new space in the 21st century.

Russia hosted the seventh BRICS summit July 9-10, 2015, in Ufa, the capital of the Republic of Bashkortostan, gathering the heads of state of the five countries. Expanding investment cooperation and exploring a strategy for multilateral economic cooperation were the centerpieces of Russia's 2015 agenda in the framework of BRICS. At the crossroads of Asia and Europe, BRICS decided to launch various projects of the Silk World Order of trade and integration. It is no coincidence, however, that the Seventh BRICS and Fifteenth Shanghai Cooperation Organisation (SCO) summits were combined into a single big international summit, to use the opportunity to initiate the integration process of the Silk World Order. One informal session at Ufa did not include the members of the BRICS and the SCO only, but also the members of the Eurasian Economic Union (EAEU). Armenia attended the joint BRICS and SCO summit in Bashkortostan, since all the other members of the Eurasian Economic Union are



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either full SCO members or, like Belarus, SCO dialogue partners. Azerbaijan and Turkmenistan also participated in informal meeting of the BRICS, SCO, and EEU. The BRICS-SCO-EEU talks were "a sign that Russia is aiming for political block-building".

The Eurasian and global convergences in Ufa used the links that already existed. China's New Silk Road and the Russian-led Eurasian Economic Union launched a roadmap to fuse together in Bashkortostan as the pivotal axis of rotation in the Eurasian space. While the New Silk Road and the EEU came together in Ufa, BRICS initiated together a development map while the SCO also outlined its expansion plans for new full members. The applications of India, Iran, and Pakistan for full membership were discussed. Moreover, Egypt and several other countries applied to join the SCO in some context. Ufa is being used to stamp out a roadmap for the "Eurasian Century" and a Silk World Order that goes beyond Eurasia, which includes everything from a transcontinental mega railroad network connecting the Iberian Peninsula to the South China Sea and to what was dubbed as the "modern city of the Eurasian continent" in Belarus.

The Chinese are busy building trade infrastructure and transport networks. In Belarus, the Chinese build the first "modern city of the Eurasian continent" in the forests next to the Minsk National Airport as part of what Bloomberg calls "a manufacturing springboard between the European Union and Russia". Upon completion, the new export-oriented city in Belarus, which is being built on the route of the European highway that links Berlin, Warsaw, Minsk, and Moscow, will be the largest manufacturing and industrial park in Europe.

This research has found a scope of new prosperous emerging, other developing and transitional economies, with the commercial exchanges, through foreign direct investments with technical cooperation, and trade as an engine of sustainable economic growth of the world economy, which ultimately creates a "new world economic order". The institutionalized grouping known as BRICS (or BRICSA according to some experts) includes three different continents namely: Asia, Latin America, and Africa, linked with each other in many ways. In trade in goods, taking into account the export structure, it can be distinguished by two complementary groups. On the one hand, China and India, whose exports are dominated by manufactured goods. On the other hand, Russia and Brazil, which focus on commodity exports surpassing those of manufactured goods, raw materials, and oil and gas supply (especially by Russia). In terms of exports trend, Brazil and India are less interested in export of their products, while China and Russia are predisposed to export.

China's economic cooperation with India is continuously growing with the target of increasing annual trade scale to $150 billion, and the total amount of China's outward investment up to $30 billion in next five years to come. India and China today constitute almost 35% of the world's population, their bilateral trade volume increased from less than $3 billion to nearly $70 billion. Two emerging powerhouses set a target of increasing their annual bilateral trade volume to $100 billion by 2015, as they are seeking to step up trade and investment engagement. It is concluded that overall FDI inflows and trade have positive impacts on the economic growth of BRICS.

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## KEY TERMS AND DEFINITIONS

**BRICS Development Bank:** It is operated by BRICS (Brazil, Russia, India, China, and South Africa) as an alternative to the international financial organizations such as the World Bank and the International Monetary Fund, which are dominated by Western countries. The objective of the bank is to mobilize resources for infrastructure and sustainable development projects in BRICS and other emerging economies and developing countries.

**De-Dollarization:** Since Bretton Woods Conference, all trade including oil and natural gas around the world has been bought and sold in US dollar. It has been a massive advantage for the USA and disadvantages for the rest of the world. Recently, BRICS nations such as Brazil, Russia, India, China, and South Africa have initiated to change the current unipolar world order through de-dollarization process.

**Economic Development Cooperation:** Among groups of countries and between the nations economic, financial, educational, scientific and technological, and trade ties based on the common objectives and goals.

**Foreign Direct Investments:** They are involved in any country to fulfill the desires of capital, technology, business organizational skills, and management. It is generally controlled by the powerful MNCs for the purpose of maximization of their profits under comparative advantage conditions.

**Infrastructure Development:** Generally, infrastructure refers to the large-scale public systems, services, and facilities of a country or region that are necessary for economic activity. The sector tends to be separated into two broad subsets – economic and social. Economic infrastructure includes highways, water and sewerage facilities, and energy distribution and telecommunication networks whereas social infrastructure encompasses schools, universities, hospitals, public housing, and prisons.

**New World Order:** The term is used to refer to a worldwide conspiracy being orchestrated by an extremely powerful and influential group of genetically related individuals.



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**Regional Integration:** An arrangement for enhancing cooperation through regional rules and institutions entered into force by states of the same region.

**Silk Road Project:** The Silk Road is a series of trade routes between China and the region of Mediterranean Sea.

**Trade:** Any country or firm involved in trade to fulfill the requirements of foreign currency to correct balance of payments and to gain profits under comparative advantage conditions when firm/country has abundant resources and able to produce goods and commodities at its cheapest.

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# Chapter 49
# Energy Policy Issues in Turkey: Renewable Energy Production and Economic Growth Nexus

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## ABSTRACT

*Energy is the source of development of the mankind and an indispensable input for economic growth. Currently, most of the energy consumed in the world is composed of fossil fuels which are not environmentally friendly and reliable since their prices are volatile and their supply compels importing countries dependent on energy exporting countries. Thus, a good remedy to reduce fossil fuel dependency is to utilize more renewable energy resources. Renewable resources can be replenished quickly, are almost infinite and would lead a country to sustainable development. The Republic of Turkey is a net importer of energy. The diversification of energy sources and supply security is of great importance for it. Thus, the objective of this study is to analyze the relationship between renewable energy production and economic growth in Turkey by using Johansen Cointegration Test, Vector Error Correction Model (VECM), Granger Causality Test and the Augmented Dickey-Fuller Test (ADF). Consequently, both long run and short run a casualty running from GDP growth to renewable energy production is determined in the study.*

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## 1. INTRODUCTION

The volume of energy consumption and its combination is fundamental for the economic development and social wellbeing of a country. However, today the energy consumption pattern in the world is mostly not sustainable and environmentally friendly owing to its hydrocarbon inception. Amounting hydrocarbon energy usage in modern life, increasing volume of population and pollution are considerable issues today. Also, the prices of fossil fuses are variable and not dependable in global markets and they are depleting continuously. Therefore, one could state that hydrocarbon sources are not sustainable and secure. Yet, sustainability of energy is the key to economic and industrial development. Sustainability of energy could be defined as secure, continuous and dependable form of energy which is conducive to environmental protection and economic growth (Öztürk, Yüksel, 2016; Zeb et al., 2014).

The amount of hydrocarbon sources is diminishing and their prices are volatile. This complicates the obtainment of sustainability which can be provided with continuous economic development with energy efficiency, also benefitting the environment positively too. The issue of using green energy and green economy has been gaining increasing importance along with global warming and greenhouse effect. Furthermore, transforming the hydrocarbon fueled economic system to a green one and securing green efficiency are requisites to sustainable development. The reduction in CO2 emission and saving financial resources by the utilization of green energy would boost the economic and industrial structures of a country. Therefore, the composition of fuel resources and securing a balance between fossil and renewable sources is of great importance for the wellbeing of a society, economic improvement and sustainability (Zeb et al., 2014; Chang et al., 2015; Öztürk, Yüksel, 2016). Furthermore, the aim of this study is to investigate the energy issues, energy and renewable energy production and economic growth nexus within the Turkish case depending on credible national and international sources and data.

## 2. ENERGY ISSUES, RENEWABLE ENERGY AND SUSTAINABILITY

21st century is the age of continuous development of countries and a period of great breakthrough with respect to economic developments, technological improvements and differentiating realities for the mankind. Within this development process, energy is the indispensable factor to sustain the improvement continuum of nations. Especially, fossil fuels have been the prominent form of energy for decades all over the world as to provide for the necessities of people, development of industries and sustainability of state policies. Yet, the pervasive spread of the wide energy consumption activities all over the globe has brought about significant concerns. First, the fossil fuel sources are not infinite in the world. Second problem related to the depletion of fossil fuels is the increasing volume of greenhouse gases which cause global warming. Third, the utilization of fossil fuels may bring about resources dependency (Sebri, Ben-Salha: 2014; Shahbaz et al., 2015).

These important problems mentioned above requires the search for a remedy which is the utilization of renewable energy sources (RESs). If managed and used suitably, RESs could be the future of energy for the mankind. Renewable energy is the continuously regenerating form of energy supplied from solar, wind, hydro, geothermal, tide, wave, biomass and waste. Conventional sources of fuel are finite, not dependable, have negative effects on environment and not sustainable. On the contrary to this from of fossil fuels, RESs are clean, safe, not contaminating and inexhaustible. That's why, it should be just natural that the usage of the RESs is fast developing in the world in order to ensure sustainable



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development, energy security and economic improvement. Therefore, one could state that the share of the RESs within the overall energy consumption has been increasing due to environmental, economic and security issues. Moreover, the sustainability and security of energy sources emerge as a substantial subject not for developing, but also for the developed countries, since, energy is the primary source of economic and country development (Sebri, Ben-Salha: 2014; Shahbaz et al., 2015; Halkos, Tzeremes, 2013; Biresselioğlu, 2012).

One of the considerable issues in the 21st century is to meet the needs of billions of people, especially with respect to energy concern and at the same time challenge the surging problems brought by conventional forms of fuels such as greenhouse effect and depletion of fossil fuels. Therefore, it is a significant matter to switch from fossil fuels to RESs in an efficient manner, since, RES are cost affective, easy to replenish and environmentally friendly. As a matter of fact, energy is the fundamental factor to enhance economic development and social welfare in a country. The more secure and plentiful energy sources a country has, the more prosperity it will enjoy. Also, within the process of modernization, countries become dependent on energy consumption. Coupling with that, the uninterrupted and adequate procurement of energy would improve the production volume and business efficiency and profitability in a country, leading to economic development too. Within this regard, the utilization of RESs would benefit a country with sustainable and green energy that is conducive to both economic and environmental development. Moreover, the expanding impact of globalization and increasing volume of international commerce would facilitate the spread of the usage of RESs by transferring efficient and green technologies among companies and countries, thereby influencing the policymakers in various states (Shahbaz et al., 2015; Sebri, Ben-Salha: 2014; Biresselioğlu, 2012; Erdal, 2015; Öcal, Aslan, 2013).

Soaring prices of oil, increasing volume of energy demand and hazardous impact of hydrocarbon fuels instigated the significance of RESs more. RESs can be replenished quickly and decline the negative effect of fossil fuels. Besides the positive impact of green energy on environment, RESs also pave the way to secure and sustainable energy consumption by declining the dependency on the energy sources of other countries. RESs can supply uninterrupted flow of energy to support economic wellbeing. Therefore, with the development of new green energy technologies and increasing intensity of their usage on the global scale, the attention will be focused on the better utilization of secure green energy. However, renewable energy also brings some costs to be on the disposal. These costs could be called as the technological and financial barriers to the development of RESs. Many of the RESs such as solar, wind and wave are intermittent. Therefore, it is necessary to store and postpone consumption. If the demand for RESs increase suddenly, it would not be easy to supply the related amount quickly. The initial investment of establishment and maintenance costs of RESs could be expensive with respect to use hydrocarbon energy. Also, in addition to initial investment costs, the establishment cost of infrastructure and superstructure to connect the RESs to the existing energy grid could be burdensome, coupling with that the research and development process (R&D) of RESs is expensive too. Moreover, the governmental policies and regulations shall be in favor of the development and the usage of RESs as well (Bayülgen, 2013; Fackrell, 2013; Erdal, 2015; Öcal, Aslan, 2013; Bhattacharya et al., 2016).

The utilization of renewable energy is indispensable to strike a balance between green energy and fossil fuels, ensure economic growth and sustainability for the future security of a country. Sustainability is to meet the needs of current generation without harming the future generations. Sustainability is a slight balance between economic growth and environmental protection as well as closely related to resource depletion, environmental and ecological preservation and wellbeing of society. The ways to produce energy and its side effects are significant indicators of how sustainable development is achieved. The



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population of the world has been rising at an increasing rate as well as new technologies and industrial breakthrough are required to satisfy the needs and expectations of rising global human needs. Resulting from this reality, the energy consumption is increasing to find permanent solutions for the necessities of the mankind. On the one hand, humanity has been utilizing hydrocarbon sources to fulfill the expectations of human population, on the other hand, the increasing volume of the utilization of fossil sources negatively contribute to environmental degradation and greenhouse effect. Energy is the first and foremost significant input in economic development. However, securing continuous energy flow by RESs is equally important to ensure future sustainability of a country (Öztürk, Yüksel, 2016; Zeb et al., 2014; Chang et al., 2015; Erdal, 2015; Öcal, Aslan, 2013).

## 3. ENERGY AND RENEWABLE ENERGY ISSUES ON TURKEY

The demand for energy has been increasing in the world resulting from economic and technological developments. Energy is also a priority issue for the Republic of Turkey. A huge surge in the energy demand has prompted Turkey to become dependent on foreign sources of supply. Turkey, with its fast increasing population and growing economy is quite dynamic. However, the volume of the production of energy is limited in Turkey. Turkey has poor hydrocarbon sources and it has got to import the necessary amount of hydrocarbon energy sources from other countries. However, it has got significant amount of renewable sources as hydraulic, solar, geothermal, wind and biomass. The optimal mixture of a fossil and renewable energy structure would lead the Republic of Turkey to a sustainable future of economic growth (Benli, 2013; Biresselioğlu, 2012; Melikoğlu, 2013).

Turkey is at the convergence of Europe and Asia, converging two continents and many energy routes. It has a population of about 78 million people with a growing economy. Therefore, energy supply is critical for a country such as Turkey and the satisfaction of energy demand is rather challenging with its scarce hydrocarbon energy sources. Turkey utilizes oil, natural gas, hard coal and lignite as hydrocarbon resources and imports a considerable volume of them. Yet, it has substantial RESs. Turkey has been importing about 75% of its energy necessity from other countries and this makes it dependent on foreign sources as well as negatively impacts on its energy security and sustainability. Moreover, the renewable energy potential of Turkey is good enough to decrease its dependency on foreign energy sources. Turkey is attempting to utilize its hydraulic, wind and solar power as much as possible and its geothermal energy potential is projected to be used much profoundly in the forthcoming years (Öztürk, Yüksel, 2016; Toklu, 2013; Bayülgen, 2013; Kaya, Kılıç, 2012; Şekercioğlu, Yılmaz, 2012; Süzer, 2013).

Turkey has been going through an economic transformation for more than a decade and its energy necessity has been increasing accordingly. It is one of the 20 largest economies in the world and this is an indication that the increase in its energy demand is going to surge in theforthcoming decades too. The energy need of the Republic of Turkey is rising at 6-8% each year and in order to respond to its ever increasing energy need, it has got to make aboaraut 120 billion USDs of investment until 2023 which is the centennial of the Republic. The Republic of Turkey also projects to become one of the ten largest economies in the next decade. This objective reinforces it to implement substantial economic breakthrough and require much more energy. However, Turkey is not bestowed with abundant fossil fuel sources and is supposed to import about 75% of its energy requirement from neighboring and other countries. Taking into account this reality, it becomes indispensable to utilize its renewable energy sources in order to



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*Table 1. The Projection of Renewable Energy Production in the Republic of Turkey[1]*

| Fuel Type | Application in Progress | | Examination in Progress | | Endorsed | | Total | |
|---|---|---|---|---|---|---|---|---|
| | Number | Installed Capacity (MWe) | Number | Installed Capacity (MWe) | Number | Installed Capacity (MWe) | Number | Installed Capacity (MWe) |
| **Hydraulic** | 126 | 10.815,63 | 87 | 2.517,52 | 220 | 13.699,31 | 433 | 27.032,46 |
| **Wind** | 7 | 167,10 | 8 | 399,50 | 17 | 1.098,05 | 32 | 1.664,65 |
| **Geothermal** | 8 | 189,20 | 10 | 103,67 | 4 | 110,00 | 22 | 402,87 |
| **Biomass** | 7 | 71,66 | 14 | 46,44 | 3 | 13,01 | 24 | 131,11 |
| **Solar** | 495 | 7.860,38 | 0 | 0,00 | 0 | 0,00 | 495 | 7.860,38 |

Source: Republic of Turkey, Energy Market Regulation Authority (EPDK), www.epdk.gov.tr

cover the huge gap (Bilgin, 2015; Fackrell, 2013; Kaya, Kılıç, 2012; Toklu, 2013; Benli, 2013; Richert, 2015; Melikoğlu, 2013).

The energy strategy of Turkey is set by the Ministry of Energy and Natural Resources (MENR). This strategy has energy supply security, environmental protection and utilization of national sources as pillars. Main objectives of the Turkish energy strategy are (Biresselioğlu, 2012; Ekşi, 2010):

- Ensuring diversity in energy by prioritizing indigenous sources,
- Increasing the volume of RESs within the total amount of energy consumption,
- Improving the energy efficiency along with declining costs,
- Liberalization of the energy market and enhancing the investment environment,

- Assuring diversity with respect to oil and natural gas as to avoid possible interruptions in their supply,
- Making Turkey an energy hub by utilizing its geographic disposition along with regional cooperation,
- Minimization of the adverse environmental effects of current energy sources,

*Table 2. Total Energy Production in Turkey (Mtoe[2])*

| Source | 1995 | 1998 | 2000 | 2005 | 2010 | 2020 | 2030 |
|---|---|---|---|---|---|---|---|
| Coal & Lignite | 12.10 | 14.22 | 13.33 | 20.69 | 26.15 | 32.36 | 35.12 |
| Oil | 3.6 | 3.3 | 2.8 | 1.66 | 1.13 | 0.49 | 0.17 |
| Gas | 0.18 | 0.51 | 0.58 | 0.16 | 0.17 | 0.14 | 0.10 |
| Nuclear | ---- | ----- | ----- | ----- | ----- | 7.30 | 14.60 |
| Hydro | 2.63 | 3.38 | 2.06 | 4.16 | 5.33 | 10.00 | 10.00 |
| Geothermal | 0.13 | 0.16 | 0.18 | 0.70 | 0.98 | 1.71 | 3.64 |
| Solar, Wind, other[3] | 7.2 | 8.2 | 8.3 | 0.22 | 1.05 | 2.27 | 4.28 |
| Total | 26.353 | 30.233 | 27.978 | 27.59 | 35.76 | 54.28 | 71.68 |

Reference: www.enerji.gov.tr; www.kalkinma.gov.tr.



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- Improving the contribution of green energy sources to the economy,
- Enhancing the efficiency of energy management of natural resources,
- Pioneering the development of contemporary energy technologies and green energy.

The increasing rate of industrialization and urbanization also increased the demand for more energy in Turkey. In order to accommodate the energy necessity, the role of imported resources is very important. However, importation of large resources come with considerable amount of bills and importation does not guarantee permanent, reliable and inexpensive sustainable solutions. Transforming the Turkish economy from an agricultural to an industrial one and rapid urbanization have required to increase the energy supply. This is a common trend in every developing country. As the volume of consumption of the fossil fuels ascend in total energy consumption and as it becomes difficult to respond to energy necessity by domestic hydrocarbon energy sources, the utilization of RESs becomes more important. Also, the usage of hydrocarbon energy in the rapid industrialization and urbanization has caused massive emission of C02 and create environmental problems. Moreover, the hydrocarbon energy is exhausting quickly and its availability raises as a question mark. Detrimental impacts of fossil fuels on environment and greenhouse effect as well as fluctuating prices and unreliable energy supply make renewable energy highly attractive not only for Turkey but for other countries too. Turkey never had sufficient energy sources. This made it to make long term energy agreements with other countries especially with Russia and Iran. These agreements are take-or-pay contracts meaning that surplus, non-consumed portion of the agreement must still be paid, bringing a huge burden to Turkish tax payers and economy. Turkey does not only have to diversify its energy sources, but it has also got to secure its supply. Currently, dependable supply of resources can be defined as an optimal mixture of fossil and renewable energy. Electricity is produced in coal-powered and natural gas-powered power plants in Turkey. A sudden interruption in any of these sources would have catastrophic consequences. The optimal alternative to avoid such events to focus on indigenous energy sources, especially renewable ones. This would diminish dependency to import fuel too. Transition from fossil fuel powered industry to renewable energy powered industry is another issue to be considered too (Biresselioğlu, 2012; Ekşi, 2010; Bilgin, 2015; Richert, 2015; Öztürk, Yüksel, 2016; Kaya, Çakmak, 2012; Süzer, 2013).

*Table 3. Total Energy Consumption in Turkey (Mtoe[4])*

| Source | 1995 | 1998 | 2000 | 2005 | 2010 | 2020 | 2030 |
|---|---|---|---|---|---|---|---|
| Coal & Lignite | 15.80 | 21.50 | 24.10 | 35.46 | 39.70 | 107.57 | 198.34 |
| Oil | 28.32 | 30.93 | 32.5 | 34.60 | 51.17 | 71.89 | 102.38 |
| Gas | 6.32 | 9.421 | 13.32 | 19.40 | 49.58 | 74.51 | 126.25 |
| Nuclear | ---- | ----- | ----- | ---- | ----- | 7.30 | 14.60 |
| Hydro | 2.63 | 3.38 | 2.06 | 4.16 | 5.33 | 10.00 | 10.00 |
| Geothermal | 0.13 | 0.16 | 0.18 | 1.89 | 0.97 | 1.71 | 3.64 |
| Solar, Wind, other[5] | 10.32 | 9.71 | 3.5 | 0.22 | 1.05 | 2.227 | 4.28 |
| Total | 63.75 | 75.56 | 78.38 | 95.28 | 147.81 | 275.25 | 459.49 |

Reference: www.enerji.gov.tr; www.kalkinma.gov.tr.



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The increase of the energy demand of Turkey does not only raises the question of resource diversification, but also ensuring its sustainability and security with RESs. Energy security is to assure adequate amount of energy sources at affordable prices and whenever needed. This is a priority for Turkey. It is to become a major player in its region and beyond. The Turkish energy strategy is aimed at striking an optimal balance among oil, natural gas, coal and renewable energy sources. Turkey's amounting energy need is certainly a significant topic. However, it is clear that it cannot be met by domestic production and has got to be either met by importation or utilizing its renewable sources more. However, a shift from extensive hydrocarbon energies sources to RESs is not quick and easy. Renewable energy technologies are expensive and must be accommodated with the existing grid. But, if one considers Turkey's dependency on neighboring countries with respect to oil and natural gas importation and the negative impact of this on the economy, the better utilization of RESs emerges as an optimal option (Bilgin, 2015; Toklu, 2013; Benli, 2013; Şekercioğlu, Yılmaz, 2012).

Energy is an essential element of economic development and social wellbeing of Turkey. However, as one can see in Tables 1 and 2 that the main production of Turley's energy necessity is still and will be based on fossil resources. However, being relied on fossil fuels is a threatening factor to the energy security and sustainability of Turkey. Fossil fuels are conventional forms of energy and easier to have access. Yet, renewable energy sources, even though they are replenished, regenerate over time and infinite, are gaining importance gradually. As one can infer from Tables 2 and 3, Turkey is a net importer of fossil fuels since it does not have sufficient amount of them. Moreover, the energy strategy of the Republic of Turkey is based on uninterrupted energy and secure energy supply along with environmentally friendly sources which decrease the CO2 emission. Also, as the importation of energy increases, Turkey will have to spend more hard currencies on foreign sources of energy which it can difficultly acquire. When Tables 2 and 3 are analyzed, it is clear that the domestic production of energy does not meet the consumption. Therefore, the difference must be met with importation. Yet, importing a considerable part of energy necessity of Turkey is not conducive to its economic growth, social wellbeing and national policies on sustainability. Therefore, the acquirement and utilization of renewable energy resources emerge as a remedy and priority in order to alleviate the dependency of Turkey on foreign sources of energy and sustain its economic growth with domestic RESs.

## 4. RENEWABLE ENERGY PRODUCTION & ECONOMIC GROWTH NEXUS IN THE REPUBLIC OF TURKEY

The Republic of Turkey is rapidly developing and is also a part of G20 group. It aspires to become one of the largest 10 economies in the forthcoming decade. This indicates that the Turkish economy grows at a convenient rate and in a competitive pattern. Economic growth is a developmental sign for a country, but, economic growth has always been coupled with rising amount of energy consumption. Yet, Turkey is not self-sufficient in terms of energy. Its fossil fuel reserve is not adequate enough to respond to its energy necessity. Therefore, Turkey is a net importer of energy from neighboring countries in order to provide for a considerable volume of its energy need. Moreover, fossil fuels are not environmentally friendly and their prices are volatile (Melikoğlu, 2013; Chang et al., 2015; Bhattacharya et al., 2016).

There is a significant correlation between renewable energy production/consumption and economic growth. Energy is one of the indispensable inputs of production. It is abundant in some countries and scarce in some other. The countries with large energy sources are bestowed and the other ones with



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scarce energy sources are supposed to search for solutions for energy scarcity and diversify scarce energy resources as to accommodate energy security and ensure sustainability. Another important factor in the energy security and sustainability is the mixture of energy sources. Striking a right balance between hydrocarbon and renewable energy is of great importance for the self-sufficiency of a country. Consuming mostly hydrocarbon fuels is dangerous for environment and if a country is dependent on foreign sources this would be also harmful to economic growth with respect to spending national reserves on foreign sources of energy which also causes an increase in balance of payments too. Yet, an optimal solution to this concern is to consume more indigenous RESs which are conducive to environmental protection and sustainable economic growth. Therefore, the more RESs a country utilizes, the more it could improve its economic growth potential. Furthermore, energy production and consumption are substantial issues for a country which impact on its future with respect to economic growth and sustainability (Chang et al., 2015; Melikoğlu, 2013; Ocal, Aslan, 2013; Bhattacharya et al., 2016).

Akpolat and Altıntaş (2013) investigated the relationship between cointegration and causality in the long run for Turkey's energy consumption and real GDP for the period of 1961-2010. The results of Johansen Cointegration Test and VECM Model determined the cointegration in the long-term with bilateral causality. Akkemik and Göksal (2012) examined Granger causality between energy consumption and GDP by using panel data on 79 countries for the period of 1980-2007. The results indicated that seven-tenths of the countries exhibit bi-directional Granger causality, two-tenths exhibit no Granger causality and one-tenth exhibit unidirectional Granger causality. Ciarreta and Zarraga (2010) analyzed linear and nonlinear causality between electricity consumption and economic growth in Spain for the period 1971-2005 by using Granger causality test and the results showed that there is a unidirectional linear causality running from real GDP growth to electricity consumption and no evidence for nonlinear Granger causality. Eggoh et al. (2011) examined the relationship between energy consumption and economic growth for 21 African countries for the period of 1976-2006 by using panel data with cointegration and causality tests. The results indicated that there is a long-run equilibrium among energy consumption, real GDP growth, labor and capital. Lee and Chang (2007) investigated co-integration and causal relationship between energy consumption and real GDP for 16 Asian countries during the period of 1971-2002 by using panel unit root, heterogeneous panel cointegration and panel-based error correction models. The results supported a positive long-run cointegration between real GDP growth and energy consumption, no short-run causality and a long-run unidirectional causality from energy consumption to economic growth. Masih and Masih (1996) examined the cointegration relationship between total energy consumption and real income of six Asian countries (India, Pakistan, Malaysia, Singapore, Indonesia and the Philippines) by using Granger causality test. The results pointed out that there is cointegration only for India, Pakistan and Indonesia. Mehrara (2007) investigated the causal relationship between the per capita energy consumption and per capita GDP with panel data on selected oil exporting countries by using panel unit-root tests and panel cointegration analysis. The results showed that there is a unidirectional causality from economic growth to energy consumption for the oil exporting countries. Narayan and Popp (2012) analyzed the long-run relationship between energy consumption and real GDP for 93 countries. It evidenced that energy consumption has a negative causal effect on real GDP growth. Pirlogea and Cicea (2012) examined the relationship between energy consumption and economic growth in a comparative analysis for Spain, Romania and European Union for the period of 1990-2010. In the long run, for both counties and the European Union, there is a correlation between economic growth and energy consumption. But, in the short-run, there is only a relationship for Romania and Spain. Soytaş and Sarı (2003) analyzed the causality relationship of energy consumption and GDP growth between



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the G7 countries and some emerging market countries. The study showed a bi-directional causality in Argentina. The causality runs from GDP growth to energy consumption in Italy and Korea as well as runs from energy consumption to GDP growth in Turkey, France, Germany and Japan. Stern (2000) investigated the causal relationship of GDP growth and energy consumption in the USA for the post-war period by using cointegration analyses. The results indicated that there is a cointegration between energy consumption and GDP growth. Yang (2000) examined the causal relationship between energy consumption and real GDP growth for the period of 1954-1997. The results showed at the existence of causality between energy consumption and real GDP growth. Altınay and Karagöl (2004) examined a series of unit root and causality tests to detect the causality between the GDP and energy consumption in Turkey by using Granger causality method for the period of 1950-2000. The result indicated no relationship between energy consumption and GDP growth. Aqeel and Butt (2001) analyzed the relationship between energy consumption, economic growth and employment in Pakistan by using Granger test. The results showed that energy consumption and employment were positively affected by economic growth. Chang et al. (2015) researched the causal relationship between renewable energy consumption and economic growth among G7 countries. The empirical results determined the existence of a bi-directional causal relationship economic growth and renewable energy; but, when individual results for each country are considered, the neutrality hypothesis is valid for Canada, Italy and the USA; yet, for France and the UK, there is a unidirectional causality running from GDP to renewable energy and the opposite is true for Germany and Japan. Bhattacharya et al. (2016) investigated the impacts of renewable energy consumption – economic growth nexus of significant renewable energy consuming countries in the world. They used the Renewable Energy Country Attractiveness Index to determine top 38 countries for this study. By utilizing panel estimation methods, the authors determined cross-sectional dependence and heterogeneity across the related countries. Their findings suggest that renewable energy consumption has a considerable positive affect on the economic growth for 57% of selected countries. Shahbaz et al. (2015) aimed to examine the correlation between renewable energy consumption and economic growth. The results of the study indicated that the entire variables in the study are cointegrated. This shows a long run relationship among the variables. Also, the causality analysis shows the feedback impact between economic growth and renewable energy consumption. Halkos, Tzeremes (2013) investigated the relationship between renewable energy consumption and economic efficiency. The results of the study indicate that renewable energy consumption has favorable impacts on the economic efficiency. Öcal, Aslan (2013) examined the renewable energy consumption – economic growth causality for Turkey. While this study's ARDL approach indicated no positive effect of renewable energy consumption on economic growth, Toda-Yamomoto causality tests indicated a unidirectional causality running from economic growth to renewable energy consumption.

## 5. DATA AND METHODOLOGY

This study is aimed at determining the relationship between renewable energy production and economic growth in Turkey for the period of 1975-2014 by using annual time series data. The data on the GDP series was acquired from the database of the Turkish Statistical Institute. Data on renewable energy production was obtained from Ministry of Energy and Natural Resources of the Republic of Turkey and World Energy Council websites. The logarithmic values of the variables are used. The variables are;



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LNGDP: GDP growth (economic growth)
LNRENEWABLE: Renewable energy production (solar, wind, wave, biomass, geothermal, hydraulic)

In this study, the relationship between renewable energy production and economic growth in Turkey is analyzed by using Johansen Cointegration Test, Vector Error Correction Model (VECM) and Granger Causality Test. Before applying the cointegration test, the stationary and integration degrees of the series are determined by the Augmented Dickey-Fuller Test (ADF).

## 6. EMPIRICAL FINDINGS

The ADF test is applied to test whether the time series used in the study are stationary or not. It is important to determine the appropriate lag length in VAR systems. During the analysis, the optimum lag length is determined by the Schwarz Information Criterion (SIC). To explain the unit root of variables, an ADF test is applied (Dickey and Fuller, 1981). The results are shown at Table 4. The critical values were generated by Eviews7 econometric program and based on MacKinnon values. The values that are given in parenthesis designate the lag lengths.

The results indicate the presence of unit roots in both series. The null hypothesis shows that the series which are non-stationary is not rejected at the levels of these variables. However, when the first differences of the variables are considered, the null hypothesis is rejected in favor of alternative hypothesis, which states that the series are stationary. Thus, their first difference is determined to be stationary and hence the series are integrated for order one, I(1).

After the analysis of the time series characteristics of variables, the next step is to analyze whether there is a long-term correlation among the variables or not. The long-term correlation is analyzed with Johansen Cointegration Test. The optimum lag lengths are determined using the Schwarz Information Criterion (SIC). The proper lag length in VAR is 2. The Johansen cointegration test is applied for these series and the results of this test is denoted in Table 5 and 6.

The results of the Johansen cointegration test, which is presented in Table 5 and 6, provide evidence for the existence of a cointegration equation at 5% significance level, implying that the two variables (LNGDP and LNRENEWABLE) are cointegrated. Thus, the results of test imply a long run relationship

*Table 4. ADF Test Results*

| Variables | ADF Test Statistics | P-Probability | Constant, Trend | Test Results |
|---|---|---|---|---|
| LNGDP | -3.441670 (1) | 0.0608 | Constant + Trend | Unit root exists: Non-stationary |
| LNRENEWABLE | -2.576704 (0) | 0.1063 | Constant | Unit root exists: Non-stationary |
| DLNGDP | -6.657281 (0) | 0.0000 | Constant | Unit root doesn't exist: Stationary |
| DLNRENEWABLE | -10.55171 (0) | 0.0000 | None | Unit root doesn't exist: Stationary |

D refers to first difference, Note: If p-value is greater than 0,05 as a result of the ADF test, we decide that 'it has a unit root'; otherwise, we decide that 'it does not have a unit root'.



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*Table 5. Results of the Johansen Cointegration Test (Order: LNGDP LNRENEWABLE)*

| **Sample (adjusted): 1978 2014<br>Trend assumption: Linear deterministic trend, Lags interval (in first differences): 1 to 2** | | | | |
|---|---|---|---|---|
| **Unrestricted Cointegration Rank Test (Trace)** | | | | |
| Hypothesized | | Trace | 0.05 | |
| No. of CE(s) | Eigenvalue | Statistic | Critical Value | Prob.** |
| None * | 0.705112 | 45.42769 | 15.49471 | 0.0000 |
| At most 1 | 0.006596 | 0.244842 | 3.841466 | 0.6207 |
| Trace test indicates 1 cointegrating eqn(s) at the 0.05 level | | | | |
| * denotes rejection of the hypothesis at the 0.05 level | | | | |
| **MacKinnon-Haug-Michelis (1999) p-values | | | | |
| Unrestricted Cointegration Rank Test (Maximum Eigenvalue) | | | | |
| Hypothesized | | Max-Eigen | 0.05 | |
| No. of CE(s) | Eigenvalue | Statistic | Critical Value | Prob.** |
| None * | 0.705112 | 45.18285 | 14.26460 | 0.0000 |
| At most 1 | 0.006596 | 0.244842 | 3.841466 | 0.6207 |
| Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level | | | | |
| * denotes rejection of the hypothesis at the 0.05 level | | | | |
| **MacKinnon-Haug-Michelis (1999) p-values | | | | |
| Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I): | | | | |
| LNGDP | LNRENEWABLE | | | |
| -3.008792 | 2.757329 | | | |
| 4.343377 | -1.520473 | | | |
| Unrestricted Adjustment Coefficients (alpha): | | | | |
| D(LNGDP) | 0.009348 | -0.003231 | | |
| D(LNRENEWABLE) | -0.252714 | -0.008065 | | |
| 1 Cointegrating Equation(s): | | Log likelihood | 78.04941 | |
| Normalized cointegrating coefficients (standard error in parentheses) | | | | |
| LNGDP | LNRENEWABLE | | | |
| 1.000000 | -0.916424 | | | |
| | (0.05408) | | | |
| Adjustment coefficients (standard error in parentheses) | | | | |
| D(LNGDP) | -0.028125 | | | |
| | (0.02175) | | | |
| D(LNRENEWABLE) | 0.760363 | | | |
| | (0.10334) | | | |



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between GDP growth and the renewable energy production in Turkey. With respect to the selected variables, results of the cointegration test can be concluded as the long run equilibrium between variables, which is;

LNGDP = 0.916424 LNRENEWABLE (normalize according to LNGDP)
(t-values) (16.94564)
LNRENEWABLE = 1.091198 LNGDP (normalize according to LNRENEWABLE)
(t-values) (11.0205)

The results indicate that there is a long run equilibrium relationship between the two variables, and this may indicate that the long run bi-directional causal relationship exists between GDP growth and renewable energy production.

The empirical results of the estimated vector error correction models are presented in Table 7.

The error correction term (ECT (-1)) represents the long run impact of one variable on the other while the changes of the lagged independent variable delineates the short run causal impact. Vector error correction results in Table 7 shows that in equation (1), the error correction term has correct sign and it is statistically significant at 5% level. This provides evidence on long run impact from GDP growth to renewable energy production. The short run examining the statistical significance of the values given in these columns can identify dynamics of the error correction processes. The optimum lag lengths for autoregressive terms in equations (1) and (2) were identified using the Schwarz information criterion. The results show that in the short run one-way directional causality runs from GDP growth to renewable energy production. All these results confirm that, beside of long term, there is a significant short term relationship as well between GDP growth and renewable energy production.

In Table 8, Granger causality test results are presented. As it is obvious from the table, there is a significant Granger causality from GDP growth to renewable energy production, but the reverse is not significant. This result is consistent with the result of VECM model.

## 7. CONCLUSION

This study investigates the relationship between renewable energy production and economic growth by using annually time series data for the Turkish economy over the period 1975-2014. By utilizing the VAR methodology, the existence of causality between renewable energy and economic growth is analyzed for Turkey.

This study applies time series econometric tools such as unit root test, Johansen cointegration, and vector error correction model and Granger causality to investigate the dynamic relationship among the variables. The results of ADF test show that all the variables are stationary in the first difference. The Johansen cointegration modeling techniques have revealed that there is a long run relationship between renewable energy production and GDP growth in Turkey. Vector error correction analysis and Granger causality tests confirm a unidirectional causality running from GDP growth to renewable energy production in Turkey. There is also evidence for long run and short run causality running from GDP growth to renewable energy production in Turkey in this paper.



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*Table 6. Results of the Johansen Cointegration Test (Order: LNRENEWABLE LNGDP)*

| **Sample (adjusted): 1978 2014<br>Trend assumption: Linear deterministic trend, Lags interval (in first differences): 1 to 2** | | | | |
|---|---|---|---|---|
| **Unrestricted Cointegration Rank Test (Trace)** | | | | |
| Hypothesized | | Trace | 0.05 | |
| No. of CE(s) | Eigenvalue | Statistic | Critical Value | Prob.** |
| None * | 0.705112 | 45.42769 | 15.49471 | 0.0000 |
| At most 1 | 0.006596 | 0.244842 | 3.841466 | 0.6207 |
| Trace test indicates 1 cointegrating eqn(s) at the 0.05 level | | | | |
| * denotes rejection of the hypothesis at the 0.05 level | | | | |
| **MacKinnon-Haug-Michelis (1999) p-values | | | | |
| Unrestricted Cointegration Rank Test (Maximum Eigenvalue) | | | | |
| Hypothesized | | Max-Eigen | 0.05 | |
| No. of CE(s) | Eigenvalue | Statistic | Critical Value | Prob.** |
| None * | 0.705112 | 45.18285 | 14.26460 | 0.0000 |
| At most 1 | 0.006596 | 0.244842 | 3.841466 | 0.6207 |
| Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level | | | | |
| * denotes rejection of the hypothesis at the 0.05 level | | | | |
| **MacKinnon-Haug-Michelis (1999) p-values | | | | |
| Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I): | | | | |
| LNRENEWABLE | LNGDP | | | |
| 2.757329 | -3.008792 | | | |
| -1.520473 | 4.343377 | | | |
| Unrestricted Adjustment Coefficients (alpha): | | | | |
| D(LNRENEWABLE) | -0.252714 | -0.008065 | | |
| D(LNGDP) | 0.009348 | -0.003231 | | |
| 1 Cointegrating Equation(s): | | Log likelihood | 78.04941 | |
| Normalized cointegrating coefficients (standard error in parentheses) | | | | |
| LNRENEWABLE | LNGDP | | | |
| 1.000000 | -1.091198 | | | |
| | (0.09901) | | | |
| Adjustment coefficients (standard error in parentheses) | | | | |
| D(LNRENEWABLE) | -0.696815 | | | |
| | (0.09471) | | | |
| D(LNGDP) | 0.025775 | | | |
| | (0.01993) | | | |



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*Table 7. Estimation Results of Vector Error Correction Model (VECM) (Series ordering: LNRENEWABLE LNGDP, normalize according to LNRENEWABLE)*[6]

| **Sample (adjusted): 1978 2014, t-statistics in [ ]** | | |
|---|---|---|
| Cointegrating Eq: | CointEq1 | |
| LNRENEWABLE(-1) | 1.000000 | |
| LNGDP(-1) | -1.091198 | |
| | (0.09901) | |
| | [-11.0205] | |
| C | 9.414312 | |
| Dependent Variable | D(LNRENEWABLE) | D(LNGDP) |
| | (1) | (2) |
| ECT(-1) | -0.696815 | 0.025775 |
| | [-7.35768] | [ 1.29332] |
| D(LNRENEWABLE(-1)) | -0.131349 | -0.027166 |
| | [-1.40962] | [-1.38547] |
| D(LNRENEWABLE(-2)) | -0.028256 | -0.012671 |
| | [-0.37909] | [-0.80787] |
| D(LNGDP(-1)) | -0.033787 | -0.100430 |
| | [-1.04063] | [-0.57392] |
| D(LNGDP(-2)) | 0.119549 | -0.085068 |
| | [2.14525] | [-0.49114] |
| C | 0.127762 | 0.047561 |
| | [ 2.14935] | [ 3.80227] |
| R-squared | 0.811914 | 0.075897 |
| Adj. R-squared | 0.781577 | -0.073152 |
| Sum sq. resids | 1.353131 | 0.059919 |
| S.E. equation | 0.208924 | 0.043964 |
| F-statistic | 26.76358 | 0.509208 |
| Log likelihood | 8.706471 | 66.37447 |
| Akaike AIC | -0.146296 | -3.263485 |
| Schwarz SC | 0.114934 | -3.002255 |
| Mean dependent | 0.112477 | 0.037999 |
| S.D. dependent | 0.447033 | 0.042439 |

ECT denotes the error correction term.

*Table 8. Pairwise Granger Causality Tests Results*

| **Sample: 1975 2014** | | |
|---|---|---|
| Lags: 2 | | |
| Null Hypothesis: | F-Statistic | Prob. |
| DLNRENEWABLE does not Granger Cause DLNGDP | 0.75397 | 0.4784 |
| DLNGDP does not Granger Cause DLNRENEWABLE | 3.58014 | 0.0392* |

* means reject $H_0$ at the 5% level



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The renewable energy production which will increase with economic growth can provide a remedy for Turkey to meet is own energy needs. Thus, Turkey can become a country which is less dependent on foreign energy with the utilization of RESs. The positive effect of economic growth on renewable energy production reveals once again the importance of sustainable green growth for the Turkish economy.

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## ENDNOTES

1 Figures as of July 2016.
2 Million tons of oil equivalent.
3 Other represents asphaltite, animal and vegetable waste and wood for 1885, 1998 and 2000.
4 Million tons of oil equivalent.
5 Other represents asphaltite, animal and vegetable waste and wood for 1885, 1998 and 2000.
6 Table 2b results were used in VECM analysis. Because, Table 2a results were not appropriate for VECM)

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# Chapter 50
# Quality Action to Accelerate Fair Accessibility Through Law of Telecommunication: Global Village Setting

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## ABSTRACT

*This article describes how telecommunication has a strategic role in national development, which requires a large amount of funding in Indonesia, in spite of the limited financial support from the government. The dynamics of telecommunication law has provided a clear direction, from monopoly to healthy competition. It is important for foreign investment to be an option that needs to be harmonized with the applicable law of telecommunication. Four main constructs have been identified as important issues to be discussed are Social Welfare (SW); Global Village (GV); Foreign Direct Investiment (FDI); and Law Telecomunication (LT). In conclusion, two quality actions are proposed to accelerate fair accesibility through law of telecommunication in global village setting. The first quality action is to accelerate SW through fair accessibility in GV setting and FDI. The second quality action is to accelerate SW through fair accessibility based on FDI and LT.*

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## 1. DYNAMICS OF TELECOMMUNICATION AND TECHNOLOGY IN A GLOBAL VILLAGE SETTING

Fast moving of technology in telecommunication includes internet have been significantly change the way of global society to interact each other. Boardless soil, language, cultural, nation and etc seem connected into one big village with the same pupose to survive within limited natural resources existed. Then to accommodate such phenomena, the term 'global village' (GV) then has entered the language as a recent reference (Densi, 2012).

In addition, the present reformation of telecommunication sector is conducted by almost all countries with an increasing acceleration and considering GV as both advantages and disadvantages impact that occurred. As to be admitted that the success of the reformation is still hard to be predicted. One of successful indicator of the reformation for nation's wide is the achievement of social welfare (SW). Distribution of fair and transparent SW's initiation seems significantly important to be considered. Theferefore, accessibility of telecommunication is needed to aim to the social welfare's (SW) achievement.

Furthermore, seems global telecommunication sector will be dominated more by private actors therefore its market will be more competitive and open for any operator. There is a demand for a fair, credible, and transparent regulation which caused a limitation on the government's role only as a regulator, and no longer as a telecommunication operator. In this respect, three phenomena – privatization, monopoly disentanglement, and establishment of independent regulation body – are the foundation of global telecommunication sector (World Telecommunication Development Report, 2002). Research conducted in developing countries indicated that the advance of telecommunication technology is always linear with the increase of a country's Gross Domestic Product (GDP) (ITU, 2012). The telecommunications sector is an industry that has achieved a leading role in the economy during the last decades, due to its potential impact in terms of welfare and development. For instance, Roller and Waverman (2001) found evidence of significant positive effects of telecommunications development on the economic growth at national level. For this reason, one major focus policy makers are to sustain and foster the service diffusion (Bruno, et al., 2015).

In Indonesia, however, to achieve SW through fair accessibility telecomunication, a regulation is required to guarantee the emergence of justice. Including one of the initiations among foreign investments is in the field of telecommunication with the interest of Indonesian people. The foreign investment required in order that the advance of communication technology is owned by foreign investors, while at the same time improve the welfare of Indonesian people. Therefore, technology advancement has rightly be an instrument for Indonesia in addressing the number of poor population (the population whose monthly per capita expenditure is under Poverty Line) which was 28.59 million people in March 2015 (11.22 percent) of around 254.9 million people (Central Bureau of Statistics, 2015).

GV is close related to industrial sector with the advance of communication technology that is also provide positive impact in increasing workers' efficiency. In terms of technology sophistication, the advance of communication technology also provides positive impact for a company. The Deployment of Fiber to the X (FTTX) and Technological Advancement in Third Generation (3G) and upcoming Fourth Generation (4G) mobile telecommunications have given birth to many new broadband, multimedia, and cloud computing services in the telecommunications services industrry (TSI). Many companies, such as in Taiwan, are increasing the use of this services for business management and are demanding highly customized services that suit their business workflow (Chen et al., 2015). Owing to the increasing popularity and the high efficiency of TSI, the competitiveness of the companies has strengthened and improved.



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As GV much affected to the advance of technology information, the technology is also significantly influence productivity and the level of industrial progress. The impact of ICT on labour productivity reveals in a company, an industry and a country level. The development of ICT results in the increase of labour productivity both in the sector producing ICT and in the sector using ICT (Mačiulytė et al., 2014). ICT development need to consider the GV setting by providing a possibility to improve the systems. The system of company includes management processes, ensures a more efficient mechanism of market distribution, stimulates the development of network economy, influences social and cultural changes within a society. In addition, ICT development in correlation with GV has a positive impact on SW development perspectives which, in turn, results in productivity growth of individual companies, as well as industries, and national or country groups.

## 2. RESEARCH DESIGN

The method of the research focuses on empirical research, which is built on the approach of telecommunication law in Indonesia. Empirical research is a research based on the data obtained in the field. The data is secondary data which is collected by bibliographical study. Analyzes and systematizes data shall be conducted to discover a conclusion as an answer to the prevailing problem.

In addition, a quality based approach is also used to analyze of each construct being used. The approach is based on mapping the construct into similar characteristic then identify each construct's relationship into others (Rika Fatimah, 2012). Four main constructs have been identified as important issues to be discussed are Social Welfare (SW); Global Village (GV); Foreign Direct Investiment (FDI); and Telecomunication Law (TL).

## 3. INDONESIA OVERVIEW: TELECOMMUNICATION AND WELFARE OF INDONESIAN PEOPLE

The role of telecommunication currently is very strategic, particularly in triggering many countries, including Indonesian government to pay special attention to improve this sector. In a global economy characterized by rapid technology change, massive trade liberalisation and increasing information needs, the telecoms sector is deemed as a crucial one that provide a basis for competitive advantage, relating to other businesses and the overal economic development (Roller & Waverman, 2001). The efficient delivery of of telecoms services generates direct benefits through reducing transaction costs and indirect benefit through improving marketing information and accelerating the diffusion of knowledge, which can subsequently enhance national productivity (Grenstein & Spiller, 1995). As such, the telecoms sector reforms have been a priority for many governments and international development agencies, (Li, 2011).

Indonesia reacted to this competition by its various policies, in its attempt to adapt this industry with global demand. Globalization era has demanded a change in the development of telecommunication industry that was once restricted and monopolistic into a more open one, by adoption of the basic principle antimonopolist, minimalization of nation role, relinquishment to market mechanism, and reduction of trade barriers, both tariff and nontariff barriers. Adoption of the principles have generated change in the development of telecommunication sector in Indonesia, as seen in various regulations stipulated by the government in regulating this industry.



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Mason's analysis predicted that the ratio of telecommunication industry penetration in Indonesia will reach 158% in the end of 2019, which is an increase from 325 million in 2013 into 411 million in 2019 (Singhania et al., 2014). A survey conducted by Milward-Brown in 2014 also indicated that Indonesian people are ranked as number one users of smartphone in the world, with the average usage time of 181 minutes a day (Milward-Brown, 2014). However, the development of telecommunication industry in Indonesia is unseparable from a number of prior dynamics. Similar to what happens in another country, structural and underlying changes has occurred in the operation of telecommunication in Indonesia, which is in line with deregulation in this field marked by the increasing level of private sector involvement in telecommunication business in many countries (Supriadi, 1996).

Telecommunication means also experienced impressive developments from year to year, both the quantitative ones (power of reach, accessibility, and capacity) and the qualitative ones (technological sophistication, efficiency, and service quality). In line with those are the increasing expectations and demands of users of telecommunication service, with regard to its capacity, quality, and kinds of it that are provided by telecommunication operator or other private sectors. In the last few years, people's needs relatively shift from quantitative matter to a more qualitative one. On the other hand, the fact that telecommunication industry becomes one of the most prestigious industry in global era means that every country, including Indonesia, must be ready in free trade, where other countries' industries will compete in capturing telecommunication market in Indonesia. In this regard, Indonesia has anticipated by building telecommunication network with a wider scope and more diverse services (Indonesian Telecommunications Policy, 1999).

The future challenge in global telecommunication industry will be more severe and complex. In response to that, the direction of national telecommunication development policy in the future must first reflect the historical trajectory of the process of telecommunication industry development policy. Therefore, the first part of this paper will discuss the dynamics of telecommunication law in Indonesia from the era of pre-globalization to post-globalization. In the second part, to promote national telecommunication sector, harmonization of telecommunication law and investment law will be discussed in the framework of global order perspective, particularly to create a environment of healthy investment and competition.

## 4. QUALITY ACTION 1: ACCELERATING SOCIETY WELFARE (SW) THROUGH FAIR ACCESSIBILITY

Quality is fulfilling customer's need, want and/or expectation. Having the quality approach into action may lead to more structured way of accelerating society welfare (SW) in fulfillment of society's need, want and/or expectation (Rita Fatimah & Jemain, 2012). In principal, SW is a significance solution to determine how best one action can comprehensively impact. However, in practice, seems what is plan is a diffetent matters to what is in action. As SW movement is mostly intangible and wide spread to the society, therefore need to make sure that what have been done in action of SW is including the element of fair accessibility.

### 4.1. Social Welfare (SW) for Fair Accessibility in Global Village (GV) Setting

Social Welfare (SW) is not only about economic development but also close related to fair accessibility to sources. Increasing interest in the economics literature with regard to fairness (Fehr & Schmidt,



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1999). Less care to other fairness to access sources than what can own access may significantly implicate within Global Village (GV). Fair accessibility is one the essential need, for nowadays, that government and organization should put their concerned to improve their quality of society. GV increases worldwide technology, within fast information movement, effective communication and consumption of popular products. In addition, GV links cultures and international relations on a variety of levels; economics, politically, socially, etc (Danesi, 2012 & Amirkhanyan, 2011). In conclusion, one of the important impacts of GV is how the society may achieve better social welfare (SW).

However, not only advantages can be direvied from GV's impact but also disadvantages which can refer as root of problems. Various disadvantages occur caused by GV. Nevertheless, GV's disadvantages can be identified into the nine (9) GV society root of problems. First, action to shift to global communication within internet setting may lead many people feeling overwhelmed and second less personal identity revealed (Dixon, 2009). Overwhelmed indicate over reaction and response to one's issues as in real probably less than happened. In addition, in global communication, seems less in real personal identity. As result, the response is overrated as one way to quests for identity in GV.

Third, the rising of cultures conflict, fragmentation and domination culture that lead hybrid cultures were issues that citizen concern with by the evolution of global village (Dixon, 2009). In addition, the fourth disadvantages are negative impacts of dominant culture around the world by those with more economic power. In other words, the cultural standard will be controlled by economic dominant countries. Furthermore, fifth, internets providing social isolation in many interactions level even the kinds of relationships that people encourage offline, while relationship between increased connectivity and increased social isolation seems paradoxical (Biggs, 2000). Next, the sixth disadvantages of GV is uneven distribution of wealth, where the develop countries will be increase twice along with the developing world (Amirkhayan, 2011).

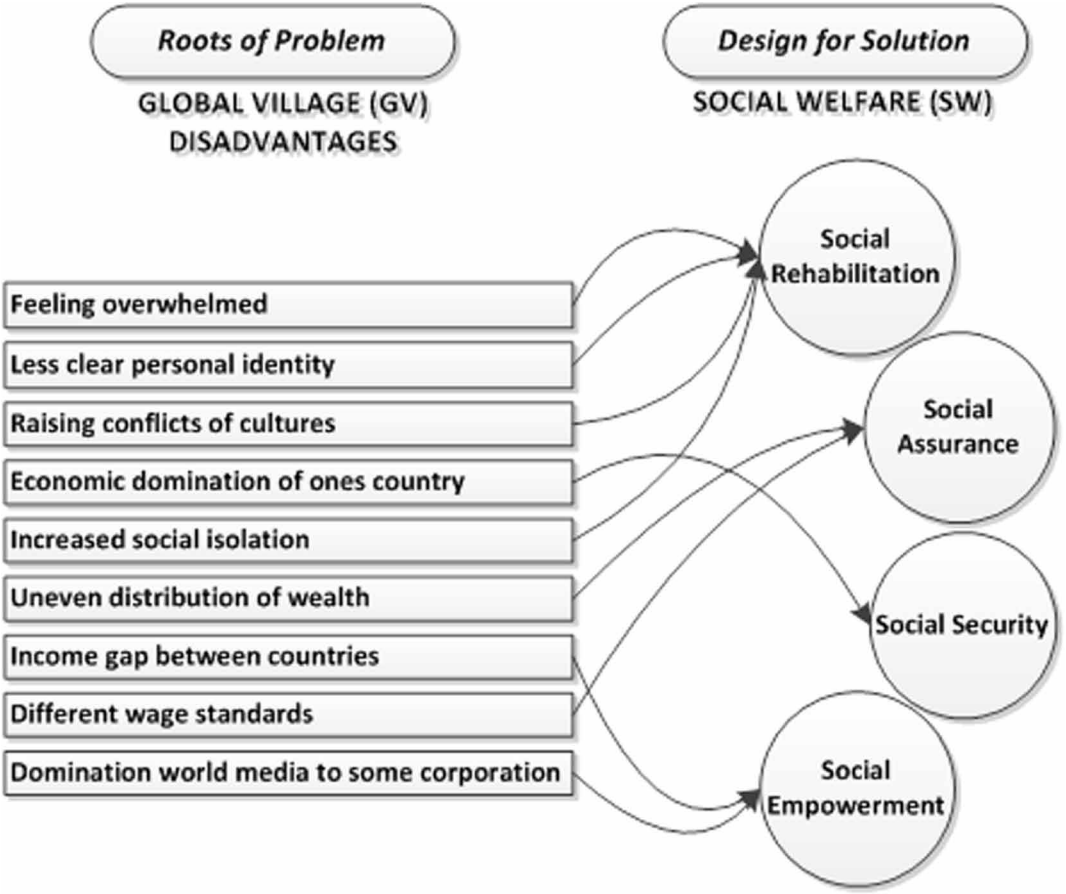
Furthermore, seventh, income gap between developed and developing countries seems continuing wider. As impact to the income gap shall follow by the different wage standards for developing countries. The standards which is explained by the following fact that the technology worker may get more value for his work in a developed country than a worker in a developing country thus there are in the later many dynamic, industrious and enterprising people who are well educated and ready to work with rigor (Amirkhayan, 2011). The last but not least disadvantages of GV, ninth, there is also another aspect of disadvantage of globalization in media sphere. The threat that control of world media by a handful of corporations will limit cultural expression.

The GV society root of problems, the nine disadvantages of GV, may refer to SW's design for solution approach. Welfare is the fulfillment of the conditions of material, spiritual, social and citizens in order to live a decent and able to develop them, so that they can perform their social function. In Indonesia, under Act 11 of 2009, the implementation of SW is the effort directed, integrated, and sustained by the government, local government, and the community in the form of social services in order to meet the basic needs of every citizen (Lakitasari, 2016). The basic needs can be fulfilled accordingly through four main solution approach are (1) Social Rehabilitation; (2) Social Assurance, (3) Social Security, and (4) Social Empowerment. Social Rehabilitation is how to improve SW into the life of every citizen while Social Assurance is all efforts aimed at preventing and addressing the risk of shocks and social vulnerability. Social Security is an institutional scheme to ensure that all people in order to meet the basic needs of a decent life. Social empowerment is all efforts aimed at making citizens who experience social problems have power, so as to meet their basic needs.



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*Figure 1. The Nine Disadvantages of Global Village (GV) as GV Society Root of Problems and Social Welfare's Design for Solution Approach*




Having said the GV society root of problems which refer to GV's disadvantages and SW as solution approach is as proposed in Figure 1.

## 4.2. Foreign Direct Investment (FDI) to Accelerate Social Welfare (SW)

Foreign Direct Investment (FDI) has positive effect on Social Wlefare (SW). FDI impact can be seen as quality action to achieve SW through for at least in four way. First, FDI impact through economic development or economic growth in particular host countries through multiple channels, namely the construction of a new plant which meant increased output or GDP, the total export and employment (Lipsey et. al., 2011). Second, FDI export growth also can be seen as quality action to achieve SW by incerasing the foreign exchange reserves further expand recipient countries to repay foreign debt and imports.

Apart of economic development and export growth, increasing employment opportunities is the third FDI as quality action to achieve SW. FDI shall had positive effects on the domestic economy through the demand side. Increasing employment opportunities shall inline to increase the ability of public spending and further increase the demand in the domestic market. The last quality action under FDI is the role



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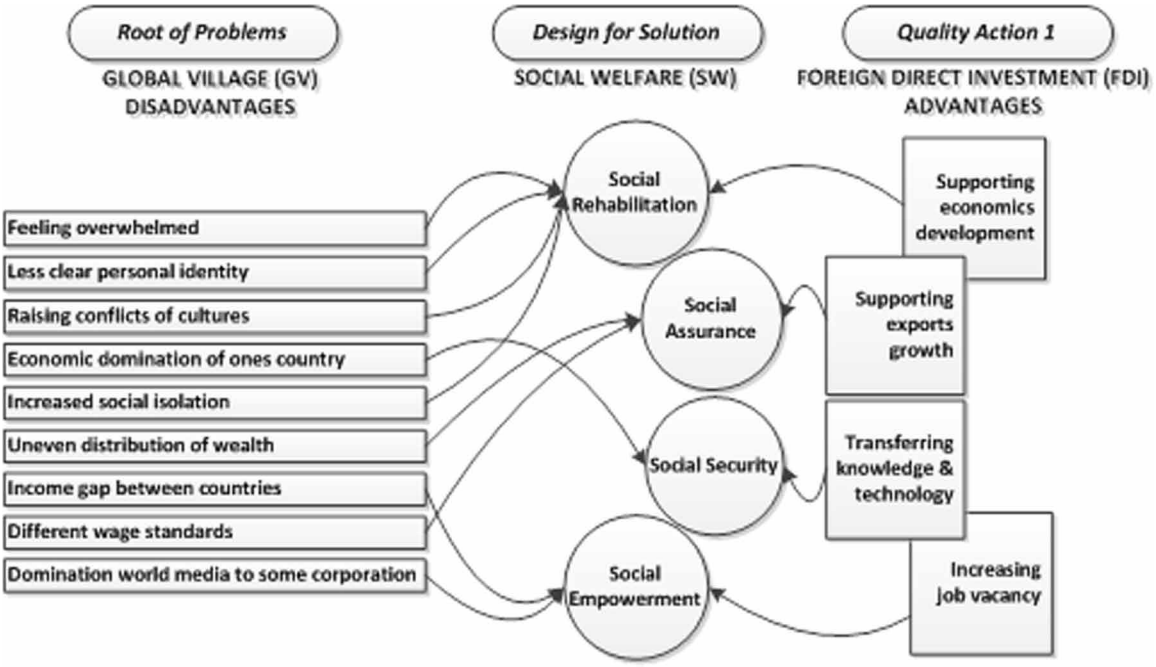
of FDI as transfer of technology and other knowledge resources. By the FDI, the production processes and services will be adopting of SOP in state financiers certainly more advanced than Indonesia as a recipient country.

As discussed, FDI shall refer as quality action to acheive SW then able to function as proposed design for solution for GV root of problems is as proposed in Figure 2.

## 5. OBSTACLE AND APPEAL FOR FOREIGN INVESTORS IN TELECOMMUNICATION SECTOR IN INDONESIA

Common obstacles faced by foreign investors in telecommunication sector in Indonesia are as follows: Common obstacles faced by foreign investors in telecommunication sector in Indonesia are as follows. First, investor will see whether or not the law is enforced based on the principle of good governance, with enforcement of law supremacy as one of its main principles. Therefore, it is important to note that in order to promote Indonesia as one of the destination countries for competitive investment compared to other countries, there must be legal certainty for the investors. Frequently complained problem by the investors is not on the law, but on the implementation of the law. As also stated by Mochtar Kusumaatmadja, the problem in Indonesia which is often complained about is legal certainty, unclear and also contradictory laws and implementation of court decision (Kusumaatmadja, 1998).

*Figure 2. Quality Action 1: Accelerating Society Welfare (SW) through Fair Accessibility in Global Village (GV) Setting and Foreign Direct Investment (FDI)*






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Second, is a good USO policy of a country will prevent digital devide between urban and rural regions or low-income region. Other problem is universal service obligation (USO) or the obligation for operator to provide telecommunication service in regions that are not profitable economically, because the procurement cost is expensive in rural and remote areas and for those with low income who cannot afford telecommunication service (ITU, 2002). And third is by mobile telecommunication system, spectrum of radio frequency is the core media as the medium used in telecommunication operating. Therefore, the management of radio frequency spectrum includes planning in usage, arrangement, licensing, and operational supervision which requires definite, transparent, and fair legal support and its utilization has to focus on the interest of people in general. The regulation of radio frequency spectrum management, in line with the need and progress of telecommunication development, telecommunication operating will be more mobile in the future (ITU, 2002).

In spite of the obstacles, investment in Indonesia tends to increase. The data from well-known economics newspaper in England, *The Economist*, stated that in 2015, Indonesia ranked the 2nd after China as the destination for world investment. Data from Capital Investment Coordinating Board (BKPM) showed that the realization of Foreign Investment (*Penanaman Modal Asing*/PMA) and Domestic Investment (*Penanaman Modal Dalam Negeri*/PMDN) in the first semester of 2015 showed an increase compared to the same period in previous year. The number of workforce employed was also significant, of about 685,000 people.

The 2nd quarter in 2015, particularly for foreign investment, BKPM data showed a quite significant change (refer to Table 1). Transportation, warehouse, and telecommunication industry moved to top rank with a $2.1 million investment. Compared to previous quarter, this industrial sector was only ranked 10 with $282 million investment. This is also strongly related to the relatively huge potential of telecommunication in Indonesia. There are at least five appealing factors for foreign investement in Indonesia. Those include, the increasing number of internet users into 23% (year 2013-present year was 71.2 million people, 2014 was 98.1 million people) and of device sales. The third factor is the huge population. The fourth one is stable political condition, and the fifth one is licensing simplification. Further description is in Table 3 in the Appendix.

*Table 1. Data on Foreign Direct Investment (FDI) in Indonesia, 2nd Quarter, 2015*

| | **2015 ($ million)** | |
|---|---|---|
| | **Q1** | **Q2** |
| **Description of FDI** | | |
| Mining | 1.135 | 1.045 |
| Metal, Engine, and Electronic Industry | 765 | 609 |
| Food Crop and Plantation Industry | 598 | |
| Food Industry | 533 | |
| Transportation Equipment | 582 | |
| Mineral Energy Industry | | 456 |
| Construction | | 631 |
| Transportation, Warehouse & Telecomunication | 282 | 2.160 |

Source: Capital Investment Coordinating Board (BKPM, 2015)



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The performance of infrastructure industries, such as energy, telecommunications, and transport are important determinants for the level of the economy large (refer to Table 1). In this context, the performance of the telecommunications industry – including the internet – takes a central role as economic and social activities are increasingly electronically mediated and transacted online (Lemstra, at. al., 2015). Generally, some of the problems can be resolved by construction and modernization of various telecommunication infrastructures. But a huge amount of capital is required to realize it, and this is the problem for Indonesia. This is where Indonesia needs foreign investors to take part in advancing telecommunication in Indonesia.

In addition to that, the government, through its 10th economical policy plan in 2016, conducted a change of share composition to foreign investment in the revision of negative list of investment (*Daftar Negatif Investasi*/DNI). This change also include DNI change in telecommunication sector. The government established an examination institution for telecommunication device from DNI. Foreign investment is open for 65% for three business fields, and it increased into 67%, such as telecommunication network operator that is integrated with telecommunication service, etc.

Therefore, the regulation on the role of private sector in domestic competition must also be regulated to prevent private sector from controlling domestic market and creating new monopoly. The finding that competition has a positive impact on investment by state-owned incumbents and a negative impact on investment by private incumbents should not be misinterpreted. In particular, it should not be inferred that telecommunications incumbents should be renationalized or that competition between private operators is not desirable. Indeed, the negative relationship between competition and investment by private incumbents does not imply that competition does not foster investment at the industry level because both the incumbents and the entrants may invest (Lestage, et. al., 2013). However, competition may not always encourage investment. When the market is dominated by a private incumbent, it may even slow down the deployment of next generation networks. In this case, pro-competitive regulation could be usefully supplemented by more direct public incentives for investment or even by government leadership.

Hence, it has to be underlined here that the existing regulation must also provide opportunities for foreign investors to continue gain benefits from Indonesian market. This is important considering that they need fund to fulfill their obligation to provide telecommunication services in remote areas in Indonesia. Multinational Enterprises (MNEs) engaging in FDI need advantages allowing them to offset the liability of foreignness in host countries (Hillemann et al., 2016). This liability of foreignness gives rise to additional operational costs related to economic, institutional, and cultural differences between home and host countries.

## 6. EXPLORING TELECOMMUNICATION LAW IN INDONESIA

Legal certainty for foreign investors, combined with potentials in Indonesia is the key for Indonesia to face the challenge of telecommunication business in global era. On one hand, Indonesia must be able to be a good host. On the other hand, to develop telecommunication, Indonesia must be able to encourage foreign investment to continue improving. Hence, harmonization of investment law and telecommunication law must be able to provide legal certainty for foreign investors in investing their capital in Indonesia, also to balance it by continue protecting national interest. The harmonization between FDI and Telecomunication Law shall refer as the next quality action to achieve Social Welfare (SW).



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## 6.1. Telecommunication Law in Pre-Globalization Era

Fundamenttaly, the dynamics of telecommunication in Indonesia can be analyzed from various regulations starting from pre-globalization era and globalization era. In the pre-globalization era, telecommunication regulation tended to legitimate monopoly practice by the government. This can be seen in Act No. 5 of 1964 on Telecommunication and Act No. 3 of 1989 on Telecommunication. Entering globalization era, particularly in the order international telecommunication business, superpower countries in telecommunication signed WTO Agreement on Basic Telecommunication, (Mačiulytė-Šniukienė et al., 2014).

The purpose of the agreement was to liberalize the market of basic telecommunication service. However, not all telecommunication markets in other countries are open for a free market. In Japan, the last mile access line market, which is the landline for from telephone offices to homes of offices, is dominated by the formerly state-owned monopoly Nippon Telegraph and Telephone (NTT) (Nakamura, 2015). Although cable TV companies have their own broadband network infrastructures as a last mile access line, their market share is small in Japan, as is the case with that of mobile broadband internet access services.

## 6.2. Exploring Telecommunication Law in Indonesia: Globalization Era

Indonesia responded global demand in liberalizing its telecommunication market by stipulating Act No. 36 of 1999 on Telecommunication. Afterwards, telecommunication regulation in Indonesia attempted to adopt principles in the business of international telecommunication, such as antimonopoly, transparency, and being open to free market. The complete description can be seen in Table 4 in the Appendix.

Examined from the aspect of telecommunication regulation, since the stipulation of Act No. 36 of 1999 on Telecommunication, it can be concluded that there is a progress in telecommunication sector in Indonesia. The change from monopoly to competition era has created a competitive business environment for big, medium, and small business actor. In comparison of public and private ownership, there is a signifant number of empirical studies examining whether the private companies operate more efficiently than the goverment-owned corporations. The result conclude that the private companies are more efficient and more profitable than the public-owned companies and thus provide better services to the people, in spite of the lack of sufficent data (Karamanis, at. al., 2015).

The development of telecommunication in Indonesia is proven by the data of Ministry of Telecommunication and Informatics, in which in 2014 the number of users in mobile telecommunication in Indonesia was 310 million people, more than the population of Indonesian people (254.9 million people). The number of Base Transceiver Station spreaded in Indonesia is 183,000, which consists of 110,000 2G BTS and 60,000 3G BTS, and the rest is 4G BTS (Kemenkominfo, 2014). The transition from monopolistic era to competition era have promoted advance in telecommunication field in Indonesia, through a competition among telecommunication operator. Indonesia's NRI value experienced a 0.2 point increase and was at the 64th position in 2014, or a 12 position rise from the previous year. NRI Networked Readiness Index (NRI) value is an index indicating the level of a country's readiness to apply and implement ICT consistently, sistematically, and in a structured way to increase economical development, which is published by World Economic Forum (The Global Information Technology Report, 2014).



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## 7. QUALITY ACTION 2: ACCELERATING SOCIETY WELFARE (SW) THROUGH FAIR ACCESSIBILITY BASED ON FOREIGN DIRECT INVESTMENT (FDI) & TELECOMUNICATION LAW (TL)

The development of telecommunication sector in Indonesia experiences problems as well. The data from Ministry of Communication and Informatics (Kemenkominfo) shows that it is not equally experienced in all parts of Indonesia (refer to Table 2). In addition to infrastructure construction, foreign investment also provides other benefits for advancing Indonesia. FDI is a crucial factor in international economic integration. FDI creates direct, stable and long-lasting links between economies. It promotes the transfer of new technology and know-how between countries, and provides the host economy to promote its products more widely in international markets (Tülüce, at. al., 2014). FDI is also an extra funding source for investment and, under the right policy environment; it can be an important channel for development of SMEs. Increased FDI inflows to a country cancreate several positive economic effects. Among others, FDI canaffect labour and capital markets, trade patterns and economic growth. It is well known from the theory of host country effects of FDI that in order for FDI to occur, the multinational enterprise (MNE) must have some firm specific advantages compared to the enterprises in the host economy.

Nowadays, internet has a crucial role for a country in global economy competition. In this regard, internet speed in a country is also one of the indicators of ICT development in every country. It is related to the condition of broadband network in the country. In Indonesia, the speed of internet access in 2014 is under 2.4 Mbps. Although it experienced an increase compared to the same period last year, the number is still under the average of internet speed in ASEAN countries, which was 3.6 Mbps in 2014 (Kemenkominfo, 2014).

However, inviting foreign investors in a national telecommunication competition also requires discretion. Indonesia must reflect on the case of the selling of Indosat shares. Almost all Indosat shares, which are capital in the limited liability company, are controlled by foreign parties. The controlled capital indicates an ownership by individual or legal entity of a company. It is worth to be noted that whoever control information, he/she will control everything. This is the negative effect of a regulation which provides unlimited opportunity to foreign parties.

In GATT-WTO agreement, particularly the one related to investment trade which is called Trade-Related Investment Measure (TRIMs), it is specified that every country who sign TRIMs agreement must not differentiate domestic and foreign capitals. Investment Law of GATT-WTO participant countries must not also differentiate both kinds of capital. Further, quoting the opinion of Bergsman and Shen, David Woodword (Woodword and Geneva, 1996), stated that:

*Table 2. Indicator of Access to and Use of Information & Communication Technology (ICT) in Households in 2014*

| | (%) | | | |
|---|---|---|---|---|
| **ICT** | **Java** | **Sumatera** | **Maluku & Papua** | **Sulawesi** |
| Computer | 30.42 | 28.57 | 16.07 | 20.70 |
| Internet | 28.28 | 26.24 | 14.20 | 17.05 |

Source: Ministry of Communication and Informatics (Kemenkominfo, 2014)



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*...that low labour cost are no longer sufficient to attach FDI, as investors are interested, primarily in productivity, and only in sites where can produce to international standars of quality and price. Among the specific factors they identify as necessary to promote FDI are: 1) a stable macroeconomic environtment (including and appropriately valued exchange rate); 2) rapid, sustained economy growth and strong consistent growth in demand for consumer goods and service; 3) sustained trade reform (and nonbureaucratic cutoms procedures) and domestic liberalization; 4) adequate legal protection for investors, including wellfunctioning legal systems; 5) general education, industrial skill training and managerial discipline; 6) access to quality supplies of parts, components, and supporting services, with upstream and downstream linkages, and 7) conditions that facilitate just-in-time delivery.*

By examining the ideas, it is important for a country to attract investors to be able to create a conducive investment environment and to have legal certainty, including in the investment for telecommunication industry. Considering that, it is required to change the way in managing investment from a passive one into a proactive one. Government and parties that are related to investment management must have perception alignment that the presence of investor is crucial in driving the development of national economy. The presence of foreign investors is intended not only for the interests of government and business actors, but also for those of people in general.

In order to obtain a more interesting environment of capital investment, the laws and regulation on capital investment must be formulated thoroughly, undividedly, and must provide legal certainty. Its effective implementation also play an important role. One of the obstacles in investment environment is on the inappropriateness of regulation implementation in capital investment, causing apprehension and uncertainty for capital investor (Sumantoro, 1984). Regulation of telecommunications sector plays a crucial role in the political and economic agenda for both industrial and developing countries. The regulatory efforts of more developing countries in order to attract investments and enhance the level of effective competition in the industry are hindered by the absence of a sound legal framework, the weak level of regulation and the extended state interventionism, (Paleologos, at. al., 2013).

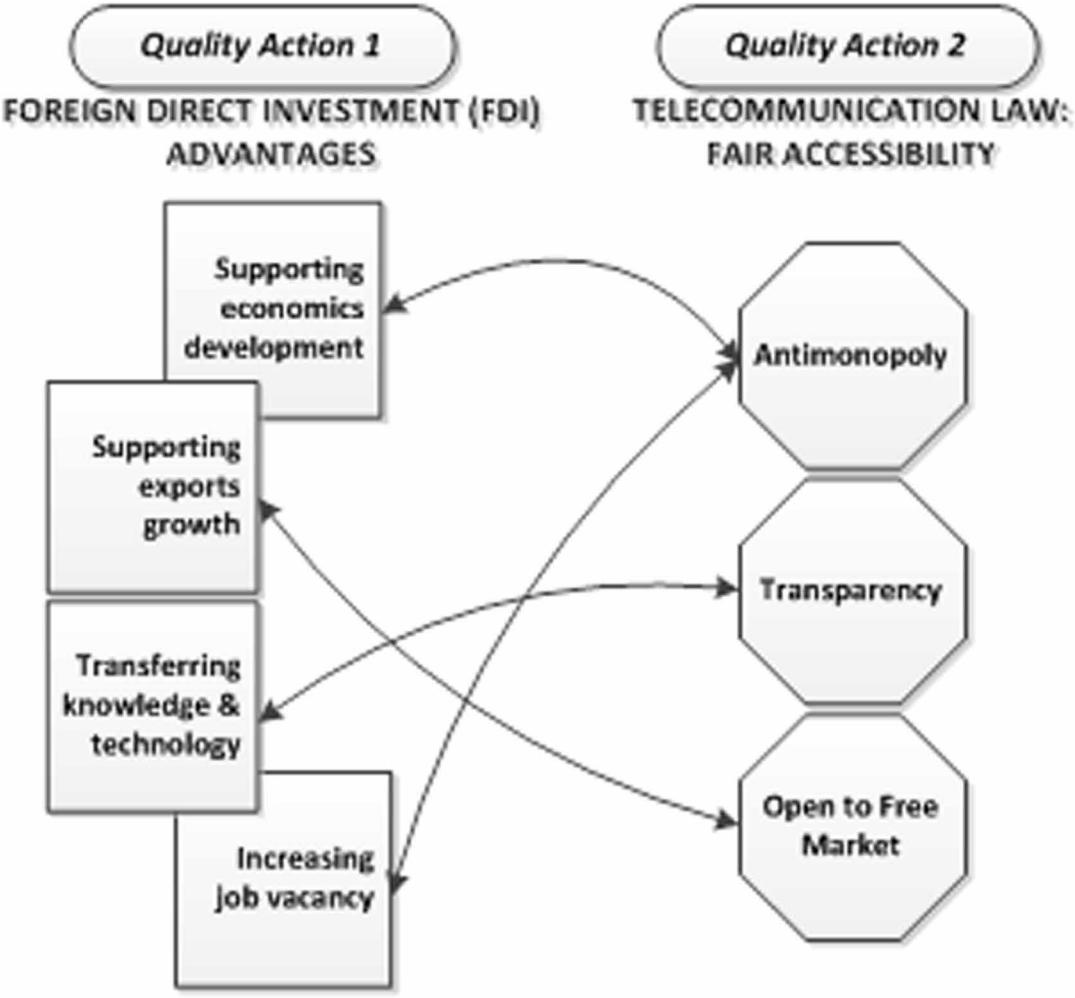
Based on that, the regulation on investment is considered important to be revised in order to be adapted with the development of investment law that is agreed to by various countries, that is realized in numerous international agreements, both in bilateral agreement (Bilateral Investment Treaties) and multilateral agreement (Multilateral Investment Treaties). However, the problem is in law enforcement. Apparently, this is the main issue in attracting investment to this country, whether judicial process as the last resort in law enforcement is conducted fairly. Therefore, although investment law is already revised, there is no guarantee that investors will come unexpectedly.

In conclusion, the need to accommodate movement of fair accessibility accordingly to FDI under Telecomunication Law (TL) shall be refer as the next quality action to achieve Social Welfare (SW) (refer to Figure 3). Indonesia already responded global demand in liberalizing its telecommunication market by stipulating Act No. 36 of 1999 on Telecommunication. Afterwards, telecommunication regulation in Indonesia attempted to adopt principles in the business of international telecommunication, such as antimonopoly, transparency, and being open to free market.



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*Figure 3. Quality Action 2: Accelerating Society Welfare through Fair Accessibility Based on Foreign Direct Investment (FDI) & Telecomunication Law (TL)*




## 8. CONCLUSION

From the exploration of historical trajectory of telecommunication regulation in Indonesia, it can be concluded that the change of nature of telecommunication business from monopolistic to competition in the global era has been proved to bring positive impact in the development of telecommunication in Indonesia. Competition in telecommunication business in Indonesia has created a competitive business environment for big, medium, and small business actors, which directly influence national economy. However, the satisfying progress also means problem. As a matter of fact, telecommunication sector is not equally distributed in Indonesia up to the present moment.

One of the ways to address the problem in developing telecommunication in Indonesia is by Foreign Direct Investment (FDI). Indonesia has a lot of potentials which functions as the appeals to attract investment. However, Indonesia has to harmonize telecommunication law and investment law, particularly to promote acceleration and connectivity of telecommunication in all parts of Indonesia. On the other hand,



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this arrangement is also important to protect national interest, while also preventing foreign dominance in telecommunication market in Indonesia.

In conclusion, two quality actions are proposed to accelerate fair accesibility through law of telecommunication in global village setting. The first quality action is to accelerate Society Welfare (SW) through fair accessibility in Global Village (GV) setting and FDI. In other words, FDI shall refer as quality action to acheive SW then able to function as proposed design for solution for GV root of problems. Second quality action is to accelerate SW through fair accessibility based on FDI and Telecomunication Law. Meaning that the need to accommodate movement of fair accessibility accordingly to FDI under Telecommunication Law shall be refer as the next quality action to achieve SW.

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# APPENDIX

*Table 3. Potential of Internet Users*

| No | Factor | Description |
|---|---|---|
| 1. | Constantly increasing number of internet users. | The published 2014 survey of the Association of Indonesian Internet Service Operator (Asosiasi Penyelenggara Jasa Internet Indonesia/APJII) shows that the increase of internet users in Indonesia was quite significant, of about 23% (from 71.2 million people in 2013 into 88.1 million people in 2014). The increase in number is followed by increase in penetration – users per the number of population – from 28.6 percent in 2013 into 34.9 percent in 2014. Meaning, the enthusiasm of Indonesian people to use internet is getting higher. |
| 2 | Constantly increasing sales of gadget | Data from VNI Forecast Cisco in 2011 showed that there were 250 million purchases of various cell phones and tablet computers in Indonesia. According to Cisco research, in only one year, the number of cell phone owners in Indonesia increased of 50 million, into 300 million users. This increase is expected to develop until 2017 into 370 million users of cell phone and tablet computer. |
| 3 | Huge population | The number of population of 254.9 million people is a proof that Indonesian market is huge. |
| 4 | Stable political condition | Political condition in Indonesia is considered stable and safe, particularly when it is related to other Southeast Asian countries such as Malaysia or Thailand. |
| 5 | Licensing simplification through PTSP | The government has simplified investment licensing in the country by implementing One Stop Integrated Service (Pelayanan Terpadu Satu Pintu/PTSP). This is conducted to address the complicated licensing in Indonesia, including the overlapping regulation bureaucracy. |

*Table 4. Dynamics of telecommunication law in Indonesia*

| Telecommunication Regulation | Description | Outcome |
|---|---|---|
| **Pre-Globalization Era** | | |
| Act No. 5 of 1964 on Telecommunication | 1. Division of duties in telecommunication into three parts<br>a) Regulation function (Government)<br>b) Operational function (State-owned Enterprises/BUMN, in this case Perumtel and PT Indosat)<br>c) Coordination function: Telecommunication Board<br>2. There are only two companies in operational function, namely telecommunication operator for domestic public, which is Perumtel (present PT (Persero) Telkom), and telecommunication operator for foreign public, which is Liability Company (*Perusahaan Perseroan*/Persero) PT Indosat. | 1. Rise of monopoly practice<br>2. The society do not have much to choose from various telecommunication business operators<br>3. No competition, causing the lack of competition and breakthrough |
| Act No. 3 of 1989 on Telecommunication (Transition Era) | Start to regulate people's involvement in certain limits | Rise of new entrepreneurs in telecommunication. |



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Section 5

# Organizational and Social Implications

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# Chapter 51
# Information Asymmetries in the Context of Restatement Announcements

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## ABSTRACT

*This chapter presents the results of an empirical investigation on stock trading activity in the context of restatement announcements. The aim is to explore whether sophisticated investors may anticipate accounting restatements, and which factors lead their trading strategies. The empirical analysis shows that sophisticated investors sell before and buy after the announcement. Moreover sophisticated investors trade more when information asymmetry and event-related risk are higher, and do not care about stock's recent performance. In contrast, unsophisticated investors do not follow a particular trading strategy before or after the announcement, stay away from trading when the information gap (risk) is too wide (high), but trade more on stock with positive past performance. Results suggest that sophisticated investors are able to anticipate restatements and exploit their information advantage to speculate.*

## INTRODUCTION

The Financial Accounting Standards Board (FASB) defines a restatement as a revision of a previously issued financial statement to correct a material error. Restatements have gathered a considerable interest from researchers, regulators and investors due to the significant impact they have on issuers' value. A consistent portion of research investigates market reaction to accounting restatements. Several studies

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document large negative reaction with a loss in equity value of 10 percent, or even higher (Hribar & Jenkins, 2004; Palmrose, Richardson, & Scholz, 2004). Part of this reaction is due to revisions in firm's expected performance and part to a reduction in management capabilities and financial statements reliability (Badertscher, Hribar, & Jenkins, 2011). A recent strand of the literature focuses on the relation between information flow among investors and the market response to restatement announcements. Hribar et al. (2010) show that institutional investors tend to quit from restatement companies one quarter before the announcement. Badertscher et al. (2011) demonstrate that insider trading and company's share repurchase before a restatement announcements have a signaling effect for investors.

This chapter aims to extend this literature by investigating the difference between sophisticated and unsophisticated investors trading strategies in the context of restatement announcement. Previous studies adopt ownership data to discriminate investors. Differently, we adopt a microstructure approach and classify investors based on their trading behaviors. This allows us to document the trading strategies implemented by each investor's type on a daily basis.

This chapter explores four hypotheses about the difference between sophisticated and unsophisticated trading. The first hypothesis is that sophisticated investors are able to anticipate accounting restatement and sell before the event's disclosure. By comparing abnormal buy and sell trading volumes, it emerges that sophisticated investors tend to sell until the day before the announcement, whereas unsophisticated investors do not change their strategy in the same period. The second hypothesis is that, given that the information advantage rests on the side of sophisticated investors, they trade more when information asymmetry is higher. The results show a positive impact of information asymmetry on sophisticated investors trading volume. On the contrary, such an impact is negative for unsophisticated investors. The third hypothesis is that sophisticated investors trade more when the risk related to the impact of the announcement on the stock price is higher. Results are coherent with the expectations and show that an increase in uncertainty has a positive impact of sophisticated investors trading. Unsophisticated investors, instead, tend to stay away from too risky stocks. The fourth and last hypothesis is that sophisticated investors do not consider stock's recent performance in their decision process, while unsophisticated do. Results show no impact of stock performance on sophisticated strategy and a positive effect on both buy and sell volumes of unsophisticated investors.

## LITERATURE REVIEW AND HYPOTHESES

Recent accounting scandals have raised both regulators and financial community interest on accounting restatements. Unsurprisingly, the literature in this field has grown significantly in the last decade (Hribar & Jenkins, 2004; Badertscher et al., 2011).

Existing studies agree on negative consequences of restatements and deeply investigated their causes and consequences. Using a relatively small sample (73 US restating companies from 1976 to 1985), Kinney and McDaniel (1989) showed that restating companies present lower returns and higher leverage; subsequently lots of effort has been dedicated to measure the market reaction and to identify event's features which could amplify or mitigate such an impact. Change in equity value is typically quantified in terms of abnormal returns in order to avoid the influence of market trend; previous studies show that restating companies lose about 10 percent of their market value within two days following a restate-



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ment announcement (Dechow, Sloan, & Sweeney, 1996; GAO, 2003; Wilson, 2008; Kravet & Shevlin, 2010; Burks, 2011). Furthermore, some characteristics of restatements may exacerbate such a negative reaction. If a restatement:

1. Involves multiple and core account revisions (e.g.: revenues and cost of sales),
2. Has large impact on net income,
3. Is deemed fraudulent, or
4. Is auditor-initiated, the loss in market value can be as high as 20 percent (Anderson & Yohn, 2002; Palmrose et al., 2004; Hennes, Leone, & Miller, 2008).

A second branch of the literature investigates the relation between corporate governance and restatements. Companies could adopt adequate measures in order to prevent restatements to occur or repeat over time. Aier, Comprix, Gunlock and Lee (2005) show that CFO financial expertise is negatively associated with restatements. Carcello, Neal, Palmrose and Scholz (2011) find the same effect for audit committee independence and expertise. Adopting more conservative financial reporting strategy may represent a wise option as well, however Moore and Pfeiffer (2004) report that restating firms do not appear to change their strategy after a restatement. Finally, top executives and audit committee members may decide to not engage in 'arguable' accounting practices in order to avoid possible reputational damages. Restatements turn to be very costly for them in terms of compensation, reputation and job loss (Srinivasan, 2005; Desai, Hogan, & Wilkins, 2006; Cheng & Farber, 2008; D. Collins, Masli, Reitenga, & Sanchez, 2009).

Overall, previous studies suggest that part of the market reaction is due to revisions in expected future earnings and financial statement reliability, and part is due to the increase in uncertainty about management credibility (Badertscher et al., 2011).

Financial studies investigate the difference between informed and uniformed investors. Two types of investors are assumed to be informed: insiders, since they possess private information, and institutional investors, since they are reasonably supposed to be more sophisticated and have more resources to spend in information mining. In this chapter, we refer to informed investors as sophisticated investors; on the opposite, we refer to uninformed investors as unsophisticated investors.

Beneish (1999), Li and Zhang (2006), Agrawal and Cooper (2008), and Badertscher et al. (2011) provide evidence of insiders' strategic trading before restatement announcements. Drake, Myers, Scholz and Sharp (2015) provide evidence of abnormal short selling behavior surrounding, but not before, restatement announcements. Despite the large number of studies investigating the informational advantage of institutional investors (D. W. Collins, Gong, & Hribar, 2003; Ke & Petroni, 2004; Ke & Ramalingegowda, 2005; Ke, Petroni, & Yu, 2008), to the extent of our knowledge, only one paper (Hribar et al., 2010) which investigates institutional investors' behavior in relation to restatement announcements. Hribar et al. (2010) argue that institutional investors act as they partially anticipate potential accounting irregularities. Institutional investors adjust their holdings downward prior to the restatement announcements and their information advantage is mainly due to their higher ability in information processing. However, it is plausible that not all sophisticated investors decide to quit so long time in advance. Some of them might not be able so get alerts so early or might simply decide to monitor the situation if the irregularities are not likely to be disclosed.

This chapter addresses this gap in the literature by deepening in sophisticated investors' behavior and by analyzing their daily trading behaviors in the context of restatement announcements.



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Accounting restatements are complex information, and investors should not be able to anticipate it. Either managers or third parties (e.g. external auditors, SEC) might discover irregularities and this makes the information timing unpredictable. Even if they were company-initiated, managers would be unwilling to share this information with outsiders. Consequently, investors' reaction to such events mostly relies on their ability (and speed) in processing information. It is possible that part of sophisticated investors fails to detect signals of a forthcoming restatement as early as predicted by Hribar et al. (2010), or they might decide to wait until the restatement is about to be announced. If this happens, abnormal trading activity coming from sophisticated investors should arise right before the announcement. This discussion leads to the first research hypothesis.

**H1:** Sophisticated investors sell before a restatement announcement, while unsophisticated do not.

If H1 is true, then sophisticated and sophisticated investors carry on different trading strategies, which are based on the information available. Sophisticated investors typically have higher information quality (Barron, Byard, & Kim, 2002; Barron, Harris, & Stanford, 2005; Bushee & Goodman, 2007; Hribar et al., 2010). This means that information asymmetry rests on their side. On the other hand, unsophisticated investors can adapt their trading strategies only after the information disclosure. Therefore sophisticated (unsophisticated) investors might (might not) be willing to trade in case of high information asymmetry. This leads to the second research hypothesis.

**H2:** Sophisticated (unsophisticated) investors trade more (less) before restatement announcements because of the increase in information asymmetry.

Unsophisticated investors typically have stricter wealth constraints compared than sophisticated investor. Consequently, unsophisticated investors are more reluctant to face risk compared with sophisticated investors (Hirshleifer, 2001; Kaniel, Liu, Saar, & Titman, 2012). When announcing a restatement, managers typically are not able to provide reliable estimation about the impact that the restatement is going to have on net income. The market appears to impose less severe losses to firms which are able to provide information about the effect of restatement quickly (Hirschey, Smith, & Wilson, 2015; BenYoussef & Khan, 2016). However, a restatement triggers a long and complex process and managers need time to assess the real impact. This situation causes an increase in information uncertainty and risk for investors. This discussion leads us to the third research hypothesis.

**H3:** Sophisticated (unsophisticated) investors trade more (less) when information uncertainty is higher.

Another important factor, which is likely to influence traders' buying and selling decisions, is stock's recent performance. As Grinblatt and Keloharju (2001) note, "*the impact of past returns on the buy versus sell decision is complicated by equilibrium constraints*"; furthermore, existing studies (Odean, 1998; Choe, Kho, & Stulz, 1999; Grinblatt & Keloharju, 2000) report some heterogeneity among countries. As we know from the literature present above, sophisticated investors are able to better process complex information (such as restatement) and have less wealth constraint compared to unsophisticated investors. Therefore they should be able to make better forecast of restatement consequences and decide to buy, hold or sell a stock regardless stock's past performance. This leads us to the fourth research hypothesis.



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**H4:** Past stock returns have lower impact on buy/sell decision of sophisticated than unsophisticated investors.

## METHODOLOGY AND EMPIRICAL RESULTS

### Data

This paper focuses on accounting restatement announcements, which are typical non-recurring and unscheduled events. There is no specific period of time when they are more likely to be disclosed. Both annual and interim reports can be affected by errors, and these errors can be discovered even long time after the original filling. With such characteristics, accounting restatement are extremely interesting from a research point of view because of their significant impact and heterogeneity, but also time-consuming from a data collection perspective. Most of the existing studies rely on a database compiled by the U.S. Government Accountability Office (GAO), which is public available. Such a database covers (in two subsequent issues) a 10-year period starting from January 1997 and provides company name, disclosure date and causes for each restatement. However, it starts to become out of the date, since regulatory and technological innovations might have modified the speed and magnitude of investors' reaction to restatement announcements. To the extent of our knowledge the only database, which goes beyond the period covered by GAO, is Audit Analytics, but it has some event overlap issues (Karpoff, Koester, Lee, & Martin, 2012). Being aware of the potential biases these two sources might introduce, we replicated the GAO methodology and built our dataset from scratch. We adopted the Power Search tool as provided by Lexis-Nexis Academic and searched for the following keywords: "restate", "restatement", "restates", "restated" or "restating" within fifty words of "financial statement" or "earnings" and variations such as "adjust", "amend" and "revise" within fifty words of "financial statement" or 'earnings". Our search included all English news and SEC filings in order to find the date when the information firstly became public. We collected all the documents announcing a restatement from 1st January 2007 to 31st December 2013. The initial sample included 6,500 events. Table 1 summarizes the number of events collected for each year.

*Table 1. Events by year*

| Year | No. of Events |
|---|---|
| 2007 | 1,367 |
| 2008 | 949 |
| 2009 | 762 |
| 2010 | 858 |
| 2011 | 855 |
| 2012 | 856 |
| 2013 | 853 |
| **No. of events** | **6,500** |

This table reports the number of events for each year as detected in Lexis-Nexis Academic database. The search was performed using the Power Search tool with the following keywords: "restate", "restatement", "restates", "restated", "restating", "adjust", "amend" or "revise" within fifty words of "financial statement" or "earnings".



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From the initial sample we selected companies listed on New York Stock Exchange, NASDAQ and Amex. We deleted 142 events due to clerical errors or omissions and further 3,857 events because of market data availability. For the remaining 2,501 we retrieved trades and quotes data, as well as changes in shares outstanding, from Thomson Reuters Tickhistory Database (TRTH). In order to be included in the final sample we require companies to have market data available for at least 60 trading days before and after the announcement, and at least 50 percent of the non-zero daily trading volume in the estimation period (-60;-21). This was necessary to avoid companies delisted right after the restatement and illiquid stocks. These restrictions led us to delete further 1,499 events. Finally, we deleted 478 events because of overlapping. In other words if a company had multiple restatement announcements within 61 trading days we kept the only the first one. Table 2 summarizes all the filters applied. The final sample consists of 524 restatements occurred to 455 firms.

In order to identify trades involving sophisticated and unsophisticated investors, we classified all transactions as follows. A trade was assigned to sophisticated investors if its volume was higher than 10,000 shares or its market value was higher than 200,000 dollars[1]. Previous studies show that trading size is highly effective in separating institutional and individual investors activities (LaPlante & Muscarella, 1997; C. Lee & Radhakrishna, 2000). We also classified transaction as buyer or seller-initiated according to Lee and Ready's (1991) algorithm paying attention to combining trades which occurred at the same time-stamp in order to avoid biases due to order fragmentation.

To detect differences in sophisticated and unsophisticated investors' behavior, we considered the daily trading volume of each investor type. There is a wide literature which shows that trading volume is more effective than stock price in separating sophisticated and unsophisticated investors' trades (Bamber, Barron, & Stevens, 2011). We adopted log turnover as a measure for trading volume. Raw turnover is defined as the trading volume divided by outstanding shares. Turnover has a major benefit, it corrects for the number of outstanding shares; therefore it provides a cleaner interpretation of the results compared to absolute volume (i.e. number of shares traded). However, the distribution of raw turnover is highly skewed and this might bias statistical tests and regression coefficient estimators. See Table 3 for summary statistics. Skewness and kurtosis show a clear divergence from normality so we applied a log transformation in order to normalize the distribution (Chae, 2005). Table 3 shows that, after applying the logarithm, our measure of trading volume is very close to normality.

*Table 2. Data sets and applied filters*

| | **No. of restatement** |
|---|---|
| Events from Lexis-Nexis | 6,500 |
| Filter for restatement due to errors or omissions | (142) |
| Filter for market and data availability on TRTH | (3,857) |
| Filter for number of trading days | (1,499) |
| Filter for overlapping | (478) |
| **Final sample** | 524 |
| **No. of firms** | 455 |

This table summarizes the sampling process. The restatement announced by US companies between 2007 and 2013 were extracted from the Lexis-Nexis database. Stocks in the final sample has to be listed in NYSE, NASDAQ or AMEX, have market data available for a 121-day period centered on the annoucnement day (-60;+60) and this time interval must not overlap with other restatements or corporate events for the same company.



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*Table 3. Turnover descriptive statistics*

| Sample | Mean | SD | Kurtosis | Skewness |
|---|---|---|---|---|
| | **Daily Turnover (%)** | | | |
| Sophisticated-Buy | 0.122 | 0.060 | 8.571 | 2.635 |
| Unsophisticated-Buy | 1.373 | 0.272 | 0.178 | 0.957 |
| Sophisticated-Sel | 0.140 | 0.164 | 47.208 | 6.540 |
| Unsophisticated-Sell | 1.379 | 0.295 | 2.492 | 1.637 |
| Full sample | 3.439 | 0.692 | 0.562 | 1.119 |
| | **Log Daily Turnover** | | | |
| Sophisticated-Buy | -2.933 | 0.152 | -0.447 | -0.143 |
| Unsophisticated-Buy | -6.449 | 0.044 | -0.545 | 0.221 |
| Sophisticated-Sel | -2.939 | 0.128 | 0.557 | -0.322 |
| Unsophisticated-Sell | -6.432 | 0.044 | -0.325 | 0.326 |
| Full sample | -5.515 | 0.045 | -0.433 | 0.311 |

This table reports the summary statistics of daily turnover for a 41-day period centered on the announcement day (-20;+20). The summary statistics include mean, standard deviation, skewness and kurtosis. The daily turnover is defined as daily trading volume divided by outstanding shares.

Unless otherwise noted, any following reference to volume, trading volume and turnover refers to log turnover as defined in Equation (1). Equation (2) shows how we estimated the abnormal trading volume, which is the difference between the trading volume of stock *i* in day *t* minus the median value $\left(\widetilde{LogTurnover_i}\right)$ of trading volume in the estimation period for the same stock[2].

$$LogTurnover = log\left(\frac{TradingVolume_{i,t}}{Outstanding_{i,t}}\right) \tag{1}$$

$$AbnormalTurnover\left(\varepsilon_{i,t}\right) = LogTurnover_{i,t} - \widetilde{LogTurnover_i} \tag{2}$$

Figure 1 provides a graphical representation of the change in trading volume from day -20 to day +20. Chae (2005) shows that abnormal trading volume increases prior to unscheduled announcement. A restatement represents a typical unscheduled announcement thus we expect to find a similar pattern in our data. The graph shows the expected increase in trading volume. Interestingly, Chae (2005) find a similar trend before merger and acquisition (M&A) announcements. M&As are usually anticipated by rumors (Aspris, Foley, & Frino, 2014; Siganos & Papa, 2015), therefore the similarity in volume pattern with restatements might be a signal of a possible investors' anticipation.

Palmrose et al. (2004), among others, provide evidence of negative market reaction to restatement announcements. Figure 2 plots the cumulative abnormal stock returns for a 21-day period starting 10 days before the restatement announcement (day 0). The time series shows a clear downward trend, which is coherent with previous studies.



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*Figure 1. Cumulative abnormal volume (-20; +20)*

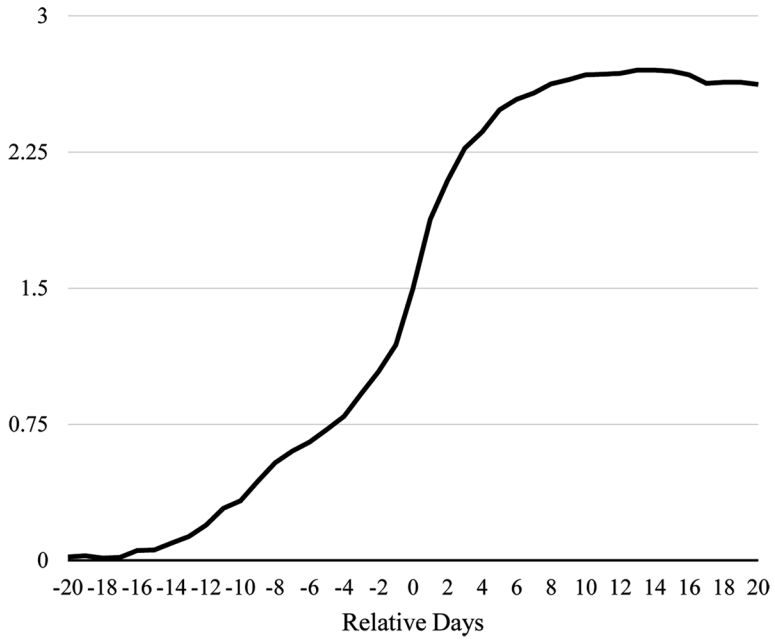
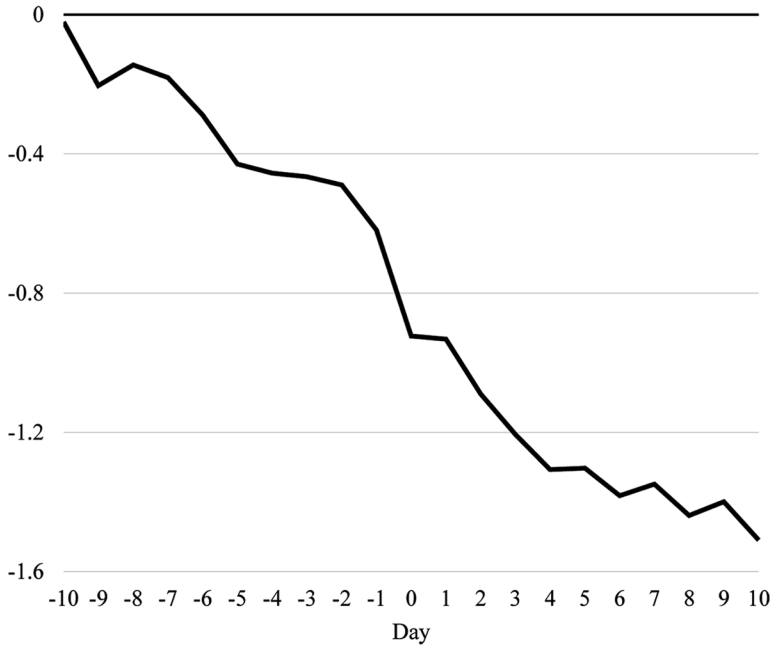



*Figure 2. Cumulative abnormal returns (-20;+20)*






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## Univariate Analysis

Using the variables described above, we report the cross-sectional average abnormal turnover for all four subsamples from day -7 to +7 in Table 4. This table shows that the abnormal volume due to sophisticated investors is significantly larger than the abnormal volume generated by unsophisticated investors, and that the difference between the two groups is statistically significant.

We also analyze the difference in net selling activity between sophisticated and unsophisticated investors. Based on the assumption that more informed traders would leave companies before the announcement, we estimated investors' net activity on the sell side, i.e. the difference the difference between abnormal sell and abnormal buy volumes (Hribar et al., 2010). Figure 3 provides a graphical representation of the cross sectional abnormal net selling activity for each investor type. When the line is above (below) zero, investors are net seller (buyer). The graph shows that sophisticated investors tend to be net buyers from day -7 to day -4 and net sellers from day -3 to day -1. On the other hand, unsophisticated investors' activity is quite constant over time. Looking also at the change in stock price, sophisticated investors show a clear speculative behavior since they sell just before the price drop suggesting that they are able to anticipate the announcement. These results lead us to accept H1.

*Table 4. Daily abnormal turnover around the restatement announcement*

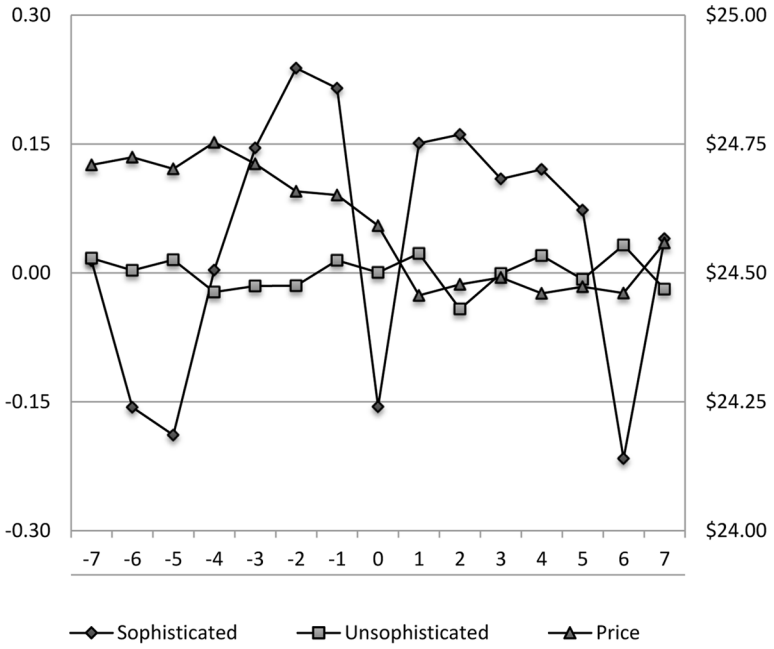
| | Buy | | | | Sell | | | |
|---|---|---|---|---|---|---|---|---|
| **Day** | **Block** | **Non-Block** | ***t*-statistics** | | **Block** | **Non-Block** | ***t*-statistics** | |
| -7 | 5.240 | 0.050 | -28.48 | *** | 5.2544 | 0.0669 | -27.95 | *** |
| -6 | 5.313 | 0.028 | -29.26 | *** | 5.156 | 0.031 | -27.8 | *** |
| -5 | 5.252 | 0.047 | -28.26 | *** | 5.063 | 0.062 | -27.21 | *** |
| -4 | 5.191 | 0.067 | -28.03 | *** | 5.195 | 0.045 | -27.65 | *** |
| -3 | 4.911 | 0.117 | -26.58 | *** | 5.056 | 0.102 | -27.07 | *** |
| -2 | 5.004 | 0.119 | -26.72 | *** | 5.242 | 0.104 | -28.06 | *** |
| -1 | 4.845 | 0.117 | -25.98 | *** | 5.060 | 0.132 | -26.68 | *** |
| 0 | 5.096 | 0.290 | -27.12 | *** | 4.940 | 0.291 | -25.71 | *** |
| 1 | 4.581 | 0.350 | -23.24 | *** | 4.732 | 0.373 | -24.08 | *** |
| 2 | 4.879 | 0.227 | -25.68 | *** | 5.040 | 0.185 | -26.52 | *** |
| 3 | 4.904 | 0.146 | -25.59 | *** | 5.013 | 0.145 | -26.37 | *** |
| 4 | 4.986 | 0.058 | -25.56 | *** | 5.107 | 0.078 | -27.18 | *** |
| 5 | 5.085 | 0.100 | -27.28 | *** | 5.159 | 0.093 | -27.94 | *** |
| 6 | 5.304 | 0.031 | -28.88 | *** | 5.088 | 0.063 | -27.49 | *** |
| 7 | 5.174 | 0.028 | -28.12 | *** | 5.214 | 0.010 | -28.49 | *** |

This table reports the cross sectional daily abnormal turnover for a 15-day period centered on the announcement day (-7;+7) and for each investor and trade types. Abnormal turnover is reported as the difference between log turnover and the median value of log turnover estimated from 60 to 21 day before the announcement, where turnover is trading volume divided by shares outstanding. ***, ** and * denote that the *t*- statistics are significant at one, five or ten percent level respectively.



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*Figure 3. Net abnormal selling (-7; +7)*




## Multivariate Analysis

This paragraph presents the regression analysis implemented in order to test the hypotheses H2-H4. The aim is to show whether sophisticated and unsophisticated investors rely on different factors in shaping their trading strategies.

In building the regression model we followed Chae (2005). We run the regression on four subsamples i.e. sophisticated-buy, sophisticated-sell, unsophisticated-buy and unsophisticated-sell. Differences in significance and magnitude of the regression coefficients across subsamples lead us to our results.

Equation 3 presents the regression model.

$$\varepsilon_{i,s} = \beta_0 + \beta_1 InfoAsym_i + \beta_2 Risk_i + \beta_3 PrcChg_i + \beta Year_{i,s} + \epsilon_{i,s} \quad (3)$$

The notation $\varepsilon_{i,s}$ is the cumulative abnormal trading volume for stock *i* in subsample *s* over a 5-day period centered on the announcement day (-2;+2); $InfoAsym_i$ is a proxy for information asymmetry before the announcement (-60;-20); $Risk_i$ is a proxy for event-related risk; $PrcChg_i$ represents the difference between average absolute return of stock *i* and average absolute value-weighted market index return[3] from day -10 day to day -3. $Year_{i,t}$ are dummy variables to check for year fix effect.

The bid-ask spread, calculated as the difference between ask and bid prices divided by the quoted midpoint, is our proxy for information asymmetry. Copeland and Galai (1983), Glosten and Milgrom (1985) and Venkatesh and Chiang (1986), among others, show that market makers widen their bid-ask spreads when information asymmetry arises in order to protect themselves from trading with informed traders. Since high bid-ask spread is associated with higher information asymmetry, and being informa-



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tion asymmetry on the side of sophisticated investors, we expect to find a positive (negative) relation between sophisticated (unsophisticated) buy and sell activities (H2).

Choosing a proxy for event-related risk is a bit more complex since the literature does not provide a generally recognized measure. Following Chae (2005), we adopted the absolute price change on the announcement day, which, in spite of possible endogeneity problems, provides a clear idea of the surprise and the direct impact caused by the announcements. As noted above, sophisticated investors have access to higher quality information and are able to process complex information quickly; moreover they have less severe wealth constraints and can face riskier trading strategies compared to unsophisticated investors. This means that sophisticated investors might decide to trade more when the risk is higher in order to seek higher profit. On the other hand, unsophisticated investors need to be more careful about what they buy or sell because of their limited resources and information disadvantage. Following H3, we expect to find a positive (negative) relation between sophisticated (unsophisticated) trading volume and risk.

*PrcChg* is a measure of stock performance compared to the market index. Since sophisticated investors typically have high analytics skills, they could decide to not follow stock's past performance in designing their strategies. Unsophisticated investors usually do not have many resources dedicated to performance forecasting, so in defining their strategies they can rely only on past performance. Agreeing with these considerations, H4 implies that recent stock performance does not have any impact on sophisticated investors trading behavior, while it is positively related with unsophisticated trading.

In order to check for possible multicollinearity problems caused by strong correlations between the variables included in the regression model, we performed a correlation analysis. Table 5 reports the Pearson correlation coefficients[4] among variables in Equation (3). A strong positive correlation exists only between buy and sell trading volumes of the two types of investors signaling that unsophisticated investors tend to follow sophisticated investors' activity. Interestingly, the coefficients between information asymmetry, risk and stock performance and volumes have all the same sign. This means that there is no single factor, which causes the differences in investors' behavior.

*Table 5. Correlation matrix*

| Variables | CAVBS | | CAVBU | | CAVSS | | CAVSU | | InfoAsy | | Risk | PrcChg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAVBS | 1.000 | | | | | | | | | | | |
| CAVBU | 0.793 | *** | 1.000 | | | | | | | | | |
| CAVSS | -0.270 | *** | -0.259 | *** | 1.000 | | | | | | | |
| CAVSU | -0.263 | *** | -0.263 | *** | 0.899 | *** | 1.000 | | | | | |
| InfoAsy | 0.108 | ** | 0.093 | ** | -0.106 | ** | -0.084 | * | 1.000 | | | |
| Risk | 0.152 | *** | 0.136 | *** | -0.089 | ** | -0.076 | * | -0.004 | | 1.000 | |
| PrcChg | -0.010 | | -0.022 | | 0.133 | *** | 0.118 | *** | 0.163 | *** | 0.056 | 1.000 |

This table reports the Pearson correlation coefficients among variables in our final sample. *CAVBS* and *CAVSS* are the cumulative abnormal volume over a 5-day period centered on the Announcement day (-2,+2) for buy and sell of sophisticated investors. *CAVBU* and *CAVSU* are the cumulative abnormal volume over a 5-day period centered on the Announcement day (-2, +2) for buy and sell of unsophisticated investors. *InfoAsy* is the average percentage bid-ask spread from day -60 to day -20. *Risk* is the absolute price change in the event day. *PrcChg* is the difference between the average absolute return of the stock and the average absolute value-weighted market index return from day -10 to day -3. ***, ** and * denote that the correlation coefficients are statistically significant at one, five or ten percent respectively.



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Table 6 summarizes the results of the OLS regression. Results show that information asymmetry has positive impact on both buy (Panel A) and sell (Panel B) volumes of sophisticated investors. In other words, they trade more when information asymmetry is higher. The sell-side coefficient is larger then the buy-side one, suggesting that sophisticated investors tend to be net seller when information asymmetry arises. On the other hand, Panel B and Panel D show that higher level of information asymmetry induces unsophisticated investors to trade less on both buy and sell sides. A restatement announcement triggers a downward price revision, therefore this evidence leads us to conclude that sophisticated investors exploit their information advantage to avoid losses and therefore to accept H2.

Looking at the proxy for risk, Table 6 shows that unsophisticated investors buy and sell less when the risk increases. On the opposite side, risk triggers an increase in sophisticated investors' trading. There is a well-known positive link between risk and returns, thus it is plausible that sophisticated investors attempt to speculate from the turmoil restatement-induced. This evidence leads us to accept H3.

The results of the regression analysis also show that recent stock performance does not have a significant impact on sophisticated investors trading. However, its effect turns to be positive and significant for unsophisticated investors. The evidence suggests that unsophisticated investors trade more in stocks with positive past performance. These results lead us accept H4.

*Table 6. Regression analysis*

| **Independent Variables** | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Intercept | InfoAsy | Risk | PrcChg | Y2008 | Y2009 | Y2010 | Y2011 | Y2012 | Y2013 | R-squared | F-Value | N |
| **Panel A: Sophisticated-Buy** | | | | | | | | | | | | |
| 21.087 | 2.961 | 50.951 | -45.151 | 1.503 | 3.462 | 1.441 | 4.587 | 3.657 | 3.464 | 0.046 | 2.75 | 524 |
| (-13.66) | (-2.43) | (-3.6) | (-0.86) | (-0.64) | (-1.29) | (-0.57) | (-1.17) | (-1.72) | (-1.81) | | | |
| **Panel B: Unsophisticated-Buy** | | | | | | | | | | | | |
| 1.531 | -0.813 | -6.586 | 39.164 | -0.197 | 0.141 | 0.104 | -1.780 | -0.809 | 0.125 | 0.066 | 4.05 | 524 |
| (-4.92) | (-3.31) | (-2.31) | (-3.72) | (-0.42) | (-0.26) | (-0.2) | (-2.25) | (-1.89) | (-0.32) | | | |
| **Panel C: Sophisticated-Sell** | | | | | | | | | | | | |
| 22.610 | 2.998 | 46.908 | -58.090 | -0.822 | 0.914 | 0.263 | 1.607 | 3.919 | 2.608 | 0.041 | 2.46 | 524 |
| (14.37) | (2.41) | (3.25) | (-1.09) | (-0.35) | (0.33) | (0.10) | (0.40) | (1.81) | (1.34) | | | |
| **Panel D: Unsophisticated-Sell** | | | | | | | | | | | | |
| 1.472 | -0.619 | -5.468 | 32.814 | -0.209 | -0.115 | 0.265 | -1.675 | -0.758 | 0.038 | 0.053 | 3.16 | 524 |
| (4.91) | (-2.61) | (-1.99) | (3.23) | (-0.46) | (-0.22) | (0.54) | (-2.20) | (-1.84) | (0.10) | | | |

This table reports the results of regressing cumulative abnormal trading volume on proxies for information asymmetry, risk and stock's recent performance for each combination of investor and trade type. The dependent variable in Panel A is the cumulative abnormal buying volume for sophisticated investors from day -2 to day +2. The dependent variable in Panel B is the cumulative abnormal buying volume for unsophisticated investors from day -2 to day +2. The dependent variable in Panel C is the cumulative abnormal selling volume for sophisticated investors from day -2 to day +2. The dependent variable in Panel D is the cumulative abnormal selling volume for unsophisticated investors from day -2 to day +2. *InfoAsy* is the average percentage bid-ask spread for each stock from day -60 to day -20. *Risk* is the absolute price change in the event day. *PrcChg* is the difference between the average absolute return of the stock and the average absolute value-weighted market index return from day -10 to day -3. The t-statistics of regression coefficients are given in parentheses below their corresponding figures.



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## Robustness Test

In our analysis we adopt the bid-ask spread as a proxy for information asymmetry. However, it embeds two components, namely adverse selection and transaction costs (Glosten & Harris, 1988; Huang & Stoll, 1997). This means that the positive relations between trading volumes and information asymmetry described above might be driven by a change in transaction costs instead of in information asymmetry. In order to test the robustness of our results, we run the regression model presented in Equation (3) using the probability of information-based trading (PIN) as proxy for information asymmetry (Easley, Kiefer, & O'Hara, 1997; Easley, Hvidkjaer, & O'hara, 2002) Table 7 reports the results of the OLS regression.

Signs and significance of the regression coefficients are all confirmed, except for the significance of the new proxy for Panel B and Panel D. However, it does not affect our main conclusions. We can conclude that our results are robust to different information asymmetry measures.

## FUTURE RESEARCH DIRECTIONS

Our results are coherent with evidence on insider and informed trading around company events in general and provide further evidence in this field. However, some interesting questions are still open.

*Table 7. Robustness test*

| **Independent Variables** | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Intercept | PIN | Risk | PrcChg | Y2008 | Y2009 | Y2010 | Y2011 | Y2012 | Y2013 | R-squared | F-Value | N |
| **Panel A: Buy-Block** | | | | | | | | | | | | |
| 17.619 | 23.738 | 48.532 | -31.170 | 2.441 | 2.441 | 5.062 | 5.369 | 3.877 | 3.454 | 0.066 | 4.02 | 524 |
| (9.76) | (4.11) | (3.60) | (-0.61) | (1.06) | (1.97) | (1.00) | (1.38) | (1.84) | (1.83) | | | |
| **Panel B: Buy-NonBlock** | | | | | | | | | | | | |
| 1.672 | -1.789 | -6.366 | 34.024 | -0.340 | -0.297 | -0.107 | -1.863 | -0.827 | 0.075 | 0.051 | 3.04 | 524 |
| (4.51) | (-1.51) | (-2.21) | (3.24) | (-0.72) | (-0.56) | (-0.21) | (-2.34) | (-1.91) | (0.19) | | | |
| **Panel C: Sell-Block** | | | | | | | | | | | | |
| 19.185 | 23.536 | 44.506 | -43.800 | 0.115 | 2.533 | 1.329 | 2.385 | 4.137 | 2.603 | 0.060 | 3.63 | 524 |
| (10.43) | (3.99) | (3.11) | (-0.84) | (0.05) | (0.97) | (0.52) | (0.60) | (1.93) | (1.35) | | | |
| **Panel D: Sell-NonBlock** | | | | | | | | | | | | |
| 1.555 | -1.221 | -5.313 | 28.862 | -0.314 | -0.448 | 0.107 | -1.734 | -0.770 | -0.002 | 0.042 | 2.51 | 524 |
| (4.37) | (-1.07) | (-1.92) | (2.86) | (-0.69) | (-0.88) | (0.22) | (-2.26) | (-1.86) | (-0.00) | | | |

This table reports the results of regressing cumulative abnormal trading volume on proxies for information asymmetry, risk and stock's recent performance for each combination of investor and trade type. The dependent variable in Panel A is the cumulative abnormal buying volume for sophisticated investors from day -2 to day +2. The dependent variable in Panel B is the cumulative abnormal buying volume for unsophisticated investors from day -2 to day +2. The dependent variable in Panel C is the cumulative abnormal selling volume for sophisticated investors from day -2 to day +2. The dependent variable in Panel D is the cumulative abnormal selling volume for unsophisticated investors from day -2 to day +2. *PIN* is the average probability of information-based trading for each stock from day -60 to day -20. *Risk* is the absolute price change in the event day. *PrcChg* is the difference between the average absolute return of the stock and the average absolute value-weighted market index return from day -10 to day -3. Y20XX are dummies for single year of the announcement date. The *t*-statistics of regression coefficients are given in parentheses below their corresponding figures.



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First, why do sophisticated investors start buying at the event day? Collecting the time of the announcements might be painful, but an intraday analysis might provide new valuable insights.

Second, is there any difference in market response if the announcements are released during trading or non-trading hours? For example, if a restatement were announced during the weekend, both sophisticated and unsophisticated investors would have time to evaluate possible consequences and define appropriate trading strategies.

Third, does information advantage of sophisticated investors rise from their analytical power or from other information sources? Studies investigating this dimension would provide significant contributions to the insider trading literature.

## CONCLUSION

This chapter provides empirical evidence on investors' response to restatement announcements. Using a dataset of 524 restatements announced by 455 US public companies from 2007 to 2013, the results show that sophisticated investors may anticipate restatement announcements and trade in advance of sophisticated investors in order to avoid losses. Sophisticated investors increase their abnormal buying activity until four days before the announcement, and then they implement an intensive selling activity until one day before the announcement. On the other side unsophisticated investors do not appear to follow any particular strategy before restatement announcements suggesting that they are not able to predict them.

The results also show that some specific determinants influence buy and sell choices of sophisticated and unsophisticated investors in matters relating to restatement announcements. First of all, information asymmetry makes sophisticated (unsophisticated) investors trade more (less). Information advantage rests on the side of sophisticated investors so they speculate on it as long as they can. Stock's risk also encourages sophisticated trading. From higher risk they can gain higher profit. Finally, our results show that sophisticated investors are not influenced by recent stock returns; indeed they typically have high analytics skills so they can rely on better predictions about companies' future performance to define their trading strategy. On the other hand, unsophisticated investors are positively and significantly influenced by recent performance.

Overall our results suggests that unsophisticated investors mostly rely on accounting and other public information in deciding their trading strategies while sophisticated investors integrate accounting information with other sources which allow them to better predict firm's future performance and detect the non-reliability of accounting information. Furthermore, the negative stock price reaction, which follows a restatement announcement, is partly due to the revision of accounting information and partly to a decrease in trust in management capabilities and in the accounting information they provide.

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## ENDNOTES

1 These parameters are coherent with the classification of block trades for NYSE, NASDAQ and Amex.

2 See Bamber et al. (2011) for reasons for choosing median, instead of mean, value as measure for normal trading volume.

3 Since stocks in our sample are listed in different markets, each stock has been associated with its respective market index.

4 An absolute value of the coefficient lower than 0.3 (higher than 0.7) denotes a weak (strong) correlation.

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# Chapter 52
# Foreign Direct Investment in China:
## Its Impact on Economic Growth (Revisited)

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## ABSTRACT

*In accounting for the gaps in the literature between the period 2011 and 2016, more recent literature – particularly empirical related studies on the topic have been consulted to consolidate on the paper "Foreign Direct Investment in China: Its Sectoral and Aggregate Impact on Economic Growth". As highlighted by Wei (2013), it is important to recognize and acknowledge that the relationship between FDI and employment is affected by many variables, such as growth of the national population, increased exports, and growth of the domestic economy. Furthermore, as illustrated by Iamsiraroj and Doucouliagos (2015), whilst positive and negative effects may be demonstrated in relation to economic growth, in some countries, no effects can be deduced as regards the relationship between economic growth and FDI in certain other countries. This chapter also aims to accentuate the need for greater focus on environmental issues - as well as poverty alleviation - than is currently the case within the sphere and framework of Carroll's pyramid of Corporate Social Responsibility.*

## INTRODUCTION

As well as the consideration of other objectives which will be introduced towards the end of this section, this chapter is aimed at highlighting why corporate governance mechanisms such as audits are assuming an ever increasing role in mitigating information gaps resulting from lack of investor confidence and growing mistrust, as well as the mitigation of information asymmetries and uncertainties which have the potential to generate shocks, panics and turmoils in financial markets.

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According to Agrawal and Khan (2011:71,72):

*FDI is an important factor in the globalization process as it intensifies the interaction between states, regions and firms. Growing international flows of portfolio and direct investment, international trade are all parts of this process. Globalization offers an unprecedented opportunity for developing countries to achieve faster economic growth through trade and investment. In the period 1970s, international trade grew more rapidly than FDI, and thus international trade was by far than most other important international economic activities. This situation changed dramatically in the middle of the 1980s, when world FDI started to increase sharply. In this period, the world FDI has increased its importance by transferring technologies and establishing marketing and procuring networks for efficient production and sales internationally (Shujiro Urata, 1998). The large increase in the volume of FDI during the past two decades provides a strong incentive for research on this phenomenon.*

*After the global financial crisis, the status and importance of Asian economies have increased a lot because of their more than expected resilience to financial crisis. Asian economies are expanding rapidly and their growing clout can be felt from the fact that out of top 5 economies of the world (in terms of GDP by PPP) 3 are Asian. Asia, with the exception of Japan, South Korea, Hong Kong and Singapore, is currently undergoing rapid growth and industrialization spearheaded by China and India - the two fastest growing major economies in the world.*

However, recent global trends, reports and developments reveal a slowing down in the pace of growth – as well as anticipated growth in the emerging economies – and notably, China. Whilst many factors are contributory to such developments, it is also vital to consider corporate governance related aspects which may have contributed to the quality of financial reporting and the reliability of financial reporting instruments and financial data in China.

It is recently acknowledged that the level of accuracy of financial data constitutes a huge matter of concern for financial investors in global markets and this has also been evidenced by the recent volatility in leading global financial markets.

Whilst the value relevance of accounting information and data in capital markets of selected jurisdictions constitutes the focus of investigation and analysis in another publication (Ojo, 2016), this chapter will briefly consider the importance of accounting information for investors – as well as Foreign Direct Investment in many emerging economies.

This chapter also aims to analyze and consolidate on the findings of Adi and Ogbole (2013) in relation to their paper "Foreign Direct Investment in China: Its Sectoral and Aggregate Impact on Economic Growth".

Since the results from their studies are based on data analysis which spans a period of 2005 to 2010, this chapter also aims to mitigate the gaps in the literature by way of reference and consultation to more recent research on the topic. The chapter will also illustrate why environmental concerns and poverty alleviation still constitute vital areas in need of redress and greater focus within the framework of Carroll's pyramid of Corporate Social Responsibility.



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## MAIN FOCUS OF THE CHAPTER

### Background to the Study: Theoretical and Empirical Review

Whilst many studies on the topic and in the literature highlight the positive effects of economic growth on Foreign Direct Investment, there are also controversial and refuting results which dispute the validity that economic growth has positive effects for Foreign Direct Investment.

Iamsiraroj and Doucouliagos (2015) highlight and demonstrate that "there is a robust positive correlation between growth and FDI" – however further studies are also cited as having reached controversial conclusions.

As well as incorporating meta-regression analysis into their study, they applied it to 946 estimates from 140 empirical studies.

Furthermore, they highlight the fact that the positive effects between growth and FDI are more visible – even if slightly, with developing countries than is the case with other countries.

According to Iamsiraroj and Doucouliagos (2015),

*Studies which demonstrate positive correlation between growth and FDI, "empirical studies which find that economic growth is an incentive for FDI inflows" include those carried out by Al Nasser 2010; Jiménez 2011; Kandil 2011; Mohamed & Sidiropoulos 2010). They also add that (pages 5 and 6):*

*There are several reasons why foreign investors might prefer faster growing markets. For example, cost efficiency of production and the realization of economies of scale and scope in production are closely linked with market size (Blonigen et al. 2007; Filippaios et al. 2003; Greenaway et al. 2007; Vernon 1966; Wang & Swain 1995). Other things equal, a growing market can be attractive to FDI because of the likelihood that a larger market will enable a more efficient scale of production through the realization of economies of scale (Agosin & Machado, 2007; Carstensen & Toubal, 2004). That is, growth is a measure and signal of market demand and market demand attracts FDI.*

The importance of favorable prospects for market growth as a means of facilitating long-term commitment by foreign investors, is also highlighted.

Other studies which accentuate a negative correlation, that is negative effects of economic growth on FDI, are as follows (Iamsiraroj & Doucouliagos (2015:7):

*Studies by Buchanan et al. (2012), Jensen (2003), and Wint and Williams (2002) – which all find a significantly negative impact of economic growth in attracting FDI in developing countries.*

One explanation for such empirical results, according to Iamsiraroj and Doucouliagos (2015) is that it is a measurement artifact.

More importantly, it is demonstrated that whilst positive and negative effects may be demonstrated in relation to economic growth, in some countries, no effects can be deduced as regards the relationship between economic growth and Foreign Direct Investment. Iamsiraroj and Doucouliagos (2015) add, with reference to (Akinlo, 2004), that "in Africa, extractive FDI is located in several mineral-rich countries, where market size and growth rate are not the key motivation for FDI" (Akinlo, 2004) – and that consequently, in such cases, economic growth and FDI will be unrelated.



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According to the OECD (2000:3):

*Because of its size, China's "open door policy" launched twenty years ago constitutes a unique and vast laboratory for the study of major structural changes in China and the world economy. It also provides an opportunity to test the benefits and the shortcomings of the economic policies which have been followed by the Chinese authorities and identify the improvements that could be brought about to increase the economic positive fall-outs of Chinese economic reforms.*

In its study, the OECD (2000:4) also remarks that:

*Despite shortcomings in available data, the synthesis note clearly shows that FDI has brought substantial and definite changes in China's external and internal economic structure. In fact the findings of the study are amazingly consistent with economic theory and existing economic literature. They confirm the complexity and diversity of China's economic situation and the broad ramifications of Chinese economic reforms.*

Zhang (n.d.) also uses data from over a period of 1992 to 2004 to analyze the impact of FDI inflows on China's income growth. His results appeared to illustrate that "positive growth effects seems to rise over time in coastal than inland areas." He also adds that FDI seemed to contribute to China's economic growth through direct effects, such as facilitating productivity and promoting imports, and positive externality effects – such as facilitating transition and diffusing technology (page 13). He concludes that the effects of foreign invested enterprises on the Chinese economy appeared to increase with FDI inflows between the period of 1992 and 2004, and that such effects appeared to be more prominent in coastal areas than in the inland region (page 13).

In attempting to answer the question revolving round the core research streams that have evolved around the phenomenon of FDI to China (Fetscherin, Voss, & Gugler: 236), Fetscherin, Voss, and Gugler, amongst other criteria and factors, employ:

*An interdisciplinary historiographic bibliometric citation analysis to reveal patterns in the analyses of research about FDI to China (Garfield,1963; Small,1974; Moedetal.,1985) and relate their findings to the four main streams of research in international business as identified by Dunning and Lundan (2008a). These are: (1) the motives and determinants of FDI; (2) 'inside' the multinational enterprise (MNE); (3) the impact of MNE activities; and (4) policy implications for the host country.*

In their opinion, they consequently expand on work by Peng, Lu, Shenkar, and Wang (2001), Li and Tsui (2002) and Quer, Claver, and Rienda (2007) by analyzing a very large sample of literature on FDI to China in an objectified manner and in close relationship to the foundations of international business research, rather than management studies (see Fetscherin, Voss, & Gugler: 236).

In comparing the pace of growth between India and China, Agrawal and Khan (2011:72) remark:

*India and China have experienced rapid economic growth in recent years. The growth, in part, is attributed to the adoption of liberal trade policies by each country in 1990's, and the consequent surge in the flows of foreign capital to both these countries. China and India, as the two largest developing countries in the world, have been both enjoying fast economic growth since the 1990s. China seems to*



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*be performing better. In 1975, China was at par with India in GDP, yet 33% lower in its GDP per capita ($146 versus $220). But over the years China developed more rapidly than India and surpassed India in terms of GDP per capita in 1984.*

*What's more phenomenal, however, is the difference in their FDI performance. China has been able to attract more FDI than India, both in terms of net inflow and as % of GDP, from the beginning. Over the past decade, China has established itself as the top recipient of foreign direct investment (FDI) among developing countries. The World Prospectus Survey 2010-2012, released by the United Nations Conference on Trade and Development (UNCTAD), showed that China has once again retained title of the world's most important FDI destination.*

They also highlight the significance of "knowing what the effect of FDI on their growth is". Having considered the controversial results relating to the positive and negative effects of economic growth on FDI, it is interesting to discover that their findings and results revealed the following (see Agrawal & Khan, 2011:76):

- Confirmation that FDI promotes economic growth, and further provides an estimate that 1% increase in FDI would result in 0.07% increase in GDP of China and 0.02% increase in GDP of India.
- That China's growth is more affected by FDI than India's growth and FDI is not as much significant as other variables to predict growth.
- The study also provides possible reasons behind China's great show of FDI and the lessons India should learn from China for better utilization of FDI.
- That majority of the foreign investors prefer China over India for investment opportunities as China has a bigger market size than India, offers easy accessibility to export market, government incentives, developed infrastructure, cost-effectiveness, and macro-economic climate – even though India on the other hand has talented management system, rule of law, transparent system of work, cultural affinity and regulatory environment.

In investigating the impact of FDI on employment in China, Wei (2013), highlights the importance of recognizing and acknowledging that the relationship between FDI and employment is affected by many variables, such as growth of the national population, increased exports, and growth of the domestic economy. As a result these variables were taken into consideration for the study, and then data analysis was also undertaken to determine whether FDI was helpful in the creation of more job opportunities for the Chinese economy in general, the magnitude of this impact, and the impact of FDI on employment in China's primary, secondary, and tertiary sectors (see Wei, 2013:7).

In order to determine the relationship between FDI and employment in China's overall economy, 8 predictor variables are used by Wei (see page 20), namely: FDI, total wages, consumption, government spending, investment, net exports, interest rates for deposits, and interest rates for loans – further, the data employed spanned over the period 1985 to 2011. The overall results of the study indicated the following (Wei, 2013: 52, 53):

- FDI did not reveal a significant relationship with employment - however, taking the autoregressive error structure into consideration, the interest rates for loans has a stronger effect on employment.



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- The FDI used in the primary sector has a significant positive effect on employment and that for the secondary sector, the effect of FDI on employment is not significant, while GDP has a large positive effect on employment.
- It was also recommended that the Chinese government could choose to expand the four components of GDP for the secondary sector (see page 52).
- That for the tertiary sector, the effect of total wages is not significant, while FDI has a negative effect on employment and GDP has a positive effect on employment, with FDI's negative effect bigger than GDP's positive effect.

The differentiation of stock markets in China is also acknowledged to be necessary and essential to the determination of value relevance of accounting information in such markets. In distinguishing the A share only firms and the AB share firms, it is added that "these two types of companies also differ in monitoring function performed by independent auditors and that although A-share companies are mostly audited by domestic CPAs, AB-share companies normally hire international accounting firms (the now big Four) to audit their IAS-based financial statements in addition to domestic auditors responsible for Chinese GAAP statements (see page 13).

Chen, Chen and Su also add that "since auditors play an important role in the quality of financial reporting and international CPA firms are of better perceived reputation, they believe that the double monitoring performed by international and domestic auditors in AB[1] companies is another factor contributing to higher quality financial reporting and therefore more relevant accounting information in the market (Chen, Chen & Su, 1999:13)." Further, they are of the opinion that:

*whilst A-share companies only follow Chinese GAAP in preparing financial statements, companies that also issue B-share to foreign investors are required to publish both Chinese GAAP-based and IAS-based financial reports. In addition, AB-share companies are also required to disclose the break-down details of the reconciliation discrepancy. Since IAS-based financial statements are, on average, less subject to managers' manipulations (Chen et al.1999), the magnitude of the reconciliation discrepancy is likely to be interpreted by investors as an indication of the quality of Chinese GAAP-based financial statements (Chen, Chen & Su, 1999:13).*

Value relevance of accounting information is hence not only determined by whether the market is an A share only company or firm, or whether it is an AB share company, but also based on the level of stock liquidity operating across the market. In this respect, Chen at al (2001:7) also emphasize the importance of distinguishing between institutional[2] and individual holdings – and that "although individual and institutional holdings constitute a company's total tradable shares as in other stock markets, individual investors generate most of the trading volume in the Chinese market."

Value relevance of accounting information is hence a very important issue – not just from the perspective of Foreign Direct Investment and the reliability and relevance of financial and accounting information for investors – whether institutional of individual, but also in matters of Corporate Social Responsibility and financial reporting. This being of crucial importance given the need to enhance the quality and presentation of financial information, the need for comparability and consistency as a means of enhancing the relevance and reliability of financial information. This issue of reconciliation discrepancy hence constitutes a matter in need of urgent redress in capital markets.



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Consequently the Enron case in the United States also revealed the flaws in the interpretation of GAAP. In the case (see page 26),[3] it was highlighted that "Enron's accounting was misleading to users and that specifically, the accounting risks for Enron were too high to be considered acceptable or presented fairly. To make them acceptable, adjustments would have been necessary to the reported estimates. Accounting risks should have been reduced to an acceptable level (as suggested by ISA 540) so that the reported numbers were more reliable."

## RESEARCH METHODOLOGY

According to Adi and Ogbole (2013:24), In spite of positive benefits of FDI, many scholars have argued that it exerts some negative effect on economic growth in some sectors of the economy, and hence they decided to empirically investigate this latter argument using time series data drawn from three sectors of the Chinese economy (1995 to 2010), namely; primary (natural resources); secondary (manufacturing) and tertiary (service).

- The Douglas' production function forms the theoretical model/framework on which the econometric model used in their study is based. The production function assumes two factor inputs as follows:
  Y= A f (KαLβ) where Y is the total output of the economy;
  L is the Labour utilized in production process;
  K is the capital. A is the technology/total factor productivity.

Their model specification is as follows:

**Model specification**

$$\text{Log } Yt = \beta 0 + \beta 1 \log Capt + \beta 2 \log Labt + \mu t \ldots\ldots. \quad (1)$$

where Log Yt is the log of real GDP; log Capt is the log of Capital stock at time t; and β2log Labt is the log of Labour used at time t.

They used the augmented Cob-Douglas' production function (a modified form of equation 1), with FDI included as one of the factor inputs by splitting capital into FDI and domestic investment (Dinv.) Equation (1) is thus modified as (see Adi & Ogbole, 2013:26):

$$\text{Log } Yt = \beta 0 + \beta 1 \log Dinvt + \beta 2 \log FDIt + \beta 3 \log Labt + \mu t \ldots\ldots. \quad (2)$$

LogDinvt is the log of domestic investment at time t
LogFDIt is the log of Foreign Direct Investment at time t
LogLabt is the Labour used at time t.

As well as re-iterating their de-aggregation of economic activity as with the case of Clark (1940) and Fisher (1939), into primary, secondary and tertiary sectors and control domestic investment and labour



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in order to determine the effect of FDI on each of these sectors (see Adi & Ogbole page 27), they also modify equation (2) as follows:

$$\text{Log } Yt = \gamma 0 + \gamma 1 \text{logFDItpri} + \gamma\ 2\text{logFDItsec} + \gamma\ 3\text{logFDItter} + \mu t \ldots\ldots. \quad (3)$$

where: Log Yt = log of Real GDP; logFDItpri = log of FDI in primary industry; FDItsec = log of FDI in secondary industry; FDItter = log of FDI in tertiary; $\gamma 1$, $\gamma 2$ and $\gamma 3$ = elasticity in primary, secondary and tertiary industries respectively; $\gamma 0$ = Intercept; $\mu t$ = Disturbance term (Error term) (which includes other explanatory variables such as domestic investment, fixed capital investment, Educational level, Government policy, labor, technology etc.); and t = Data collected at time t.

## Data Description

Other statistics used are as follows (see page 27):

*Annual Time series data (from annual FDI utilized in 21 sectors of China's economy) was used but grouped into the national industrial classification in China (primary, secondary and tertiary). The data are in millions of US Dollars. The traditional approach of homogeneity of FDI was assumed and hence the quality of FDI was not ascertained. Domestic capital formation was used as proxy for domestic investment and number of employed persons per 10,000 persons as proxy for labor.*

## RECOMMENDATIONS AND FUTURE DIRECTIONS

Recommendations cited in their study include:

1. FDI attracting economic policies with greater attention to the secondary and tertiary sectors of the economy;
2. FDI attracting economic policies should pay more emphasis on the secondary sector at the early stage of such policies as this sector exerts growth enhancing spillover effects on other sectors and industries is the economy;
3. Economic policies that de-emphasize FDI into the primary sector as this may exert negative influence on economics growth;
4. Human resource capacity building economic policies that would take advantage of technology transfers and managerial skills acquisition occasioned by such FDI, more so that some corporations technically deprive the host economies ready access to their advance technologies.

Based on their findings, the following were recommended:

1. FDI attracting macroeconomic policies should be formulated to attract FDI as it spurs economic growth, at least the aggregate level.
2. Though FDI should be attracted to both the secondary and tertiary sectors, to spur economic growth, yet emphasis should be on the secondary sector (at the early stage of FDI policy) as it has spillover effect on other industries in the economy through it wider array of economic linkages;



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3. FDI inflow into the primary sector should not be encouraged due to its negative growth effect on the industry;
4. Government policy should adequately focus on human resource development through transfers of advanced technological know-how, superior managerial and marketing skills from the foreign corporations.

To the above recommendations, the following considerations must also be mentioned as being in need of redress. When should economic policies and economic objectives take subordinate roles to the implementation of regulations, standards which are aimed at compelling compliance with environmental standards, rules and regulations? As demonstrated by recent global events and falling oil and gas prices, the impact of such a slump in prices, economically, may be more apparent in oil exporting countries than oil importing countries – however, environmental repercussions of continued consumption of oil and gas – in huge quantities, particularly encouraged and fueled by prevailing low prices, and evidenced by higher carbon emissions, generate far reaching consequences which are not only measured monetarily, but also in terms of potential life threatening and toxic emissions.

## Environmental Issues and Their Relation with Corporate Social Responsibility and Foreign Direct Investment Continue to Constitute Areas Which Should be Focal Points and in Need of Attention

As highlighted by (Fetscherin, Voss, & Gugler: 243):

*Areas that currently underdeveloped and offer opportunities for international business scholars to explore come to light. It is proposed that the following themes need further attention, namely: FDI and environmental issues; FDI and corporate social responsibility; FDI and social impacts; FDI and institutional transformation in China; and FDI and the growth of the Chinese MNE. Inward FDI to developing countries is often accused for negatively impacting the host country by exploiting low environmental standards to shift polluting production processes from countries where these are prohibited (He, 2006; Cole & Elliott, 2005). Further, after relocating polluting facilities, MNEs could engage in institutional spillover and seek to secure an institutional environment that is favorable for them. China has a track record of environmental incidences and low practical environmental standards despite having a written book law (Ross, 1998).*

*The extent to which environmental regulation can be and has been shaped and exploited in China by MNEs is therefore an important research topic. In particular, MNEs seek to exploit their technological superiority while need to ensure that their product quality and standards are comparable globally. From this perspective MNEs should have a self-interest in supporting and enforcing strict environmental regulation. Environmental issues have gained new momentum with the advancement of greenhouse gas measurements and the global debate on climate change.*

As already highlighted in the volume, and with particular regards to the chapters on poverty alleviation and according to World Bank reports (World Bank, 2002:63), private investment in Sustainable Forest Management (SFM) is not only attracting a lot of attention because of the magnitude of funds



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being invested and diverted towards this industry and sector, but also because of the opportunities it provides for developing countries.

Private sector actors and contributors who have been identified to have an influence on the forest sector, include (Toppinen et al, 2014: 65):

- Large multinational companies
- Local companies of varying sizes
- Individual private investors (such as conservation investments by philanthropists)
- Community or cooperative enterprises which implement sustainable forest management; and
- Small scale forest owners

Further, as regards accountability and corporate governance measures in this sector, focus is considered to continually "shifting towards placing more emphasis on environmental and social sustainability of the industry", not only because of opportunities being provided for emerging economies such as Brazil, Russia, India and China, but also because of the scale and opportunities for investments in such countries, the current challenges being encountered by investors, as well as limited research on MNE's foreign investment in China.

## CONCLUSION

As a means of accounting for the gaps in the literature between the period 2011 and 2016, further more recent literature – and particularly empirical related studies on the topic have been consulted. As highlighted by Wei (2013), it is important to recognize and acknowledge that the relationship between FDI and employment is affected by many variables, such as growth of the national population, increased exports, and growth of the domestic economy.

More importantly, it has recently been demonstrated by Iamsiraroj and Doucouliagos (2015) that whilst positive and negative effects may be illlustrated in relation to economic growth, with respect to certain countries, no effects can be deduced as regards the relationship between economic growth and Foreign Direct Investment – with regards to other countries.

When should economic policies and economic objectives take subordinate roles to the implementation of regulations, standards which are aimed at compelling compliance with environmental standards, rules and regulations? Perhaps the need to implement and effectively enforce auditing and regulatory standards will serve as a necessary and compelling impetus and trigger which will pave the way for the implementation and enforcement of environmental standards. As demonstrated by recent global events, economic objectives and policies may be compelled to take subordinate positions where a matters of national interest are at stake, and where certain economic policies and practices serve as a deterrent to foreign investors whose interests are better served by greater demonstration of transparency and financial reporting within the corporate process.



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## ENDNOTES

1 They argue that the mere existence of the dual-GAAP reporting system in AB companies, along with the disclosure of the reconciliation discrepancy, is a sufficient motivational factor which makes it more likely for AB-share companies to produce higher quality accounting information than A share companies with a one-GAAP reporting system. Also see Chen et al (2001:8).

2 Institutional shareholders in China and distinguished from institutional shareholders from the West. In this regard Chen et al add that "While institutional shareholders in China may hold a large percentage of company's stock, their ability to trade is severely restricted by the government policy and trading rules in China. The institution-held shares can only be transferred to other institutions with approvals from the government. The transfer price is based on negotiations rather than the market price. Consequently, a higher percentage of individual holdings may indicate a more active market, and it is through an active market that stock prices have the potential to fully reflect public information including accounting information." See Chen et al, 2001:7

3 See Fairness of Reporting, Acceptable Accounting Risk and the IASB's Conceptual Framework Review: Insights from the Enron Trial

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# Chapter 53
# Measuring the Effects of Risk and Cultural Dimensions on the Adoption of Online Stock Trading:
## A Developing Country Perspective

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## ABSTRACT

*Online stock trading (OST) is a growing phenomenon across countries, yet there is a sparse literature focusing on the negative utilities (risks) that causing the low adoption. Drawing from perceived risk theory, this article attempts to fill the gap by identifying the influential risk factors that impede the acceptance of OST in a developing country, Pakistan. The study also applies the Hofstede cultural theory to ascertain the effects of cultural moderators on investors' usage behavior (UB). Based on structured questionnaire, 443 valid responses were received from current and potential investors. The model was tested using structural equation modeling through Smart-PLS. The results validate a negative and significant relationship between risk dimensions and investors' behavioral intentions (BI) to use OST. Especially time, financial, performance, privacy and opportunity cost risks are found having a negative impact on investors' BI. Moreover, the study finds that cultural dimensions, collectivism, and uncertainty avoidance, moderate the relationship between BI and UB.*

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## 1. INTRODUCTION

Today, the Internet proliferation has radically changed the operations of brokerage houses and has enabled them to provide online services to their clients for performing seamless transactions irrespective of time and location (Ramayah, Rouibah, Gopi, & Rangel, 2009). Internet stock trading is the provision of online access by the brokerage houses to their client to execute buy or sell stock orders on the brokerage's Internet-based proprietary trading platforms (Carlos Roca, José García, & José de la Vega, 2009). High liquidity of financial assets, low transactions fees, faster transactions, better information transparency are the direct advantages whereas checking stock quotations, receiving real-time market news, performing transactions from anywhere and anytime are the indirect benefits that investors can gain from online stock trading (Guiso & Sodini, 2013; Lee-Partridge & Ho, 2003). The provision of online services to clients is also advantageous for brokers as it increases revenue by reducing operational expenses (Yiu, Grant, & Edgar, 2007). Traditional settings require excess staff and physical offices for smooth business operations (Cheng, Lam, & Yeung, 2006).

Despite the multiple advantages, high-speed digital gadgets/computers, and Internet access, the online stock trading is still in its infancy (Tai & Ku, 2013). In this respect, scholars have identified different factors by using the dominant information technology models[1] that contribute to investors' decision regarding adoption of online stock trading. For instance, social factors, facilitating conditions, information quality, compatibility, complexity, relative advantages (Lee-Partridge & Ho, 2003) perceived security, perceived privacy, perceived trust, usefulness, ease of use (Carlos Roca et al., 2009) injunctive norms, descriptive norms (Ramayah et al., 2009). However, the literature reveals a limited focus on reflecting the inhibitors (perceived risks) of online stock trading. There are fewer studies that examined perceived risk in the context of online stock trading adoption (Lee, 2009b; Tai & Ku, 2013). These studies used perceived risk as a single construct or with some specific dimensions. The current literature on technology acceptance divides risk into various dimensions, for example financial, time, physical, privacy, psychological, opportunity cost risks etc. (Featherman & Pavlou, 2003; Kassim & Ramayah, 2015; Martins, Oliveira, & Popovič, 2014). Such dimensions are still unexplored in the context of online stock adoption, especially in developing countries. In this regard, the perceived risk theory (PRT), i.e., the users' behavioral perception of risks, can be appropriately used to explain the acceptance process. In addition to PRT, this study uses the cultural theory of Geert Hofstede (1980) for evaluating the moderation effects of cultural dimensions on the usage behavior of online stock trading adoption.

Perceived risk dimensions are considered as key factors preventing customers' intentions regarding the adoption of information technology (Martins et al., 2014). Khedmatgozar and Shahnazi (2017) found that various risks are involved in online banking adoption, thereby, corporate clients in Iran prefer traditional banking method. Another study conducted Yang, Liu, Li, and Yu (2015) identified risk dimensions as main inhibitors of customers' mobile acceptance. Cultural dimensions have an influence on customers' adoption of IT. For example, Chen and Barnes (2007) reported that in contrast to Korea's online trade rate (54%), customers in Taiwan have lower trust on e-business, therefore, their online trade rate is only 20% (Lee, 2009b). The technology acceptance is profoundly dependent on users' cultural dimensions (Zhang, Weng, & Zhu, 2018). Using cultural theory, Baptista and Oliveira (2015) identified positive effects of the five cultural dimensions[2] on mobile banking usage behavior. Similarly, Khan, Hameed, and Khan (2017) found Individualism/Collectivism (I/C) and Uncertainty avoidance (UC) as significant moderators in online banking usage behavior. This study believes that the investors might be affected by their cultural values in the adoption of online stock trading.



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The study contributes to the extant literature in several ways. First of all, understating online stock trading (OST) is relatively overlooked area in electronic finance. Previous studies investigated the effect of perceived risk dimensions on internet banking, e-government and online shopping adoption and pointed out that risk dimensions negatively influence customers' intention for e-services adoption (Martins et al., 2014; C. Park & Jun, 2003; Xie et al., 2017). There are quite a few studies highlighting the adoption of OST and especially they focused on the positive factors that contribute to the customer adoption of OST. There is very little research on the negative utilities that impede the adoption of OST. This study, to the best of authors' knowledge, is the first one that closes the gap by investigating the impact of perceived risk dimensions on OST adoption in a developing country, Pakistan. This was also suggested by Yang et al. (2015) to examine the effect of perceived risk dimensions in a new context and new culture. Secondly, the study is new in evaluating the moderation effects of Hofstede cultural dimensions on investors' usage behavior. Past studies concluded that cultural dimensions/values have a moderating effect on users' adoption of technologies (Abbasi, Tarhini, Elyas, & Shah, 2015; Khan et al., 2017; Zhang et al., 2018). In this regard, this study is insightful that analyze the moderating impact of cultural dimension on investors' usage of OST, especially in a developing country, Pakistan.

## 2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

### 2.1. Studies on Online Stock Trading Adoption

There are few studies that examined the internet stock trading adoption in different contexts. Carlos Roca et al. (2009) investigated online stock trading in Spain by using perceived trust, security, privacy, and TAM. Their results revealed a positive and significant relationship of perceived usefulness (PU), perceived trust with behavioral intention, and perceived ease of use with PU, and perceived security with perceived trust. Lee (2009b) studied investors' intention to adopt online stock trading in Taiwan using TAM and TPB. The author found that PU, ease of use and perceived benefits positively affect investors' attitude towards intentions. Trust positively affect investors' attitude, perceived behavioral control and subjective norms (SN) towards intentions while perceived risk negatively affect investors' attitude and behavioral intention. Lee-Partridge and Ho (2003) investigated online stock trading adoption issue in Singapore. The authors pointed out the significant and positive effect of social factors and information system quality on investors' behavioral intention. Singh, Sandhu, and Kundu (2010) examined the internet stock trading adoption issue in India and found that demographic and attitude dimensions significantly affect internet stock trading adoption. Tai and Ku (2013) worked on mobile stock trading adoption with the help of the UTAUT and perceived risk. Their results showed performance expectancy (PU), effort expectancy (EE), and social influence as positive determinants while security risk, financial risk and functional risk as negative determinants of internet stock trading adoption. Bhattacherjee (2000) concentrated on the acceptance of e-services by using the theory of planned behavior. Collecting online data from 172 electronic brokerage users in the USA, the author studied the influences of SN (including both external and interpersonal influences) and determined SN as an important predictor of e-services. However, the study found a minimal impact of behavioral control on e-services acceptance. Ramayah et al. (2009) checked internet stock trading adoption in Malaysia on the basis of the decomposed TRA.



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They found that attitude and SN are positively affecting the stock trading adoption; PU and ease of use significantly influence attitude, while injunctive norm and descriptive norm significantly influence SN. Among the literature, there is little known as how the risks dimensions affect the online stock trading.

## 2.2. Perceived Risk Theory and Online Stock Trading Adoption

Since the 1960s, perceived risk theory (PRT) has been used in different studies of behavioral economics and after then a considerable research has ascertained the impact of risks on customers decisions (Lin, 2008). Perceived risk (PR) is generally defined as the likeliness of possible negative consequences or losses of using any product or service. Bauer (1967) defined PR as "a combination of uncertainty plus seriousness of outcome involved". According to Peter and Ryan (1976) "PR is the expectation of losses associated with the purchase and act as an inhibitor to purchase behavior". Generally, scholars defined perceived risk according to their own research contexts. For example, Forsythe and Shi (2003) defined perceived risk as "a buyer's subjective expectation of possible losses when making decisions about online shopping". In this study perceived risk is defined as investors' perceptions about the possible monetary and non-monetary losses or risks allied with the internet stock trading adoption. Roy, Balaji, Kesharwani, and Sekhon (2017) argued that customers consider new technology as having the problem of uncertainty like performance, reliability and market acceptance.

Scholars have shown that perceived risk consists of several dimensions in e-commerce context (Featherman & Pavlou, 2003; Martins et al., 2014). Keeping in view the risk as a multi-dimensional phenomenon, the authors investigate eight-dimensions of perceived risk in the context of online stock trading adoption in Pakistan. These dimensions are time, financial, security and privacy, social, performance, psychological, physical and opportunity cost risk, consistent with the work of (Kassim & Ramayah, 2015; Martins et al., 2014). The definition and importance of each risk dimension in terms of internet stock trading are highlighted as follows:

### 2.2.1. Time Risk

Time risk refers to the investors' concerns about wasting time due to the usage of the online stock trading platform (Featherman & Pavlou, 2003). Khedmatgozar and Shahnazi (2017) defined time risk as wasting time in searching securities, trading securities and learning online securities trading platform. It includes potentials investors concerns' like how much time is needed for learning the online securities trading system; how much time needs to be spent in searching good securities and how much time is spent in completing the transactions. Hoyer and MacInnis (1997) pointed out that consumers have to devote sufficient time for buying, using or disposing of a product or service. Several studies pointed out that time risk significantly affect IB adoption (Featherman & Pavlou, 2003; Lee, 2009a). Currás-Pérez, Ruiz-Mafé, and Sanz-Blas (2013) also identified the negative relationship of time risk with the usage of social sites. Keeping in line with previous studies, this study also expects that there will be a negative and significant relationship of time risk with behavioral intentions to use online stock trading in Pakistan. Therefore, we propose the following hypothesis:

**H1:** Time risk negatively influences investors' intention for online stock trading adoption.



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### 2.2.2. Financial Risk

Financial risk is defined as the investors' perception of possible monetary loss associated with the usage of internet stock trading adoption (Featherman & Pavlou, 2003). The online transfer of money between accounts in online stock trading may increase worries of investors that the accounts and passwords may be hacked/ stolen. Kuisma, Laukkanen, and Hiltunen (2007) affirmed that investors hesitate to perform online transactions or transfer money because they afraid of losing money. Khedmatgozar and Shahnazi (2017) clarified that financial risk refers to the investors' concerns about the possible financial loss caused by making mistake(s) in entering account number or amount of money. It is also because they have concerns in asking compensation from brokers in case of errors in transactions. Yang et al. (2015) found a strong negative relationship between financial risk with m-payment acceptance. Similarly, Featherman and Pavlou (2003) identified that financial risk effects e-services adoption negatively. In the context of Pakistan, this study hypothesizes that:

**H2:** Financial risk negatively influences investors' intention for online stock trading adoption.

### 2.2.3. Performance Risk

Performance risk refers to the investors' perception about the possible malfunctioning or not working as advertised of the online stock trading system and thus being unable to provide desired services (Featherman & Pavlou, 2003). Furthermore, sometimes the performance of online stock trading system may be unstable due to low internet speed or disconnections. Kuisma et al. (2007) conceded that sudden web server breakdown and disconnections during conducting online transactions may result in unexpected losses to the users/investors. The performance may depend upon digital devices such as mobile application, laptops, pads or personal computer, used for internet stock trading. For instance, Yang et al. (2015) documented that mobile phones screen size or processing capability reduce users' m-payment adoption and noted negative effects of performance risk on m-payment acceptance. Tan (2002) concluded that perceived performance significantly predict customers' intention while Liao, Lin, and Liu (2010) found so significant relationship of performance risk with intentions. In the context of Pakistan, the study posits that performance risk will negatively influence investors' intentions. Therefore, it is proposed:

**H3:** Performance risk negatively influences investors' intention for online stock trading adoption.

### 2.2.4. Privacy Risk

Privacy risk refers to the investors' perception about the possible exposure of their private information (Featherman & Pavlou, 2003). Privacy risk is a major barrier in the adoption of e-services (internet stocking) because users have to provide more private information such as biodata, phone numbers, account number etc. when they open an account with an online broker. Such information if fell into the wrong hands can be misused. The violations of one's private information include intentionally disclosing, selling personal data of a customer by the service provider without his/her knowledge or hackers may hack such information. According to Chen and Barnes (2007), lack of privacy and security has a significant



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negative effect on customers' intention to use e-service. Yang et al. (2015) also identified negative effects of privacy risk on m-payments acceptance. Similarly, Featherman and Pavlou (2003) found significant effects of privacy risk on e-services adoption. So, the authors hypothesize that:

**H4:** Privacy risk negatively influences investors' intention for online stock trading adoption.

### 2.2.5. Social Risk

Social risk refers to the potential loss of status in one' social group as a result of adopting online stock trading (Featherman & Pavlou, 2003). Forsythe and Shi (2003) defined social risk as "a threat which creates a possible loss of self-image or prestige resulting from the purchase or use of certain products or services". It includes potentials investors' concerns of losing social status among family members/ friends/colleagues in cases of financial or privacy loss due to the usage of online stock trading. It is possible that a person's social status may be increased or decreased on the basis of how online stock trading adoption is viewed in the society. For example, Ali, Shafeeq, and Ali (2012) argued that majority of people in Pakistan don't consider stock investing to be religiously legitimate i.e., "halal". Yang et al. (2015) investigated the effects of social risk on m-payment acceptance, however, the authors did not find a negative relationship between social risk and m-payment. Currás-Pérez et al. (2013) examined social risk with social sites usage and validated a negative relationship. The current study hypothesizes that the social risk will have a negative impact on the investors in Pakistan to use online stocking. It is, therefore, posited:

**H5:** Social risk negatively influences investors' intention for online stock trading adoption.

### 2.2.6. Opportunity Cost Risk

Lu, Hsu, and Hsu (2005) defined opportunity cost risk as the possibility that the "the best alternative is not chosen" an investor may lose when a choice is made. In the context of stock trading adoption, the opportunity cost risk can be explained as adopting internet stock trading by losing the alternative traditional settings (phone-based stock trading) or investing savings in the stock market by losing best alternate investment opportunity (Kerins, Smith, & Smith, 2004). If a consumer takes a decision regarding the purchase of any product or adopting a service, his/her decision may be affected if several opportunities exist in the market. For example, Kassim and Ramayah (2015) argued that opportunity cost risk negatively influences the attitude of traditional banking customer towards internet banking adoption in Malaysia. Similarly, Lu et al. (2005) concluded a negative relationship between opportunity cost risk with online applications usage. Keeping in view the literature, this study proposes that:

**H6:** Opportunity cost risk negatively influences investors' intention for online stock trading adoption.

### 2.2.7. Physical Risk

Customers are always cautious about their physical health. In this context, Lu et al. (2005) defined physical risk as "the potential threat to an individual's safety, physical health, and wellbeing". According to Hoyer and MacInnis (1997) when an investor intends to adopt online stocking trading he/she has



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to give sufficient time for buying and using the online stock trading platform. Kassim and Ramayah (2015) argued that using online services a consumer may lose data or his hard disk may be damaged, his eyesight may be affected or may fall in a headache and backache etc. Kassim and Ramayah (2015) investigated the physical risk, however, they did not find a negative relationship in the case of internet banking adoption. Lu et al. (2005) identified the effect of physical risk in online applications usage. Therefore, we hypothesize:

**H7:** Physical risk negatively influences investors' intention for online stock trading adoption.

### 2.2.8. Psychological Risk

Psychological risk refers to the investors' perception about the possible psychological frustration, pressure, or anxiety due to the use of online stock trading system (Lim, 2003). Compared with the traditional stock investment, online stock trading is a relatively complex service. Users may not operate it successfully and thus inducing a psychological pressure. Investors may face psychological pressure due to low internet speed or devices such as a mobile app or personal computer. For instance, Yang et al. (2015) found that mobile screen size or low processing capability may induce anxiety in investors if a transaction does not complete. Investors may succumb to psychological pressure such as disappointment and frustration if their personal information is misused (Forsythe & Shi, 2003). Currás-Pérez et al. (2013) identified psychological risk as the main driver of users' attitude towards social networking sites. Liao et al. (2010) admitted the significant role of psychological risk in the context of software. Yang et al. (2015) investigated psychological risk in the context of mobile payment acceptance and pointed out insignificant results. This study proposes that the psychological risk will have a negative effect on investors' intentions in Pakistan. Therefore, it is hypothesized:

**H8:** Psychological risk has a negative influence on investors' intention to adopt online stock trading.

## 2.3. Behavioral Intention

Behavioral intention (BI) leads to actual usage of information technology. Many past studies in the context of e-commerce/e-health have substantiated that actual usage of individuals is positively influenced by BI (Khan, Yu, Hameed, Khan, & Waheed, 2018; Yu, 2012). Venkatesh, Thong, and Xu (2012) reported that BI urge people' actual usage behavior. Same results that BI has a significant and positive impact on users' actual behavior are also confirmed by (Khan et al., 2017). Therefore, it is hypothesized that:

**H9:** Behavioral intentions have a positive effect on investors' actual usage behavior in online stock trading.

## 2.4. Cultural Moderators

Technology adoption is duly influenced by cultural differences; therefore, investors might be influenced by their cultural values (Srite & Karahanna, 2006). G Hofstede (2014) defined culture as "the way people think, feel and act". J. Park, Yang, and Lehto (2007) reported significant moderation effects of cultural values between BI and actual usage of mobile banking. This study followed Geert Hofstede (1980) culture model to investigate the moderation effects of cultural dimensions between BI and actual



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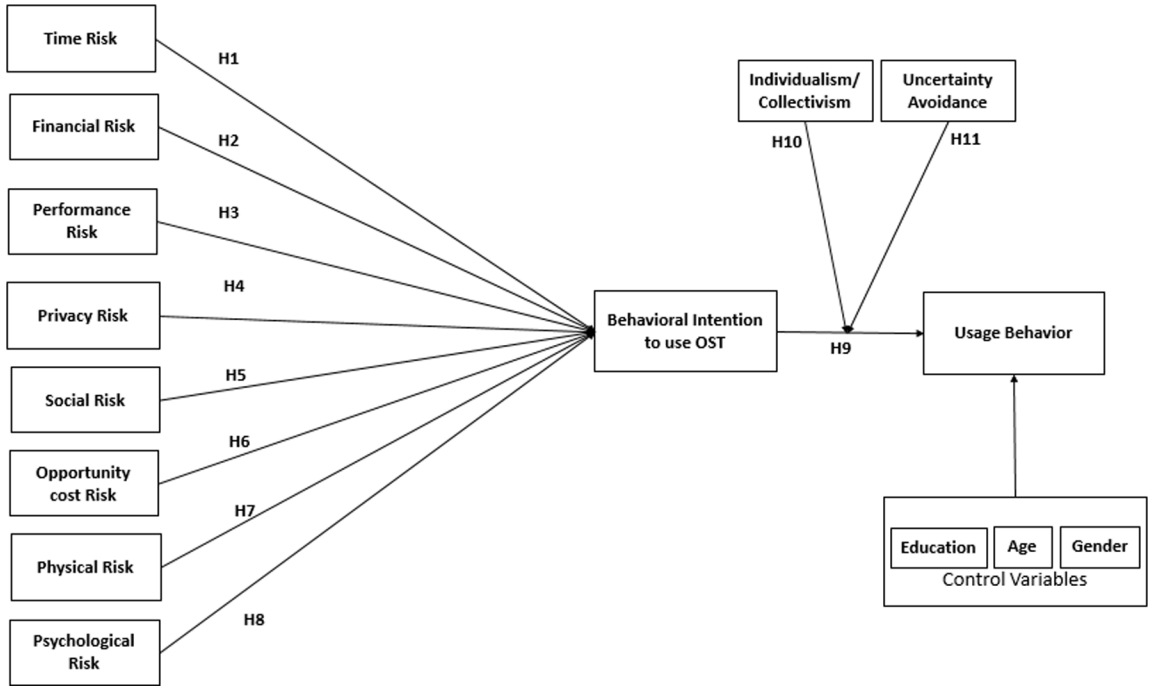
usage of online stock trading. In this regard, the Geert Hofstede (1980) model can be conveniently used at both the individual and organizational level. The other models of Hall (1989) and Trompenaars and Hampden-Turner (1998) are complex and used only at the organizational level (Abbasi et al., 2015). Out of the five cultural dimensions, this study investigates only two cultural dimensions (Individualism/collectivism and uncertainty avoidance) to understand the problem of low adoption of online stock trading in Pakistan. The reason behind the selection of the two dimensions is the high score of the selected dimensions on the Hofstede continuum.

Individualism/collectivism (I/C) shows how customers/investors adopt any technology and whether they are influenced by their society or they are independent in the decision. In an individualistic society, the investors will be independent in the adoption or rejection but in a collectivist society, they are influenced by voices of their peers, colleagues, friends, and others (G Hofstede, 2015). The I/C index explores the degree to which the individuals are associated in groups. The individualistic mode shows a loose tie with society, while a collectivist culture gives importance to the social and group pressures/opinions. The dimension of uncertainty avoidance expresses how people look and behave in uncertain situations, whether they embrace or avert the unexpected and unknown uncertainties. The authors hypothesize that;

**H10:** Individualism/collectivism moderates the relationship between behavioral intention and usage behavior in such a way that the relationship will be stronger among investors with collectivist values.

**H11:** Uncertainty avoidance moderates the relationship of behavioral intentions and usage behavior in such a way that the relationship will be weaker among investors with a higher level of uncertainty avoidance (see Figure 1).

*Figure 1. Proposed Research Model*






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## 3. RESEARCH METHODOLOGY

### 3.1. Sample and Procedure

Before starting the formal survey, first, we performed a focus group with three university professors and five experienced individuals in the field of internet stock trading. Upon their recommendations, we made some changes in the wordings and design of our questionnaire to make it more easy and understandable to the respondents. Following the method of Ramayah et al. (2009) and Alleyne and Broome (2011), the study collected data from two target groups: individuals who had internet stock trading experience and those students who were in final years of their Master and PhD studies from business schools of six universities[3] in the capital territory of Islamabad, Pakistan. As the students of business studies have knowledge of stock market and investment, therefore considering potential investors, we included them in the target population. Secondly, with the help of brokerage houses in Islamabad, we managed to collect data from experienced individuals. For this cross-sectional study, we gathered data through an adapted questionnaire in the second last quarter of 2017. First, the purpose of the study was clarified to the respondents and they were assured that the responses will be strictly kept confidential and will only be used for research purposes. The students and the investors took part in the survey voluntarily. They were motivated by giving them different small gifts and promised to get the copy of results when the paper is completed. Finally, a total of 470 responses were received of which the 27 were data-constrained and were excluded from onward analysis. Among the received responses, there was a participation of 210 experienced individuals while the remaining 233 responses were from non-experienced individuals/students. Table 1 shows demographic information of the respondents. The table shows that almost 58% of the participants were male, 50% of the respondents aged above 30 years and 73% of the participants have a master and above education.

*Table 1. Demographic Information*

| **Characteristics Number of Respondents (n = 443)** | | |
|---|---|---|
| Gender | Male | 252 |
| | Female | 191 |
| Age | ≤ 25.00 | 113 |
| | 26.00 - 27.00 | 76 |
| | 28- 30.00 | 83 |
| | 31- 35.00 | 93 |
| | ≥36.00 | 78 |
| Qualification | Bachelor | 119 |
| | Master | 163 |
| | M.Phil/MS | 121 |
| | Doctorate | 40 |
| Use experience | ≤ 3 Years | 85 |
| | 3-5 Years | 73 |
| | 5-8 Years | 39 |
| | 8 & above Years | 13 |



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## 3.2. Measurement Development

We designed the survey questionnaire in two parts. The first part was designed to collect the basic information such as gender, age, level of education, and internet stock trading experience of the respondents. The second part was designed on the basis of constructs of perceived risk i.e. time, financial, performance, privacy, social, psychological, physical and opportunity cost risk. All items for constructs were borrowed from past literature and were slightly modified to suit the context of online stock trading adoption. For measuring perceived risk dimensions, the relevant constructs were borrowed from the study of Featherman and Pavlou (2003), Lu et al. (2005), Kassim and Ramayah (2015), having four items per construct. Four items were used for measuring dependent variable behavioral intention derived from Kim, Chan, and Gupta (2007), Venkatesh, Morris, Davis, and Davis (2003). The measures for cultural dimensions of Geert Hofstede (1980) were adopted from (Srite & Karahanna, 2006). Nominal scales were used in the first part and seven-point Likert scales, ranging from "disagree strongly" to "agree strongly" (1 = disagree strongly to 7 = agree strongly) were used for measuring constructs in the second part of the survey questionnaire.

Besides the main variables, the study controls for education, age, and gender to test the relationship and get the findings fairly. Empirical studies in the context of e-commerce have shown that behavioral intention is also influenced by age, gender, education, income an experience. For example, Koenig-Lewis, Palmer, and Moll (2010) reported a high adoption rate of internet banking among young Germans. Koksal (2016) found insignificant results of gender and education on mobile banking adoption. Du, Zhu, Lv, and Sun (2012) discovered that higher income people have a positive attitude towards accepting new technology. Pavlou (2003) mentioned that experience has a positive impact on future intentions. Therefore, keeping in view the possible impact of these variables, this study used age, gender, and education, as control variables to independently validate the model.

# 4. RESULTS AND ANALYSIS

## 4.1. Data Analysis

To examine the structural model, the researchers chose structural equation modeling (SEM) and analyzed through partial least squares (PLS) estimation. According to Hair, Black, Babin, Anderson, and Tatham (2006), PLS is a powerful technique, which is used to better combine the principal components analysis (CFA) and regression, and simultaneously to analyze the measurement model. In this study, we use the Smart-PLS 3.0 software to get the PLS estimation. Barnes (2011) suggested that smart-PLS is dealing with formative measures and moderating associations in the most effective way. Therefore, the study relied on the use of smart-PLS 3.0 software to conduct confirmatory factor analyses and get results of the structural model.

## 4.2. Common Method Bias

According to Podsakoff, MacKenzie, and Lee (2003) when all the data are gathered from one source and at the same time, the problem of common method bias (CMB) could influence the validity of the results. To test the CMB, Harman's single factor test was used. The result of the test shows that all the stated items can be classified into nine factors where the first factor explains 27.10% of the variance indicating that common method bias was not an issue in current research.



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## 4.3. Structural Model

Following Hair et al. (2006), The study measured the relationships in the model through CFA. More precisely, the measurement model was tested using content, convergent, and discriminant validities. Through an exhaustive review of the past literature and pilot testing, we managed to assess the content validity. Similarly, by getting the values of factor loadings, Cronbach's alpha, composite reliability, and average variance extracted (AVE), we assessed the convergent validity. The findings of the CFA indicate that all item loadings are greater than 0.60, except UA1. The recommended cutoff levels for Cronbach's alpha composite reliability and average variance extracted are 0.7, 0.7 and 0.5, respectively, fulfilling the standard rates (Flynn, Sakakibara, Schroeder, Bates, & Flynn, 1990; Fornell & Larcker, 1981; Hair, Anderson, Tatham, & William, 1998). Results in Table 2 indicate that composite reliability scores are greater than 0.7, and the AVE of all variables is greater than 0.7. Thus, the findings demonstrate good convergent validity.

*Table 2. Factor loadings, Cronbach's alpha, CR and AVE*

| Constructs | | Loadings | Cronbach's alpha | CR | AVE |
|---|---|---|---|---|---|
| Behavioral | BI1 | 0.873 | 0.868 | 0.919 | 0.72 |
| Intention | BI2 | 0.916 | | | |
| (BI) | BI3 | 0.878 | | | |
| | BI4 | 0.723 | | | |
| Financial risk (FNR) | FNR1 | 0.807 | 0.743 | 0.870 | 0.62 |
| | FNR2 | 0.838 | | | |
| | FNR3 | 0.791 | | | |
| | FNR4 | 0.715 | | | |
| Opportunity | OPR1 | 0.734 | 0.812 | 0.870 | 0.63 |
| Cost risk | OPR2 | 0.712 | | | |
| (OPR) | OPR3 | 0.839 | | | |
| | OPR4 | 0.872 | | | |
| Performance risk (PFR) | PFR 1 | 0.768 | 0.726 | 0.86 | 0.61 |
| | PFR 2 | 0.786 | | | |
| | PFR 3 | 0.685 | | | |
| Physical Risk | PHR1 | 0.771 | 0.718 | 0.840 | 0.64 |
| (PHR) | PHR2 | 0.849 | | | |
| | PHR3 | 0.772 | | | |
| Privacy Risk | PRR1 | 0.776 | 0.779 | 0.860 | 0.60 |
| (PRR) | PRR2 | 0.760 | | | |
| | PRR3 | 0.826 | | | |
| | PRR4 | 0.734 | | | |

*continues on following page*



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*Table 2. Continued*

| Constructs | | Loadings | Cronbach's alpha | CR | AVE |
|---|---|---|---|---|---|
| Psychological Risk (PSR) | PSR1 | 0.829 | 0.786 | 0.861 | 0.61 |
| | PSR2 | 0.785 | | | |
| | PSR3 | 0.747 | | | |
| | PSR4 | 0.753 | | | |
| Social Risk (SOR) | SOR1 | 0.744 | 0.733 | 0.833 | 0.55 |
| | SOR2 | 0.787 | | | |
| | SOR3 | 0.774 | | | |
| | SOR4 | 0.675 | | | |
| Time risk | TMR1 | 0.699 | 0.774 | 0.86 | 0.60 |
| (TMR) | TMR2 | 0.855 | | | |
| | TMR3 | 0.777 | | | |
| | TMR4 | 0.752 | | | |
| Use behavior | UB1 | 0.703 | 0.732 | 0.763 | 0.53 |
| (UB) | UB2 | 0.725 | | | |
| | UB3 | 0.682 | | | |
| | UB4 | 0.726 | | | |
| IC | IC1 | 0.777 | 0.759 | 0.832 | 0.55 |
| | IC2 | 0.685 | | | |
| | IC3 | 0.784 | | | |
| | IC4 | 0.822 | | | |
| UA | UA2 | 0.768 | 0.698 | 0.815 | 0.54 |
| | UA3 | 0.732 | | | |
| | UA4 | 0.744 | | | |

Table 3 shows the results of inter-construct correlations and discriminant validity. Discriminant validity represents whether the measures of a variable are different from other constructs. To examine the discriminant validity, we followed two approaches (Gefen & Straub, 2005). First, we evaluated discriminant validity by comparing the association between variables and the square root of the AVE of constructs. Table 3 demonstrates that the square roots of AVE are above the correlation between constructs, therefore showing good discriminant validity. Secondly, we analyzed the items in the item loadings and cross-loadings (see Table 5 in the Appendix) to construct the associations.

Results in Table 3 indicate that all the item loadings of the corresponding variables are above the cross-loading values of the other latent constructs, therefore indicating proper discriminant validity. We further analyzed the variance inflation factors (VIFs) and tolerance values of predictor variables to check whether multicollinearity was an issue. According to Mason and Perreault Jr (1991), the results of VIFs should be less than 10, while our results demonstrated that the VIF scores range between 1.06 to 2.60. Thus, multicollinearity does not exist in this research.



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*Table 3. Inter-construct correlations and discriminant validity*

| | M | SD | BI | FNR | IC | OPR | PFR | PHR | PRR | PSR | SOR | TMR | UA | UB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BI** | 3.736 | 0.786 | **0.889** | | | | | | | | | | | |
| **FNR** | 3.591 | 1.099 | 0.493 | **0.813** | | | | | | | | | | |
| **IC** | 3.452 | 1.732 | 0.249 | 0.376 | **0.745** | | | | | | | | | |
| **OPR** | 3.592 | 0.664 | 0.604 | 0.347 | 0.243 | **0.792** | | | | | | | | |
| **PFR** | 3.478 | 0.982 | 0.481 | 0.486 | 0.399 | 0.613 | **0.764** | | | | | | | |
| **PHR** | 3.498 | 0.775 | 0.315 | 0.377 | 0.437 | 0.286 | 0.272 | **0.734** | | | | | | |
| **PRR** | 2.265 | 0.804 | 0.097 | 0.109 | -0.065 | -0.119 | 0.025 | 0.006 | **0.772** | | | | | |
| **PSR** | 3.722 | 1.05 | 0.553 | 0.564 | 0.250 | 0.512 | 0.601 | 0.463 | 0.078 | **0.779** | | | | |
| **SOR** | 3.690 | 0.771 | 0.475 | 0.602 | 0.527 | 0.442 | 0.414 | 0.248 | 0.053 | 0.547 | **0.745** | | | |
| **TMR** | 3.432 | 0.854 | 0.656 | 0.485 | 0.305 | 0.466 | 0.328 | 0.310 | -0.017 | 0.575 | 0.486 | **0.773** | | |
| **UA** | 3.234 | 1.345 | 0.442 | 0.249 | 0.310 | 0.297 | 0.461 | 0.317 | 0.242 | 0.509 | 0.576 | 0.385 | **0.725** | |
| **UB** | 3.423 | 1.023 | 0.656 | 0.506 | 0.443 | 0.558 | 0.458 | 0.258 | 0.070 | 0.577 | 0.364 | 0.372 | 0.499 | **0.726** |

Note: N = 443. Diagonal elements are the square root of the average variance extracted of each construct. *P< .05, **P<.01

## 4.4. Hypotheses Testing

The relationships among the constructs were analyzed by examining the standardized paths. Following the previous research Henseler, Ringle, and Sinkovics (2009) path significance method were used with 2000 iterations of resampling (Chin, 1998). Table 4 summarizes the results of hypotheses testing. Psychological, social, and physical risks were found insignificant in the model while the rest of the hypotheses were supported by the data.

The findings in Table 4 demonstrates that Time risk (β=.275, $p$<.001), financial risk (β=.142, $p$<.001), performance risk (β=.268, $p$<.001), privacy risk (β=.122, $p$<.01) and opportunity cost risk (β=.293, $p$<.001) are statistically significant in exploring behavioral intention to use OST, therefore, supporting hypotheses H1, H2, H3, H4, and H6. On the other hand, the social risk, physical risk and psychological risk has no statistically significant influence on behavioral intention to use OST, thus H5, H7 and H8 were not confirmed. Figure 2 specifies that the model explains 60.4% variation in behavioral intention and 54.3% in usage behavior. In addition, the results depict that behavioral intentions has a positive impact on use behavior of OST, thus, confirming hypothesis H9.

## 4.5. Moderating Analysis

The study uses two cultural moderators i.e., individualism/collectivism (I/C) and uncertainty avoidance (UA) between behavioral intentions and usage behavior. Table 4 indicates the moderation results for I/C and UA. The results prove that the interaction effect of BI with IC (BI*CI→UB) is significant in predicting usage behavior of OST. Furthermore, the interaction effect of BI with UA (BI*UA→UB) is also significant that predict usage behavior of OST, therefore, our results confirm hypotheses H10 and H11.



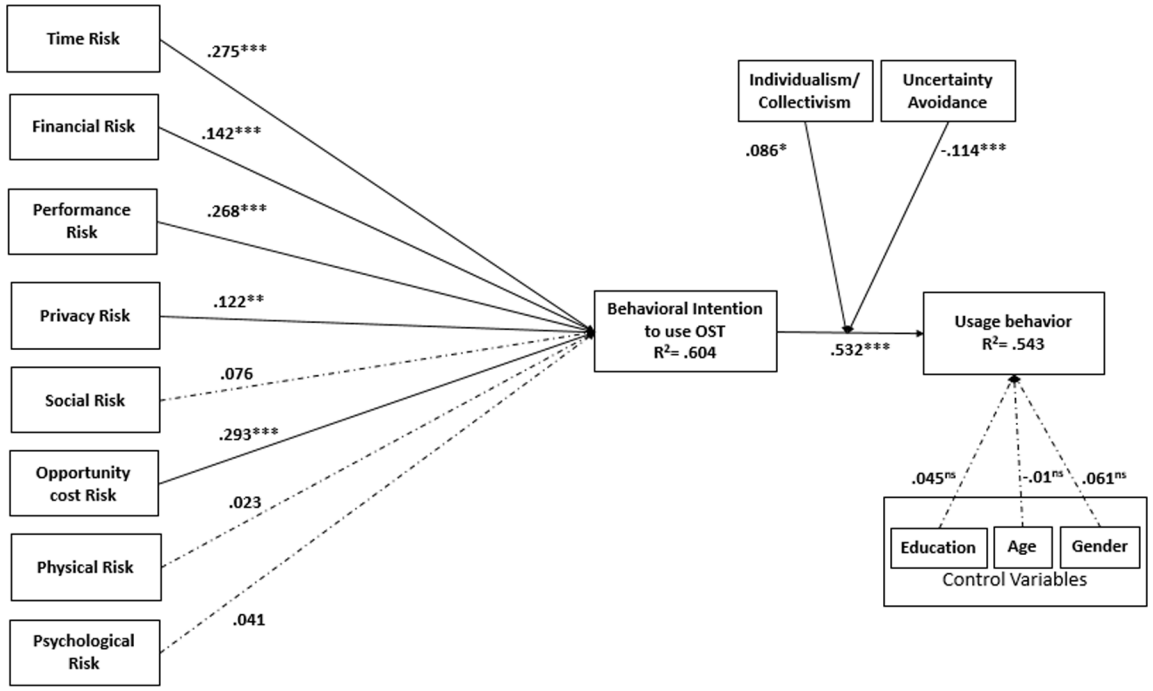
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*Table 4. Summary of the hypotheses testing*

| Hypotheses | Path coefficient | Standard error | t-value | P-value | Results |
|---|---|---|---|---|---|
| H1: Time risk ----> Behavioral Intention | 0.275 | 0.047 | 5.815 | P < 0.001*** | Supported |
| H2: Financial risk ----> Behavioral Intention | 0.142 | 0.039 | 3.740 | P < 0.001*** | Supported |
| H3: Performance risk ----> Behavioral Intention | 0.268 | 0.060 | 4.467 | P < 0.001*** | Supported |
| H4: Psychological Risk ----> Behavioral Intention | 0.041 | 0.045 | 0.841 | P > 0.05 | Not Supported |
| H5: Social Risk ----> Behavioral Intention | 0.076 | 0.042 | 1.732 | P >0.05 | Not Supported |
| H6: Privacy Risk ----> Behavioral Intention | 0.122 | 0.032 | 3.796 | P < 0.01** | Supported |
| H7: Physical Risk ----> Behavioral Intention | 0.023 | 0.033 | 0.642 | P > 0.05 | Not Supported |
| H8: Opportunity cost Risk ----> Behavioral Intention | 0.293 | 0.035 | 8.400 | P < 0.001*** | Supported |
| H9: Behavioral Intention × ----> Use behavior | 0.532 | 0.042 | 12.596 | P < 0.001*** | Supported |
| H10: Behavioral Intention × ----> IC Use behavior | 0.086 | 0.033 | 2.594 | P < 0.05* | Supported |
| H11: Behavioral Intention× ----> UA Use behavior | -0.114 | 0.026 | 4.330 | P < 0.001*** | Supported |

*Note: N* = 443; *P< .05, **P<.01, ***P<.01

*Figure 2. Research Model with Results*






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# 5. DISCUSSION AND IMPLICATIONS

## 5.1. Discussion

Past studies reveal that different scholars have investigated information technology models (for example, the Technology Acceptance Model, Theory of Reasoned Action, Theory of Planned Behavior, Unified Theory of Acceptance, and Use of Technology), to ascertain positive utility factors that contribute to the adoption of online stock trading across countries. However, there is little known to uncover the negative factors that impede the adoption of online stock trading. Up to the best of authors' knowledge, there is a dearth of research work using perceived risk theory in the context of online stock trading adoption. Especially, there is no study measuring the effects of risk dimensions on the OST in developing country, Pakistan. Therefore, based on PRT we explored the risk factors influencing online stock trading adoption in Pakistan.

The most influential risk affecting investors' intention to use online stock trading is opportunity cost risk (β=.293, $p$<.001). This result supports the findings of Lu et al. (2005), Kassim and Ramayah (2015) and indicating two possibilities. First, as argued by prospect theory (Kahneman & Tversky, 1979), if traditional settings are still working, then people do not adopt a new risky method for conducting transactions. Thus, due to the various risks associated with e-services adoption, investors in Pakistan prefer traditional method (phone-based) of stock trading. Second, as mentioned by Kerins et al. (2004) investment decision may be affected in case of more investment opportunities in the market. Therefore, it may be possible that they have other best investment opportunities in the market which prevent them from internet stock trading adoption.

The second important inhibitor of internet stock trading is time risk (β=.275, $p$<.001) This result is in line with the previous studies of Featherman and Pavlou (2003) and Currás-Pérez et al. (2013). The finding reveals that investors in Pakistan have worries in terms of learning the online trading platform which might take a long time. Forsythe and Shi (2003) affirmed that online trading is complex than traditional trading methods and it needs sufficient time for learning. Similarly, Hoyer and MacInnis (1997) argued that a lot of time is spent in online stock trading. These concerns adversely affect investors' intentions to use internet stock trading.

Performance risk (β=.238, $p$<.001) is the third important risk that adversely affects investors' intentions to use internet stock trading. Same results were also confirmed by Khedmatgozar and Shahnazi (2017); Hanafizadeh and Khedmatgozar (2012). The results indicate that investors' concerns about the possible malfunctioning of the online stock trading system or low internet speed reduce their intentions to use online stock trading. In this respect, another possible concern of investors is that the service provider may not be able to provide them the advertised services, advantages and facilities, which adversely affect their intention to use internet stock trading.

Financial risk (β=.142, $p$<.001) is the fourth influential risk having a negative effect on investors' intention for internet stock trading usage. This conclusion is consistent with the findings of (Hanafizadeh & Khedmatgozar, 2012) and (Martins et al., 2014). Financial loss as a result of careless operations, fear of hacking of the online account(s), unable to claim compensation from brokerage houses in cases of errors in transactions and lack of legal support are some of the concerns that investors face in respect of financial risk. These concerns prevent them using internet stock trading for their investment purpose. The study also finds that privacy risk (β=.122, $p$<.01) has a significant negative influence on investors' intentions to opt for online stock adoption. The finding is in accordance with the results of Currás-Pérez



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et al. (2013). The result indicates that investors' fear regarding the misuse of their private information by service providers or hackers, adversely affects their intention to use online stock trading.

Unexpectedly, we found insignificant results of three risk dimensions i.e. social risk, psychological risk and physical risk on investors' internet stock trading acceptance. Insignificant results about these risk dimensions have also been confirmed by Lee (2009a), Yang et al. (2015) and Kassim and Ramayah (2015) respectively. The insignificant results of social risk indicate that investors do not pay heed to the social pressure from family members, friends or/colleagues with regard to internet stock trading. There are two possible interpretations, one is that internet stock trading is common where the social group(s) has a favorable perception of it. Second, the decision of internet stock trading is not mandatory, rather it is voluntary. Venkatesh et al. (2003) argued that social norms significantly influence intentions in the context of mandatory-usage and has a low effect on intentions in the context of voluntary-usage. The insignificant results of psychological and physical risk show that investors have a favorable attitude towards internet stock trading. The investors do not think that internet stock trading will lead to any physical threat or psychological discomfort.

The moderating results reveal that collectivism affects the investors' usage of online stock trading in Pakistan. Investors living in Pakistan, tend to be influenced by the opinions of other investors, colleagues, friends, and others important. Consistent with the results of (Abbasi, 2011; Khan et al., 2017), the group pressures matter in the adoption of online stock trading in Pakistan as individuals are often get affected by his/her society. The high score of uncertainty avoidance does moderate the relationship between BI and usage behavior. The result is not in line with the projected hypothesis which may show the specific data characteristic. This counterintuitive result was also found by Baptista and Oliveira (2015) in the area of mobile banking.

## 5.2. Implications

### 5.2.1. Theoretical Implications

This paper contributes theoretically in several ways. First, this article contributes to the extant literature of internet stock trading by shedding light on the factors that impede the use of online stock trading adoption. Second, the findings of this paper further validate the negative and significant role of perceived risk dimensions in a new context i.e. internet stock trading adoption as suggested by Yang et al. (2015). Similarly, as argued by Lee (2009a) that the perceived risk dimensions are indirectly influenced by cultural differences, so these dimensions should be examined in different cultural contexts. Therefore, considering further validations in a new cultural context, we examined risk dimensions in Pakistan. The study extended the work of Tai and Ku (2013) by examining the impact of more risk dimensions on internet stock trading. The cultural dimensions are worth including in the technology acceptance studies. This study added the cultural dimensions to understand the online stock investing behavior of individual investors. This is a new evidence of the cultural moderators in the area of online stock trading and it will further stimulate the research to better investigate the cultural impacts in other technology acceptance studies. Theoretically, the study will pave the way for future researchers in using or extending the model in other contexts and technology groups.



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### 5.2.2. Practical Implications

This research has many managerial implications. Regarding the significant and negative impact of risk dimensions on online stock trading acceptance, effective risk-reducing strategies may be formulated for promoting the adoption of online stocking among current and potentials investors. This research found that opportunity cost risk has the most significant impact on online stock trading adoption. This result implies that due to various risks associated with online stock trading, investors prefer the traditional method of stock trading. Thus, stock brokers and planners can focus on such factors which can be used for reducing the impact of various risks on technology acceptance. For example, Hanafizadeh and Khedmatgozar (2012) found that awareness negatively influences risk dimensions towards internet banking adoption. Awareness refers to the information of investors about the availability of online services, benefits and the procedure to open an account for using the online stock trading platform. Thus, this risk can be minimized by increasing awareness through advertisements, training, and literacy. Similarly, the recent finding of Xie et al. (2017) hold that perceived risk has a negative association with trust, indicating the importance of trust-building measures in online services. Therefore, this study suggests that the online stock brokers must develop trust-enhancing mechanisms such as guarantee statements, providing digital receipts of transactions, and/or increase familiarity with the online trading platform.

The possible solutions for investors' concerns regarding the second important inhibitor, time risk, includes preparation of appropriate guidelines for investors so that they can easily use the online stock trading platform (Khedmatgozar & Shahnazi, 2017). Hanafizadeh and Khedmatgozar (2012) suggested telephone calling centers for this purpose to facilitate the investors in real time. Yiu et al. (2007) stressed on advertisements of demonstration versions of online stock trading for learning the trading platform. Performance risk, the third inhibitor of online stock trading can be minimized by implementing traffic management systems (Khedmatgozar & Shahnazi, 2017), adopting of latest and user-friendly technology, hiring an active technical team, frequent and redundant data back systems to avoid data loss and by implementing multiple high-availability server clusters. This study, too, highlights the concentration of policymakers and web-designers to work out for improving investors' performance.

Reducing the financial risk, online stock brokers can keep investors informed about the guidelines and instructions for knowing their rights and responsibilities. Stockbrokers can reduce financial risk by providing improved services, a guarantee of satisfaction, digital receipts of transactions and money back guarantees to investors. Finally, the study found that privacy risk is another inhibitor of online stock trading. Bestavros (2000) recommended the following suggestions for decreasing privacy risk: keeping the investors informed about the regulatory materials that hold brokerage houses responsible for misuse or disclosing the private information of investors. In this regard, the right to information act and other digital rights can be strengthened for the sake of promoting online stock trading, including the protection of investors' private information in the policy of brokerage houses. Lee (2009a) also pointed the implementation of strong authentication systems and encryption to minimize chances of fraud and identity theft. In the context of Pakistan, the investors can be ensured of their privacy in the form of latest technology, government regulations and right information of the online stock trading.



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## 6. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

In this study, based on perceived risk theory, we tested the impact of perceived risk components on investors' online stock adoption in the context of Pakistan. Although the study contributes to the extant literature in different ways, yet we acknowledge several limitations associated with the study. First, the findings of this study have generalization problem. The validity degree of risk components may vary according to the difference in culture and market conditions. The user must take care of the context and therefore, the validation of risk components in different national culture is a worthwhile opportunity for future researchers. Secondly, the study used a cross-sectional design, which could limit the findings and can be robustly validated by using longitudinal studies in future. Third, the study focused to test how risk perceptions affect online stock trading from individual investors' perspective, which could be alternatively researched in the context of organizations. Fourth, the model was composed of the risk factors which could be more strengthened by taking some other variables (predictors or moderators), like government support and social influence. Finally, the study did not examine the actual behavior in terms of frequency of use which can be covered in further studies.

## 7. CONCLUSION

Online stock trading provides multiple advantages to investors, but still, the adoption rate is unexpectedly low, especially in developing countries. In this respect, past scholars have increasingly applied various adoption models to explore the positive factors that influence investors' intentions to use online stock trading. However, perceived risk has received limited attention in the online stock trading literature. This study aimed to close the gap by using perceived risk theory to examine the risk dimensions inhibiting online stock trading adoption at individual investors' level in Pakistan. Moreover, this study measures the cultural effects on the investors' usage behavior which has been remained unaddressed in the previous literature.

More specifically, this study examined the effects of eight risk dimensions (i.e., time, financial, security and privacy, social, performance, psychological, physical and opportunity cost risk) upon investors' behavioral intentions to use online stock trading. We found that time, financial, privacy, performance, and opportunity cost risks have significant and negative effects on behavioral intentions to use online stock trading. Consistent with the previous empirical studies, the results of this study confirm the negative and significant role of perceived risk dimensions on behavioral intentions. The cultural dimensions, too, have a significant impact on the investors' usage behavior. The findings provide insights to help regulators/planners in developing risk-reducing strategies to enhance online stock trading by considering the risk and cultural factors.

## DISCLOSURE STATEMENT

The authors have no conflict of interest to be reported.



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## ENDNOTES

1. The Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), Theory of Planned Behavior(TPB), Unified Theory of Acceptance and Use of Technology (UTAUT)
2. Individualism/Collectivism, Uncertainty avoidance, Long/Short term, Masculinity/ Femininity and Power Distance
3. Quid–e-Azam university, National university of modern languages, National university of Science and Technology, International Islamic University, COMSATS University, and Air University Islamabad

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## APPENDIX

*Table 5. Cross loadings*

| | BI | FNR | IC | OPR | PFR | PHR | PRR | PSR | SOR | TMR | UA | BI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BI1 | **0.873** | 0.386 | 0.222 | 0.514 | 0.464 | 0.338 | 0.456 | 0.314 | 0.364 | 0.238 | 0.427 | 0.523 |
| BI2 | **0.916** | 0.454 | 0.231 | 0.595 | 0.551 | 0.275 | 0.110 | 0.533 | 0.446 | 0.564 | 0.394 | 0.668 |
| BI3 | **0.878** | 0.467 | 0.209 | 0.545 | 0.695 | 0.280 | 0.086 | 0.508 | 0.445 | 0.635 | 0.359 | 0.548 |
| BI4 | **0.723** | 0.389 | 0.291 | 0.471 | 0.560 | 0.252 | 0.081 | 0.435 | 0.378 | 0.541 | 0.636 | 0.397 |
| FNR1 | 0.407 | **0.807** | 0.337 | 0.283 | 0.379 | 0.282 | 0.071 | 0.411 | 0.446 | 0.365 | 0.571 | 0.426 |
| FNR2 | 0.429 | **0.838** | 0.285 | 0.241 | 0.398 | 0.304 | 0.110 | 0.462 | 0.525 | 0.409 | 0.626 | 0.414 |
| FNR3 | 0.364 | **0.791** | 0.222 | 0.328 | 0.411 | 0.323 | 0.084 | 0.507 | 0.497 | 0.409 | 0.183 | 0.143 |
| FNR4 | 0.283 | **0.690** | 0.231 | 0.384 | 0.424 | 0.387 | 0.334 | 0.444 | 0.287 | 0.184 | 0.159 | 0.202 |
| IC1 | 0.092 | 0.219 | **0.777** | 0.106 | 0.131 | 0.292 | -0.064 | 0.137 | 0.219 | 0.125 | 0.235 | 0.353 |
| IC2 | 0.108 | 0.233 | **0.685** | 0.112 | 0.172 | 0.277 | -0.046 | 0.149 | 0.239 | 0.182 | 0.294 | 0.454 |
| IC3 | 0.206 | 0.256 | **0.784** | 0.198 | 0.318 | 0.318 | -0.042 | 0.152 | 0.444 | 0.238 | 0.204 | 0.367 |
| IC4 | 0.247 | 0.361 | **0.822** | 0.236 | 0.413 | 0.390 | -0.055 | 0.261 | 0.508 | 0.289 | 0.197 | 0.389 |
| OPR1 | 0.324 | 0.252 | 0.183 | **0.734** | 0.411 | 0.168 | -0.130 | 0.362 | 0.361 | 0.371 | 0.226 | 0.479 |
| OPR2 | 0.290 | 0.321 | 0.213 | **0.712** | 0.418 | 0.141 | -0.131 | 0.244 | 0.384 | 0.261 | 0.293 | 0.503 |
| OPR3 | 0.543 | 0.244 | 0.179 | **0.839** | 0.527 | 0.278 | -0.050 | 0.465 | 0.341 | 0.399 | 0.231 | 0.688 |
| OPR4 | 0.627 | 0.309 | 0.212 | **0.872** | 0.554 | 0.246 | -0.089 | 0.479 | 0.364 | 0.413 | 0.409 | 0.665 |
| PFR1 | 0.598 | 0.256 | 0.206 | 0.294 | **0.768** | 0.221 | -0.093 | 0.455 | 0.357 | 0.451 | 0.206 | 0.538 |
| PFR2 | 0.337 | 0.382 | 0.405 | 0.201 | **0.786** | 0.120 | 0.086 | 0.300 | 0.684 | 0.316 | 0.480 | 0.697 |
| PFR3 | 0.440 | 0.252 | 0.142 | 0.346 | **0.685** | 0.187 | -0.062 | 0.390 | 0.290 | 0.777 | 0.229 | 0.200 |
| PHR1 | 0.238 | 0.343 | 0.403 | 0.172 | 0.183 | **0.771** | 0.062 | 0.236 | 0.235 | 0.238 | 0.339 | 0.258 |
| PHR2 | 0.285 | 0.343 | 0.319 | 0.240 | 0.260 | **0.849** | 0.007 | 0.478 | 0.236 | 0.292 | 0.185 | 0.172 |
| PHR3 | 0.173 | 0.178 | 0.359 | 0.154 | 0.168 | **0.772** | -0.011 | 0.309 | 0.105 | 0.189 | 0.110 | 0.077 |
| PRR1 | 0.084 | 0.082 | 0.304 | -0.054 | 0.048 | 0.009 | **0.776** | 0.047 | 0.080 | -0.003 | 0.180 | 0.080 |
| PRR2 | 0.077 | 0.082 | 0.292 | -0.101 | -0.015 | 0.052 | **0.760** | 0.064 | 0.003 | -0.022 | 0.147 | 0.012 |
| PRR3 | 0.093 | 0.122 | -0.034 | -0.102 | 0.048 | -0.025 | **0.826** | 0.101 | 0.074 | -0.004 | 0.229 | 0.071 |
| PRR4 | 0.064 | 0.038 | -0.023 | -0.094 | 0.017 | -0.080 | **0.734** | 0.031 | 0.016 | -0.034 | 0.186 | 0.048 |
| PSR1 | 0.495 | 0.513 | -0.060 | 0.409 | 0.500 | 0.420 | 0.047 | **0.829** | 0.469 | 0.481 | 0.489 | 0.492 |
| PSR2 | 0.431 | 0.431 | -0.092 | 0.371 | 0.456 | 0.339 | -0.010 | **0.785** | 0.412 | 0.480 | 0.394 | 0.434 |
| PSR3 | 0.341 | 0.359 | 0.195 | 0.424 | 0.350 | 0.358 | 0.075 | **0.747** | 0.337 | 0.332 | 0.312 | 0.326 |
| PSR4 | 0.441 | 0.433 | 0.209 | 0.401 | 0.544 | 0.283 | 0.147 | **0.753** | 0.470 | 0.474 | 0.365 | 0.519 |
| SOR1 | 0.374 | 0.413 | 0.151 | 0.333 | 0.629 | 0.135 | -0.012 | 0.339 | **0.744** | 0.394 | 0.369 | 0.684 |
| SOR2 | 0.377 | 0.526 | 0.218 | 0.305 | 0.640 | 0.148 | 0.116 | 0.468 | **0.787** | 0.399 | 0.431 | 0.676 |
| SOR3 | 0.326 | 0.481 | 0.445 | 0.359 | 0.459 | 0.236 | 0.062 | 0.451 | **0.774** | 0.332 | 0.382 | 0.470 |
| SOR4 | 0.341 | 0.372 | 0.440 | 0.328 | 0.385 | 0.196 | 0.012 | 0.379 | **0.675** | 0.314 | 0.539 | 0.417 |
| TMR1 | 0.493 | 0.445 | 0.401 | 0.314 | 0.462 | 0.307 | -0.012 | 0.456 | 0.387 | **0.699** | 0.395 | 0.457 |

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*Table 5. Continued*

| | BI | FNR | IC | OPR | PFR | PHR | PRR | PSR | SOR | TMR | UA | BI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TMR2 | 0.616 | 0.458 | 0.275 | 0.462 | 0.607 | 0.279 | -0.029 | 0.514 | 0.438 | **0.855** | 0.349 | 0.566 |
| TMR3 | 0.440 | 0.252 | 0.258 | 0.346 | 0.645 | 0.187 | -0.062 | 0.390 | 0.290 | **0.777** | 0.206 | 0.538 |
| TMR4 | 0.442 | 0.311 | 0.310 | 0.283 | 0.531 | 0.155 | 0.052 | 0.397 | 0.365 | **0.752** | 0.217 | 0.517 |
| UA1 | 0.341 | 0.615 | 0.142 | 0.202 | 0.356 | 0.218 | 0.174 | 0.361 | 0.373 | 0.293 | **0.768** | 0.386 |
| UA2 | 0.336 | 0.642 | 0.207 | 0.153 | 0.332 | 0.267 | 0.244 | 0.404 | 0.379 | 0.299 | **0.732** | 0.364 |
| UA3 | 0.323 | 0.594 | 0.223 | 0.264 | 0.347 | 0.258 | 0.156 | 0.409 | 0.395 | 0.310 | **0.744** | 0.365 |
| UB1 | 0.630 | 0.268 | 0.233 | 0.482 | 0.757 | 0.220 | -0.100 | 0.459 | 0.364 | 0.482 | 0.230 | **0.703** |
| UB2 | 0.336 | 0.369 | 0.249 | 0.196 | 0.565 | 0.129 | 0.090 | 0.277 | 0.667 | 0.318 | 0.409 | **0.725** |
| UB3 | 0.401 | 0.232 | 0.196 | 0.352 | 0.615 | 0.188 | -0.057 | 0.373 | 0.276 | 0.703 | 0.206 | **0.682** |
| UB4 | 0.371 | 0.474 | 0.211 | 0.233 | 0.628 | 0.157 | 0.242 | 0.432 | 0.708 | 0.375 | 0.479 | **0.726** |



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# Chapter 54
# Outward Foreign Direct Investment in Emerging Economies:
## A Case of Turkey

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## ABSTRACT

*Outward Foreign Direct Investment (OFDI) has been utilized by developed economies to enter developing markets for competitive advantages. However, recent boom in OFDI from emerging economies has prompted the question as to why these economies are investing abroad? A modest amount of literature exists regarding China and India, however, Turkey being an emerging economy has been largely untapped when it comes to determinants of OFDI. This study uses the Global Competitiveness Index (GCI) to find host and home country factors which have led to OFDI from Turkey to their top 10 investment destinations for the past 10 years. The host country factors found to be significantly correlated with Turkish OFDI are innovation (Netherlands and Russia), technological readiness (Russia and UK), labor market efficiency (Netherlands), infrastructure (Netherlands), domestic market size (Germany), and exports (UK). The home factors found to be significantly correlated with Turkish OFDI are infrastructure and domestic competition.*

## INTRODUCTION

Foreign Direct Investment (FDI) is an important factor for economic growth especially within developing economies. Generally the flow of FDI has been from developed towards developing economies, however in recent history there has been a shift in the outward foreign direct investment (OFDI). Emerging

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economies have been increasingly investing abroad sparking the question of how FDI outflows or OFDI impacts the home country and why are companies in emerging economies engaging in more OFDI today? Outward FDI refers to companies investing abroad through various tools such as Green field investments, Brown field investments, and expansion of existing foreign facilities. Since the year 2000, there has been a surge in the OFDI from developing economies around the globe. The OFDI figures for all developing economies combined have increased exponentially. According to United Nations Conference on Trade and Development (UNCTAD, 2016; UNCTAD), FDI Outflows from developing economies increased from an estimated $88.63 billion to an estimated $377.94 billion from the year 2000 to 2015 respectively. The proportion of FDI outflows from developing economies to all FDI outflows from the world has also increased immensely, changing from 7.62% in 2000 to 25.64% in 2015. Whereas, the OFDI stock from developing economies increased from $734.81 billion (9.88% of global OFDI stock) in 2000 to $5, 296.35 billion (21.15% of global OFDI stock) in 2015.

Turkey holds a geographical advantage due to its location forming a connection between Asia and Europe. Turkey is also one of the fastest growing economies around the globe, growing almost three fold since the year 2000; the GDP of Turkey grew from $266 billion in 2000 to $798 billion in 2014. The increasing foreign direct investment has helped the Turkish economy grow over time, while there has been growth in FDI inflows there has also been an increase in FDI outflows. Turkish organizations are looking to take their business abroad and invest in different regions. But the question arises as to why Turkish companies are going abroad? Why invest in the international market rather than the domestic market? This study is undertaken in order to find the OFDI determinants among Turkish organizations.

The rest of the paper is divided into the following sections: Section 2, Turkey's Current Outward Foreign Direct Investment Overview; Section 3, Literature Review; Section 4, Methodology; Section 5, Results; Section 6, Conclusion.

## TURKEY'S CURRENT OUTWARD FOREIGN DIRECT INVESTMENT OVERVIEW

Turkey's OFDI flows have been increasing over the years improving the OFDI stock to over $40 billion. Turkish firms are looking to go abroad and have recently had major mergers and acquisitions. OFDI not only helps these Turkish firms reach new markets, resources, and technology but also provides employment to thousands of people in host countries. Several surveys completed over the years show the number of foreign workers which are employed by Turkish MNEs; in 2007 the top 12 Turkish MNEs employed over 72, 000 workers abroad (KHU-DEIK-VCC, 2009), in 2009 the top 19 Turkish MNEs employed over 90, 000 workers abroad (KHU-DEIK-KPMG-T-VCC, 2012), and in 2012 the top 29 Turkish MNEs employed over 115, 000 workers aboard (KHU-DEIK-VCC, 2014). Turkish MNEs continue to invest abroad and increase their foreign affiliates and assets. Turkish OFDI Stock had crossed the $40 billion mark in the year 2014 over double its size in 2008 (estimated $17.85 billion). UNCTAD (2015) data on Turkish OFDI shows that Turkish investors have substantially increased their investments abroad after the 2008 global financial crisis.



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*Table 1. Turkey's outward foreign direct investment (1990-2014)*

| Turkey's OFDI Figures | | |
|---|---|---|
| Millions of U.S. Dollars | | |
| **Year** | **FDI Outflows** | **FDI Outward Stock** |
| **1990** | -16.0 | 1150.32 |
| **1991** | 27.0 | 1177.32 |
| **1992** | 65.0 | 1242.32 |
| **1993** | 14.0 | 1256.32 |
| **1994** | 49.0 | 1305.32 |
| **1995** | 113.0 | 1418.32 |
| **1996** | 110.0 | 1528.32 |
| **1997** | 251.0 | 1779.32 |
| **1998** | 367.0 | 2146.32 |
| **1999** | 645.0 | 2791.32 |
| **2000** | 870.0 | 3668.0 |
| **2001** | 497.0 | 4581.0 |
| **2002** | 143.0 | 5847.0 |
| **2003** | 480.0 | 6138.0 |
| **2004** | 780.0 | 7060.0 |
| **2005** | 1064.0 | 8315.0 |
| **2006** | 924.0 | 8866.0 |
| **2007** | 2106.0 | 12210.0 |
| **2008** | 2549.0 | 17846.0 |
| **2009** | 1553.0 | 22250.0 |
| **2010** | 1469.0 | 22509.0 |
| **2011** | 2330.0 | 27681.0 |
| **2012** | 4106.0 | 30968.0 |
| **2013** | 3527.0 | 33373.0 |
| **2014** | 6658.33 | 40088.0 |

Source: UNCTAD (2015).

## Geographical Breakdown

A breakdown of the geographical OFDI is important because it helps us analyze the regions in which Turkey's investors hold interest. Europe has always been a close trading partner of Turkey especially after the Customs Union agreement between European Union and Turkey in 1996. Customs Union strengthened the trade relationship between EU and Turkey paving the way for higher volumes of trade and FDI. This is evident from the amount of money Turkish investors have been investing in Europe. A majority of the Turkish OFDI have been directed towards Europe. Since 2002, 63% of all OFDI flows have been to Europe whereas only 25% have been to Asia, 10% to America, and a mere 2% to Africa.

Surveys of top Turkish MNEs completed by KHU-DEIK-VCC (2009, 2011, and 2014) also show that the majority of their affiliates are located in Europe. Furthermore, these surveys also found drivers for foreign investments by Turkish MNEs. A survey of top 19 Turkish MNEs (KHU-DEIK-KPMG-T-VCC, 2012) revealed that Turkish MNEs target Europe to acquire technology and skills, Africa and Asia for low cost labor, and Central Asian Turkic Countries for natural resources. Through a survey of top 29 Turkish MNEs (KHU-DEIK-VCC, 2014), respondents were asked to identify drivers of investments abroad; these drivers



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*Figure 1. Depiction of Turkey's outward foreign direct investment over the years*

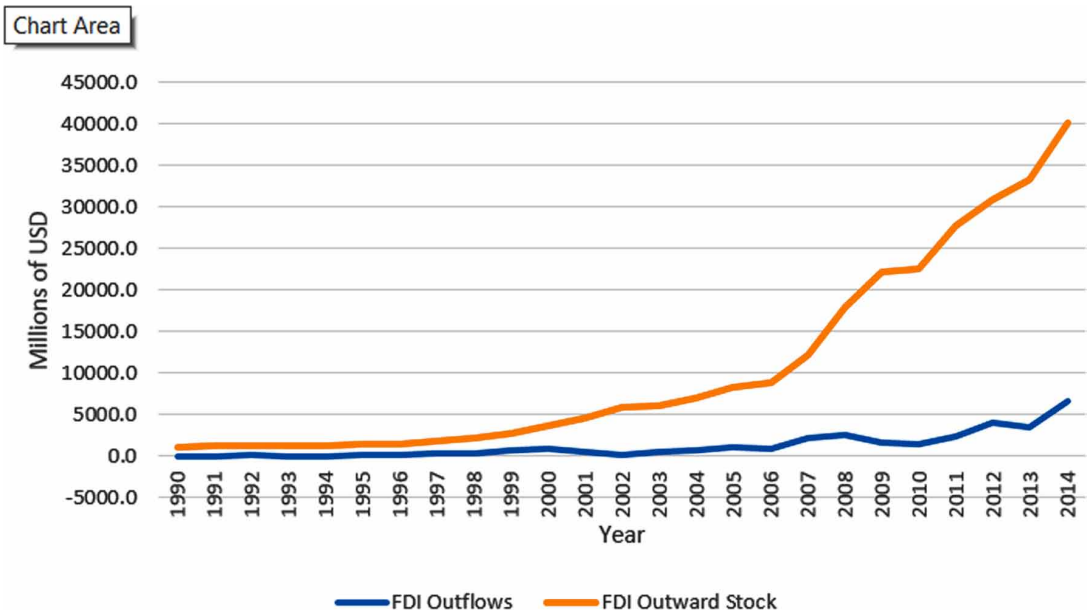



*Table 2. Turkey's outward FDI according to region (2002-2015)*

| Turkey's Regional Foreign Direct Investments Abroad (Millions USD) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 * |
| Europe | 199 | 166 | 315 | 504 | 1,104 | 1,621 | 1,370 | 1,537 | 1,254 | 1,879 | 3,502 | 2,138 | 2,207 | 3,217 |
| Africa | 0 | 4 | 1 | 5 | 15 | 86 | 211 | 36 | 41 | 38 | 50 | 69 | 44 | 24 |
| America** | 43 | 69 | 46 | 22 | 40 | 83 | 533 | 73 | 58 | 54 | 176 | 251 | 485 | 1,360 |
| Asia | 4 | 240 | 452 | 504 | 518 | 485 | 490 | 394 | 470 | 569 | 600 | 768 | 2,483 | 581 |
| Oceania and Polar Regions | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 0 | 0 | 0 |
| Unclassified | 5 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 58 |
| **Total** | **251** | **486** | **815** | **1,065** | **1,677** | **2,275** | **2,604** | **2,040** | **1,823** | **2,542** | **4,334** | **3,226** | **5,234** | **5,240** |

*Provisional

**America includes both North and South America

Source: Data obtained from Central Bank of the Republic of Turkey's online database.

include new markets and market diversification (75%), sustainable growth (60%), managing risk (50%), and access to natural resources and low costs (almost 40%). The same study also identified that the Turkish Government has been assisting investors through the opening of new embassies in Africa. Furthermore, the Government of Turkey has adopted an expansion policy by opening trade and investment offices in new regions, increasing flight destinations of Turkish Airlines, and increasing development assistance by Turkish Co-operation and Co-ordination Agency (TIKA). OFDI flows trends towards Europe determine that Turkish MNEs are looking to move towards developed markets which can provide them with high technology and highly skilled labor. Africa is still an untapped market for Turkish investors however, the government of Turkey is trying to push Turkish investors to invest in the African region.



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*Figure 2. Graphical representation of Turkey's Regional OFDI (2002-2015)*

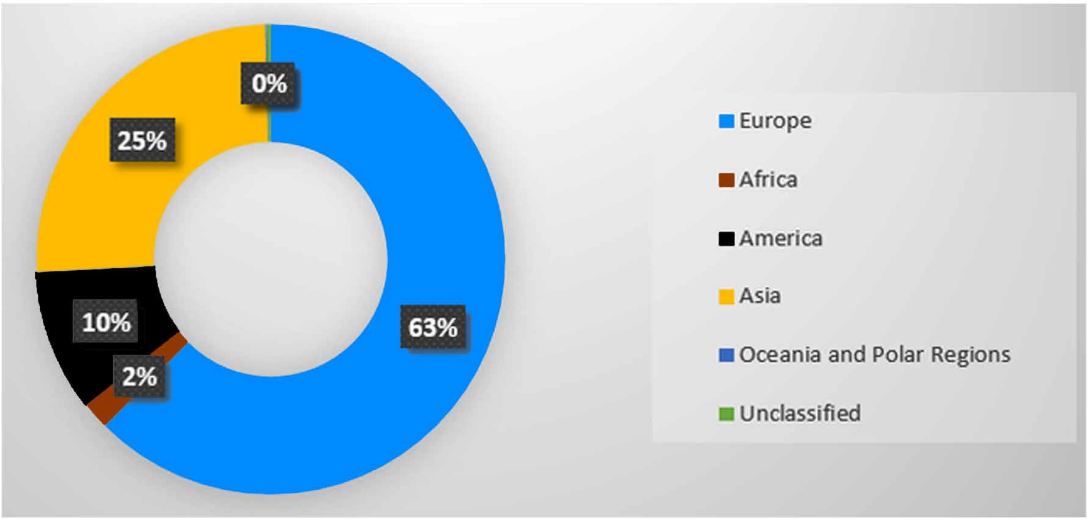



*Table 3. Turkey's outward foreign direct investment by industry (2002-2015)*

| Turkey's Foreign Direct Investments Abroad by Industry (Millions USD) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 * |
| Agriculture, Forestry and Fishing | 0 | 0 | 0 | 1 | 0 | 2 | 8 | 3 | 53 | 19 | 0 | 2 | 4 | 6 |
| Mining and Quarrying | 9 | 246 | 472 | 506 | 456 | 343 | 264 | 254 | 233 | 298 | 471 | 750 | 2,985 | 1,869 |
| Manufacturing | 83 | 99 | 60 | 419 | 810 | 230 | 1,382 | 281 | 444 | 517 | 2,742 | 1,086 | 667 | 852 |
| Electricity, Gas, and Water | 2 | 5 | 4 | 0 | 0 | 0 | 2 | 17 | 21 | 129 | 52 | 83 | 158 | 117 |
| Construction | 10 | 3 | 25 | 11 | 54 | 75 | 94 | 122 | 158 | 150 | 72 | 211 | 296 | 322 |
| Wholesale and Retail Trade | 9 | 17 | 25 | 8 | 42 | 21 | 20 | 22 | 35 | 21 | 48 | 101 | 123 | 69 |
| Transportation and Storage | 29 | 6 | 9 | 19 | 9 | 100 | 211 | 63 | 63 | 586 | 32 | 141 | 127 | 38 |
| Accommodation and Food Services | 13 | 1 | 2 | 6 | 2 | 0 | 14 | 7 | 3 | 14 | 194 | 20 | 148 | 44 |
| Information and communication services | 0 | 0 | 151 | 28 | 78 | 125 | 362 | 245 | 110 | 17 | 45 | 69 | 7 | 656 |
| Financial and Insurance Activities | 91 | 81 | 66 | 52 | 202 | 1,352 | 175 | 694 | 549 | 590 | 379 | 487 | 507 | 801 |
| Real Estate Activities | 0 | 0 | 0 | 1 | 1 | 12 | 13 | 267 | 66 | 114 | 217 | 199 | 130 | 389 |
| Other Services | 5 | 28 | 1 | 14 | 23 | 15 | 59 | 65 | 88 | 87 | 82 | 77 | 82 | 77 |
| **Total** | **251** | **486** | **815** | **1,065** | **1,677** | **2,275** | **2,604** | **2,040** | **1,823** | **2,542** | **4,334** | **3,226** | **5,234** | **5,240** |

*Provisional

Source: Data obtained from Central Bank of the Republic of Turkey's online database.

## Industry Breakdown

Through the industrial breakdown, a recent surge in OFDI in the Mining and Quarrying sector can be observed. This could be associated with recent large pipeline projects which Turkey has undertaken in neighboring countries. OFDI in Manufacturing has always been attractive since Turkish firms are going abroad in search for better technology which they have done by mostly acquiring firms in other nations. The financial sector of Turkey has also been very successful, various Turkish banks have opened offices in neighboring countries expanding their markets.



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## LITERATURE REVIEW

Research on outward foreign direct investment from emerging economies picked up pace after the turn of the 21st Century. Various studies have been conducted on OFDI from emerging economies ranging from the determinants of OFDI to the benefits of OFDI for home and host countries. Evidence from various emerging economies suggest that motives for OFDI from these economies have changed over time and vary among regions and industries. Dunning (1993) explained that firms invest abroad for three reasons: foreign-market seeking FDI, efficiency-seeking FDI, and resource-seeking FDI. Emerging economies also look for asset acquisition when investing abroad (Hill & Jongwanich, 2014), especially acquiring of assets in western economies. It is possible that these emerging economies are trying to acquire assets in countries with sounder institutional environment. However, in general emerging economies look to invest in countries which have relatively close or weaker institutions, moreover, institutional distance is diminished given that the host country has natural resources which are required by the home country (Athukorala & Hill, 2010; Aleksynska & Havrylchyk, 2012). Investment in natural resource rich areas can also explained by the fact that emerging East Asian countries are generally investing abroad through Sovereign Wealth Funds (SWFs) hence their aim for acquiring natural resources (Hill & Jongwanich, 2014). According to Andreff (2015), Russian Multinational Corporations (MNCs) are targeting industries in U.S., Canada, Italy, Switzerland, and South Africa for natural resources.

Emerging economies are also investing abroad in order to acquire technological assets which are not available in their domestic market (Dunning et al., 2008). Further motivations for OFDI include large surpluses, to gain competitive advantage (strengthen R&D and increase knowledge of regionally close markets), to seek markets (in case there are high trade barriers), and due to unfavorable domestic investment climate (Hill & Jongwanich, 2014). Stoian and Mohr (2016) find various motives for firms investing abroad due to avoidance of home country regulative voids. They find that OFDI from firms in emerging economies is a result of high protectionism, high corruption, high bureaucracy, and missing or inadequacy of rules and regulations which aren't enforced. They suggest that firms in emerging economies engage in escapist OFDI in order to avoid competitive disadvantages which may result from regulative voids. However, escapist OFDI does not have positive effects on the home country since firms are leaving due to shortcomings in the domestic market. Hill (2012) In Stoian and Mohr (2016) explains that bureaucracy, corruption, and protectionism all lead to negative consequences for the home country which hamper the economic growth. Similarly, Luo and Tung (2007) state that MNCs in emerging economies expand internationally in order to escape institutional and market constraints within domestic markets because these constraints lead to competitive disadvantages for emerging economy MNCs. A large number of studies on emerging economies and their determinants for OFDI have been done on China and India hence the OFDI patterns from these two economies are studied in-depth in this literature review. Furthermore, past studies on OFDI behavior from Turkey are examined.

In the case of India, one of the fastest growing economies in the world today, OFDI was motivated through learning and knowledge acquired from multinational corporations (Matthews, 2002). According Pradhan (2008), Indian multinational corporations (MNCs) go abroad in order to avoid a stagnant domestic market as well as policies which restrict firm growth such as the Foreign Exchange Regulations Act, licensing, regulations, and the Monopoly & Trade Restrictive Practices Act. Likewise, Andreff (2015) states that Indian MNCs go abroad in order to reduce dependency on the local market and business cycle. Indian MNCs have also been targeting Western Europe and U.S. in an attempt to improve their research and development, strategic assets, and skill structure (Andreff, 2015).



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Other motivations of Indian MNCs include attaining global size and status as well as combining international economy with the low cost labor market at home (Andreff & Balcet, 2013). Furthermore, Nayyar (2008) conducted a survey of Indian MNCs and their motives for investing abroad; the survey found that market access (51% respondents) was the top motive for Indian MNCs going abroad, other motives were efficiency seeking (22%), resource seeking (13%), and created asset seeking (14%). In the case of India, liberalization of investments policies according to the changing preferences of the Indian companies have helped these companies increase their investments abroad (Anupam, Rani, & Kumar, 2014). Government policies are very important when it comes to FDI and OFDI, the government of India has been able to facilitate investors looking to go abroad. Pradhan (2011) found several drivers for Indian multinationals investing abroad, these include attraction towards countries with larger population and GDP per capita and countries which hold bilateral investment agreements (BIT) with India. These factors show that Indian MNCs like to target bigger markets and are willing to invest in countries where they have favorable investment policies in place through a BIT.

China is the largest emerging economy in the world. The rapid economic growth of China has also led to a rapid growth in OFDI from China. According to Ye Gang (1992), the first foreign investments of China were made in 1979 when Chinese companies began creating subsidiaries in an attempt to open up to new export markets. The early growth in OFDI from China has been due to FDI spillovers which resulted in technology transfers from MNCs towards local firms (Andreff, 2015). The rapid growth of OFDI after 2001 is due to the "go global" strategy adopted in 2001 as well as China's accession into the World Trade Organizations (Chen, n.d.). Chinese OFDI is directed towards natural resources in countries with poor institutions which explains higher investment by the Chinese in African nations (Kolstad & Wiig, 2012).

Additionally, Zhang and Daly (2011) conducted a panel data analysis of China's top importing countries from 2003 to 2009 in order to find the determinants for OFDI from China. They found that China's OFDI is attracted towards regions in which China has large exports, high GDP growth, high GDP per capita, large natural resources, and open economic nations. Similarly, Chang (2014) studied the characteristics and determinants of China's OFDI using the spatial gravity model for the same time period of 2003-2009. Chang found that OFDI characteristics for China include a focus on extraction of natural resources from developing and developed nations such as Kazakhstan, Australia, and African nations and investment in technology-intensive firms in developed nations. Chang identified determinants for China's OFDI as host country's GDP, vertical OFDI opportunities, a common language, fuel exports of host nations, and an export platform in the case of petroleum exporting nations. These results reveal the preferences of the Chinese OFDI towards natural resources and specifically towards petroleum rich nations.

It is important to note that OFDI from China is dominated by state owned firms which are controlled by the central government (Chen, n.d.) therefore the determinants of these firms would be aligned with the government policies unlike other emerging nations where MNCs are the major players in OFDI. This is evident due to the Chinese government providing subsidies to state owned firms which have invested in energy such as zero percent loan to China National Oil Corporation when bidding for a U.S. oil company (Xiao & Sun, 2005) and preferential interest rates to Chinalco bidding on an Australian mining company (Yao, Sutherland, & Chen, 2010). This also provides evidence that Chinese OFDI is directed towards strategic assets which align with China's strategic needs (Deng, 2007). Some motivations for OFDI from China's state owned firms include bypassing host country trade barriers, securing natural resources, gaining managerial expertise, acquiring technology, and gaining strategic assets (Wei & Alon, 2010). Whereas, provincial firms (which are mostly non-state owned) in addition to the determinants



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mentioned earlier, look for gaining knowhow, management skills, expansion of marketing networks, and increased competition at home leads to these firms seeking OFDI opportunities (Chen, n.d.).

Turkey is also a fast growing emerging economy which along with its economic growth has also increased in its OFDI although not as fast as other emerging economies such as China, Brazil, India, and Russia. To our knowledge there are only a handful of studies which have been conducted on the OFDI behavior of Turkey. These studies include a study of OFDI drivers for Turkish MNEs (Erdilek, 2008), determinants of OFDI from Turkey (Kayam & Hisarcikcilar, 2009; Onder & Karal, 2013), the impact of unfavorable home environment on Turkish Manufacturing firms' FDI (Kaya, 2009), and determinants of OFDI from Turkey towards Europe (Uray, Vardar, & Nacar, 2012; Gubbi & Sular, 2015). Erdilek (2008) conducted a case based study of MNEs in Turkey consisting of six SMEs and two large corporations. Several motives were found for OFDI from Turkey including ease of regulations, home environment (push factors such as high competition and exit costs), access to new markets, and host country environment (pull factors such as international brands, and access to natural resources). Similarly, considering Turkish manufacturing firms Kaya (2009) found utility costs, political instability, instability of exchange rate, and high inflation to be push factors for OFDI.

Kayam and Hisarcikcilar (2009) conducted an empirical study in order to find the determinants for Turkish OFDI using data of 11 countries from 1999 to 2005. They found the major determinants for Turkey's OFDI to be market seeking, substituting foreign markets for domestic markets, higher corruption index of host country, an increase in Turkish GDP decreases OFDI, and Turkish firms tend to produce low quality alternatives for higher quality products in host countries. Increase of Turkey's GDP has a negative impact on OFDI because Turkish firms are substituting domestic markets for foreign ones hence an increase in GDP per capita means that the buying power of domestic consumers are increasing leading to higher purchasing power motivating firms to focus on domestic markets. Uray, Vardar, and Nacar (2012) find that Turkish firms have invested in developed nations in order to attain technology and innovation. Furthermore, Turkish firms investing in Eastern European countries aim to change the country of origin in order to be more appealing toward the European customers (Uray, Vardar, & Nacar, 2012; Gubbi & Sular, 2015). Another important factor for investing in European countries is favorable tax policies for foreign investors (Gubbi & Sular, 2015). Literature shows that Turkish firms are investing abroad in order to expand their market, gain access to technology, present themselves are European firms (in the case of investment in Europe), gain product innovation, and avoid instability in the home environment.

## METHODOLOGY

The researchers applied a preliminary data analysis approach in order to narrow down the determinants for investing in a specific region and the determinants for leaving the domestic market. The Global Competitiveness Report was used to analyze a list of determinants which were deemed fit in the case of OFDI. The Global Competitiveness Report is published yearly by the World Economic Forum, the purpose of the report is to assess the competitiveness of economies around the globe. Currently the Global Competitiveness Index (GCI) comprises of 12 pillars divided into three sub-indices including basic requirements subindex (institutions, infrastructure, macroeconomic environment, health and primary education), efficiency enhancers subindex (higher education and training, goods market efficiency,



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financial market development, technological readiness, market size), innovation and sophistication factors subindex (business sophistication, innovation).

Global Competitiveness Report for 2015-2016 consisted of 140 countries within which 14, 000 business executives were surveyed about the dimensions mentioned above. The executives chosen for this survey are investment decision makers hence their ability to provide accurate information on the business environment of an economy. Furthermore, the data for analyzing a business environment is difficult to gather hence surveying business executives seems to be a good alternative. The researchers chose a few questions from within this survey to analyze the top 10 countries in which Turkish investors have invested over the past 10 years. A few questions from the survey were also chosen to analyze the business environment of Turkey. These factors would help assess the host and home country factors which motivate Turkish investment abroad. A period of 10 year is analyzed through GCI from 2006-2007 to 2015-2016. A preliminary analysis is conducted on these questions by analyzing the correlation between indicators and Turkish OFDI patterns over the years. This analysis facilitates understanding of whether if the GCI is a good fit for analyzing business environment factors which impact the decision making for Turkish investors.

## RESULTS

The analysis only showed meaningful results for several home and host country factors for a few countries (Appendix A and B). Through preliminary analysis it was found that only Germany, Netherlands, Russia, and UK showed significant results in some of their business environment factors. Similarly, correlation analysis for Turkey also showed that some home factors were significantly correlated to its OFDI patterns. Turkey's OFDI patterns show correlation with domestic competition and infrastructure. The Pearson correlation coefficient for OFDI and domestic competition is 0.882, which is statistically significant ($p < 0.01$ for a 2-tailed test). The Pearson correlation coefficient for OFDI and infrastructure is 0.690, which is also statistically significant ($p < 0.05$ for a 2-tailed test). The rest of the factors did not show any significant correlation. The relationships between domestic competition and OFDI from Turkey is interesting because the domestic competition has been increasing over the years which means that firms may be investing abroad in order to counter the competition at home. In the case of host countries, Turkish investors have invested the most in Netherlands with an OFDI stock of over $9 billion. Turkey's OFDI patterns towards Netherlands showed correlation with three market factors. Following are the results of Turkey's FDI in Netherlands. The Pearson correlation coefficient for Turkey's FDI and Labor Market Efficiency is 0.784, which is significant ($p < 0.01$ for a 2-tailed test). The Pearson correlation coefficient for Turkey's FDI and Infrastructure is 0.668, which is significant ($p < 0.05$ for a 2-tailed test). The Pearson correlation coefficient for Turkey FDI and Innovation is 0.738, which is significant ($p < 0.05$ for a 2-tailed test).

Germany receives the fourth highest FDI from Turkey having an OFDI stock of almost $2 billion since 2002. In the case of Germany we found only one factor to have significant results. The Pearson correlation coefficient for Turkey's FDI and Domestic Market Size is 0.856, which is significant ($p < 0.01$ for a 2-tailed test). The Pearson r shows a high correlation between Turkey's FDI to Germany and the German Market Size which could possibly mean that Turkish firms are investing there to capture a larger market. In the case of United Kingdom, which receives the fifth highest FDI from Turkey with an OFDI stock of over $1.5 billion since 2002, there are two factors which have been found significant when



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correlated with FDI from Turkey. The Pearson correlation coefficient for Turkey's FDI and Technological Readiness is 0.741, which is significant ($p < 0.01$ for a 2-tailed test). The Pearson correlation coefficient for Turkey's FDI and Exports to UK is 0.778, which is significant ($p < 0.01$ for a 2-tailed test). This shows the Turkish firms willingness to go to the UK market for technology. Finally, two factors were found to be significantly correlated with the Russian market. Russia receives the 8th highest FDI from Turkey with an OFDI stock of about $835 million since 2002. The Pearson correlation coefficient for Turkey's FDI and Technological Readiness is 0.643, which is significant ($p < 0.05$ for a 2-tailed test). The Pearson correlation coefficient for Turkey's FDI and Innovation is -0.716, which is significant ($p < 0.05$ for a 2-tailed test). This is interesting because there is a negative correlation between Turkey's FDI to Russia and their innovation level. We would have to look into this further to understand this relationship. The rest of the top 10 FDI locations for Turkish investors did not show any significant relations in terms of their business environment and Turkey's FDI into that region. Although the results of the current study only showed significant relations with only a few dimensions and Turkey's OFDI, we believe that the Global Competitive Index can be helpful in predicting the OFDI host and home country indicators.

## CONCLUSION

Outward Foreign Direct Investment from emerging economies has been increasing since the 1990s and began to multiply greatly after the turn of the 21st Century. Studies on this topic have also been limited greatly due to a lack of data from within these emerging economies. We have found this to be true especially in the case of Turkey where data from primary sources was difficult to attain. Therefore, we tried a different approach by using several dimensions within the Global Competitive Index in order to determine the host and home country factors for OFDI. Although our results were not significant for many of the dimensions, we found there to be some significantly correlated factors for Turkish FDI towards various countries. The host country factors which were found to be significantly correlated with Turkish FDI were innovation (Netherlands and Russia), technological readiness (Russia and UK), labor market efficiency (Netherlands), infrastructure (Netherlands), domestic market size (Germany), and exports (UK). The home factors found to be significantly correlated with Turkish FDI were infrastructure and domestic competition. Data was a major limitation for this research since it was difficult to attain primary data which would have provided us with better results. However, for future research the researchers propose working with the Global Competitiveness Index to test the investment factors for other emerging economies such as China, India, Russia, Brazil, Indonesia, etc. because the researchers believe that the GCI can help provide much needed data for this topic which is difficult to attain otherwise.

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## APPENDIX

Pearson's Correlation analysis was conducted between Turkey's OFDI and Business Environmental Factors of the top 10 countries towards which Turkish investors invest. The OFDI to each country was correlated with various business environmental factors to find the significance of these factors with the OFDI from Turkey. The results are given in Table 4.

*Table 4. Correlation between Turkey's OFDI and business environmental factors in partner countries*

**Correlations Among Host Country OFDI from Turkey and Business Environment Factors**

| | | OFDI | Infrastructure | Quality of Education System | Domestic Competition | Foreign Competition | Labor Market Efficiency | Financial Market Development | Technology Readiness | Domestic Market Size | Innovation | Exports | Imports |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OFDI Azerbaijan | Pearson Correlation | 1 | .361 | .166 | .369 | -.383 | -.299 | -.148 | .390 | .196 | -.069 | .487 | .179 |
| | Sig. (2-tailed) | | .305 | .647 | .294 | .274 | .402 | .684 | .265 | .588 | .849 | .153 | .621 |
| | N | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| OFDI Germany | Pearson Correlation | 1 | -.103 | .229 | .203 | -.274 | .050 | .287 | -.212 | .856** | .270 | -.243 | -.133 |
| | Sig. (2-tailed) | | .778 | .525 | .573 | .443 | .891 | .421 | .557 | .002 | .451 | .499 | .714 |
| | N | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| OFDI Ireland | Pearson Correlation | 1 | .057 | -.600 | -.609 | .048 | -.165 | -.339 | -.027 | -.239 | -.408 | -.424 | -.251 |
| | Sig. (2-tailed) | | .876 | .066 | .061 | .896 | .648 | .338 | .941 | .507 | .242 | .222 | .484 |
| | N | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| OFDI Luxembourg | Pearson Correlation | 1 | .219 | .226 | .406 | .111 | .307 | -.379 | .320 | -.152 | .108 | -.397 | -.049 |
| | Sig. (2-tailed) | | .544 | .530 | .244 | .760 | .388 | .280 | .368 | .675 | .766 | .256 | .894 |
| | N | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| OFDI Malta | Pearson Correlation | 1 | -.402 | -.222 | -.227 | -.471 | -.254 | .289 | -.585 | -.249 | -.221 | -.111 | -.165 |
| | Sig. (2-tailed) | | .250 | .537 | .529 | .169 | .478 | .418 | .076 | .489 | .539 | .760 | .649 |
| | N | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| OFDI Netherlands | Pearson Correlation | 1 | .668* | .590 | -.020 | .620 | .784** | -.376 | .262 | -.131 | .738* | .373 | .404 |
| | Sig. (2-tailed) | | .035 | .073 | .956 | .056 | .007 | .285 | .464 | .718 | .015 | .289 | .247 |
| | N | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| OFDI Russia | Pearson Correlation | 1 | .497 | -.400 | -.142 | .315 | -.430 | -.568 | .643* | .311 | -.716* | .608 | .468 |
| | Sig. (2-tailed) | | .144 | .252 | .695 | .375 | .215 | .087 | .045 | .381 | .020 | .062 | .173 |
| | N | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| OFDI Switzerland | Pearson Correlation | 1 | .538 | -.027 | .227 | -.174 | -.220 | .020 | -.142 | -.357 | -.387 | .081 | .293 |
| | Sig. (2-tailed) | | .109 | .942 | .528 | .631 | .541 | .956 | .696 | .311 | .269 | .823 | .411 |
| | N | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| OFDI UK | Pearson Correlation | 1 | .357 | .390 | .404 | .295 | -.142 | -.384 | .741* | -.515 | .464 | .778** | .314 |
| | Sig. (2-tailed) | | .311 | .265 | .248 | .409 | .695 | .273 | .014 | .128 | .177 | .008 | .377 |
| | N | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| OFDI USA | Pearson Correlation | 1 | .055 | .130 | .291 | -.240 | -.380 | .290 | .562 | .[a] | -.147 | .596 | .077 |
| | Sig. (2-tailed) | | .880 | .721 | .415 | .504 | .278 | .416 | .091 | | .685 | .069 | .833 |
| | N | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).



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Pearson's Correlation analysis was conducted on Turkey's OFDI and their home business environmental factors. Table 5 shows the results.

*Table 5. Correlation between OFDI from Turkey and home country factors*

**Correlation between OFDI from Turkey and Home Country Factors**

| | | OFDI | Ethics and Corruption | Undue Influence | Government Efficiency | Infrastructure | Domestic Competition | Labor Market Efficiency | Foreign Competition | Financial Market Development | Innovation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| OFDI Turkey | Pearson Correlation | 1 | .623 | -.438 | .621 | .690* | .882** | -.121 | -.395 | .149 | .592 |
| | Sig. (2-tailed) | | .054 | .205 | .055 | .027 | .001 | .738 | .258 | .681 | .072 |
| | N | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).



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# Chapter 55
# Outward Foreign Direct Investment in Post-Transition Economy: Poland's Experience

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## ABSTRACT

*Recent two decades witnessed unprecedented changes in the economies of Central and Eastern Europe. Accelerated economic growth following systemic transformations, globalisation and liberalisation and EU integration visibly intensified international capital flows, including foreign direct investment (FDI). Intense internationalisation of an economy is usually perceived as a positive process, which – in general – gives an opportunity to accelerate growth and strengthen competitiveness. Therefore the authorities of an economy try to support FDI flows by implementing different incentives. The main goal of the chapter is to show the scale and scope of outward foreign direct investments (OFDI) of Polish companies in the light of economic transformation experience and authorities support. The chapter is organized as follows: first it presents Poland's path from centrally planned state to developed, competitive economy. Secondly, the focus is laid on support offered to companies undertaking OFDI ventures and finally on the scale and scope of Poland's outward investments.*

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## INTRODUCTION

Foreign direct investment, its definitions, forms, motives and consequences have already been broadly discussed in scientific literature. However the problem itself is still very urgent and hot-debated issue because dynamic changes in global economy triggers few directions and forms of flows. Central and Eastern European countries (CEECs), which have successfully overcame transition period, play growing role in this process. For many years they have been mostly recipients of foreign capital (in the form of FDI) while recently also companies originating form CEE economies start to internationalize actively.

It should also be stressed that the net benefits for the economy which come from inclusion into international capital flows are unquestionable. Therefore, legal authorities often implement numerous incentives and support solutions not only for inward FDI but for outward FDI as well. Poland seems to be a perfect example of that process, that is why the main goal of the chapter is to present and discuss the scale and scope of outward foreign direct investments (OFDI) of Polish companies in the light of economic transformation experience and authorities support.

The chapter is organized as follows: first it presents Poland's path from centrally planned state to developed, competitive economy. Secondly, the focus is laid on support offered to companies undertaking OFDI ventures and finally on the scale and scope of Poland's outward investments.

## BACKGROUND

Nowadays, transition economies, with Central and Eastern European countries and Poland in particular, are becoming increasingly important players at international FDI markets. So far these countries were mainly FDI recipients but since their EU accession their OFDI significantly increased. It was made possible as a result of intense economic and systemic transformations launched after 1989. The main objective was to do away with centrally planned economy model and adopt a strategy to build up liberal, free market economy. Reconstruction of the market system in CEECs after several decades of central planning was difficult, exhausting, and time consuming. These countries, including Poland, underwent macroeconomic reforms, which at the beginning consisted in implementing a tight monetary policy and market-economy rules, necessary in view of the total macroeconomic imbalance at the outset of the transformation.

Comparing the experience of Poland and other countries in the region, e.g., the remaining Visegrad Group Countries (the Czech Republic, Slovakia, and Hungary), we may conclude that Poland was confronted with the most difficult conditions at the start of economic transformations. According to the EBRD study the initial conditions index[1] for Poland was 1.9 while for the Czech Republic it amounted to 3.5, for Slovakia 2.9, and for Hungary 3.3 (the higher the index the better initial conditions to implement market reforms) (Transition Report 2000, 2000, p. 21). In spite of this, economic transformation in Poland produced a more general model for other CEECs. Major assumptions were based on five pillars of economic transformation: (1) rapid transformation into a functioning private market economy; (2) liberalization of economic functions, especially in relation to foreign trade and foreign direct investment; (3) privatization of state-owned-enterprises; (4) construction of an effective social safety net by reforming the pension, education, health care, and social security systems; and (5) mobilization of international financial assistance to support the process (Hunter and Ryan 2005). These pillars of transformation were



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closely interrelated (Mickiewicz 2005, p. 26 and further). The program identified all steps necessary to ensure macroeconomic stabilization. These included, inter alia, the limiting of budget deficits, reducing inflation and establishing fully convertible currency with real exchange rate.

In order to accomplish the above assumptions, numerous concrete actions had to be undertaken, and the so called "shock therapy" started. It meant quick implementation of a radical and comprehensive economic program, which included macroeconomic stabilization, market liberalization, and fundamental institutional restructuring. To entrepreneurs systemic changes were of fundamental importance as entrepreneurship model changed. After 1989 everyone could start a business and many Poles took advantage of this opportunity. In the first decade of transformation, ownership changes that increased the share of the private sector in the economy and helped develop micro, small and medium-sized enterprises were very dynamic. A lot of new provisions entered into force that regulated economic activity, e.g. the commercial law, tax code and the banking law.

Micro and small enterprises, practically right from the outset of the transformation until to date, have accounted for the majority of firms in Poland. They are the core of the Polish economic transformation and nowadays play a critical role in the Polish economy. SMEs create employment and are the source of large part of value added. Besides, they shape foreign trade in Poland, its structure and dynamics. Their share in total exports was ca. 1/3$^{rd}$ and has not changed much since the beginning of the century (Central Statistical Office of Poland 2016). Developed markets, mainly of the EU Member States, were and still are the main partners of Polish foreign trade. They represent ca. 3/4$^{th}$ of all the SME exports.

Entrepreneurship development was facilitated by political decisions on the accession to the European Union structures. On February 1, 1994, Poland and the EU, signed the Europe Agreement giving Poland the status of an associated country. Accession negotiations were completed in 2003 and six months later Poland and nine other countries formally joined the EU. Within 10 years following the accession, they exported to the EU goods worth almost PLN 3.5 billion. This is twice the value of Poland's GDP (Poland's 10 years in the European Union 2014).

The membership in the European Union and the opening up of the Polish economy consequently pursued throughout more than two decades have given powerful development impulse to the Polish economy and contributed to its improved competitiveness. First of all, it opened up new opportunities of development to enterprises. We mean here better access to the EU funds and external sources of funding, higher demand for Polish products in the EU single market, better access to loans, and improved financial performance. Besides, we witnessed positive changes in the economy, e.g., increased share of services in the GDP with simultaneous drop in the share of agriculture, increased efficiency of the economy as a result of technological progress and intensified competitiveness in the internal market, higher production levels of medium- and highly processed goods, and an increased share in global trade (Poland's 10 years in the European Union 2014).

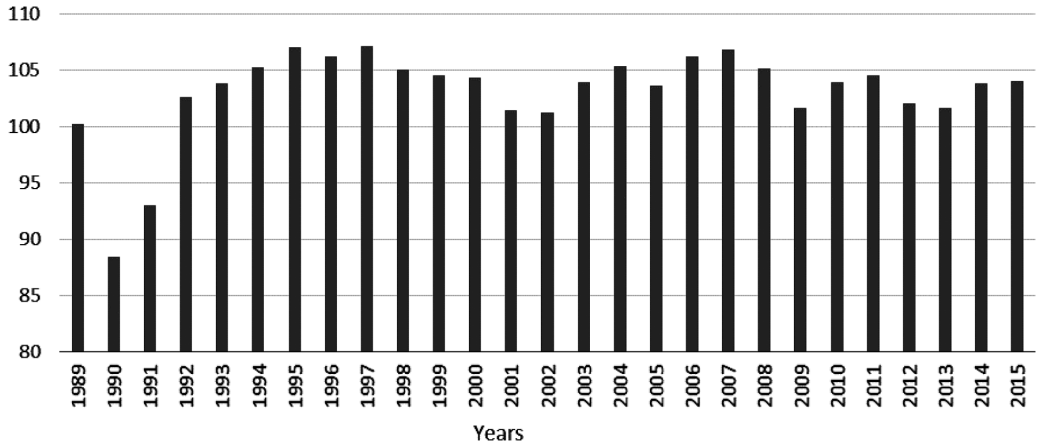
Transformation in Poland paved the way for systematic economic growth at a relatively high rate. Recession instigated by systemic transformations did not last long and was followed by dynamic growth, which substantially improved Poland's position in the group of transition economies (Jarmołowicz and Piątek 2013, p. 81). Economic recovery, which could be observed already in mid-1992, got stabilised and acquired solid foundations in 1994 (Leszczyński 2015). The foregoing was evidenced by lasting high GDP growth rate. (Figure 1).

Over the years 1992-2013 GDP per capita in Poland was growing at a rate that was twice high as the rate in the most developed EU member states (Gomułka 2014). World Bank data show that per capita GDP presented in terms of purchasing power parity increased from almost USD 6,000 in 1990 to USD



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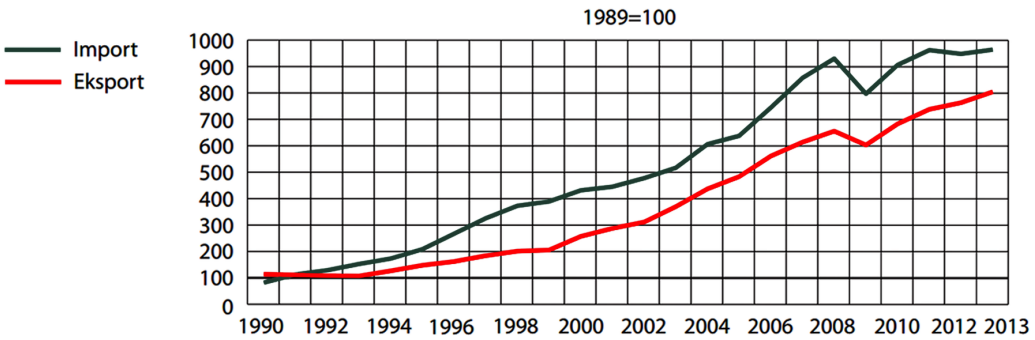
*Figure 1. GDP dynamics (in constant prices) over the period 1989-2015 (preceding year =100) (in %)*
*Source: authors' own compilation based on GUS data (GUS, 2016).*




26,135 in 2015, i.e. slightly more than fourfold (www.data.worldbank.org 2016). In 2013 GDP per capita reached 62% of income of developed Western European countries (Eurozone), a natural point of reference for Poland and a benchmark for social aspirations, while back in 1992 it represented less than 30% (Piątkowski 2013). In 2011, for the first time ever, OECD and the World Bank changed the classification of Poland from an "upper middle income country" to a "high income country", which means that economic transformation has produced expected results.[2]

A range of changes was also reported in Poland's exports and imports after 1989. First of all, the volume of international trade increased and its geographic structure changed. Until the EU accession, exports (in USD) increased fivefold while Polish imports increased more than ninefold. Also per capita trade with other countries rapidly increased (per capita exports increased almost four times, imports almost seven times). All the above only confirms substantial opening of Polish economy in the 1990s (Chilimoniuk and Czarny 2005, p. 157). In the period of 2004–2012, the value of trade in Poland grew over two times – exports (in current prices, expressed in EUR), increased by 140%, and imports by 116% (Poland in the European Union … 2014, p. 55). Exports and imports dynamics over the years 1989-2015 is presented in Figure 2.

*Figure 2. Exports and imports dynamics over the years 1989-2015*
*Source: authors' own compilation based on (GUS, 2016).*






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The structure of Polish foreign trade by SITC sections is similar to the overall structure of trade in the EU where both imports and exports are dominated by products from the section: "Machinery and transport equipment". Unfortunately, the share of high-tech products in Polish exports is low, which is not good for the economy. That is due to marginal importance of the manufacturing of high-tech goods in domestic enterprises and a very small share of foreign companies from high-tech sector in incoming FDI (Potencjał innowacyjny gospodarki… 2016).

As we have already mentioned, systemic transformation and liberalisation of trade policy did not remain neutral for geographic transformations in the structure of Polish foreign trade. These changes clearly reinforced the role of developed countries, in particular European ones. Additionally, changes in the structure of trade were encouraged by intensive inflow of foreign capital (including IFDI). Businesses with foreign capital account for almost 60% of Polish exports (Kłysik-Uryszek 2012). Thus, we may conclude that liberalisation of economic ties between Poland and the EU member states was one of the major factors that changed the structure of exports and imports of goods (Czubek and Molendowski 2005, p. 31).

The above effects have become visible in annual competitiveness rankings where Poland, slowly but systematically, improves its position. For example, between 2004 and 2016 Poland markedly improved its Global Competitiveness Index ranking from 60 to 41 (The Global Competitiveness Report 2015–2016, 2016). It is also considered as a country with development potential in the manufacturing sector, BPO/SSC services, and R&D. This potential is enhanced by the highest rate of absorption of EU resources (85%) among the new EU Member States (Economist Intelligence Unit 2015, p. 10).

In the case of Poland it is also stressed that recent improvements have been made in terms of institutions, infrastructure, and education, and that the flexibility of the labour market increased. These key achievements "are steps in the right direction to boost the country's competitiveness" (The Global Competitiveness Report 2014-2015, 2015, p. 24).[3] When analyzing the results of other leading international rankings, we may conclude that over the last several years, including the times of crisis and economic downturn, Poland (from among the CEECs) was one of the most preferred destinations for foreign investors. They were attracted mostly by cheap labour and a big, quickly developing market (the biggest in the CEECs, which as a result of integration and liberalisation has become a good place to further develop exports to the neighbouring countries). Investment promoting policy of the State (including establishing Special Economic Zones) was another factor favouring the location. All in all, Poland's attractiveness was created by legal and institutional conditions, such as (Kłysik-Uryszek 2010, pp. 20-21):

1. Economic, political and social stability, security, and predictability of legal and administrative regulations;
2. Tax policy, State aid, including investment incentives and allowances;
3. Regulations concerning market entry (i.e. equal treatment), operations, and protection of competition;
4. Efficiency of state administration and institutions involved in creating the business climate.

In the opinion of Ernst & Young experts (EY's attractiveness survey, Europe 2014) other countries are battling to replicate the Polish model of attracting investors. Poland ranks high also in the World Bank Group flagship report "*Doing Business*". It suffices to say, that in 2016 the country occupies 25th place in the ranking (Doing Business 2016, 2015), while in 2006 it ranked 54 (Doing Business 2006, 2006).



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Poland is also appreciated in the UNCTAD ranking. Poland's competitive advantages are: a large and rapidly developing internal market, an educated and flexible workforce, stable banking system, access to international local markets, and the availability of suppliers and partners. Report for 2014 also stresses that Poland adopted the "Programme to support investments of high importance to the Polish economy for 2011-2020", with the aim of increasing innovation and the competitiveness of the economy by promoting FDI in high-tech sectors (World Investment Report 2014, p.113). Most probably the above mentioned factors gave Poland a place in the group of the top 15 attractive FDI locations in recent years (World Investment Report 2010-2015).

The above-presented considerations show that the assessment of Poland's investment attractiveness has always been high. We can read it not only in reports of international institutions but, primarily, in the value of FDI incoming to Poland. Surely, attracting foreign investment into the exporting sector (manufacturing) and services (banks, large format retail trade, telecommunication and hotels) was a success, although invested amounts were relatively modest (in 1995-2008 they represented ca. 10% of all investment) but they focused on neglected sectors of economy. With the benefit of hindsight, we can say that they were crucial for the growth of exports and services (Gomułka 2014).

Systemic transformation and the EU accession not only improved Poland's investment attractiveness but also very much intensified the involvement of Polish enterprises in investment projects abroad. Polish enterprises have invested their capital in almost 100 countries, however, a detailed analysis of the geographical breakdown of their investments clearly indicates that European markets, in particular those in neighbouring countries, were especially attractive to Polish enterprises. Almost 85% of all foreign affiliates are based in Europe (and ca. 88–90% of affiliates owned by manufacturing companies) while over a half of foreign affiliates of Polish non-financial companies (and slightly more than 60% of manufacturing companies) were located in our immediate neighbourhood (Germany, the Czech Republic, Slovakia, Ukraine, Belarus, Lithuania, and Russia) (Buczkowski et al. 2015, pp. 98-99).

## INSTRUMENTS TO SUPPORT INVESTORS IN ACTIVE INTERNATIONALISATION

### Economic Rationale behind Support to OFDI

Generally, FDI may prove to be either advantageous or disadvantageous to the receiving economy (e.g. Moran, Graham and Blomström 2005; Tytel and Yudaeva 2006; Herzer 2012; Temiz and Gökman, 2014). In the developing or (post) transition countries they are usually seen as a reliable and cheap source of capital, technology, and management skills and an easy way to access international markets.

Many researchers have also relatively thoroughly discussed and studied effects of outward FDI at the macro- and micro-economic level in developed and developing countries (e.g. Globerman 2012; Wiliński 2013; Globerman and Shapiro 2008; Gorynia, Nowak and Wolniak 2009). Numerous studies confirm that FDI impact upon economic performance of multinational enterprises (MNEs) depends on various factors, among which we should list their size, motivation behind FDI and expansion strategy, industry, experience in operating in international markets, the quality of institutions in the home and host countries, time horizon, etc. Obviously, the multiplicity of potential determinants, which may be interpreted in various ways, makes conclusions drawn by individual researchers, as well as research methods and assumptions strongly context-dependant (Gorynia and Trąpczyński 2014).



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The assessment of effects of outward FDI to the home country is often ambiguous. Controversies intensify when OFDI effects are assessed not just from the viewpoint of the investing entity, but in a wider context considering the home economy of FDI, which includes also other enterprises, central budget or economic environment. However, in general positive opinions prevail. Active policy pursued by public authorities in support of foreign investment, inward as well as outward, seems to be economically justified. It also explains why various types of investment incentives are applied (Buczkowski et al. 2015).

Principal objective of investment incentives addressed to foreign investors is to attract capital that will help modernise production assets and technology. Such support can be offered at all three levels of government: central, regional, and local. The role of incentives designed to attract inward FDI and economic rationale behind them have been usually analysed at the two first levels. To the best of our knowledge, outward foreign direct investment incentives have not generated much interest among researchers, which could well be explained by the difficulties in access to reliable data on OFDI support tools and by poor portfolio of instruments available to local authorities.

There is a broad consensus that resources inflowing to host countries as inward FDI produce positive outcomes and hence efforts made to attract them are seen as positive. However, such consensus has not been so strong over OFDI, which is why until quite recently supporting outward FDI has often been avoided. But approaches to OFDI are changing fast and many countries have come to believe that incentives to OFDI are appropriate and efficient. This new attitude encourages governments, as well as regional and sub-regional authorities to be much more active in this field also because countries have realized that domestic companies need to be competitive in the global economy (Investment Incentives 2013).

## OFDI Support Instruments

James (2009) defines investment incentives as measurable economic advantages that public institutions provide to specific companies or groups of firms, to steer investment into favoured sectors or regions or to influence the character of such investments projects.

Thomas (2007) describes investment incentives in a more unambiguous way and interprets them as a financial support given to affect the location of investment. The aim may be to enhance new investment projects or to retain an existing facility. As a general rule, wherever the system of investment incentives is in place, it exerts significant impact upon the investment climate in a given economy. This support also enhances investment attractiveness of the host country.

We may list various forms of investment incentives (Tavares-Lehmann et al. 2016, Investment Incentives 2013, OECD 2003):

1. **Regulatory:** E.g. exemptions from specific regulations binding in the host country (connected with the environment, labour market, social insurance);
2. **Financial:** E.g. providing physical infrastructure (e.g. roads, railways, harbours) or communication tailored to meet the needs of the investors; assistance in training workers where skilled labour is not available; relocation and expatriation support; administrative assistance; temporary wage subsidies; credits to investors; government preferential insurance; assistance in acquiring real estate (land or property sold below market prices);
3. **Fiscal:** E.g. reduced taxes (tax holidays, reduced rates of corporate income tax, special tax-privileged zones); incentives for capital formation (special investment allowances, investment tax credits, reduced impediments to cross-border operation, withholding tax);



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4. **Technical:** They usually focus on technical matters relating to dissemination of information on investment opportunities and procedures and providing special services, and "aftercare" once an investor has already invested.

In the case of incentives offered as home country measures (HCMs) designed to intensify internationalisation of domestic entities through OFDI, classification of instruments (OFDII) slightly differs from the above presented catalogue. Hence OECD (2003) divided OFDII into three main categories:

1. Fiscal,
2. Financial,
3. Regulatory.

Economou and Sauvant (2013) proposed modified and extended OFDII classification, which encompasses:

1. Institutional framework,
2. Information services,
3. Financial measures,
4. Fiscal measures.

The Authors of Investment Incentives (2013) proposed 5 categories of OFDII, pointing at the same time to principal differences with regard to incentives intended for inward FDI (Table 1.).

The above summary demonstrates that public administration has got rather substantial possibilities to support active internationalisation of enterprises. The scope of support is close to that of incentives addressed to foreign investors, although the objectives are completely different.

## OFDI Support Instruments in Poland

Poland is one among the countries, which actively support various forms of internationalisation of domestic enterprises, also through foreign direct investment. Such support must be granted lawfully, based on detailed the EU and domestic regulations.

From the point of view of the EU law, which regulates some aspects of support to foreign investment, there are two key areas, i.e., regulations concerning bi- and multilateral investment agreements and regulations on State aid and competition.

In the first case, negotiating and concluding international agreements belongs to the so called the EU exclusive competences and pursuant to the Treaty on the Functioning of the European Union (TFEU) is subject to the rules of common trade policy. These common regulations are designed, first and foremost, to secure investors' interest in two points of time: when they enter a third country market and when investment project has already been launched. Moreover, they ensure equal treatment of the EU investors in third countries, irrespective of the country of origin of capital and potential differentiation of the scope of bilateral agreements (between an the EU Member State and a third country) (Art. 206-207 TFEU).

In the second case, incentives (financial and non-financial) granted by entities from the public finance sector at various levels must comply with competition and State aid rules. The same applies to Poland, who – as a EU member, must also observe State aid rules stipulated in Art. 107 and 108 of the Treaty



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*Table 1. OFDII classification*

| No. | Type of OFDII | Typical Forms | (Potential) Differences Compared to Inward FDII |
|---|---|---|---|
| 1. | Financial | Money transfers, subsidies, grants, soft loans, capital holdings in investment projects | Obvious differences in the objective. Preferential financial support may be helpful, e.g., in acquisitions. |
| 2. | Fiscal | Tax allowances, exemptions, deferrals, reduction of rates, losses brought forward to the next accounting periods, accelerated depreciation | Tax allowances and exemptions are much more popular for inward FDI, although tax instruments may also be used as incentives that support active internationalisation of domestic enterprises. |
| 3. | Information and technical services | Scope of information and advisory support is wide and diverse. In general, these services are addressed to selected foreign markets, where enterprises are established and developed, including, e.g., the analysis of economic indicators, institutional and legal environment, competitors, suppliers, subcontractors, clients, R&D capacity, human resources and advisory services in investment procedures | Such incentives are relevant for both inward and outward investments. Apparently, from the viewpoint of domestic authorities the need to support domestic entities who invest abroad prevails over the need to support foreign investors. |
| 4. | Risk-minimizing measures | These incentives include primarily guarantees and insurances connected with risks involved in operating abroad. They may be linked with both political (conflicts, unfavourable changes in legislation, etc.) and economic (delayed payments, unreliable suppliers, clients, etc.) risks. | These incentives target OFDI only. International treaties and agreements (bilateral and multilateral) are important. A country, who is a signatory to such agreements usually offers more security to foreign investors. |
| 5. | Regulatory | All regulations and agreements connected, e.g., with taxation or restricting procedures that facilitate or encourage investing abroad. | Completely different than for inward FDI when the authorities of the host country may create favourable investment climate through adequate regulations. In supporting OFDI it is much more difficult as it depends mainly on foreign partners. |

Source: Investment Incentives (2013).

on the Functioning of the European Union [4] when granting aid to domestic and foreign investors. Pursuant to Art. 107.1, State aid is banned in general when it is granted selectively and favours only certain enterprises or the production of certain goods by which it distorts or threatens to distort competition and when it impacts trade among the EU Member States.

Art. 107.2 enumerates some automatic exemptions from general ban on granting State aid; besides, there are also conditional exemptions, which make aid acceptable in accordance with Art. 107.3. These conditional exemptions enable public administration bodies to assist enterprises directly, as well as indirectly by creating favourable climate for business development.

In domestic law harmonised with *acquis communautaire*, provisions on foreign direct investment made by Polish enterprises are included in the Act on Foreign Exchange Law (Journal of Laws of 2002, No. 141, item 1178). In accordance with the wording of Art. 7. of the Act on Foreign Exchange Law, minister responsible for public finances issues general foreign exchange permits by way of a regulation. Permits may be granted to all entities or to a certain category of entities, as well as to all kinds of activities or to a certain type of activities. Moreover, by issuing an administrative decision the Governor of the National Bank of Poland grants individual foreign exchange permits outside of the scope of general foreign exchange permit (Art. 8.1.of the Act).



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Considering all legal limitations, Poland exploits a variety of possibilities related to investment incentives. Obviously, these efforts are dominated by measures applied by governments at different levels to attract and retain operators with foreign capital in Poland. By joining the EU Poland gained access to Structural Funds distributed under Operational Programmes. These funds have become the main source of State aid available to all companies operating in Poland. In some aspects, incentives designed to attract new foreign investors may put additional burden on the central budget, as well as on the budgets of local governments. Special economic zones (SEZs), Programme for the support of investments of considerable importance for Polish economy (Support programme), and property tax allowances are examples of such incentive arrangements. Besides, the Polish Information and Foreign Investment Agency (Polish abr. PAIiIZ) promotes Poland as a good location for FDI. The Agency runs Regional Investor Assistance Centres in provinces and Regional Investor Assistance Offices in various cities. PAIiIZ offers services free of charge. It helps select investment sites in Poland, organises tailor-made investor visits to Poland, provides information on legal and economic environment and on available investment incentives, facilitates contacts with central and local authorities, identifies suppliers and contractors, and takes care of existing investors (to support reinvestments in Poland) (Dorożyński et al. 2014).

Although much less popular, incentives that target Polish enterprises who export FDI are offered by public administration responsible for support to entrepreneurship and internationalisation of Polish economy (Table 2).

The system of OFDI support instruments in Poland is not fully comprehensive and coherent yet. Most of the above mentioned incentives have been implemented relatively recently and are still largely limited by the EU and international legal restrictions, ie. competition policy or common trade policy. Therefore, as for now within the whole system of support tools those of information and promotion in nature (thus – less quantitative) prevail. Moreover, support is offered in many forms by different organizations which makes the whole system blurred and not holistic or complementary enough – it may thus be hard and laborious for investors to get familiar with all solutions and available to choose the best option.

That all makes any attempts to assess the effectiveness of Poland's OFDI support system difficult and limited. However, it should be expected that in the coming years the list of support instruments will be not only topped up and complemented but also tailored to the needs and expectations of entrepreneurs, so that their effects and effectiveness will be more visible (and measurable).

## Poland's OFDI: Statistical Approach

Over the years of systemic transformation Poland became an interesting location for foreign direct investment. Its dynamics had been steadily growing since the 1990s while stable economic growth, gradual liberalisation of regulations, and preparations to the EU membership accelerated the process. Parallel, economic growth and the fostering of the position of Poland in international environment resulted in an increasing number of Polish enterprises who successfully entered foreign markets. Although Poland remains a net receiver of FDI, especially after 2004, the stream of OFDI has been continuously increasing.

Changes in the value of Polish OFDI over 1995-2014 can be observed in Figure 3. As we can see, dynamic increase in the involvement of Polish enterprises into OFDI started after Poland has joined the EU.

However, it is worth stressing that in the period covered by the study FDI classification changed twice. First, since 2010 FDI flows started to cover intercompany loans (i.e. flows of capital between sister companies within capital group). It considerably increased OFDI to almost USD 57.4 bn at the end of 2012 – mainly in "other capital" category (intercompany capital flows accounted for ca. USD



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*Table 2. Examples of OFDII in Poland*

| No. | Type of Incentives | Source and Scope of Support | Responsible Institutions |
|---|---|---|---|
| 1. | Financial | Foreign Expansion Fund FIZAN (Firms may benefit from financing that takes the form of capital, mezzanine and borrowings secured by foreign project assets without redress to the Polish company. The share of Foreign Expansion Fund in project funding will typically reach between several to several dozen million PLN but it will not exceed 50% of the total investment). | Investment Fund Company BGK S.A |
| 2. | Financial | EU Structural Funds, in particular Operational Programme Smart Growth and regional operational programmes financed with the European Regional Development Fund (e.g., co-funding of innovative projects, internationalisation of enterprises and clusters) | Minister responsible for regional development and local authorities at provinces, which manage regional operational programmes |
| 3. | Fiscal | No special incentives but provisions of the Act on Corporate Income Tax (CIT) prefer certain countries as investment host countries, i.e., EU, EEA, and Switzerland. Operators, who invest in these countries may expect more favourable tax regulations, including tax allowances in the host country. | Minister responsible for public finances, tax chambers and offices |
| 4. | Risk-minimising instruments | Insurance of foreign direct investment, such as:<br>• Acquisition of a foreign enterprise or an organised part thereof,<br>• Establishing and running an enterprise abroad (also an affiliate or representative office),<br>• Outlays intended to expand an already existing enterprise,<br>• Capital injections and borrowings made by partners,<br>• Acquisition of real estate and other fixed assets.<br>• Insurance protection covers losses suffered in relation with a foreign direct investment that result from actions undertaken by the host country, such as:<br>• Changes in legal regulations (the so called regulatory risk),<br>• Expropriation,<br>• Inability to transfer receivables (e.g. dividend),<br>• Total depravation of rights related to the investment.<br>Compensation is also paid if the investment gets damaged as a result of force majeure, e.g., earthquake, flood, fire or war. | Export Credit Insurance Corporation Joint Stock Company (Polish company whose shareholders are State Treasury represented by the Minister of Development and Bank Gospodarstwa Krajowego. The only one insurance company in Poland to offer export insurance guaranteed by the State Treasury) |
| 5. | Information and advisory services | Provision of information about foreign markets, conditions of economic operations abroad; facilitates business relations; advisory services; assistance in taking part in fairs and economic missions abroad. | Ministry of Development, Polish Agency for Enterprise Development, Polish Information and Foreign Investment Agency, Departments of Trade Promotion and Investment, Regional Investor and Exporter Assistance Centres |

Source: Buczkowski et al. 2015, Świerkocki 2015, https://tfibgk.com.pl/fundusz-ekspansji-zagranicznej-fizan (accessed on 11.10.2016), www.poir.gov.pl (accessed on 11.10.2016), http://www.kuke.com.pl/dla-firm/ubezpieczenie-inwestycji-za-granica (accessed on 11.10.2016).

26.7 bn at the end of 2012). It also demonstrates relatively strong position of Polish enterprises in the times of crisis meaning, paradoxically, that Polish economy became the source of capital loans for all affiliates (subsidies, but also parent companies and associates).

The second – more substantial change – took place in 2013 and was consistent with OECD guidelines included in the Benchmark Definition of Foreign Direct Investment 4th ed. (BD4). As mentioned above, earlier classification (in line with International Investment Position statistics) of OFDI included also



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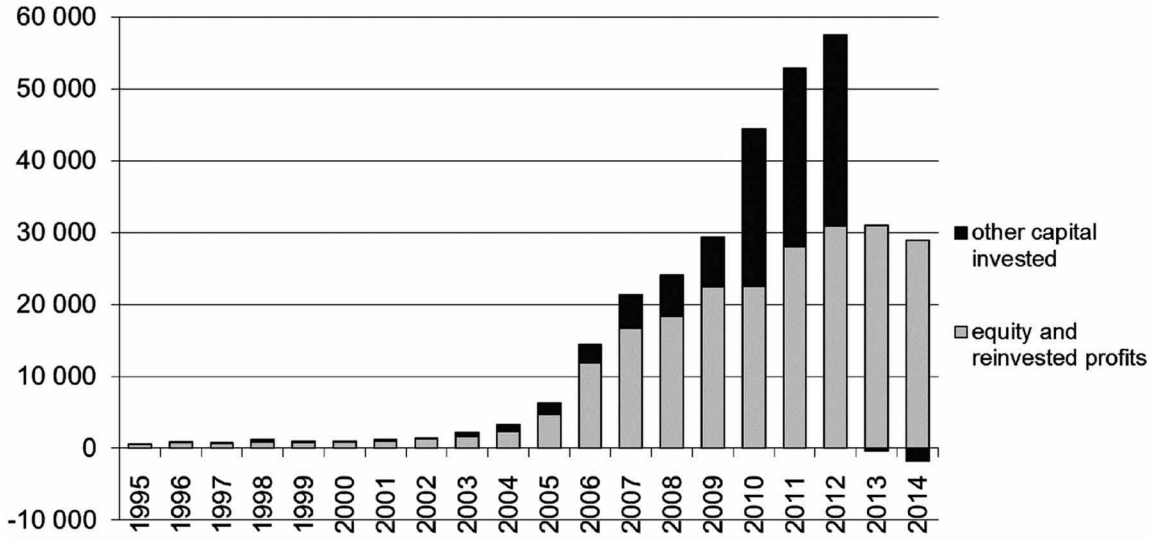
flows between Polish investor and other entities in capital group irrespectively of where the dominant entity in the group is based. Since 2013 this kind of loans has no longer been included into OFDI flows in cases where Polish investor is controlled by a foreign MNE (this kind of flows is now considered a part of IFDI). Substantial reduction in "other capital" value confirms high proportion of intercompany loans granted to related entities within international holdings.

All in all, when analysing the international expansion of Polish enterprises attention should be paid predominantly to the value of primary investment ("equity and reinvested profits") rather than "other capital". Firstly, primary investment tells us how much have the enterprises got involved into manufacturing and service operations abroad; secondly, its definition and classification into FDI flows remains relatively unchanged.

The flow of primary investment is largely dominated by investments in new foreign equity acquisition. Until 2009 reinvested profits represented not more than 10% of all equity investment. In subsequent years proportions slightly changed, mainly as a result of reduced involvement of Polish enterprises in new foreign undertakings, which was due to the crisis. In general, the primacy of new investment projects was an expected tendency, typical of the initial stage of internationalisation of enterprises, when they have just started developing a network of related foreign affiliates by investing in production assets.

The entire period was dominated by investments made by companies from the service sector; at the end of 2014 their share reached almost 80%. Major role was played by enterprises active in financial intermediary services or managerial consultancy. Their total investment ranged from 56% up to even 94% of FDI from the service industry. Only in 2008 the share was lower, ca. 35%. At the end of 2014 the proportion of investments generated by financial companies represented 50% of cumulated value of Polish OFDI, while head offices operations, managerial consulting, as well as (increasingly important in FDI flows) administration and business support activities – ca. 14% each. (see also Table 3.). The later can be associated mainly with business optimisation at international scale: tax optimisation, raising financial capital in international markets through special purpose vehicle companies, etc.

*Figure 3. Polish foreign direct investment (cumulated value) in the years 1995-2014 in USD mio*
*Source: Authors' own compilation based on (NBP [National Bank of Poland] 2016).*






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*Table 3. Poland's OFDI at the end of 2014 broken down by economic activity of the direct investment in USD mio*

| | Total | Of Which: | |
|---|---|---|---|
| | | Equity and Reinvested Profits | Other Capital |
| **Total** | 27 155.0 | 28 881.6 | -1 726.6 |
| **Industry** | 3 469.0 | 3 002.1 | 466.9 |
| Manufacturing | 3 832.8 | 2 559.4 | 1 273.4 |
| Food products; beverages and tobacco products | 268.7 | 200.0 | 68.8 |
| Wood. paper & their products; printing and reproduction | 216.9 | 132.6 | 84.4 |
| Coke and refined petroleum products | 784.0 | 701.4 | 82.6 |
| Chemicals and chemical products and basic pharmaceutical products | 400.3 | 121.9 | 278.4 |
| Basic metals and fabricated metal products. except machinery & equipment | 658.6 | 575.2 | 83.4 |
| Motor vehicles. trailers and semitrailers | 913.3 | 448.3 | 464.9 |
| Construction | -280.2 | 126.7 | -406.9 |
| **Services** | 21 392.5 | 23 591.2 | -2 198.7 |
| Wholesale and Retail Trade | 1 777.7 | 1 099.2 | 678.5 |
| Transportation and Storage | 328.4 | 349.9 | -21.6 |
| Accommodation and Food Service Activities | -62.0 | 86.9 | -149.0 |
| Information and Communication | -2 982.1 | -885.6 | -2 096.5 |
| **Financial and Insurance Activities** | 13 680.2 | 14 890.1 | -1 209.9 |
| Activities of holding companies | 10 585.6 | 11 136.8 | -551.3 |
| Real Estate Activities | 316.7 | -396.9 | 713.6 |
| **Professional. Scientific and Technical Activities** | 3 904.8 | 4 105.3 | -200.4 |
| Activities of head offices | 2 648.2 | 2 335.0 | 313.2 |
| Management consultancy act | 1 135.0 | 1 680.2 | -545.2 |
| Administrative and Support Service Activities | 3 816.5 | 3 794.8 | 21.7 |

Source: Authors' compilation based on (NBP, 2016).

Investments made by manufacturing companies generated on average ca. 20% - 30% of total FDI of Polish companies after 2004. However, their share in the structure of Poland's OFDI was systematically decreasing. At the end of 2014 it amounted to only ca. 14%, which was not positive as it testified to the weakening manufacturing position of Polish companies, their decreasing competitiveness, even vis-à-vis service companies. On top of that, we may also suppose that Polish companies have started to approach international market as a place where they can optimise business rather than production processes. Little international involvement of manufacturing companies is an evidence of underused potential of international location-related assets, including cost reduction capabilities.

Throughout the entire period covered by the study manufacturers of coke and refined petroleum products enjoyed the biggest share in investments made by industrial companies (20% in 2014). Moreover, these projects were, first and foremost, primary investment, which means they included the development of



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new assets abroad. We may thus consider that these companies have the biggest competitive advantages (ownership advantages) among all Polish manufacturing companies and best tap into opportunities offered by the international market. That is not surprising as – against hopes vested in intensive economic growth – Polish economy still rests on traditional industries.

Next in a row were investments made by companies manufacturing motor vehicles, trailers and semi-trailers (which exceeded investments made by manufacturers of coke and refined petroleum products only in 2014) and chemicals and pharmaceuticals. Opposite to the previous – these were made largely as intercompany loans. Similar situation was observed for manufacturers of metal and metal products, which may be attributed to the facts that in those branches many Polish investors in belong to foreign MNEs. In general terms, a large chunk of investments made by these entities may be attributed to their mother-companies intention to inject capital into all foreign affiliates within the group rather than "classical" manufacturing expansion resulting from decisions and advantages of Polish companies.

Polish investments targeted mainly European countries. Their share in outflows of Polish capital over the period covered by the study amounted to more than 95% (see Table 4.). In principle, there are three groups of countries, to which capital was directed: 1) countries, which hosted financial investments and investments connected with optimisation of business processes: Luxembourg, Cyprus and Switzerland; 2) Poland's neighbouring countries similar in their Slavonic culture: Ukraine, Russia, the Czech Republic, Lithuania; 3) countries that have invested the most (in IFDI form) in Poland: Germany and the Netherlands.

*Table 4. Poland's OFDI at the end of 2014 broken down by host country in USD mio*

| | **Total** | **Equity and Reinvested Profits** | **Other Capital** |
|---|---|---|---|
| Total | 27 155.0 | 28 881.6 | -1 726.6 |
| Europe | 25 090.8 | 27 516.9 | -2 426.1 |
| Euro Zone (17 countries) | 20 367.7 | 20 114.0 | 253.7 |
| EU-27 | 19 390.5 | 23 545.1 | -4 154.7 |
| Germany | 1 134.8 | 749.8 | 385.0 |
| Netherlands | 2 786.9 | 1 926.7 | 860.3 |
| Great Britain | 981.1 | 927.6 | 53.5 |
| Czech Republic | 1 735.6 | 1 083.1 | 652.5 |
| Lithuania | 959.8 | 624.7 | 335.2 |
| Cyprus | 8 610.2 | 8 639.0 | -28.7 |
| Luxemburg | 7 316.4 | 7 344.7 | -28.3 |
| Switzerland | 3 256.4 | 3 153.9 | 102.5 |
| Russia | 721.3 | 434.2 | 287.0 |
| Ukraine | 56.8 | 161.2 | -104.3 |
| Turkey | 258.1 | -27.9 | 286.0 |
| USA | 635.1 | 463.5 | 171.6 |
| Africa | 196.0 | 168.1 | 27.9 |
| Asia | 978.0 | 670.2 | 307.9 |

Source: Authors' compilation based on (NBP, 2016).



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Luxembourg, Cyprus and Switzerland were the biggest recipients of Polish capital in the period covered by the study. Their share was systematically increasing. At the end of 2011 these countries received in total ca. 35% of the total value of Polish investment, including over 24% addressed to Luxembourg alone. At the end of 2014, total share of these countries reached ca. 60%, out of which more than 30% of capital targeted Cyprus. Luxembourg, similarly to Switzerland, hosts many international funds, as well as investment and financial organisations. All shares (i.a. shares of stock or certificates) acquired by Polish residents (including minimum of 10% of shares in a given entity) are classified as FDI. Additionally, investors willingly establish special purpose vehicles (SPV) to get access to loan capital in local capital markets.

High value of investment into Cypriot economy is mainly due to some unique, favourable tax arrangements. Many companies, especially after the financial crisis started in 2008, decided to move their principal places of business or established their affiliates (also SPV) in Cyprus because it helped considerably reduce the average tax burden of all the company.

Manufacturing and trade-related investment projects headed mainly in the neighbouring countries - similar to Poland when it comes to their economic development, social and cultural environment. That is typical of the first stages of internationalisation of the economy. Such location facilitates "acclimatization" of a company in a new location, better understanding of market mechanisms, business environment institutions, and – the most important in business – interpersonal relations. The mechanism is explained by, e.g., the Uppsala model positively validated for Polish circumstances (Witek-Hajduk 2010, Kłysik-Uryszek and Kuna-Marszałek 2015).

Finally, we should pay attention to the period 2010-2012 when statistics showed the scale of loan support granted by Polish companies to related entities within capital groups. Significant share of loans granted within a group could be observed not only in Europe, but also in America or Asia. In Europe most countries used capital borrowed from Polish entities (usually ca. 65-75% of all Polish FDI cumulated in given economies). The highest values were reported for: Portugal (98%), Greece (97%), Finland (96%), Italy (95%), United Kingdom (90%), Germany (82%) or Hungary (81%). It proves again that Poland, who relatively little suffered from the crisis, has become the source of financial support to enterprises from countries that struggle with post-crisis difficulties. Average values of the discussed indicator both for Europe and for EU-27 amounted to ca. 45%, which was predominantly due to low share of capital flows in Luxembourg (ca. 20%) and in Cyprus (ca. 3,5%).

## FUTURE RESEARCH DIRECTIONS

Further studies could develop along two major lines. Firstly, it would be worthwhile to examine the efficiency with which support instruments available to entrepreneurs who expand abroad within the OFDI framework are used. While in literature we can come across a variety of studies that discuss this very issue in the context of developed countries (te Velde 2007; Bannò, Piscitello and Varum 2014), very few such studies can be found in relation to the emerging markets or transition economies (Buczkowski et al. 2015). The problem, however, seems relevant as it refers to the efficiency of spending public funds and the outcomes of studies in field are ambiguous. On the one hand, some authors question the rationale behind offering assistance schemes to investors, while on the other hand we can hear voices that point to positive aspects of such schemes and their favourable impact upon the involvement of entrepreneurs into OFDI. Such studies could be particularly useful for the central government and for lower levels of



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administration, which increasingly often play a vital role in developing economic policy. This knowledge is important for managers and politicians responsible for commercial policy especially in the light of a rather common global practice of offering government support to domestic FDI (Sauvant et al. 2014).

The assessment of if and how the enterprises involved in foreign direct investment influence the economy of their home country and brought changes in, e.g., in local employment and jobs quality, or in collaboration level with R&D centres also seems interesting. The same can be said about studying the spillover effects for other domestic firms or business partners. By the same token we could demonstrate how OFDI from Poland or from other emerging markets impact economic development, at local, regional or national levels. So far literature on the subject is rather scarce and most researchers focus on developed economies (Globerman and Shapiro 2008; Sunesen, Jespersen and Thelle 2010). Effects of FDI exports to emerging economies are far less known (Gorynia i in. 2014).

## CONCLUSION

Intensive international capital expansion of Polish enterprises which can be observed recently is the evidence of successful economic development and efficient market transformations that have taken place in Polish economy since the early 1990s. Gradual liberalisation of capital flows, opening up of the economy to the inflow of foreign direct investment and integration processes have made Polish enterprises capable of effectively competing not only in the domestic but also in international markets. With the support of own experience gained on national, but highly opened market they are becoming active players also at the international level.

Growing support (in the form of different OFDI incentives) is provided also by national and regional public institutions. Unfortunately, due to the short period of their presence on the market, as well as the substantial restrictions put by EU legal regulations, the fully effective and comprehensive system of OFDI support have not been settled down yet, and therefore investors do not use these incentives broadly. However, the dynamics of OFDI flows as well as its cumulated value show the increasing interest in internationalization process of firms. It will probably trigger the expansion of support instruments more and more custom-fitted to the companies' needs.

Sectoral structure of Poland's OFDI suggests the domination of the service sector, in which financial and advisory services play the major role. It is not surprising because financial markets and capital flows are among the most mobile ones. Besides, it is much easier to relocate financial and advisory activities or head offices in a group than to relocate manufacturing. It also shows that enterprises are not seeking only traditional resources or increased sales in foreign markets but also sources of higher effectiveness.

Investments in industry focus mainly on traditional, technologically little advanced sectors. It demonstrates comparative advantages of the economy, which – although experiences structural transformations – is still not particularly competitive in modern and technologically advanced production.

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## KEY TERMS AND DEFINITIONS

**Central and Eastern Europe:** For the needs of this publication we adopted the most commonly used scope of Central and Eastern Europe including: Poland, the Czech Republic, Slovakia, and Hungary (Visegrad Group), Baltic States (Lithuania, Latvia, and Estonia), countries of the former Yugoslavia, Romania, Bulgaria, and Albania.

**Economic Transformation:** Change of economic system, in particular shifting from centrally planned to market economy, based on a functioning free market, competition and private business. Centrally planned economy was the system in most of the Central and East European countries until the end of the 1980s. It made the economy fully dependent on the decisions of central authorities. Private business was limited to the minimum, production assets were fully owned by the state, there was not any financial or capital market, market mechanism did not work, prices were decided by officials, and competition was replaced with a monopoly. Trade with third countries was regulated.

**FDI:** Foreign direct investment (outward – OFDI; inward – IFDI), the most advanced form of internationalisation of companies; FDI are undertaken to exercise a long-term capital supervision over an entity located abroad (branches or subsidiaries).

**Intercompany Loans:** Are perceived as part of FDI flow, as long as the debt concerns entities belonging to one international group or MNE.

**Internationalization of a Company:** A process, through which a firm moves from operating in a domestic marketplace to international markets.

**Primary Investment:** Part of FDI flows that consist of equity investments. They precede the other parts of FDI flows – reinvested earnings and intercompany loans.

**State Aid:** Any action undertaken by state authorities consisting in granting aid, in any form whatsoever, to an individual entrepreneur or to a group of entities, which distorts competition on the market. In the EU State aid is regulated in Art. 107 and 108 TFEU. The following premises must be met (jointly) to



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decide, that we are dealing with incompatible State aid: 1. A measure is an aid to an undertaking; 2. Aid is granted by the State or from the State resources; 3. Aid favors certain undertakings or the production of certain goods; 4. Aid distorts competition or threatens to distorts it; 5. Aid distorts trade among member states; 6. Aid is not covered by any of the Treaty exemptions. An example of aid covered by the Treaty exemption and, as such, compatible with the EU market, is aid to promote economic development of areas where the standard of living is abnormally low or where there is serious underemployment. State aid consists in granting direct financial or in-kind advantages to the beneficiary, e.g. subsidies, grants for equipment. State aid may also consist in the reduction of public and legal liabilities of the beneficiary, e.g., liabilities write-off.

## ENDNOTES

1. To calculate the index account was taken of: weighted average of measures for the level of development, trade dependence on the Council for Mutual Economic Assistance, macroeconomic disequilibria, distance to the EU, natural resource endowments, market memory and state capacity (Transition Report 2000, 2000, p. 21).
2. Investment bank Goldman Sachs foresees that until 2030 Poland (and other CEECs) should grow by at least 2 percentage points annually faster than the EU-15.It means that until 2050 GDP per capita in Poland would be by only 15% lower than in the most developed EU member states but higher than, e.g., in Spain (Zsoldos and Zadornova 2008).
3. Besides strengths, the report also highlights barriers faced and observed by foreign investors in Poland. The following dimensions have been assessed as poor in the ranking: transport infrastructure, some institutional aspects, such as the regulatory burden, rather inefficient legal framework for settling business disputes, and difficulties in obtaining information on government decisions for business. To bolster its innovative capacity, more attention should be paid to reinforcing its innovation ecosystem in close collaboration with the private sector.
4. Consolidated version of the Treaty on the Functioning of the European Union, 30 March 2010.

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# Chapter 56
# The Degree of Home Bias in the Holding of Share Portfolio: Case of American Investors

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## ABSTRACT

*The objective of this paper is to measure the degree of Home Bias within the holdings of portfolio and to identify their determining factors. By following an intuitive reasoning, the authors have chosen a number of susceptible factors that have an impact on Home Bias. In fact, they have developed an international CAPM (Capital Asset Pricing Model). This model is estimated for 20 countries, with the use of cross-section econometrics. The authors' results show that all countries have recorded a high level of Home bias in their holdings of portfolio. In order to study whether the Home Bias of the newly emerging markets and that of the developed markets react differently to the determining factors or not the authors have evaluated the model so much jointly for all markets as separately for the developed and the newly emerging ones. In the case of classification of the sample, the results have permitted us to draw an important conclusion and to have cognizance that the volatility of the exchange rate is statistically significant concerning the newly emerging economies at a threshold of 1%, while it is hardly remarkable for the developed countries. This means that this variable prevents the American investors from investing in the former countries. Samely, for both variables of joint- variance and size.*

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## 1. INTRODUCTION

Financial markets are characterized by quite an important volatility and an environment that is laden with risks, wherefore the investor finds himself confronted with the problem of [dynamically] managing his portfolio. Within this context, ever since the model theory of portfolio selection has emerges by the founding works of Markowitz (1952, 1959). His research has concentrated on the problem of portfolio selection based mainly upon the gadgets of returns-risk. This theory stipulates that the inclusion of less correlated securities within a portfolio drastically reduces its risk. However, this risk may also be reduced by the geographical diversification of the portfolio across many markets over the world. This very phenomenon is called "international diversification". It is important to allude to the fact that international diversification goes in line with the renowned adage: "Don't put all your eggs in one basket".

Numerous writers, notably Solnink (1974), Harvey (1991), De-Santis & Gérard (1997), Lewis (2000) and Arouri (2005, 2006 b) show that international diversification allows to considerably downsize the risk of portfolio and /or to improve its anticipated investment yields. Nevertheless, despite the recommendations of the financial theory prompting the importance of international diversification, institutional investors show strong preference for national assets. This issue is called "Home Bias". Meanwhile, many researchers have been interested in the study of this phenomenon. We can mention as an example the study of Tesar & Werner (1995); who observed the phenomenon in a dynamic fashion from 1970 to 1990: the weak share of foreign securities in the portfolios of German, American, British, Canadian and Japanese investments. It is to be noted that many studies have focused the attention on the question of factors that are significantly contributing to the existence and justification of Home Bias.

Yet, it is quite clear that this present work contributes to the literature by widening the scope of analysis of Home Bias in the field of shares. Our objective, within the framework of this research, consists in resolving the following question:

What are the benefits of international diversification?
What are the explanatory factors of Home Bias?

The upshot of this article is to study the determinants of Home Bias in connection with the newly emerging and developed markets both jointly and separately. After having presented the objective of our work, we shall bring forward, in the second section, a brief review of the major works and latest developments concerning the topic of international diversification, together with the issue of Home Bias. This is all in accentuating the related explanations presented in the literature of international financial markets. The data being used and the methodology being followed shall be the object matter of the third section. The fourth section exposes the results of our empirical part. At last, we shall finish by discussing our results. In the fifth section, we shall conclude.

## 2. A SUMMARY OF THEORETICAL LITERATURE

The international diversification is considered as a central area of management that seeks to improve the performance of portfolio. In fact, as we have previously seen with many already done, studies such as those of Grubel (1968), Levy & Sarnat (1970) and Solnik (1974), the international allotment of portfolio's investments constitutes the best way to ameliorate the performance of portfolios.



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The pioneering researches about this strategy had been conducted principally by Grubel (1968) and then by Levy &Sarnat (1970). The idea initiated by these researchers was to derive the efficient portfolio out of the international stock-markets.

The study of Grubel (1962) supposes that the international diversification of the portfolio represents a source of benefit through the making out of international relations that differ from those coming out from the traditional exchange. Grubel has made an empirical test about the stock-market indexes of 11 countries over the period spanning from January 1959 to December 1966 in order to examine the advantages of international diversification for American investors. He has proven that the international diversification between the assets of 11 surveyed countries allowed investors, either to reach the highest rates of return on investment, or the lowest variance of their portfolios.

Extending from this contribution, Levy & Sarnat (1970) have documented low coefficients of correlation between the returns on assets and concluded that the gain from international diversification was substantial.

Liljeblom, Loflund & Krokofrs (1997) have made an investigation about the benefits of international diversification concerning Nordic countries. These researchers have applied their analyses over the period between 1974 and 1993, based upon the monthly returns of assets of 18 national capital markets. These returns were based on the value of MSCI index (Morgan, Stanley Capital International) within the national capital markets and included notably the capital gains on assets and the payment of dividends. These writers have divided the period of study into two sub-periods: the first one spanned from 1974 to 1986, whereas the second stretched from 1987 to 1993. In the light of this study, they concluded that the substantial gains of the geographical investors were there for all Nordic countries with the exception of Denmark.

Likewise, Lapp (2001) has tried to analyze the benefits of international diversification for the German investor. This examination was applied on a sample of 18 countries throughout a period of 10 years, from 1988 to 1997 and showed that a diversified portfolio was much more profitable than a purely domestic portfolio without taking into account the degree of aversion to risk. However, Schroder (2002) shows that the strategy of international diversification permits to supply additional and significant returns for all investors belonging to the examined sample (British, French, & German investors) with the exception of the American investor.

In brief, international diversification is often regarded as the most efficient way to ameliorate the performance of the portfolio.

K.Li, Sarker and Wang (2003) have also studied within the frame of average-variance the dynamics of gains of international diversification put under certain constraints of short sale. The study was realized on the period spanning from January 1976 to December 1999, and the sample of this research included the monthly returns on the stock market indexes of the G7 [countries] together with 8 newly emerging markets of Latin America and Asia. From their empirical results, these writers have concluded that the anticipated gains from international diversification remain substantial for investors in the American stock market wherein there are no constraints of short sale on the newly emerging markets. They have remarked a reduction at the level of financial integration of international markets, but this does not allow to delete the anticipated gains from the international diversification put under the constraints of short sale.

Arouri (2005) has elaborated an extension of the multi-varied model of GARCH initially proposed by De Sentis & Gérard (1997) in order to derive a measurement of the predicted gains from the international diversification of the portfolio. This study dealt with the stock markets of the G7 countries and the international markets, while it covered the period from February 1970 to May 2003. The results



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of this study show that the benefits of international diversification are statistically and economically significant for all financial markets except those of France and UK, wherein the gains of international diversification record a slight tendency of decrease. Generally, for all the surveyed markets, the gains of international diversification have once again become—over the last decades—greater than their average that is calculated during the entire period. Most of the time, the gains stemming from international diversification depend upon the low correlation of return of the different securities invested in the markets. That's why, any increase of such correlation may be responsible for the decreases of the predicted benefits of international diversification. This increase results from the rise of the level of integration of financial markets. Consequently, the gains of diversification are linked with the level of integration or segmentation of financial market.

In order to better profit from the strategy of international diversification many researches have shown that the worries of investors are directed towards the developed markets. Nevertheless, with the turning of the 1980s and 1990s, many writers made their studies within the frame of international management of portfolio [of stocks] to assess the significance offered by the emergent stock markets. Beforehand, these markets had to be able to manage important potentials of diversification in comparison with the markets of developed countries which have a tendency to be more and more integrated with each other. These changes can be explained by the low correlation of the newly emerging markets with one another and with the rest of the world.

Odier et al. (1995) have tried to examine the characteristics of returns for the newly emerging markets in comparison with the developed markets. These writers recorded an important increase of returns in the newly emerging markets, but these returns were associated with high levels of risk. They have deduced that the correlation between returns within the newly emerging markets and the international index of the developed markets was 0.31, which means that the gains anticipated from the international diversification on the newly emerging markets are much more beneficial than investing uniquely on the developed markets.

In tune with the preceding studies, Bellalah Makram and Fadhlaoui Kais (2006) have given evidence of the importance of the newly emerging markets for the international diversification by measuring the relations of interdependence between the developed markets and the newly emerging ones. In this respect, the benefits of international diversification resides firstly in the reduction of the risk, and secondly, in the improvement of performance. However, in spite of the theoretical and empirical evidences about the additional gains of international diversification, investors have tendency to allot part of their wealth in foreign securities smaller than that which they invest in domestic securities. In other words, investors hardly diversify their portfolios and prefer to hold local securities. This fact is called Home Bias, or else national preference which can be defined as the gap between the shares of wealth being effectively invested in foreign assets and the optimal shares determined by the financial theory.

Home Bias is a well-established phenomenon in international finance. French & Poterba (1991) demonstrate the strong proclivity of American, British and Japanese investors to hold national securities. According to French & Poterba (1991), in 1989 investments in domestic securities exceeded 90/100 in the US and Japan, and 80/100 in Europe (GB, Germany and France). Moreover, the preference of domestic assets is considered to be a normal behavior as Gorman & Jorgen (2002) show. These two latter writers conducted a research that included the investors from 5 greatest countries in the world using the performance measurement of Sharpe (1966). In fact, they show that the ratio of sharp for the optimal portfolio is typically below the ratio of Sharpe for the 100/100 domestic portfolio. Therefore, the



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100/100 allocation is much more profitable than the portfolio with optimal tangency. To sum up, they conclude that domestically-oriented investors are not "irrational" and that the benefits of international investments are difficult to attain.

In line with the same principle, Cambell (2006) in developing a finance study of "household" suggests that investors have tendency to prefer national securities. In fact, he conducts his study basing upon the body of information accumulated by precedent researchers such as French & Porterba (1991), Cooper & Kaplanis (1994) in order to show that domestic investors have a very important level of "Household" comparatively with foreign investors. Besides, investors exhibit a preference for regional companies against non-regional enterprises. However, this Home Bias paradigm can be explained mainly by the existence of barriers against the flux of capitals manifested basically in the costs of transaction due to the holding of foreign assets, the withholdings at source, the political risk, the failure in parity of the purchasing power, informational asymmetries and the constraints on short sales. Hence, it clearly appears that there are numerous factors which encourage international under -diversification since the investor might be hindered to settle himself in a given market other than that of his own country, or he might be hampered by the weakening of his gain under the effect of the excessive costs of transaction or heavy taxation.

Within this framework, Mishra (2008) fixes a given set of factors pertaining to explain national preference relying upon the economic theory. Among these factors, he uses the exchange risk, distance, language, the joint-variance, the legal origin, the cost of transaction and other informational variables. According to certain studies, the volatility of the exchange rate constitutes a brake on the growth of international investment. Within this purview, the exchange risk constitutes an important variable that has to be taken into consideration in every strategy of international investment and more particularly within the newly emerging markets. At this level, we equally have to emphasize the fact that the occurrence of financial crises in some markets is translated by important devaluations of the currency in which the securities are made out. Hence, a positive link is made up between the volatility of the exchange rate and Home Bias.

Within this context, Bin, Morris & Chen (2003) have shown that the foreign exchange rate and the interest rate make up the principal determinants of ADR's assessment. These writers conclude that the ADRs of the developed countries (Australia, Japan, Europe) and those of the newly-emerging countries (China, Chile, Korea, Mexico and South Africa) are affected by–and sensitive to – variations in comparison with their corresponding currency. However, monetary fluctuations affect significantly the aggregate return of a diversified internationally portfolio. This comes from the fact that the description of a given monetary unit is not often made by the estimation of another. This deduction can be considered as a major advantage that encourages investors to hold possession of domestic securities. In tune with the preceding studies, Giurda & Tzaralis (2004) equally ask whether the exchange risk is assessed within the international stock markets. They remarked that a dynamic strategy of a portfolio, which is covered against the variations of the exchange rate, supplies much more important returns than another strategy which may happen to ignore them. So, the exchange risk constitutes an obstacle that thwarts the investors to hold possession of foreign assets. Within this context, a great deal of theoretical and empirical corpus has been conducted to explain the Home Bias taking into account diverse frictions in the financial markets. These frictions manifest basically in a fiscal advantage following the investment on the domestic level together with the tax on repatriation of foreign dividends.

Within this framework, taxes appear to have an enormous effect on the demand of foreign assets. In fact, the inversive relation between tax and the demand of foreign assets indicates that investment in foreign asset diminishes as tax increases.



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From this point of view, Stulz (1981) concludes that the valuation of tax may be at the origin of segmentation of financial markets, which discourages the international investment and, consequently, increases the interest of the investor to direct towards the local market. He proves that certain assets can only be possessed by domestic investors because their interest in terms of diversification does not compensate the cost in terms of foreign investment taxes on creditor and debtor positions. In fact, this result shows that the tax-factor contributes significantly to the explanation of Home Bias.

The inversive relation between tax and demand of foreign assets indicates that investment in foreign asset diminishes as the tax increases. Thence, drawing upon Black (1974), we should say that the heterogeneity of taxes explains the elucidation of financial assets and particularly the preference of investors for national assets.

On the empirical plane, the other major contribution has been brought about by Amadi (2004) who supports the idea that common language, distance, as well as immigrants equally influence the strategy of foreign investment. This implies the existence of such costs that may hinder the entrance to a foreign market. In this perspective, investors move typically over markets that have the same language, culture or other notions of familiarity. (Amadi; 2004 & Grimblat & Kelaharju; 2001). In tune with this recent study, Berkel (2004) examined the institutional determinants of international portfolios of assets. In particular, the results of estimation indicate that the asymmetries of information, approximated by geographical proximity, together with the existence of a common language, or a common colonial background, have an enormous effect upon the composition of international portfolios of assets. Therefore, it is convenient to recall that the impact of geographical distance upon the holdings of assets is quantitatively of first rank since the increase of 1/100 within the distance between 2 countries diminished the average of foreign asset's ownership share to approximately 0.15 in 1997 and 0.27 in 2001. This result is namely evident even if the two countries had the same legal origin. In fact, the share of ownership of foreign asset diminished with roughly 0.25 in 1997 and 0.39 in 2001, which leaves room to note that distance is expected to be positively linked with the cost of information. In other words, a farther distance implies a weaker cultural link. Thus, we are going to use the distance between the country of origin and the country of destination as a proxy variable to replace the cost of information needed to the acquisition of foreign assets. In this context, investors prefer to make their investments within the country that has the same language in use as their native countries, which helps facilitate the financial analysis of organizations.

Moreover, the size of a market improves its liquidity and its capacity to mobilize its funds and diversify risks. This means that American investors are going to orient themselves towards the markets that have an important share within the global market. As a consequence, the increase of size of the country favors the strategy of international diversification with this country. In fact, if the share of this country is important within the global market, the American investor decreases his foreign investments.

A good openness to the external trade gains the trust of international investors and attracts more the foreign funds. Once the country of destination invests some assets within the American market, the barriers between both countries would be reduced. In other words, the more the number of foreign organizations increases within the American market, the more the American investors would have better information and vision about the markets of those countries. This would facilitate the holding of foreign assets while those countries would gain from the strategy of international diversification. In the light of the precedent discussion, our objective is to test the influence of the volatility of exchange rate, size, transaction, distance, language, legal origin, foreign organizations' share, the joint-variance-diversification, as well as tax, upon the phenomenon of Home Bias for the American investor. The hypothesis which we are going to test in this respect is the following:



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**Hypothesis:** Volatility of the exchange rate, size, transaction, distance, language, legal origin, foreign organizations' share, the joint-variance diversification and tax all encourage the issue of Home Bias.

## 2.1. Conceptual Framework

Based on the arguments presented above, the conceptual model proposed in this study is presented in Figure 1.

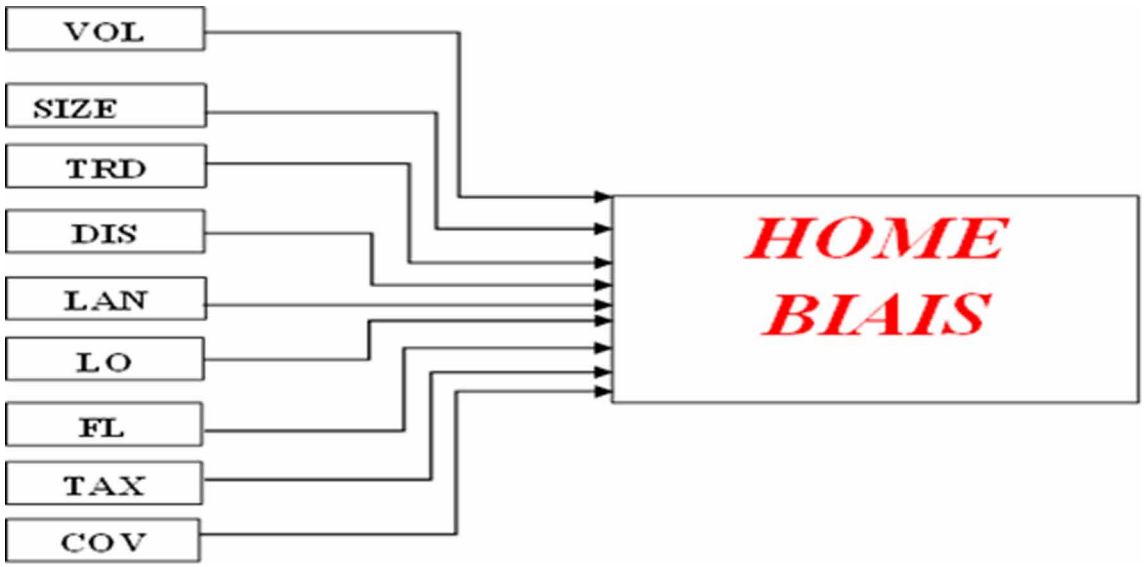
On the basis of the above cited arguments, the conceptual model of this research is presented in Figure 1:

## 3. RESEARCH METHODOLOGY

In order to cover this stage and achieve it, we have chosen a sample of 20 countries. The regional classification of countries is displayed in the table of appendix. This classification is based on the division of the geographical area. Besides, in relation to the selection of these countries, the choice has excluded many countries due to the availability of data. Our research spans over a period of 6 successive years, from 2008 to 2013.

The starting point of our empirical approach consists essentially in measuring the issue of Home Bias. This stage will be a descriptive analysis which verifies the under-weightings of foreign assets within the portfolio of investors for the majority of sample-countries in the course of the studied period. To meet that end, we are going to use as data, on one side, the total cross-border holdings of assets while on the other side, the portion of invested assets at national level. In fact, the data that have to do with holdings are excerpted from WEF (World Exchange Federation) which submits a respectable body of information about the holdings of the portfolios of securities for the end of year of individual economies assessed in market price. Besides, it is essential to note that the investors of the sample-countries effectively make the exchange of financial assets with the American market and vice-versa.

*Figure 1. Conceptual model of study*






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Within this context, we shall try to know if the Home Bias in assets is observed for the majority of countries within our sample during the indicated period of research. This means that the countries significantly hold portfolios of assets which are largely biased towards domestic securities. Likewise, we are going to verify if the investors invest a much more important proportion in the domestic market than that being suggested by the theory of share-portfolio. In fact, after regulating the measurement of the global Home Bias of countries, it has been quite interesting to mark out the distribution of Home Bias by subdividing the holdings of assets by pairs of countries. This stage consists in analyzing the Home Bias in a bilateral way. This research is focusing solely on the study of conspicuous and salient American foreign share-holdings, which means that we are going to make holdings of American investors. Then, we are going to move in a third stage to test the determinants of Home Biases based upon an econometric model. In this respect, it is essential to recollect and recall the factors which are at the origin of Home Bias.

## 4. APPLICATION AND RESULTS

In this research, we are going to call back the explanatory variables that are largely used by Mishra (2008). We shall start with the overall measurement of Home bias of a given country as being the relationship between the real relative share of assets invested in the domestic market and the aggregate assets of the country

Formally:

HB = Real Share of domestic holding / Aggregate Asset, with:
Aggregate Asset = Domestic Asset + Foreign Asset + Investment Fund

After having conveniently analyzed the aggregate holdings of foreign assets of the countries, and for the purpose of better locating the distribution of Home bias, we intend to implement a bilateral analysis of the bias. This is why; we are going to adopt the measurement applied by Mishra (2008) who has studied the holding of Australian shares by a certain number of countries. However, our point of focus in this research shall be the study of holdings relative to American investors, which means that we are going to be concerned mainly with American market. Here, we are going similarly to quantify the volume of home bias of a given country *i* towards country *j* as the relative difference between the weight of real or actual foreign portfolios and optimal ones. In other words, we shall prove the existence of home bias, in regard to American portfolios, through the comparison of the actual proportion of foreign assets in American investors' portfolios coming from the selected countries of the sample with that predicted by the global market.

$$HB_{ij} = 1 - \frac{I_i^j}{I_i^*}$$

The holding of foreign assets within the total share portfolio of American investors is attained via the relationship between their holdings of foreign shares and their aggregate holdings of shares (foreign and domestic).



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Within the track of our objective to identify the factors affecting investors to choose domestic assets, we are going to develop an econometric model of international CAPM type which has made these factors obvious and discernible. In fact, the main point within this model is to present and discuss the pertinence of the susceptible variables for being the same self-factors determining the issue of Home bias. We are, similarly, going to verify in measurement the potential causes of this bias between the stipulations of financial theory and the economic reality. This model in question is relying upon that developed by Mishra (2008), except that we shall replace the exchange of financial assets with the Australian market with that of the American one. In fact, this model encompasses integratively the variable of exchange risk with other variables that measure the frictions in the financial market, and it is tested through the MCO econometric method using cross-country data. So, in mathematical terms, the estimated basic statistical model can be formulated as follows:

$$HB_{ij} = \alpha_1\left(VOL\right) + \alpha_2\left(COV\right) + \alpha_3\left(SIZE\right) + \alpha_4\left(LAN\right) + \alpha_5\left(LO\right) + \alpha_6\left(FL\right) + \alpha_7\left(TRD\right) + \alpha_8\left(DIS\right) + \alpha_9\left(TAX\right) + \varepsilon_{ij}$$

with:

- **$HB_{ij}$:** This is the dependent variable which indicates the bilateral measurement of home Bias
- **The Volatility of Exchange Rate (VOL):** This variable is measured by the standard deviation of monthly change of bilateral exchange rate over the specific period of study.
- **Diversification-Covariance: (COV):** Indicates the covariance between the American market's returns and the country of destination.
- **Language (LAN):** This is a mute variable that can take two values: 1, if both countries either have a common language or a common colonial background, and 0, if it is not the case. This variable indicates the legal system in use within the country.
- **The Share of Foreign Organizations (FL):** This is the share of foreign organizations out of the total sum of all organizations located in the domestic market. This measure is credited to Mishra (2008) and Amadi (2004).
- **Transaction (TRD):** Measures the degree of tentative offers of the country. This variable is given under the following formula:
  0.5* (Exports + Imports) / GDP
- **Distance (DIS):** Indicates the physical distance in kilometers between the country of origin (the USA) and the country of destination. This variable is estimated using the logarithm
- **The Tax (TAX):** Indicates the set of taxations imposed by the country
- **$\varepsilon i_{j:}$** indicates the margin of error

The real holdings of portfolio are identified by using the date of international investment locations. In fact, Table 1 displays the different elements to be considered in the measurement of home bias for the year 2012.

The contemplation of the figures in the table permits drawing strong conclusions. Besides, it is highly interesting to remark, according to this table, that all countries record a high level of home bias. This implies that investors of these countries significantly hold share portfolios that are biased towards



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*Table 1. Home bias in share portfolios (December 2012)*

| Country | Aggregate Assets | Aggregate Domestic Assets | Home Bias |
|---|---|---|---|
| Australia | 672388.5 | 636089.8 | 0.946015287 |
| Brazil | 165275.6 | 164816.1 | 0.997219795 |
| Canada | 900493.1 | 898851 | 0.998176443 |
| Columbia | 9418.9 | 9418.9 | 1 |
| China | 392772.4 | 387003 | 0.985311086 |
| Egypt | 26241.1 | 26239.4 | 0.999935216 |
| Spain | 1566107.1 | 1546869.7 | 0.987716421 |
| South Africa | 201779.1 | 145687 | 0.722012339 |
| Germany | 1915304.5 | 1749657.5 | 0.913514013 |
| India | 473671.2 | 473671.2 | 1 |
| Japan | 4679557.8 | 4622614.8 | 0.987831542 |
| Malaysia | 51601.4 | 50449.3 | 0.977673086 |
| Mexico | 56682.8 | 53392.4 | 0.941950644 |
| Poland | 30421.5 | 29290.1 | 0.962809197 |
| France | 2906208.2 | 2776739.5 | 0.955450989 |
| United Kingdom | 5677721 | 3185654.2 | 0.561079736 |
| Thailand | 95645.8 | 95637.1 | 0.999910084 |
| Turkey | 199187.8 | 199187.8 | 1 |
| USA | 28553196.4 | 25113766.3 | 0.879543079 |
| Italy | 1293682.1 | 1216676.3 | 0.940475484 |

Source: Author calculations

national securities. In other words, investors prefer to invest [their stocks] within the national market, while they ignore the potential gains of international diversification strategy.

In 2012, the least elevated value of home bias concerning portfolios was registered in the UK where only 56.10 percent of the total volume of share portfolios was invested in domestic stock. while the most elevated value was registered in Columbia, India and Turkey; where we find that all investments in portfolio were domestic. It seems that home bias in the holding of shares has been diminished within developed countries' markets (US, France, Germany..), whereas the markets of the newly-emerging economies (Brazil, UK, Egypt..) record a much higher level of home bias. In this respect, it is self-proven that the markets of developed countries offer the best opportunities to diversify the share portfolios at international scale. This means that the correlations between the financial markets of these countries are weak.

After having conveniently analyzed the holdings of aggregate foreign assets of countries and for the purpose of better locating the distribution of home bias, we are going to make a bilateral analysis of the bias. So, we shall calculate this bias between the American market and the other countries of the sample. In fact, Table 2 presents the components of bilateral bias in 2012.

However, this table shows, as we have already mentioned, American investors' strong preference for domestic shares. This means that investors tend to invest less internationally than what is theoretically predicted, and thence, the real foreign participation is smaller than the optimal portion of international



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*Table 2. Bilateral bias in the share portfolio in 2012*

| Country | Real portion of foreign shares | Optimal Portion $\left(I_j^*\right)$ | $\frac{I_i^j}{I_j^*}$ | $HB_{ij}$ |
|---|---|---|---|---|
| Australia | 0,0187 | 0,71738 | 0,026 | 0,97393 |
| Brazil | 0,0477 | 0,3459 | 0,1379 | 0,86209 |
| Canada | 0,1160 | 0,350 | 0,3314 | 0,6686 |
| Columbia | 0,00081 | 0,1677 | 0,00483 | 0,99517 |
| China | 1,136 | 8,978 | 0,1265 | 0,87347 |
| Egypt | 0,0544 | 0,526 | 0,10342 | 0,89658 |
| Spain | 0,0083 | 0,2617 | 0,03171 | 0,96829 |
| South Africa | 0,0017 | 0,8742 | 0,001956 | 0,99804 |
| Germany | 0,0255 | 0,4442 | 0,05733 | 0,94266 |
| India | 0,0051 | 0,7037 | 0,007218 | 0,99278 |
| Japan | 0,335 | 1,418 | 0,23624 | 0,76375 |
| Malaysia | 0,01068 | 0,282 | 0,0378 | 0,962127 |
| Mexico | 0,00128 | 0,3459 | 0,00370 | 0,9963 |
| Poland | 0,00048 | 0,1229 | 0,00387 | 0,99612 |
| France | 0,0364 | 0,3614 | 0,10072 | 0,8993 |
| United Kingdom | 1,475 | 6,351 | 0,23224 | 0,7977 |
| Thailand | 0,04727 | 0,7739 | 0,061073 | 0,9389 |
| Turkey | 0,0185 | 0,1326 | 0,139215 | 0,86078 |
| Italy | 0,02101 | 0,327 | 0,06425 | 0,93575 |

Source: Author calculations

assets within investors' portfolios. In this respect, we notice that the American share portfolio is roughly composed of 85% of American stock.

The main point of this work is to analyze the factors that are affecting the choice of financial assets of economic agents. To do that, we have developed a multifactorial econometric model in which we have analyzed the degree of explanation supplied by the explanatory variables that are already mentioned. Then, this brings forth a clearer vision about the causes behind this economic model. We estimate this model relying upon the econometric model MCO and in use of cross-section data for the period that spans from 2008 till 2013.

The results of the econometric regression of this basic model for the year 2013 are presented in Table 3.

Although the obtained results at continental level could not supply us with enough information to determine whether the considered factors- seemingly the root of home bias- had specifically been at a certain sub-sample [level] or not. That's why, we have classified our sample-countries into developed (Australia, Canada, Germany, Japan, France, Spain, UK) and newly-emerging ones (Brazil, Egypt, Poland, Thailand, Turkey, China.). In the light of this classification, we have estimated the determining factors of home bias for every category aside. Therefore, Table 4 and Table 5 display the results of this estimation:



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*Table 3. Results of regression of the basic econometric model (2013)*

| | Coefficient | Statistic-t |
|---|---|---|
| **VOL** | 0,18 | (1,69) |
| **COV** | 0,00843 | (3,91)*** |
| **SIZE** | -3,1034 | (-2,254)** |
| **DIS** | 2,4E-07 | (1,68)* |
| **LAN** | -1,041 | (-0,067)* |
| **LO** | -0,249 | (-0,00)*** |
| **TAX** | 0,076 | (0,015)** |
| **TRD** | -1,65E-07 | (1,048)** |
| **FL** | -0,59 | (-8,95)* |
| CONST. | 1,867 | (1,419) |
| $R^2$= 0,27<br>Number of observation: 171 | | |

Source: Author calculations, * means threshold at 1%; ** means threshold at 5% *** means threshold at 10%

*Table 4. Results of regression of the basic econometric model: emerging countries*

| | Coefficient | Statistic-T |
|---|---|---|
| **VOL** | 0,011 | (0,016)*** |
| **COV** | 0,0084 | (3,91)*** |
| **SIZE** | -0,21 | (-0,13) |
| **DIS** | 0,17 | (2,71)* |
| **LAN** | -0,08 | (-3,77)* |
| **LO** | -0,06 | (-3,63)* |
| **TAX** | 0,003 | (2,14) |
| **TRD** | -0,005 | (-2,4)** |
| **FL** | -0,0001 | (-0,213) |
| **CONST.** | 0,9 | (16,72)* |
| $R^2$= 0.59<br>Number of observation: 99 | | |

Source: Author calculations/figures, * means threshold at 1%; ** means threshold at 5% *** means threshold at 10%

*Table 5. Results of regression of the basic econometric model: developed countries*

| | Coefficient | Statistic-T |
|---|---|---|
| **VOL** | 0,0001 | (1,6) |
| **COV** | 0,0072 | (3,35)*** |
| **SIZE** | -0,43 | (-0,07)*** |
| **DIS** | 0,42 | (5,35)* |
| **LAN** | -0,11 | (-6,65)* |
| **LO** | -0,09 | (-4,52) |
| **TAX** | 0,005 | (2,4) |
| **TRD** | -0,008 | (-3,91) |
| **FL** | -0,0007 | (-0,149) |
| **CONST.** | 0,8 | (10,3) |
| $R^2$= 0.54<br>Number of observation: 72 | | |

Source: Author calculations/figures, * means threshold at 1%; ** means threshold at 5% *** means threshold at 10%

## 5. DISCUSSION AND CONCLUSION

According to the estimation of this model, it is evident to notice that the explanatory factors are indispensable for the existence of home bias. This implies that these factors contribute largely in the formation of home bias.



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The analysis of Table 3 allows us to deduce that the variable of volatility of the exchange rate is positively correlated with home bias phenomenon at (0.18) for the year 2013. The positive figure obtained for the exchange risk is conformed to economic intuition. This means that the volatility of the exchange rate generally reflects the uncertainties [of investors] towards the economic situation of the country in question and towards the efficiency of the predicted shares. From this perspective, a strong volatility of the exchange rate encourages the American investors to invest in the domestic market. Consequently, this variable represents a barrier against the international movements of capitals, which sustains the results attained by Mishra (2008) concerning the Australian market. He concluded that the exchange risk constitutes a potential conductor towards the issue of Home bias. This is to say that the exchange risk plays a primordial role in the explanation of national preference in using the method of generalized moments in order to test the predetermined model.

More precisely, when we separately examine the developed countries and the newly-emerging economies, we find that the volatility of the exchange rate is generally of low importance for the developed countries' markets during the limited period for study, while it is quite important at a threshold of 1% for the years 2008, 2009 and 2011, and at a threshold of 10% for the years 2010, 2012 and 2013 concerning the emergent markets. Hence, the volatility of the exchange rate encumbers American investors from embarking on the markets of the newly-emerging economies.

Let's consider, now, the covariance factor. The obtained figure of this variable is positive at (0.00843) for the year 2013, and it is strongly important at a threshold of 10% for almost the whole period of study. As for the newly-emerging countries, the coefficient of this variable is positive and interesting over the whole period of study at a threshold of 10%. This indicates that there is a strong correlation between the return of the American market, which consequently means that domestic assets are strongly weighed within the portfolios of American investors.

Yet, for all the developed countries, the joint-variance variable is positive, but it is not that important except for the years 2012 and 2013. From this perspective, we can conclude that the American market is weakly correlated with the markets of developed countries, something which facilitates the acquisition of foreign assets by these countries. Consequently, the American investors benefit from the strategy of international diversification. From this, we can deduce that this variable is not in the advantage of the issue of home bias concerning the developed countries. As a result, we find that American investors prefer to invest in the markets of these countries.

Moreover, we have used the distance between the country of origin and the country of destination as a proxy-variable to replace the costs of information. Within this frame, we find a very interesting result that the coefficient of this variable (distance) is quite significant, which means that the distance between the financial centers is important in determining the choice of investors of their assets. Nevertheless, this coefficient is positive, which gives credence to the previously mentioned hypothesis. This indicates that the holding of foreign assets diminishes when the distance between the two countries increases. This can be explained by the fact that the width of distance between countries creates much higher costs to get to information.

Within this same purview, the size of the country influences home bias. The coefficient of this variable is negative at (-4.89) and (-3.51), and quite significant at a threshold of 1 percent for the years 2008 and 2010, and a threshold of a 5 percent for the years 2009 and 2013. We should recall that this variable indicates the market share of every country within the global market. As the share of the country increases



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within the global market, the holding of domestic assets decreases. In this respect, investors prefer to direct themselves towards the developed markets more than the emergent ones in case they profit from the strategy of international diversification.

We shall move now to focus on the significance of mute variables selected in this research which manifest essentially in language and legal origin. These variables indicate the cultural, linguistic and historical links between the American market and those markets making the sample of our study.

Estimations show that the coefficients of these variables are negative at the values of (-0.384) and (-1.15) for the years 208 and 2012; and at the values of (-0.44) and (-1.04) for the years 2011 and 2013. These coefficients are equally important at a threshold of 5% for the first range of values, and at a threshold of 1% for the others. Besides, the same result has been remarked concerning the estimation of these variables for both categories of countries (developed and newly-emerging). These results show us that, in the case where the country of destination and the United States have the same language in use, American investors additionally increase their investments towards that country. This goes hand in hand with the logic of our hypothesis concerning the impact of information. Likewise, the legal origin appears very important and it is true in absolute terms. It has an influence yet more powerful at continental level as it is proven by the extent of its estimated coefficient. It is very likely that the same legal origin permits the economies to reinforce diversification and, hence, to diminish the impact of home bias.

The results which we have attained emphasize the importance of informational functions as being the fundamental determinants of holdings of international share portfolios. In other words, both variables (language and legal origin) play a prominent role in the reduction of home bias phenomenon, and they also have some important effects on the extent of diversification.

We still have another important domain for investigation which has to do with the role that transactions play in the process of home bias. The resulting figures for transaction are negative at the values of (-0.00609) and (-1.27) for the years 2008 and 2012, which goes in tune with the economic intuition. This variable is important at a threshold of 10% equally for all the markets of our sample of study as for the emergent and developed markets when treated separately. The classical trade theory emphasizes the positive relation between the trade openings and the international diversification strategy. This indicates that American investors would head towards the countries that have a respectable level of development concerning their financial markets. Here, the effect seems much more important for the country of destination. Therefore, the more developed the financial market of the country of destination is, the more advantageous the opportunities of investment are that's why American investors would be inclined, in advance, to hold the portions of portfolio in such economy. Concerning tax, it means that this variable is positively correlated with national preference (0.044) and (0.076) for the years 2010 and 2013. This means that the increase of tax rates in the country of destination leads American investors to invest less at international scale. However, the obtained coefficients are most often statistically important at a threshold of 5% equally for all the sample countries together as for all the emergent and developed markets when taken independently. From this perspective, we need to note that the increase of tax rate prevents American investors from holding foreign assets and, hence, they prefer domestic assets.

Furthermore, we still have another element that is very interesting in determining the choice of investor in relation to his or her portfolio of financial assets at an international level. This variable manifests in the share of foreign organizations located in the domestic market (American market); that is to say: the more the number of these organizations increases in the American market, the more the American



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investors would have the opportunity to gather information about the markets of these organizations' native countries. This facilitates the holding of foreign assets, and thence, they would benefit from the strategy of international diversification. This result contributes in reducing the extent of home bias.

The estimated results of our sample demonstrate that this variable constitutes an unfavorable determinant of home bias, in such way that it shows negative coefficients (-0.4) for the year 2008. Besides, this variable is significant in the choice of investments concerning economic interplayers at a threshold of 1% for the same year. Similarly, for the remaining period of study, we deduce that this variable seems to be highly significant at a threshold of 1%.

Generally, the results of estimation for the year 2008 show a median coefficient of determination ($R^2$) at the value of 58%, which means that the model has a moderate explanatory power. Putting this otherwise, the exogenous variables explain the endogenous variables at 58%. Similarly, for the remaining period of study, the coefficient of determination ($R^2$) seems to be the medium of the values 34%, 57.5%, 30%, 34% and 27% respectively for the years 2009,2010,2011,2012 and 2013. In general, the model is significant during the period of study. As a matter of fact, concerning the newly-emerging markets and those developed ones, the result that has to do with the significance of the model is very similar to the basic model.

Our analysis means that the issue of home bias is there all the time and at very similar levels in spite of the process of financial integration followed by the countries.

The consequences of the estimation reveal that our econometric model has succeeded to demonstrate its applicability on financial reality. In this respect, we have deduced that numerous factors can explain the allocation and allotment of financial assets.

In the case of classification of the sample, the results have allowed us to draw an important conclusion to have cognizance that the volatility of the exchange rate is statistically significant for the newly-emerging economies at a threshold of 1 percent, while it is not quite mentionable for the developed countries. This means that this variable prevents American investors from investing in those countries, which is the case for both variables of Joint-variance and size. Another conclusion drawn from this estimation is that American investors prefer to overweight their share portfolios by the assets of foreign countries comparatively with the newly-emerging ones.

In addition, there will be an interesting effect of investors' behavior in the matter of choice of assets. It seems quite important, then, to identify the impact of the behavioral approach upon the issue of home bias. In this respect, an interesting track for such kind of study would be to include the behavioral factors in the explanation of home bias, which will be the object of contemplation for future researches.

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# Chapter 57
# Dilemmas on OFDI Measuring and Interpreting: The Case of Poland

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## ABSTRACT

*Foreign direct investments (FDI) seem to have been thoroughly studied in specialised literature. However the scope of available statistical data often significantly hampers or even prevents any in-depth analysis of the phenomenon. The dynamic economic processes lead to the formation of new linkages, new organisational solutions in international enterprises that co-exist with well described and recognised forms of FDI but escape proper monitoring of statistical institutions. The chapter discusses the different concepts of measuring and interpreting FDI to provide researchers helpful guidelines how to deal with the problems of different methodological dilemmas. A main conclusion is that data provided by official statistics are insufficient and incoherent, and analysis of the scale of OFDI engagement of enterprises (especially from emerging countries) carries some risk and its results should be approached with caution. The case study of Poland's statistics has been used to portray the most significant discrepancies and problems.*

## INTRODUCTION

Foreign direct investment plays crucial role in contemporary economy; however, despite abundant theoretical and empirical writings on the subject many issues have still remained unclear or unclassified. Additionally, rapidly changing economic reality generates new business relationships in connection with international capital flows. These new flows not always fit already existing FDI classification framework

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and thus cannot be reflected in theoretical considerations. Yet, they take place at significant scale and should be explored when it comes to their motives and economic effects. Hence, attention needs to be paid to indicators that measure and evaluate contemporary FDI.

Methodological difficulties connected with FDI analysis can be divided into two groups: statistical and formal. The first ones refer to inconsistencies between available statistical data (at national and international levels) and classifications described in official documents of international organisations (OECD, World Bank, UNCTAD, IMF) and in specialised literature, which provide the basis for analysing motives and assessing effects of investment. Despite many publications that offer detailed description and categories of international flows of capital (OECD 1999, OECD 2005, IMF 2004), national and international statistics often prevent any precise analysis of the phenomena due to over-aggregation of indicators or interpretation discrepancies.

Second group of difficulties results from the absence of theoretical considerations and in-depth cognitive surveys of different types of FDI (especially non-manufacturing ones). Numerous theoretical concepts that discuss FDI at micro scale focus predominantly on relocation of industrial operations and leave services, support to export or financial sector out. The main research problem concerns the interpretation of financial flows, which account for a growing share of FDI flows. And it is not just about establishing special purpose entities abroad to achieve tax optimisation but also about large scale investments made by investment funds (i.e. M&A). On top of that, balance of payments-based macroeconomic statistics classify as FDIs not only primary investment (in foreign affiliate equity and reinvested profit) but also intra-corporate loans used to support related companies. These FDIs are also out of the mainstream of theoretical considerations but they significantly impact overall FDI amount (in particular OFDI from countries such as Poland) and investment position of countries.

The goal of the chapter is to put in order all FDI-related lack of clarity at micro and macro levels; it also draws attention to serious inconsistencies between theoretical considerations that explain FDI specificity and the reality revealed by available statistical data.

The chapter is composed of the following parts: the Background gives a general outlook at selected methodological problems connected with FDI analysis. It identifies difficulties and discrepancies in definitions, collection and presentation of statistical data, as well as main problems of how theoretical concepts of FDI (motives, investment modes and effects) translate into real position of investors and countries.

Main focus of the chapter has been laid on the exemplification of the above mentioned problems and inconsistencies using the case of OFDI from Poland. The authors provide a general outlook at the available sources of data and discuss individual challenges faced by researchers who wish to explore reasons and effects of Poland's OFDI. Then, propose solutions and recommendations, as well as future research directions. Main findings are summarized in Conclusions.

## BACKGROUND

FDI is an important category in international accounts, and one of the five functional categories used as the primary basis for classifying data on financial transactions, positions, and income (Kozlow 2011, p. 27). Unfortunately, the quality of FDI data remains unsatisfactory and apparently the collection of high quality data on inward and outward FDI is a challenge to statisticians and researchers, which has been raised as an issue since the 1990s (Cantwell 1992). The problem becomes particularly clear when we



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compare FDI in international and national economic accounts. The lack of reliable statistical information and inconsistency in data collection and reporting methods of many countries complicate studies and make impact assessment difficult. Besides, it limits the ability of policymakers to formulate appropriate FDI policies and strategies (Fujita 2008, p. 108). Timely and reliable statistics are the key if they are to be used as tools by decision makers and potential investors.

For example, in principle inward FDI and outward FDI across the world should balance. However, due to differences in the interpretation of FDI definition, various ways of calculating and the compilation and reporting of statistics, they rarely do (Table 1). Lack of balance between global inward FDI (IFDI) and outward FDI (OFDI) flows is also due to the so called "capital in transit", treated as a separate category by very few countries, which does not improve the transparency of generally available statistics.

Many studies highlight the "problem of limited generalizability due to the idiosyncratic and country-specific nature of the subject" (Bellak 1998, p. 253).

At microeconomic level FDI analysis relates to the theory of international manufacturing and it focuses on the investing enterprise. FDIs are undertaken in order to conduct a long-term control over an enterprise located abroad. This "lasting interest" is usually defined as direct or indirect ownership of equity that entitles it to the minimum of 10% voting rights (i.e. of ordinary or voting shares) in the direct investment enterprise.

Investors may create independent economic entities from scratch (*greenfield* investments) or by taking over the control of an already existing enterprise (*cross-border acquisitions and mergers)*[1]. Sometimes *joint-ventures*, where the new entity is created together with a national partner may be isolated out of a *greenfield* investments. Among the acquisitions there are *brownfield* investments. Their aim is to modernize and restructure an acquired enterprise into a competitive entity through its development, replacement of equipment and technology and often also human resources and assortment. In transformation economies, including Poland, *brownfield* investments are most often connected with the privatization of state enterprises.

Referring to main definitions, FDI capital flows are made up of three basic components: (Navaretii, Venables 2004, p. 285):

1. Equity capital, which comprises equity in branches, all shares in subsidiaries and associates (except non-participating, preferred shares that are treated as debt securities and are included under other direct investment capital) and other capital contributions such as provisions of machinery, etc.;

*Table 1. Imbalance between global (world) FDI inflows and outflows, 2010-2015 (millions of USD)*

| Year | FDI Inflows | FDI Outflows | FDI Inflows - FDI Outflows |
|---|---|---|---|
| 2010 | 1 388 821 | 1 391 918 | -3 097 |
| 2011 | 1 566 839 | 1 557 640 | 9 199 |
| 2012 | 1 510 918 | 1 308 820 | 202 098 |
| 2013 | 1 427 181 | 1 310 618 | 116 563 |
| 2014 | 1 276 999 | 1 318 470 | -41 471 |
| 2015 | 1 762 155 | 1 474 242 | 287 913 |

UNCTAD, WIR 2016, p. 196.



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2. Reinvested earnings consisting of the direct investor's share (in proportion to direct equity participation) of earnings, no distributed, as dividends by subsidiaries or associates and earnings of branches not remitted to the direct investor;
3. Other direct investment capital or intercompany debt transactions, meaning capital involved in debt-generating transactions within a multinational corporation; these are debt securities and trade loans between parent company and its foreign affiliate. It should be stressed that need to stress that these long-term loans may be provided at lower than current market rates.

However, in many cases non-financial involvement (such as participation in management process, membership in advisory board, technical, know-how or organizational support) is decisive for the effects and success of an investment. Unfortunately, while financial engagement of an investor in a foreign entity is quantifiable and, to a certain extent, reflected in national and international statistics, there are no statistics or measures that would describe other (non-financial) engagement of an investor (although theoretically, e.g., the value of available technology or know-how could be calculated).

At macroeconomic scale FDIs are one among types of international capital flows and belong to the balance of payments. Earnings on FDI are often a major component of property income from abroad in the distribution of income accounts. FDI stocks are reflected in current and financial accounts. In the first case they include income of foreign direct investors that can be divided into income from shares in corporate equity and income from other debts. FDI on financial account comprises: capital inflows from cash purchases of shares and stock, in-kind capital, injections of capital, reinvested profits and the balance of other receivables and liabilities (Golejowska 2008, p. 13). There are various ways in which countries collect and process statistical data pertaining to FDI flow and stock. The most important of them include: 1) international transactions reporting system (ITRS) that uses records of bank transactions of foreign economic operators – most often used by central financial institutions (e.g. central banks) to produce the statistics of the balance of payments, 2) enterprise surveys, most often deployed by central statistical offices, and 3) administrative sources such as investment promotion agencies, tax revenue offices, security exchange offices.

Incompatibility of presented data is, unfortunately, the main obstacle. With respect to FDI value, the fullest picture can be obtained from balance of payments statistics as they include all transactions within a given economy. However, the level of aggregation (adequate for data in the balance of payment) totally ignores data relating to decisions and outcomes of investments made by individual enterprises, the element highlighted in data from enterprise surveys. Other sources of data cannot be unambiguously classified and they usually limit themselves to, e.g., data on the biggest investments made in cooperation with a particular entity (promotion agencies). Additional research problem may also consist in lack of access to specific data (e.g. originating from tax agencies) – some institutions that do not manage statistical data but have access to them within the scope of their operations, do not present data in collective reports and do not make them available to external entities even upon special request.

To sum up, a number of difficulties associated with measuring FDI could be indicated. The most relevant of them include (Bürgi-Schmelz et al. 2010, p. 7; Kozlow 2011, p. 31)

1. Identifying the units that meet the definition of a direct investor, direct investment enterprise, and fellow enterprise;



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2. Differences in the level of consolidation between business registers, particularly where different registers are used in international and national accounts. It often happens when separate agencies are responsible for compiling data. For example, for national accounts, countries often include each individual enterprise into national registers, while for international economic accounts countries often consolidate domestic units that are under common control for statistical purposes. That may produce inconsistencies in how direct investors, direct investment enterprises and fellow enterprises are classified by industry sector in national and international economic accounts;
3. Conducting a survey, in which respondents provide data according to the concepts used in direct investment;
4. Ensuring that direct investment equity position data reported by the direct investor are based on information from the books of the direct investment enterprise abroad. In other words, information on equity holdings is often not recorded on the same basis by the direct investor and its direct investment enterprise;
5. Estimating reinvested earnings of direct investment enterprises, especially on a timely quarterly basis. On many occasions, information on reinvested earnings is available only after a very long delay, and then sometimes only for annual data.

Despite attempts to master statistical systems on FDI they are still full of gaps and their quality is questioned by many researchers. According to Bellak (1998), international standards are often either neglected by those who collect data on FDI or they are too complex to fulfil. Harmonisation of various FDI-related definitions and statistical systems for collection and presentation of FDI data is going on. The same can be said about what international corporations are doing but important discrepancies remain, even among developed countries (Fujita 2008, p. 108). Measuring FDI is a difficult task especially in transition economies. These difficulties are also reinforced by the transformation of statistical systems (von Westernhagen 2002, p. 208).

According to UNCTAD (2006), in some developing and transitional economies additional difficulties emerge. Much FDI are transactions referred to as "round tripping". They consist in capital exports by domestic agents and their return as FDI, which results from, e.g., bureaucratic and tax difficulties faced by enterprises in their home countries. Investment abroad gives them some freedom to continue investing domestically or abroad. The practice is the result of financial incentives intended exclusively to foreign investors, lack of effectively operating institutions that could intermediate the funds domestically and better protect ownership rights abroad. "Round-tripping" is quite a widespread phenomenon (Borga 2016), it can be witnessed, e.g., in China (Geng 2004; Garcia-Herrero, Xia, Casanova 2015) or Russia (Ledyaeva, Karhunen, Whalley 2013).

## SELECTED "ORGANIZATIONAL" ISSUES

Although FDI account for a large portion of international investment, not all investments are really "direct". Hence, to analyse it, we first of all need to study types of transactions and entities that conclude them. Against this background, identification of investor's motivation is also important as that is the initial criterion that distinguishes direct investment from other types of international investment (e.g. portfolio investment). As it has been already mentioned, FDI include both initial transactions between two operators and any later capital transactions between them and related companies, whether they are legal persons or not.



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Sometimes enterprises from different countries establish relations that carry some FDI characteristics, even when formally they are not related (two enterprises in two different countries that have the same Management Board, units responsible for the strategy and joint funds but none has got the minimum 10% share in the other). Under such circumstances enterprises are tied not with any direct investment but rather with broadly understood capital links. In some countries FDI statistics cover just loan-based relationships between a parent and a daughter company while in other all links among entities within a capital group. On the international scale this problem had been discussed and solved in Benchmark Definition of Foreign Direct Investment 4th ed. (OECD 2008), but the guidelines have not been implemented into all the national statistics yet.

Nonetheless, at this point attention should be paid to general FDI breakdown on organisational side. An enterprise Embarking on FDI may hold shares abroad in:

- Independent economic operators (legal entities) as
  - Subsidiary companies with more than 50% of investor's share in equity capital,
  - Associate companies with up to 50% (but more than 10%) of investor's share in equity capital,
- Operators who formally belong to the investor (i.e. without legal personality) as
  - **Branches:** Units authorised to conduct the same activities as the parent company,
  - **Representations:** Unit whose responsibilities are limited to representation, promotion, marketing and trade activities performed for the parent company.

Sometimes FDI may be a simple and straightforward structure but it may also be a maze of very complex relationships. In accordance with international standards, statistics on outgoing and incoming direct investment should cover all enterprises owned directly and indirectly, with and without legal person that meet certain criteria (i.e. all dependent and related companies, as well as their affiliates). Full scope of direct investment relations allows to use the so called „*Fully Consolidated System*" (FCS) recommended by international organisations (e.g. OECD, IMF, and UNCTAD). This subject has been extensively discussed in literature (OECD 2005, IMF BOPCOM-04/32). Examples of its practical applications are presented in Fig. 1.

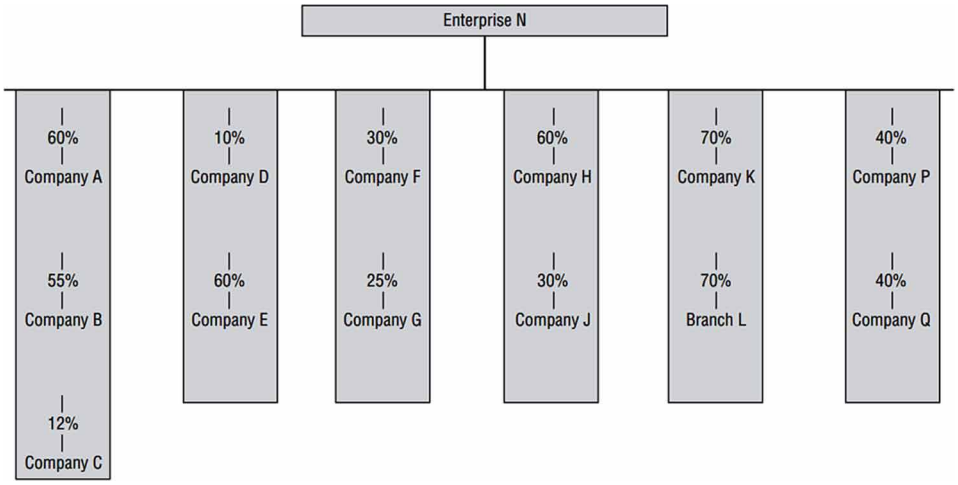
According to the FCS the example presented in Figure 1 could be analysed as follows (OECD 2005, pp. 51-52):

- Company A is a subsidiary of N. Company B is a subsidiary of A and thus a subsidiary of N even though only 33% of B is indirectly attributable to N.
- Company C is an associate of B and, through the chain of subsidiaries A and B, of N as well, even though only 4%of C is indirectly attributable to N.
- Company D is an associate of N, Company E is a subsidiary of D and thus an associate of N even though only 6% of E is indirectly attributable to N.
- Company F is an associate of N and G is an associate of F, but G is not an associate of N.
- Company H is a subsidiary of N and Company J is an associate of H and thus an associate of N.
- Company K is a subsidiary of N and L is a branch of K and thus of N.
- Company P is an associate of N and Q is an associate of P, but Q is not an associate of N.



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*Figure 1. Application of the Fully Consolidated System*
*OECD 2005, p. 52.*




The above analysis shows that FCS-based FDI statistics would cover enterprises A, B, C, D, E, F, H, J, K, L and P but would exclude G and Q. The method is neither easy for researchers (Gregorová 2005) nor is it free of disadvantages (IMF 2004), however, it is often recommended in practice to identify an indirectly owned direct investment relationship. As an alternative, the "*US Method*" (USM) could be used. The USM excludes (the FCS may include) foreign enterprises in which the direct investor has less than a 10% equity interest but it includes (and the FCS excludes) associates of associates in which the direct investor has 10% or more equity interest. In the example in Figure 1 the USM would exclude companies C and E but include Q.

In this context, the problem of overlapping investment is also very important. If that is enough to have more than 10% of equity capital of an affiliate to establish a FDI relationship, therefore one FDI venture can become a FDI of several direct investors. Thus, firstly we may not unambiguously identify investor's home country, which prevents precise analyses that would consider geographical distribution of FDI (directions of capital flows, motives and effects of investments undertaken by investors from one country in another, etc.); and, secondly, at international scale we will have statistical inconsistencies. Investors declare their affiliated entities while statistics in the host country will show only one entity with the involvement of foreign capital.

The above described problems are largely true of transition economies (including the Central and Eastern Europe countries) although most direct investors from these countries are at first stages of active internationalisation and they develop little extensive structures where capital relations are easily detectable. However, these countries also host MNE-dependent entities with complex capital structures, which (as residents) make further direct investment (chain ones). Thus, they directly impact the scale and structure of OFDI. Moreover, corporations originating from emerging economies are becoming increasingly stronger.



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## THEORETICAL APPROACH VS. FDI REALITY

Relocation of economic activities (i.e. FDI) is economically justified as the market experiences numerous distortions, such as (Witkowska 1996, p. 37): market imbalances, distortions generated by government and international institutions, imperfect market structure and market inefficiencies that perpetuate differences in availability (and prices) of production factors at international level. That is why rationally operating enterprises decide to engage in foreign direct investment in order to discount potential benefits of having a network of enterprises or affiliates in various market and business environments and to optimise the performance. Improved efficiency, the fundamental goal of foreign investment, may be achieved, inter alia, by reducing the costs of manufacturing and distribution, expansion of the scope of operation (increased sales), risk reduction through geographic and sectoral diversification of activities. Literature identifies two main types of foreign direct investment, depending on global strategy of a given enterprise:

- Vertical investment,
- Horizontal investment.

They have been distinguished based on empirical observations and theoretical studies. The starting point comes from theories of multinational enterprise and foreign direct investment[2] initially based on neoclassical assumptions and then on the assumptions of new trade theory[3]. Unfortunately, despite extensive theoretical writings on potential consequences of specific types of investment, we have no indications as to how allocate investments to specific types. Ability to precisely examine vertical and horizontal FDI relations could importantly help to identify relationships between FDI and trade, crucial for wider studies of economic growth. It is even more important because vertical and horizontal investments produce different effects not only in host countries but also in home economies. Vertical investment generates international trade flows between the parent company (or at least related companies) and a foreign entity. Under favourable circumstances, it may not just prevent the reduction of capacity output and employment in the home country (caused by capital exports) but stimulate increased production of goods that are further used as components in the production of a foreign affiliate. Similar scenario may develop when an investor establishes a representative office abroad to assist export.

Totally new effects can be produced by horizontal investment intended to substitute export. The situation is much less favourable for investor's economy as it limits production in the home country and may reduce employment and income. M&A in new sectors of economy undertaken to diversify risk have relatively the least impact upon the home economy. Such foreign investments can be treated as lost investment opportunities at home.

Obviously, it should be stressed that the problem consists not only in developing appropriate measures to identify production relations between an investor and a foreign entity (where the scale of vertical trade relations between the parent company and related companies within capital group can be used as an approximant) but also in the difficulty to identify dominant nature of a concrete investment. In practice, extensive production structures of MNEs unable simple classification of performed on operations they actually pursue.

Investments made by investment funds pose another interpretation problem in particular in the context of FDI analysis as a type of international production pattern. These funds often acquire enterprises operating at international level and as such they count as FDI flows. However, their motives and, first of all,



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investment directions go beyond FDI concepts that can be found in literature. Their actions more often coincide with conclusions of portfolio investment theory. Similar things can be said about big financial holdings – their investments, although often classified as FDI (since they exceed the 10% threshold), result from macroeconomic mechanisms of the financial market rather than from production location abroad.

A relatively new phenomenon in MNEs growth is the expansion of organisational structure with geographically dispersed special purpose entities. Usually they are established to optimise financial effect of assets management (e.g. when a given economy offers favourable tax arrangements connected with a particular business profile), tax optimisation or, e.g., seeking financial resources in international markets (e.g. stock issued in international stock exchanges). Such operations are especially easy within integration groupings where there are no legal limitations in establishing a new entity abroad or where difficulties are reduced to minimum. At theoretical level, such operations can be attributed to "efficiency seeking" motivation, however, they are hard to explain with international production concepts or models of stage or network internationalisation.

Deepened analyses of investment operations are seriously impeded by chain investment made by MNEs' affiliates, which are formally residents of a given economy. Their investment operations result from decisions, resources and competitive advantages of the corporation, not just the affiliate based in a given economy, which can be analysed in the light of internationalisation of enterprises. Yet, these operations hinder the life of researchers who explore investment operations of companies from transition economies. Their investments are often much bigger and more "advanced" than it would be expected from economic development of the home economy. Thus, by trying to anchor the analysis in macroeconomic FDI concepts (models of Ozawa, Investment Development Path by J.H. Dunning or even R. Vernon's international product life cycle) we may draw erroneous conclusions as to the general level (stage) of economic development and advantages of an economy.

## METHODOLOGICAL PROBLEMS OF OFDI STUDIES IN POLAND

Despite increasing interest in Poland's OFDI, access to complete and reliable statistical data about companies engaged in internationalisation is very limited. Analysis of the methodology used to collect and process published data calls for a cautious assessment of reality. It is not possible to directly compare data in available statistical sources.

Data on foreign direct investments undertaken by Polish enterprises under the Polish reporting system come, in principle, from two sources: the National Bank of Poland (NBP) and the Central Statistical Office of Poland (GUS). General comparison of the data provided by the two is presented in Table 2. All international sources, such as Eurostat, IMF, UNCTAD, OECD use data supplied by the Polish reporting system, i.e., effectively by NBP and GUS.

NBP data – due to the specificity of how data are collected from the balance of payments statistics – give information about the values of all financial flows (i.e. initial equity investment, intra-group loans, reinvested profits and other income of direct investors) broken down by geographic regions, industries and sectors. Moreover, they provide both stock values and yearly flows. Nevertheless, we should be careful when combining these values as the sum of flows in subsequent years does not add up to the overall stock value. It connects, inter alia, with the present market evaluation of assets held by Polish investors and the changing exchange rate.



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The second source of information, not necessarily about FDI but about investors with holdings in foreign entities, is periodical publications of the Central Statistical Office of Poland. These data are collected and made available since 2009. They come from annual statements of economic operators that must be submitted by all operators active in Poland. This method of data collection helps to analyse the effects of foreign subsidiaries' operations (employment, revenue from sales, foreign trade, including trade with related operators within capital group). However, they do not provide any information about the value of investments (neither about the initial investment nor later capital flows between the parent company and its related entities). We also need to bear in mind that GUS is not able to require statistical data from companies who do not comply with the reporting requirement and it cannot verify the accuracy of provided data. As a result, it has got data concerning companies that voluntarily provided them. Hence, data published in individual years and reports differ and generally may somehow be underestimated. That is due to the unwillingness of economic operators, in particular small ones (to whom the need to fill in long questionnaires means a considerable time burden) to provide data.

Another serious inconsistency in NBP and GUS data, which makes direct comparison of the two sources impossible results from the scope of entities obliged to submit statements. The NBP data include all operators within the national economy while the GUS area of competence excludes the financial sector. Therefore, in order to realise the scale of Poland's OFDI one should rather use NBP data. Figure 2 presents cumulated value of Poland's OFDI. It can be clearly seen that significant intensification of international involvement of enterprises took place after 2004. In the record-breaking 2012 cumulated investment amounted to ca. 12% GDP.

*Table 2. Comparison of the scope of statistical data on OFDI: GUS and NBP*

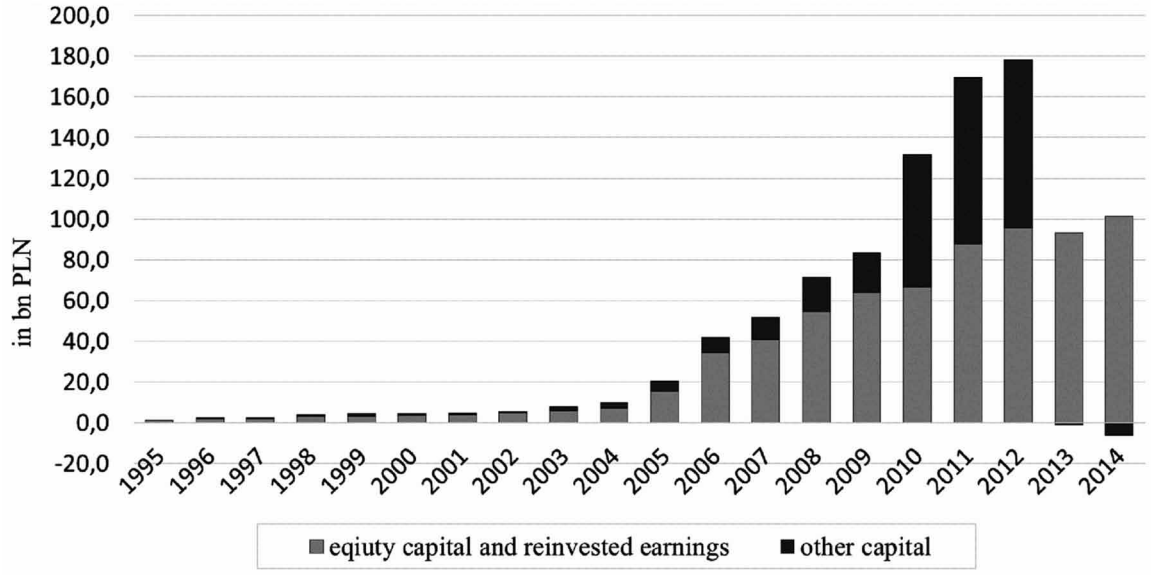
| Measure | | GUS | NBP |
|---|---|---|---|
| Value of OFDI (Position) | Of which:<br>• Equity capital investment<br>• Reinvested earnings<br>• Other capital (intracompany loans) | - | + |
| OFDI yearly outflows | | - | + |
| Data in PLN | | + | + |
| Data in other currencies (USD, EUR) | | - | + |
| No. of investing entities | | + | - |
| No. of foreign affiliates | | + | - |
| Investment directions (countries) | | +<br>(by no. of foreign entities in a given economy) | +<br>(by amount of capital invested in a given economy) |
| Type of investment (no. of greenfield investments) | | - | - |
| Investor's share % in equity of a foreign affiliate (without branches and representation offices) | | + | - |
| Revenue in foreign affiliates (including revenue from exports) | | + | - |
| Income from foreign affiliates | | - | + |
| Vertical links with the parent company (trade) | | + | - |
| In-kind outlays on fixed assets in foreign affiliates | | + | - |

Authors' own compilation.



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*Figure 2. Poland's OFDI according to NBP (in bln PLN)*
*Authors' own compilation based on NBP data.*




Still, closer analysis of Poland's OFDI shows the need of sceptical/cautious assessment of these significant values. Firstly, subsidiaries and associates of multinational enterprises located in Poland also enjoy resident status in Polish economy. Thus, their investments, which are in fact chain investments, are reflected in NBP and GUS statistics as Poland's OFDI. It may slightly complicate the examination of regulations governing Polish foreign direct investments since not all of these investments result from the competitive merits of affiliates operating in Poland but from ownership advantages and the strategy of the corporation. Hence, they may be independent of the economic development and current economic performance of the country. Unfortunately, neither NBP nor GUS give information about the direct scale of engagement of Polish affiliates of multinational corporations in FDI.

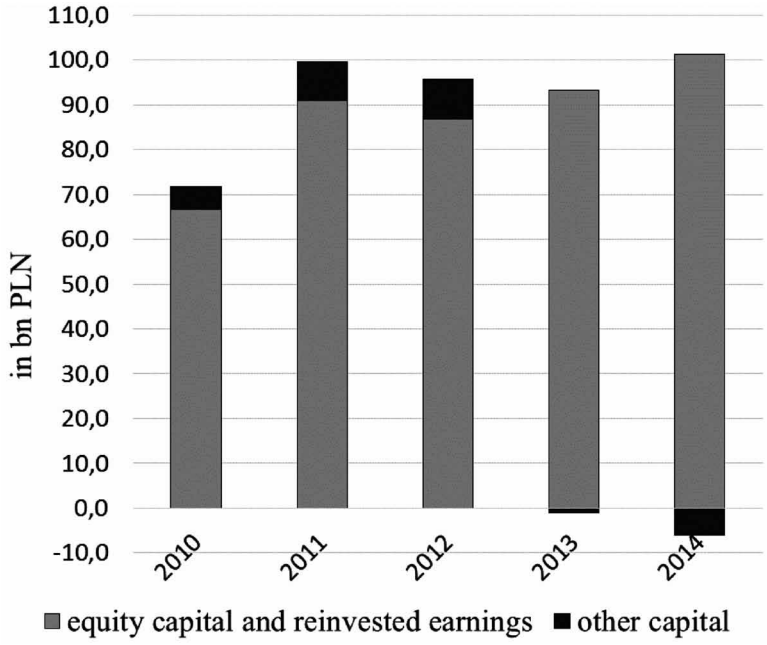
Secondly, a large part of OFDI represents „other capital", meaning intra-corporate loans. Studies demonstrate that to a large extent the loans were granted by affiliates of multinational enterprises to parent companies based in Western Europe. In the times of crisis Polish subsidies were the source of capital to the "Western economy".

More attention should be paid to methodological problem with the continuity of data (in data for the years 2010-2012). In 2010 the approach to "other capital" changed and started to include not only net loans granted directly to parent companies but all other forms of support made available to related entities within capital group, i.e. also those where non-resident was a dominant entity. This change produced significant increase in "other capital". Three years later this interpretation was given up and loan-based relationships with non-resident as a dominant party and entities operating within a capital group were transferred to IFDI account. Considerable drop in „other capital" may also be attributed to partial repayment of debt incurred earlier or to big liabilities of Polish companies vis-a-vis their „daughter" companies based abroad through which investors raise capital from bonds issued in the European market (NBP 2016). In connection with this change, NBP made available a new time series reviewed since 2010 in accordance with new guidelines – see Figure 3.



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*Figure 3. Reviewed Poland's OFDI according to NBP*
*Authors' own compilation based on NBP data.*




Summing up, while amounts in statistics are significant, most of them are dedicated to support exports, investment in financial sector or chain investment of multinational enterprises (including intra-corporate loans). Therefore, there are many OFDIs but in reality they do not stem from advantages referred to in theoretical FDI concepts.

Comparison of GUS and NBP data in sectoral (Table 3) and geographical (Table 4) breakdown provide interesting information about the structure of Poland's OFDI. Of course, different scopes of data are very important: GUS provides information about investors' economic activity while NBP gives the value of investment.

The comparison of sectoral OFDI structure applied by GUS and NBP reveals two principal issues. Half of Polish foreign investments are made by operators from the financial sector and thus are completely ignored by GUS. As it has been already mentioned, the mechanism of such investments is totally different than for investments of non-financial sector. Considering general development level of Polish economy and the structure of entities from the financial sector (largely based on foreign capital) one may assume that to a large extent these investments result from decisions of international financial operators (banks, capital or insurance funds). Hence, we should not attach to much importance to this component of Polish foreign investment in the context of macroeconomic assessment of Poland's development (e.g. to calculate NOI indicator in accordance with the concept of IDP J. H. Dunning).

By excluding investments of the financial sector from comparative analysis one should, in principle, bring sectoral investment structure (according to NBP) to the structure of investors and their foreign entities (according to GUS). Relative shares of investments of individual non-financial sectors according to NBP would then be twice as high as those presented in Table 2. Assuming, with some caution, that populations of entities based on which GUS and NBP organised their statistics are similar, one may try



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*Table 3. Sectoral structure of Poland's OFDI in 2014 according to GUS and NBP*

| | GUS | NBP |
|---|---|---|
| Total | 1645 Investors | 95 237.9 bn PLN |
| **Mining and extraction** | 0.7% | 5.1% |
| **Industrial manufacturing** | 35.1% | 14.1% |
| Manufacture of food products, beverage and tobacco products | 3.3% | 1.0% |
| Manufacture of coke and refined petroleum products | 1.8% | 2.9% |
| Manufacture of pharmaceuticals | 4.0% | 0.9% |
| Manufacture of metals and fabricated metal products | 7.5% | 2.4% |
| Manufacture of electric devices | 3.0% | - |
| Manufacture of cars, trailers and semi-trailers | 0.5% | 3.4% |
| **Manufacture and distribution of electricity, gas, steam and air** | 1.0% | -5.4% |
| **Construction** | 10.8% | -1.0% |
| **Wholesale and retail trade; repair of cars and motorcycles** | 20.7% | 6.5% |
| **Transport and warehousing** | 3.9% | 1.2% |
| **Information and communication** | 5.5% | -11.0% |
| Activities connected with production of films, video recording and TV shows, other entertainment activities | - | -4.8% |
| Telecommunications | - | -7.9% |
| **Finance and insurance** | 4.5% | 50.4% |
| Operations of financial holdings | - | 39.0% |
| **Services to real estate market** | 3.6% | 1.2% |
| **Professional, scientific and technical activities** | 8.1% | 14.4% |
| Head offices operations | - | 9.8% |
| Management consultancy | - | 4.2% |
| **Administration and support services** | 3.6% | 14.1% |

Authors' own compilation based on GUS and NBP data.

to identify how much capital-intensive are investments in individual sectors. For example, manufacturing companies account for 1/3rd of all investors from non-financial sector and they invested ca.30% of total Poland's non-financial OFDI. Entities from mining and extraction sector represented only 0.7% of all investor but value of their investment is almost 10% of all OFDI. That is indicative of high capital-intensity of their ventures. The same can be said about the section "Professional, scientific and technical activities". Operators in this section account for ca. 8% investors but their investments exceed 28% of all Polish non-financial investment. Of course, these conclusions are very general and carry high risk of error. Significant differences in the methodology of data collection do not allow formulating universal conclusions even if the structures are compared.

Analysis of investment directions according to standards applied by GUS and NBP also reveal serious differences. In this case, any comparison is even more difficult as we may not remove the financial sector from the analysis of NBP data because the NBP does not inform where these investments are



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*Table 4. Geographic structure of Poland's OFDI in 2014 according to NBP*

| | GUS (No. of Foreign Entities) | NBP (Invested Amount) |
|---|---|---|
| Total | 3,703 entities | 95 237.9 (in bn PLN) |
| **Europe** | **-** | **92.4%** |
| **European Union (27 countries)** | **-** | **71.4%** |
| **Euro zone (17 countries)** | **-** | **75.0%** |
| Cyprus | 4.8% | **31.7%** |
| Luxembourg | 1.8% | **26.9%** |
| Switzerland | 1.0% | **12.0%** |
| the Netherlands | 1.9% | **11.1%** |
| Czech Republic | **7.1%** | 6.4% |
| Slovakia | 3.8% | 1.0% |
| Germany | **13.4%** | 4.2% |
| Lithuania | 3.1% | 3.5% |
| Hungary | 3.3% | 1.5% |
| United Kingdom | 2.9% | 3.6% |
| France | 2.5% | -1.1% |
| Romania | 4.9% | 2.1% |
| Russian Federation | **7.3%** | 2.7% |
| Ukraine | **9.0%** | 0.2% |
| **USA** | **2.9%** | **2.3%** |
| **Asia** | **-** | **3.6%** |
| India | - | 1.0% |

Authors' own compilation based on GUS and NBP data.

directed. Based on general knowledge and external data we may expect that large portion of these flow to financial centres in Europe: Luxembourg, Switzerland, and United Kingdom (London). These locations dominate in NBP reports but they are not indicated in GUS statistics.

If we omit investments in countries perceived as financial centres or offering preferential financial terms (e.g., in taxation such as Cyprus), we can clearly see Polish investors' interest focusing mainly on neighbouring countries. They are interested in German, Czech, and Lithuanian markets. Many affiliates have been established also in Ukraine and Russia, however, the value of these investments is small.

To complete the picture, it should be mentioned two more issues that hinder studying investment-related activities of Polish investors based on data originating from GUS and NBP. The first is the problem with access to panel data. Confidentiality of statistical data introduced by virtue of binding legislation in Poland forbids publishing data when aggregated in a way that would enable the identification of data concerning a particular company. In practical terms, it means that the statistical office (GUS) may not make sectoral or sectional data available when there are fewer than 4 entities or when an operator's dominant position is strong enough to determine indicators for all of the group. NBP does not publish



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any data disaggregated to the level of groups of enterprises. It seriously impedes studying FDI in Poland using econometric methods since to do that, in most cases, we need panel data, and in Poland building such a time series is impossible.

The second problem consists in the absence of possibilities to trace investors' activities in foreign entities. Generally available GUS statistics organise company-related data by investor or foreign entity's PKD (Polish classification of economic activities), however, it is not possible to directly trace whether an investor in his foreign affiliate replicates his principal activities or whether he focuses on other business activities (industries). Thus, one does not know if, e.g., manufacturing companies manufacture the same products in their dependent entities or if they deal with manufacturing at all (or perhaps just trade or act as special purpose vehicles established to acquire additional funds or for tax optimisation purposes).

## SOLUTIONS AND RECOMMENDATIONS

Identified inconsistencies and gaps in available statistical data make us approach all results of studies with caution and require good knowledge about the basis on which conclusions have been drawn. The scope of data and potential exclusions may considerably impact the picture. Hence, the attention is to be paid to the methodology of data collecting used in particular studies and avoid direct comparisons.

Dynamically changing international business relations, expanded activities of international corporations, and globalisation favour new organisational and financial solutions between economic operators. Many of them are close to internationalisation, which forces out changes in the approach to definition and classification of FDI, as well as notions used to describe firms involved in direct investment. Theoretical achievements connected with the analysis of the phenomenon should be the closest possible to what actually happens in economy.

Besides, it seems justified to collect data for the same time, i.e. data on business activities in different countries should reflect the situation as at the end of calendar year. Data collected either for the beginning or for the end of fiscal year (which may be different for each country) may impact their comparability at international level. Besides, for many enterprises, information on reinvested earnings is available only after a very long delay and thus early estimates are subject to considerable change when more complete data become available. Uniform time, for which data are collected facilitates comparisons not only at international but also at national level.

It is also important to collect data for the same degree of consolidation of accounts in multinational enterprises (e.g., if in a given country data on the number of dependent entities are collected based on consolidated accounts while other data are taken from non-consolidated accounts we are not able to compare the variable which is subject to analysis) and to distinguish between direct and indirect control. Some countries do not treat all investments on an equal footing that is why we need to harmonise the rules.

It is also worth mentioning that statistical data must be allocated to places where investor's business actually takes place, not to his headquarters (Domański 2002) – but this postulate seems the most difficult to comply with. In most cases it is impossible to unequivocally identify the location where business takes place, especially when we deal with investment in the financial sector.



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## FUTURE RESEARCH DIRECTIONS

Insufficiencies with respect to the scale and structure of published data on foreign investors' activities seriously hinder (or even prevent) any reliable assessment of investors, as well as the impact of OFDI on both home and host economy. OFDI is important enough for the economy to justify its in-depth studies aimed at developing the best rules of FDI policy. All parties are interested in achieving maximum benefits.

Two main directions of action can be suggested: firstly, we should try to conduct as much research as possible based on available data and try to work out new indicators that would help learn more about the specificity of Poland's OFDI. On top of that, studies could be supported with other research methods, e.g., questionnaire-based studies in enterprises or, to a certain extent only, econometric analysis. (Świerkocki et al. 2015; Kłysik-Uryszek, Kuna- Marszałek 2015, 2016). On the other hand, we should identify gaps in available data to mobilise reporting organisations (GUS and NBP) to go more in-depth in their OFDI related research and to provide increasingly more detailed data. It seems necessary to improve interpretation and classification of terms and to unify the collection and presentation of statistical data by different institutions.

Since most issues discussed in this chapter are universal, it would be advisable to reporting institutions from other countries to expand their statistics to achieve the most complete and coherent internationally available data (from international institutions) and to enable the widest possible international comparative studies.

## CONCLUSION

Over twenty five years of economic transformation in Poland, including radical stabilisation, liberalisation and institutional reconstruction, have widened the scope of economic freedom, promulgated private ownership and rationalised economic operations. Foreign direct investments, both IFDI (Kłysik-Uryszek 2010; Świerkocki ed. 2011; Michałek, Brzozowski, Cieślik 2012; Wydmus, Bombińska, Pera 2012), as well as OFDI, especially after EU accession, (Karaszewski ed. 2013, Gorynia, Nowak, Wolniak 2010, Kłysik-Uryszek 2013a, 2013b; Gorynia et al. 2014; Buczkowski et al. 2015) played fundamental role in the process.

However, despite many discussions, interest of international organisations and broad literature concerning FDI, the data provided by official statistics are still insufficient and incoherent. Two sources of data about Poland's OFDI – GUS and NBP provide divergent data about investments and, unfortunately, cannot be freely combined or used in joint studies. Analyses conducted based on NBP data show the value and scale of investments, sectors from which capital has been exported and countries, to which it has flown. GUS, in turn, provides data on investors' activities rather than on the value of investment. However, it should be stressed that GUS data come from statements submitted by companies and data included in them are not verified. Moreover, not all enterprises comply with the reporting requirement thus we may expect that statistics published by GUS are largely underestimated. Analysis of the scale of OFDI engagement of Polish enterprises carries some risk and its results should be approached with caution. On top of that, many aspects relevant from the viewpoint of the specificity of Poland's OFDI are missing from these reports. We mean here types and forms of foreign investments and their importance to parent companies, as well as the scope of ties between investors and MNEs, which may impact the scale of chain investments.



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## KEY TERMS AND DEFINITIONS

**Balance of Payments (BoP):** A statement that summarizes all economic transactions between the residents of the country and the rest of the world in a particular period (over a quarter of a year or more commonly over a year). It encompasses all transactions involving: goods, services and income; financial claims on and liabilities to the rest of the world; and transfers such as gifts.

**Economic Transformation:** Change of an economic system, in particular shifting from a centrally-planned to a market economy, based on a functioning free market, competition, and private business.

**FDI:** Foreign direct investment (outward – OFDI; inward – IFDI), the most advanced form of internationalisation of companies; FDI are undertaken to exercise a long-term capital supervision over an entity located abroad (branches or subsidiaries). Investors may create independent economic enterprises from scratch (*greenfield* investments) or take control over an already existing company (acquisitions and mergers).

**Foreign Entity:** An entity (affiliate company or a branch/representation) located in host economy in which a foreign investor has a long term capital supervision.

**Foreign Investor:** An enterprise (legal person) located in home economy that sets up an OFDI abroad in the form of independent entity, i.e. affiliate company (subsidiary or associate company) or branch/representation.

**GUS:** Main Statistic Office in Poland.

**Internationalisation of a Company:** Process, through which a firm moves from operating in a domestic marketplace to international markets.

**NBP:** National Bank of Poland.

## ENDNOTES

1. It is not the only division present in literature. An extensive discussion of other classifications of FDI is included in: *Strategie firm polskich wobec ekspansji inwestorów zagranicznych*, Gorynia (2005).
2. Overview of studies on the subject can be found in: Cieślik (2005).
3. The theory includes elements of market organisation, imperfect competition, product diversification and increasing revenues from scale. For new trade theory see: Cieślik (2000).

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# Chapter 58
# Facilitating Hospitality and Tourism Management in Global Business

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## ABSTRACT

*This chapter explains the overview of hospitality management; the overview of tourism management; product quality, service quality, price, customer satisfaction, and consumer trust in hospitality and tourism management; the significance of hospitality management in global business; the significance of tourism management in global business; and the managerial implications of hospitality and tourism management. Tourism and hospitality industry is one of the most important industries in the modern business world. It is essential to acquire a driving enthusiasm for customer service and a strong sense of professionalism to develop and maintain customer satisfaction in the hospitality and tourism industry. Effective hospitality and tourism management positively affects customer satisfaction, firm growth, and productivity in global business. The chapter argues that facilitating hospitality and tourism management in global business has the potential to enhance organizational performance and reach strategic goals in the digital age.*

## INTRODUCTION

From a practical business perspective, hospitality and tourism management sector is one of the most important sectors in the global economy (Israeli, 2014). From an academic perspective, the perspectives of hospitality and tourism management are the interdisciplinary fields that focus on many areas, such as management, strategic management, human behavior, organizational behavior, finance, yield management, planning, and marketing (Israeli, 2014). Tourism contributes to the growth of regional economies, thus providing a source of income for both resident households and local firms (Incera &

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Fernandez, 2015). Tourism is related to globalization and modernity (Wang, Niu, Lu, & Qian, 2015). Tourism is viewed as the development priority concerning government and international organizations (Tolkach & King, 2015).

Tourism has become one of the most growing service sectors in global business (Tang & Tan, 2015). Modeling tourism demand is important in countries where the income from tourism constitutes a considerable percentage of their gross domestic product (Akın, 2015). Tourism marketing can help facilitate the dynamic evolutions and the demands of tourism industry concerning the diversity of tourism marketing topics (Kasemsap, 2015a). The hospitality industry in many parts of the world is expected to realize the significant rates of growth in the next few years (Pirani & Arafat, 2014). Recognizing the importance of product and service quality, satisfaction, and trust every firm in the hospitality and tourism industry is becoming more concerned about managing and improving quality, satisfaction, and trust (Han & Hyun, 2015).

This chapter aims to bridge the gap in the literature on the thorough literature consolidation of hospitality and tourism management. The extensive literature of hospitality and tourism management provides a contribution to practitioners and researchers by describing the theory and applications of hospitality and tourism management in order to maximize the business impact of hospitality and tourism management in global business.

## BACKGROUND

Research with the tourism and hospitality management realms has reached a certain degree of maturity, demonstrated by researchers via both qualitative and quantitative methods (Köseoglu, Sehitoglu, & Craft, 2015). An emergent contemporary hospitality literature is dedicated to the methodological appraisal and development (Robinson, Solnet, & Breakey, 2014). There are a number of scholarly works published by researchers that investigate the domains of tourism and hospitality management (Tsang & Hsu, 2011).

Many studies map the intellectual structure of tourism and hospitality management-related disciplines, such as organization studies (Ferreira, Pinto, & Serra, 2014), general management (Tahai & Meyer, 1999), strategic management (Nerur, Rasheed, & Natarajan, 2008), international management (Acedo & Casillas, 2005), knowledge management (Ponzi, 2002), human resource management (Fernandez-Alles & Ramos-Rodríguez, 2009), business ethics (Tseng, Duan, Tung, & Kung, 2010), information systems management (Culnan, 1987), and operations management (Pilkington & Liston-Heyes, 1999).

Contributions of economics to hospitality literature are largely empirical and microeconomics-related (Mohammed, Guillet, & Law, 2015). Many researchers recognize hospitality management as a field of study with a mission of preparing students for successful careers in this industry and helping the industry solve its problems (Lugosi, Lynch, & Morrison, 2009). The focus of hospitality management research should be on instrumental research that addresses the main challenges of hospitality industry, rather than topics that have little practical implications (Pizam, 2003). Tourism affects economic growth (Jalil, Mahmood, & Idrees, 2013). The tourism sector has become the main source of income for many countries contributing to their economies, generating markets for a wide variety of goods and services both directly and indirectly related to tourism (Eugenio-Martin & Campos-Soria, 2011).



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## PERSPECTIVES OF HOSPITALITY AND TOURISM MANAGEMENT

This section emphasizes the overview of hospitality management; the overview of tourism management; product quality, service quality, price, customer satisfaction, and consumer trust in hospitality and tourism management; the significance of hospitality management in global business; the significance of tourism management in global business; and the managerial implications of hospitality and tourism management.

### Overview of Hospitality Management

The hospitality industry is a major industry that combines the components of product and service (Israeli, 2014). Given that performance in the hospitality sector is a multi-dimensional construct, there are various recognized measure approaches (e.g., the balanced scorecard) that combine quantitative and qualitative performance measures (Kaplan & Norton, 1996). However, hospitality leaders often adhere to one paradigm (e.g., production or service) which title their management and decision-making style as production-oriented or service-oriented perspective (Harris, 1999). Israeli et al. (2006) stated that hotel managers may lack a clear vision about managing hospitality performance under production and service paradigms.

Competency models have become a meaningful method for determining requisite skills in both hospitality and tourism education (Chung-Herrera, Enz, & Lankau, 2003) and operations (Tas, 1988). Competency models can serve a wide variety of organizational functions and can help develop managerial skills (Testa & Sipe, 2012). Many studies have described significant competencies in the hospitality field (Johanson, Ghiselli, Shea, & Roberts, 2011). Hospitality researchers have continued to indicate the fundamental competencies and curricular needs perceived to be important by practitioners in the hospitality areas (Fjelstul, 2007). Researchers have compared how students, educators, and practitioners effectively perceive such competencies in order to determine whether there is the broad stakeholder agreement on the skills needed for various roles in the hospitality industry (Raybould & Wilkins, 2005).

Managers should learn through work activities (Marsick, 2003). Pre-designed educational programs and training courses limit learning that reflects constantly changing work practices. In the hospitality industry, the pre-planned approach utilizing information and communication technology (ICT) (e.g., learning management system) drives management development provision (Li, Buhalis, Lockwood, & Benzine, 2007). Hospitality leaders should utilize the learning management system and ICT applications in their daily practices toward gaining potential to facilitate their learning in the hospitality industry (Li, Lee, & Law, 2012). Modern organizations that emphasize employees' learning requirements can achieve business objectives through building knowledge, transferring knowledge, and applying knowledge in the learning organizations (Kasemsap, 2016a).

Service quality and customer satisfaction is the fundamental goal of tourism organizations that takes a strategic approach (McCole, 2004). Customer value is positively correlated with customer satisfaction (Kasemsap, 2014a). The balance of business and people-related competencies is required for effective service leadership (Sandwith, 1993). The managerial success is related to the constant development in the hospitality industry (Testa & Sipe, 2012). Self-development is the most influential issue for the hospitality leaders (Kay & Russette, 2000). Hospitality leaders should professionally act, effectively organize the service standard, and provide organizational value (Yoon, Beatty, & Suh, 2001).



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## Overview of Tourism Management

Tourism is one of the most significant service industries in global business (Pérez & del Bosque, 2014). Tourism can be an impetus for the positive growth and economic success (Dodds & Kuehnel, 2010). However, if irresponsibly utilized, tourism can be a source for leakage, low fares and seasonal employment, instability and low job status, environmental degradation, displacement of local people, inflation, and the dilution of culture (Agarwal, 2002).

Sustainability has gained momentum in the tourism industry, where tourism organizations must play a role in the exercise of good governance practices (Martínez, Pérez, & del Bosque, 2013). Sustainability is considered as a multi-dimensional construct that equally emphasizes the economic, social, and environmental duties of companies (Panwar, Rinne, Hansen, & Juslin, 2006). Regarding sustainability, triple bottom line (TBL) include three dimensions (i.e., economic, social, and environmental perspectives) (Pérez & del Bosque, 2014).

The economic dimension is based on ensuring the feasible economic activities so that all stakeholders suitably receive the distributed socioeconomic benefits (Dyllick & Hockerts, 2002). The social dimension refers to the consideration for the cultural authenticity of host communities, the preservation of their architectural and living cultural assets and traditional values, and a contribution to intercultural understanding and tolerance (Dyllick & Hockerts, 2002). The environmental dimension refers to the optimal utilization of environmental resources, which is a crucial component of tourism development, protecting ecological processes, and conserving natural resources (Dyllick & Hockerts, 2002).

The academic literature contains the investigation of case studies of countries and tourist destinations that have sought to rebrand themselves by promoting cultural events, exhibitions, sports competitions and tourism (Lahav, Mansfeld, & Avraham, 2013). Kulendran and Dwyer (2009) indicated that investment in destination promotion and marketing has a positive effect on inbound tourism. The adoption of various public diplomacy means has limited effect when a destination is associated with risk due to war, violence, and instability (Taylor, 2006). The negative characteristics dominate the perception of the destination and harm its attempts to attract tourists (Avraham, 2015).

Tourism firms are required to adapt their strategies to fit the rapidly changing environment (Pechlaner & Sauerwein, 2002). A great deal of innovation is vital for tourism firms to increase their competitiveness through the establishment of new products, such as customization and ICT interaction (Sundbo, Orfila-Sintes, & Sorensen, 2007). Executive's human capital and social capital are important to provide a better quality of supervision of the strategic position of tourism firms to ensure that the firms are able to adapt to the changing environment (Ooi, Hooy, & Som, 2015). Regarding the increasing advances in technology, information technology (IT) and knowledge management applications effectively improve the strategic tools for providing the direct link between customers and tourism organizations, thus encouraging the communication channels in global tourism (Kasemsap, 2016b).

Although tourism development brings about a great deal of positive benefits, the residents of host communities can experience the negative socio-cultural changes in their daily lives (Jordan, Vogt, & DeShon, 2015). Theoretical frameworks (e.g., social exchange theory, power theory, and identity theory) are utilized to investigate the resident perceptions of, support for, and responses to tourism development (Nunkoo & Ramkissoon, 2012). Emotional and psychological well-being is an influential part of individuals' overall quality of life (Schalock, 1997). There is an increasing body of literature toward understanding how individuals' lives are affected beyond attitudes for tourism development (Kim, Uysal, & Sirgy, 2013).



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Corporate social responsibility (CSR) is an innovative way to create value for society and tourism organizations (Starr, 2013). The aims of CSR in tourism management are to reinforce ties with community (Kasim, 2006), to engage with the social and environmental issues (Henderson, 2007), and to sustainably utilize tourism resources (Chhabra, 2009). Environmental protection and well-structured CSR strategies are the foundation of the environmental and socially responsible cultural tourism (Black, 2012), can help target the financial pressures experienced by heritage attractions which is expected to become more challenging (Garrod & Fyall, 2000).

Rural tourism, also called ecotourism, has been adopted by many countries in the world as one of the major rural policies to generate the rural vitality (Brandth & Haugen, 2011). Although there exists a fundamental debate about the driving agency of rural tourism, common understandings are converging to emphasize the importance of the public sector (Logar, 2010). Rural tourism is one of the major components representing the transition from an economy of production to an economy based on consumption in rural area (Woods, 2005).

Rural tourism is a composite of agricultural products, eco-products, cultural resources, and spatial amenities, involving diverse functions (e.g., economic, social, educational, environmental, recreational, and therapeutic activities) (Lee & Kim, 2010). Bel et al. (2015) stated that tourism has the potential to make a major contribution to the development of rural areas. Rural tourism facilitates rediscovering the values of rural resources that have been neglected in the modernization process of the world economy (Hwang & Lee, 2015). Rural tourism offers diverse implications for farm-based rural businesses and sustainable rural development plans (Lane, 1994).

## Product Quality, Service Quality, Price, Customer Satisfaction, and Consumer Trust in Hospitality and Tourism Management

Product quality, service quality, satisfaction, and trust are recognized as the important concepts in explaining customer post-purchase behavior (Han & Hyun, 2015). Researchers explain that these variables contribute to creating positive intentions toward affecting customer retention and loyalty (Han, 2013). Conceptualizations of the perceived quality of products and services differ little in the extensive literature, but an essential aspect of this concept is the process of evaluating the products and services offered by a specific company for excellence against alternatives provided by competitors (Han & Ryu, 2006).

Product quality and service quality involve the two major facets (i.e., core-product and service-product performances) (Bitner, Booms, & Tetreault, 1990). Quality of core product indicates the performance of the basic product relative to its value (Clemmer, 1990) while service-product quality suggests the performances derived from interactions with service personnel (Price, Arnould, & Deibler, 1995). Product quality and service quality contribute to building customers' behavioral intentions (Cronin & Taylor, 1992). Keeping existing customers is about five times more profitable than attracting new customers (Chiu, Hsu, Lai, & Chang, 2012) as the increased customer retention is likely to improve business's profitability (Jiang & Rosenbloom, 2005).

Price is an increasingly vital topic in the hospitality and tourism industry (Han & Hyun, 2015). Customers tend to utilize price reasonableness when evaluating their experiences with a product and service (Ryu & Han, 2010). Customers utilize the reasonableness of price as a cue when estimating their product and service experiences and organizing their attitudes toward the provider (Varki & Colgate, 2001). Individuals' judgments about whether a firm's price is reasonable or unreasonable result in negative decisions concerning the firm (e.g., deciding to spread the negative word-of-mouth) and



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increase price sensitivity (Oliver & Swan, 1989). Customers tend to remember the perceived price rather than the actual price after evaluating price reasonableness compared to the reference prices offered by competitors (Oh, 2000).

A considerable body of literature has indicated the significance of price reasonableness in explaining consumer behavior (Crozier & Baylis, 2010). In a hospitality context, Han and Kim (2009) stated that reasonableness of price importantly affects individuals' intention formation. Price perception (e.g., expensive or cheap and reasonable or unreasonable perspectives) plays an important role in customers' decision-making processes (Ryu & Han, 2010). Customers' perceptions of a firm's price reasonableness in comparison to its competitors' prices is central in building the enthusiastic intentions and loyalty toward a firm (Han & Kim, 2009). Price reasonableness is a critical product and service cue affecting consumer decision making (Watchravesringkan, Yan, & Yurchisin, 2008).

While various conceptualizations of customer satisfaction have evolved over the past few decades, the general agreement among practitioners and researchers is that individual satisfaction is an evaluation of the overall experience of consumption (Oliver, 1997). If customers positively evaluate their overall consumption experiences, their satisfaction levels and readiness to repurchase will increase (Jani & Han, 2013). Many studies have offered the support for the essential role of quality and satisfaction in the intention formation (Lee, Lee, & Yoo, 2000; Ting, 2004). While the complicated character of the relationship between quality and customer satisfaction exists, quality acts as a significant predictor of customer satisfaction toward generating behavioral intentions (Han & Ryu, 2006). Quality is an important origin of customer satisfaction (Han & Ryu, 2006). The quality-satisfaction relationship is vital in establishing individual's intention (Ting, 2004).

Wang et al. (2014) indicated that consumer trust has attracted the increasing attentions from hospitality and tourism researchers since the 1990s. Consumer trust is largely investigated in hospitality sectors, especially in hotels (Lovell, 2009) and restaurants (Oh, 2002). Consumer trust is studied in the hospitality settings, such as tourism suppliers and travel (Macintosh, 2002), nature-based tourism provider (Zillifro & Morais, 2004), conference (Lee & Back, 2008), and airlines (Forgas, Moliner, Sánchez, & Palau, 2010).

For service businesses (e.g., tourism and hospitality industry), the unique natures (e.g., intangibility and inseparability of production and consumption) emphasize the consequential roles played by building and maintaining strong relationships with customers (McCole, 2002). Zillifro and Morais (2004) indicated that the inherent natures of tourism services (e.g., intangibility of service performance and lack of services transparency) lead to information asymmetry and opportunistic behavior. The existence of intense competition in the marketplace on the supply side makes business operations more challenging as switching costs for consumers are greatly lowered (Álvarez, Casielles, & Martín, 2009).

Consumer trust is viewed as a crucial aspect to sustain continuity in the consumer-provider relationship (Han & Hyun, 2013). Sirdeshmukh et al. (2002) defined consumer trust as the expectations held by the consumer that the service provider is reliable. Consumer trust serves as a powerful method for minimizing uncertainty and diminishing the sources of uncertainty (Pavlou, Liang, & Xue, 2007). Trust in a firm's practices refers to the organizational performance, policies, and practices (Santos & Basso, 2012). Consumer trust leads to the loyalty, irrespective of the magnitude of the level of the relationship between the company and its customers (Agustin & Singh, 2005). Consumer trust based on such satisfactory experiences acts as an influential determinant of the repeat purchase intention (Lankton, Wilson, & Mao, 2010).



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## Significance of Hospitality Management in Global Business

Ruetzler et al. (2014) stated that in hospitality management, strategic planning is critical in a competitive environment. Christou (2002) determined that managing guest problems and maintaining positive customer relations are the crucial skills indicated by hotel managers. Other dimensions of strategic planning include quality management, systems design, process improvement, teamwork, business policy, strategy analysis, and sustainability (Okumus, Wong, & Altinay, 2008). Although strategic planning remains a popular activity within organizations (Whittington & Cailluet, 2008), it is surprising that the subject has received relatively little attention in the tourism literature (Soteriou & Roberts, 1998).

Strategic planning is an important management tool for profit and non-profit making organizations in competitive and turbulent environments (Liu, Siguaw, & Enz, 2008). Slattery (2002) recognized the structure of hospitality as freestanding (e.g., hotels and cruise ships), operations within leisure venues (e.g., casinos and sports stadia), operations in travel venues (e.g., airports and train stations), and subsidized hospitality (e.g., workplaces and education). Earlier strategic planning research emphasized tourism enterprises (Phillips & Moutinho, 2000) with interest in not-for-profit tourism enterprises growing in more recent work (Soteriou & Coccossis, 2010). Contemporary developments in tourism highlight, the mixed nature of the industry involving private firms, public agencies, and not-for-profit associations (Andersson & Gertz, 2009).

Social networking sites involve blogs, photo sharing sites, message boards, and other online communities (Hanna, 2008). Social networking sites are the modern technological trends to reach the hospitality industry and hospitality managers should obtain the social media skills (Sieburgh & Berkus, 2007). Social media technology can enhance the organizational productivity by fostering the communication and collaboration of employees which aids knowledge transfer and makes organizations more profitable (Kasemsap, 2014b). Social media enables the development of knowledge value chain to customize information and delivery for a technological business growth (Kasemsap, 2014c). The capability of social media in building brand is essential in modern advertising (Kasemsap, 2015b). Social networking sites can be utilized to increase productivity and reduce employee turnover through developing team loyalty among employees (Ketter & Ellis, 2010).

## Significance of Tourism Management in Global Business

Tourism remains a critical economic activity, which continues to grow (Phillips & Moutinho, 2014). Tourism incorporates both public and private sector organizations (Cooper, 2006). The current economic upturn suggests that tourism industry will not only experience another business cycle, but also a restructuring of the economic order (Phillips & Moutinho, 2014). Regarding cultural perspectives, the internationalization of tourism has brought attention not only to the cross-cultural peculiarities that arise from traveling internationally, but also to the inter-religious locus of modern tourism (Kirillova, Gilmetdinova, & Lehto, 2014). Modern business organizations must recognize the differences in cross-cultural values and develop strategies for reconciling these cross-cultural differences in the digital age (Kasemsap, 2015c). New hybrid cultures are emerging and blending elements of different culture origins (Kasemsap, 2015d).

Hospitality on the part of hosts leads to the feeling of welcome on the guest side and acts as a fundamental prerequisite for an enjoyable vacation (Mill & Morrison, 2009). Hosts who rely on tourism for economic benefits tend to perceive the presence of tourists in the area more favorably than other



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residents (Látková & Vogt, 2012). The success of tourism development should not be measured by the increased number of tourists or tourism revenues, instead it should be evaluated according to how it is integrated within the local economy, and to what extent the industry contributes to the well-being of local people (Buzinde, Kalavar, & Melubo, 2014). Both the positive and negative impacts of tourism influence residents' support (Sinclair-Maragh & Gursoy, 2015).

Ritchie (1999) drew the attention to the growing level of international competition in the tourism marketplace that makes strategic planning increasingly imperative. Competitiveness is defined as the capability a geographical area has to compete in international markets (Kogut, 1993). This vision is based on the theory of comparative advantage (Leamer, 1993). With this approach, the explanation of competitiveness in international tourism markets is limited to considering the cost advantages derived from the productive resources controlled by the tourism sector in each location and the endowments of factors in the space in which it is located (Camison & Fores, 2015). Pham et al. (2015) stated that the impacts on tourism are complicated due to the offsetting income and exchange rate effects.

Tourism development generates social harmony (Airey & Chong, 2010) and helps in the preservation of local cultures (Stronza & Gordillo, 2008) and the environment (Dwyer, Edwards, Mistilis, Roman, & Scott, 2009). Regardless of these economic, social, cultural, and environmental benefits, tourism activities are recognized as having negative effects (Gursoy, Jurowski, & Uysal, 2002). Tourism activities can likewise damage the natural and physical environment (Brida, Osti, & Barquet, 2010) on which tourism depends (Moeller, Dolnicar, & Leish, 2011). Sociological analysis of districts (Grandori, 1999) is relevant in the tourism sector which emphasizes the competition around human capital and knowledge-related resources (Galbreath & Galvin, 2008). The importance of the collective learning processes that occur around the firms located in a tourist district or destination (Camison & Fores, 2015).

The culture of host communities can be negatively influenced due to the erosion of traditional values (Besculides, Lee, & McCormic, 2002). Organizational culture is positively correlated with organizational climate (Kasemsap, 2014d). The strategic perspective of industrial districts emphasizes shared competence in the pattern of knowledge and information assets deposited in a territorial setting near the firm (Breukel & Go, 2009), such as the flows of knowledge, information, and experience circulation within the district with a certain degree of freedom (Hjalager, 2002); the existence of a common positioning and branding; and the culture, values, and vision established in the territory (Saxena, 2005).

Empirical studies show that income positively affects the decision to travel (Fleischer & Rivlin, 2009), and its effect is higher for individuals with the high levels of income (Nicolau & Mas, 2005). The income elasticity is below the unit value (Alegre & Pou, 2004), and has a value greater than one for the decision to travel abroad (Eugenio-Martin & Campos-Soria, 2011). Rapoport and Rapoport (1975) defined age as a major determinant of tourism expenditure behavior. Age conditions the different stages of the tourist participation pattern (Bernini & Cracolici, 2015).

## Managerial Implications of Hospitality and Tourism Management

Executives and managers in the hospitality and tourism industry need to know what hospitality and tourism management is, the economic, environmental, social, and cultural impacts of hospital and tourism management in global business. In addition, executives and managers need to know the relationship between hospitality and tourism industry with other industries, the roles, and the responsibility of individual staff to plan and organize the hospitality and tourism businesses toward gaining sustainable competitive advantage in hospitality and tourism industry. In order to gain an advantageous edge in the



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competitive environment, hospitality and tourism practitioners should organize the relationship marketing and should recognize it as a strategic tool in the hospitality and tourism industry (Wang et al., 2014).

Hospitality industry encompass an extensive variety of service industries that include food service, tourism, and hotels. Hospitality industry can be empirically divided into two parts, namely entertainment areas (e.g., clubs and bars) and accommodation. Accommodation takes the form of public houses, resorts, inn, campgrounds, hotels, hostels, serviced apartments, and motels. The clubs and bars category include restaurants, fast foods, and nightclubs. The hospitality industry also includes tourism support commercial activities (e.g., airline cabin staff and travel agents). To encourage a tourist's preference for a specific destination, an effective tourism marketing strategy needs to gain a large share of first mentions among consumers who are choosing between competing travel destinations (Ruhanen, Whitford, & McLennan, 2015).

Hospitality and tourism consist of several nuances ranging from being both capital and labor intensive (Olsen, West, & Tse, 2008). The structure of the hospitality field includes the dispersed units, franchised, managed operations, and independent operators (Phillips & Moutinho, 2014). The intangible nature of the tourism experience renders complications. The generation of a valuable tourism experience depends on the provision of intangible services, which are derived from intangible resources, such as knowledge and innovative capability (Voelpel, Leibold, & Eckhoff, 2006). The adoption of tourism strategy ranges from destinations, trade associations to special events, and strategies for specific defined needs (Tribe, 2010).

While the attrition curve is a model that can be utilized to evaluate tourist awareness, preference, and intention to adopt a tourism experience, it is not a continuous phenomenon that can be employed to predict behavior (Ruhanen et al., 2015). Correlations between preference and arrival are a function of tourism product (Macfarlane & Jago, 2009). The development of accessible tourism product has to replicate tourist product offered to all tourists by concentrating on its competitive advantages in the perspectives of heritage resources (e.g., wealth, parks, and landscape) and creative resources (e.g., artistic, sports, nature, and adventure activities).

## FUTURE RESEARCH DIRECTIONS

The classification of the extensive literature in the domains of hospitality and tourism management will provide the potential opportunities for future research. Sustainable tourism is tourism committed to generating a low impact on the surrounding environment and community by acting responsibly while generating income and employment for the local economy and aiding social cohesion. Customer relationship management (CRM) becomes one of the most important business strategies in the digital age, thus involving organizational capability of managing business interactions with customers in an effective manner (Kasemsap, 2015e). The relationship between sustainable tourism and CRM in the tourism and hospitality industry will be the beneficial issue for future research direction.

Social media platforms (e.g., Facebook and Twitter) and the Web 2.0 technologies are the technological tools to facilitate various marketing activities (e.g., advertising, personal selling, sales promotion, public relations, direct marketing, and brand building). Practitioners and researchers should explore the applications of social media platforms and the Web 2.0 technologies in promoting the tourism and hospitality services. Customer service is an array of significant activities designed to enhance the level of customer satisfaction. Understanding the importance of good customer service is essential for a healthy business in creating new customers, keeping loyal customers, and developing referrals for future



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customers. Good customer service is strongly related to how service quality is effectively managed and which holds a meaningful importance to customer satisfaction and customer loyalty. In the hospitality and tourism industry, customer service, customer satisfaction, and customer loyalty are certain to remain important topics for future research directions.

## CONCLUSION

This chapter highlighted the overview of hospitality management; the overview of tourism management; product quality, service quality, price, customer satisfaction, and consumer trust in hospitality and tourism management; the significance of hospitality management in global business; the significance of tourism management in global business; and the managerial implications of hospitality and tourism management. Tourism and hospitality industry is one of the most important industries in the modern business world. Tourism occurs as a result of the different types of business that provide a range of products and services to tourists. It is essential to acquire a driving enthusiasm for customer service and a strong sense of professionalism to develop and maintain customer satisfaction in the hospitality and tourism industry.

Hospitality and tourism sector involves a wide variety of related sectors providing a range of services and facilities and a range of jobs in various departments. Career and job opportunities can be created due to the expansion of tourism and hospitality businesses toward business success and economic growth. Individual staff in the hospitality and tourism sector can work as chef, housekeeper, receptionist, concierge, marketing executive, travel agent, and tour operator. In the hospitality and tourism sector, the skills and abilities (e.g., automated ticketing and reservation systems, sales and marketing, information seeking, customer service, administration, accounting, and strategic planning) are required. Executives and managers in the hospitality and tourism industry must have the particular knowledge and skills (e.g., leadership skills, human resource management, facility management, and service management) to organize and control individual staff to effectively perform in the industry.

Effective hospitality and tourism management positively affects customer satisfaction, firm growth, and productivity in global business. The facilitation of hospitality and tourism management is vital for modern organizations that seek to serve suppliers and customers, increase business performance, strengthen competitiveness, and achieve continuous success in global business. Sustainable tourism, rural tourism, and responsible tourism are the emerging trends in the hospitality and tourism industry and should be studied for future research. Facilitating hospitality and tourism management has the potential to enhance organizational performance and reach strategic goals in global business.

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## KEY TERMS AND DEFINITIONS

**Corporate Social Responsibility:** A company's sense of responsibility toward the community and environment in which it operates.

**Customer Satisfaction:** The degree of satisfaction provided by the products or services of a company as measured by the number of repeat customers.

**Hospitality Industry:** The industry related to hotel, motels, inns, or such businesses providing transitional lodging, with or without food.

**Product Quality:** The group of features and characteristics of a saleable good which determine its desirability and which can be controlled by a manufacturer to meet certain basic requirements.

**Service:** A valuable action or effort performed to satisfy a need or to fulfill a demand.

**Service Quality:** An evaluation of how well a delivered service conforms to the client's expectations.

**Strategic Planning:** A systematic process of envisioning a desired future, and translating this vision into broadly defined goals and a sequence of steps to achieve them.

**Tourism:** The marketing of the enjoyable features of a travel destination, and the provision of facilities and services for the pleasurable tourists.

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# Chapter 59
# The Effects of Economic Structural Transformation on Employment:
## An Evaluation in the Context of Economic Complexity and Product Space Theory

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## ABSTRACT

*Structural transformation concept emphasized by countless numbers of policy makers and scholars. Structural transformation affects not only countries' income levels but also a number of their economic parameters. Employment is one of the most significant of these parameters because the success of structural transformation is measured by the contributions of agriculture, manufacturing, and the service sector to growth and employment. In this chapter, the changing effects of economic complexity (as a major indicator of structural transformation) on employment, and the visual representation of this complexity, which is called product space, are studied using samples from South Korea and Japan. As a result of research, it is found out that increased complexity of a country's economy (increased intensity of the product space center) will lead to a decrease in the employment in agriculture and manufacturing, an increase in the employment in the services sector.*

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## INTRODUCTION

In today's world, countries are competing with one another economically in ways that they have not before. While some compete through their cheap workforce, others keep up with the competition through their sophisticated product manufacturing capabilities. This competition is also reflected in the incomes of countries. The question is whether countries can outmatch the competition by more products in general or manufacturing more sophisticated products. According to Rodrik (2006), the number of products a country sells is not significant anymore. What is more important is what type of product the country sells. For example, both Singapore and Pakistan sell 133 different sorts of products to the world market. However, when compared in terms of per capita income, the case of each country is quite different. Singapore is 38 times richer than Pakistan (Hausmann et al., 2011, p. 22). If this is the case, what contributes to this striking difference? The answer to this question takes us to the "structural transformation" concept emphasized by countless numbers of policy makers and scholars.

The first studies on structural transformation were carried out by Prebisch (1950), Singer (1950), Lewis (1954), and Hirschman (1958). The mutual point underlined by all these studies is that countries which specialize in primary products and have a limited export basket might experience problems in terms of trade in the long run. Moreover, these studies suggest that countries should move from selling traditional products to more complex ones (Petralia, Balland, & Morrison, 2015). Additionally, in their studies, Rostow (1959) and Kaldor (1967) emphasized that knowledge and skills, structural transformation, forward and backward linkage among sectors, and productivity growth are significant for countries that aim to grow over the long term. These studies also strongly underlined that structural transformation can significantly contribute to output and employment growth. Furthermore, structurally transformed countries have the capability to overcome macro-economic shocks more easily (De Bandt & Vigna, 2008). In general terms, structural transformation can be defined as changing the manufacturing structure of a country from one of agriculture to industry and then from industry to service.

Structural transformation affects not only countries' income levels but also a number of their economic parameters. Employment is one of the most significant of these parameters because the success of structural transformation is measured by the contributions of agriculture, manufacturing, and the service sector to growth and employment (Srinivasan, 2013, p. 54). Transformation generally formed out of the growth of a country results initially in the workforce moving from agriculture to the manufacturing industry and then to the service sector. Increased economic growth also leads to urban migration from rural areas (De Brauw, Muller, & Lee, 2014, p. 33). The most significant reason for migration is the higher life standards provided by larger cities (The United Nations Human Settlements Programme [UN-HABITAT], 2011, p. 13). Also, when compared with the agriculture sector, wages in the manufacturing and service sectors are higher.

In this chapter, the changing effects of economic complexity (as a major indicator of structural transformation) on employment, and the visual representation of this complexity, which is called product space, are studied using samples from South Korea and Japan. The underlying reason for selecting these two countries as samples is their achievement of structural transformation through conscious policies. The chapter begins with a discussion of economic complexity and product space theory. The effects of structural transformation on employment in agriculture, manufacturing, and the service sector in South Korea and Japan are then examined separately.



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## ECONOMIC COMPLEXITY

Economic structural transformation, which has been referred to quite often in economic literature in recent years, influences countries in many ways. Countries' features underlie this transformation. The variety (or scarcity) of these features (capabilities) has a determining role in the increase (or decrease) of countries' incomes. Moreover, turning toward sectors other than agriculture is of high significance in increasing income because agriculture is a low-productivity sector (McMillan, Rodrik, & Verduzco-Gallo, 2014, p. 11). In these terms, structural transformation is regarded as redistribution of input used for manufacturing in the economy from the low-productive agriculture sector to non-agricultural sectors (Lee & Malin, 2013). Structural transformation first requires transformation from agriculture to manufacturing and then from manufacturing to service (Gilmann, 2011). To realize structural transformation, a shift of focus to high-productivity areas is needed. This provides more rapid growth of the economy (Hausmann, Hwang, & Rodrik, 2007). This also means that the productive economic structures determine the countries' welfare (Hidalgo, 2009, p. 2).

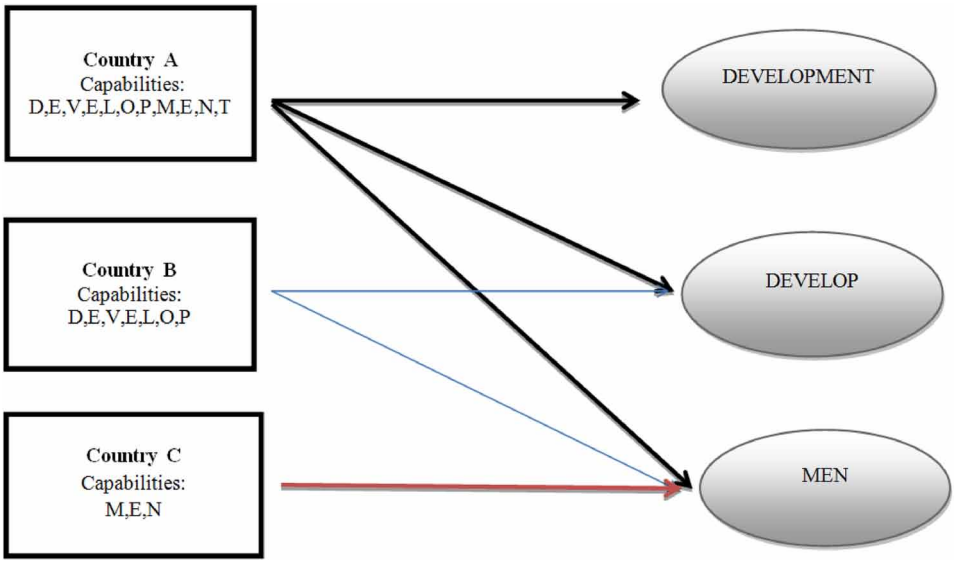
Products are composed of the aggregation of inputs that are different in terms of content. Some of these inputs are non-tradable (Hausmann & Hidalgo, 2011, p. 310). These include a country's human and physical capital, the legal system, institutions and infrastructure. Each one of these can be defined as a "capability" of the country (Hidalgo, 2009; Hidalgo & Hausmann, 2009). "Knowledge" itself is a type of capability. In this context, the factors of production, technology level, and a country's other capabilities play a significant role in producing a product. Increasing these capabilities means increasing the variety of the production basket (Hausmann & Hidalgo, 2011, p. 310). In other words, increasing the qualifications of the country's human capital, improving the legal system, protecting intellectual property rights, increasing the quality of infrastructure, and increasing physical capital can provide the country with the ability to manufacture more sophisticated products. For example, let's assume that each capability can be represented by one letter and that each word composed of these letters represents one product. The words with more letters symbolize complex products, while the ones with fewer letters represent products that do not require complex knowledge and skills to produce. We shall choose the following letters for this example: D, E, V, E, L, O, and P. In this assortment of letters, the most sophisticated product will be DEVELOP. If the country can increase its capabilities and provide M, E, N, and T inputs as capabilities, it can manufacture a DEVELOPMENT product, which will be more sophisticated than the DEVELOP product. However, if the country has the letters (capabilities) M, E, and N letters, it can only manufacture MEN (or the other combinations of these letters). More precisely, the more the capability level (letters) of a country is increased, the more sophisticated and complex the products (words) that can be manufactured.[1]

Figure 1 represents manufacturing capabilities in the way described above. As can be inferred from the figure, the A, B, and C countries have different capabilities. The country with the highest number of capabilities is A. The fact that this country has the most diverse set of capabilities means that it can manufacture three different products using its different capabilities. Country B has a more limited set of capabilities in comparison with country A. Country B can manufacture two different types of products with its existing capabilities. Country C has the most limited set of capabilities, which means that it can manufacture only one type of product. It cannot manufacture the most sophisticated product manufactured by country A. In order for country C to manufacture the products produced by country A,



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*Figure 1. Capabilities and products*




it needs to increase its capabilities. In other words, it is necessary for country C to increase its human capital, improve its legal system, resolve infrastructure problems, protect intellectual property rights, and increase physical capital.

Limited capabilities forcibly lead the country to focus on simple products that do not require complex knowledge and skills to produce. If the country has limited knowledge and skills, it is quite challenging for it to manufacture nuclear reactors or technologically advanced machines of even low quality (Schetter, 2015). Nations that hold complex knowledge are able to make complex or sophisticated products that cannot be made in countries with only basic knowledge. Therefore, there is a causal relationship between knowledge and development (Yameogo, Nabassaga, & Ncube, 2014, p. 402). Diversity of productive knowledge, however, is not enough. In order to put knowledge into productive use, societies need to reassemble these distributed bits of knowledge through teams, organizations, and markets (Hausmann et al., 2011, p. 7). What's more, capabilities require individual and social quality, information efficiency, and experience. These features lead to the improvement of a firm's technological and organizational skills (Andreoni, 2011, p. 1). Economically, this can be defined as productivity growth. For productivity growth, companies must spend money on research and development (R&D), prioritize mechanization, and train their workforce (Chang, Andreoni, & Kuan, 2013, p. 14). It is clear that this process cannot be accomplished in a short time. In other words, a long and continuous process is necessary for ensuring productivity growth in the economy as a whole. Hidalgo and Hausmann (2009) stated that the most prominent factor affecting a country's productivity level is non-tradable capabilities. According to Hidalgo and Hausmann, the basis of the difference in income among countries is a difference in capabilities.

If this is the case, how can one identify the capabilities (including knowledge) of a country? In other words, how can one determine how complex a country's economy is? Hidalgo and Haussmann (2009) claimed that the most suitable way to find out about the capabilities of a country is to look at its export basket. According to these scholars, the export basket is, in fact, the best indicator of to what extent a country is capable of manufacturing knowledge-skills-involved products. According to Lall (2000), the



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strength of a country's production capabilities is reflected in the manufactured products. If the country is able to manufacture sophisticated products, this shows the extent of its human capital, physical capital, institutions, and other capabilities. The capabilities of countries can be divided into general and private. While some capabilities (general ones such as institutions, infrastructure, etc.) are necessary for the manufacturing of all products, other capabilities are needed for specific products. From this point of view, what is more significant for countries is that they have general capabilities because such capabilities make it more possible for countries to manufacture new products. However, countries that are deprived of general capabilities will find it less possible to produce new products (Boschma & Capone, 2015, p. 4).

Today, countries are exporting many products of various content. Scholars create different indexes to measure export baskets. The most commonly used are the Herfindahl-Hirchman and entropy indexes. However, these indexes do not contain data on the quantity and types of product a country exports. In these indexes, there is no difference between an export basket consisting of 10% banana and 90% mango and one consisting of 10% motorcycle and 90% aircraft engine (Hausmann & Hidalgo, 2011, p. 316). What is more significant for the above-mentioned indexes is the diversity of exported products. The economic complexity index is different from the other two in this regard. This index emphasizes the diversity of product content. Product diversity is the most prominent indicator of the income level of a country.

So, what does economic complexity mean? Arthur (2013) stated that it is more than a theory involving efforts to understand how the elements of a system work. Economic complexity can instead be defined as the efforts of individuals who come together to create a new model (Arthur, 2013). According to Hidalgo (2009), on the other hand, complexity is the effect of a country's capabilities and qualifications on the economy. If the products manufactured by a country are produced by many others—*if the products are common everywhere*—the knowledge and skill level of a country is regarded to be present in many other countries as well. Minondo and Requena-Silvente (2013) defined complexity as the whole of knowledge and skills that are used in manufacturing. Ferrarini and Scaramozzino (2016) underlined that product variety and the ubiquity of the manufactured products are indicators of a country's economic complexity. According to Lall (2000), turning toward complex sectors is important for structural transformation, technological advancement, modernization, and development. For instance, in Malaysia and Chile in 2012, per capita income and gross enrollment were almost similar. In the same period, Chile was ranked 72$^{nd}$ in economic complexity in the world, while Malaysia was in 24$^{th}$ place. The most important reason for this is that Malaysia focuses on the manufacturing of electronic and mechanical products that require complex knowledge and skills to produce. Conversely, Chile predominantly specializes in copper, fish, and fruit production, which do not require complex knowledge and skills (Hartmann, Guevara, Jara-Figueroa, Aristaran, & Hidalgo, 2015). Commodity exporter countries intensify the production of less sophisticated products because of the Dutch disease. As these sectors are mainly physical capital intensive, they lead to less employment and fewer spillover effects (Daude, Nagengast, & Perea, 2015, p. 3).

Lall (2000) expressed that knowledge- and skills-intensive (technology-intensive) product manufacturing plays an important role in the growth of countries. The most significant reason for this is that these types of products have high income elasticity. Knowledge-intense manufacturing also affects other sectors via a spillover effect. For example, let's assume that engineers in the chemistry industry develop a product that functionally decreases energy loss in vehicles by 20%. So, will this product be used only in the automotive industry? The answer is no. We can predict that this product will swiftly expand into other sectors. It will be used in each product in which energy loss through friction occurs (e.g., aircrafts, trains, washing machines, refrigerators, etc.). Another example can be given from the medicine industry. Cancer is one of today's most challenging health problems. We know that different types of cancer ex-



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ist. Let's assume that a country has developed a medicine for 10 types of cancer and that this drug has a 100% success ratio. In your opinion, would it be easy to develop an imitation of this product? The answer is absolutely not because long studies were carried out on this drug, a number of experiments were done, and scientists from different disciplines (biology, chemistry, pharmaceuticals, etc.) were employed. The country that discovered this medicine will export it to a number of other countries and earn a serious amount of revenue. This will increase the income differences of manufacturer country and other countries. The above scenario is an example of what Hidalgo and Haussmann mean when they speak of economic complexity. If a product requires a variety of knowledge and skills in its manufacturing procedure and can be exported by very few countries, this is an indication of how sophisticated and unique the product is (Özgüzer &Binatlı, 2015).

Various knowledge and skills are needed for the manufacturing of complex products. If a country has limited knowledge and skills, it will experience difficulty in finding the resources to manufacture such products. However, if a country has a vast scale of knowledge and skills, it will not experience such hardship (Daude et al., 2015, p. 3). Having advanced and efficient knowledge-skills enables countries to manufacture high-value-added and sophisticated products. Furthermore, a country's knowledge-skills provide significant advantages for manufacturing new products (Hartmann & Pyka, 2013). Today, it is clear that developed countries are the ones with extensive knowledge and skills. It is because of these knowledge and skills that this group of countries is ranked at the top of the economic complexity index. Additionally, the biggest advantage these countries have is their ability to combine the small differences in qualifications among the workforce in their manufacturing process (Minondo & Requena-Silvente, 2013, pp. 929-930).

Table 1 shows the world's economic complexity index (ECI) rankings. As can be inferred from the table, Japan has the most complex economy in the world. Switzerland, Germany, and Sweden follow, in second, third, and fourth place, respectively. When the 2011, 2012, and 2013 tables are compared, the top 10 countries are more or less the same. These countries are also in the World Bank's high-income countries group which can be regarded as a reflection of capability differences on income level.

*Table 1. Economic complexity index rankings*

| Rank (2011) | Countries | ECI | Rank (2012) | Countries | ECI | Rank (2013) | Countries | ECI |
|---|---|---|---|---|---|---|---|---|
| 1 | Japan | 2.31 | 1 | Japan | 2.23 | 1 | Japan | 2.29 |
| 2 | Switzerland | 2.04 | 2 | Switzerland | 1.97 | 2 | Switzerland | 2.16 |
| 3 | Germany | 1.96 | 3 | Germany | 1.84 | 3 | Germany | 1.95 |
| 4 | Sweden | 1.86 | 4 | Sweden | 1.71 | 4 | Sweden | 1.83 |
| 5 | South Korea | 1.80 | 5 | South Korea | 1.70 | 5 | England | 1.72 |
| 6 | Austria | 1.80 | 6 | Czech Republic | 1.62 | 6 | Czech Republic | 1.71 |
| 7 | Czech Republic | 1.80 | 7 | England | 1.61 | 7 | South Korea | 1.70 |
| 8 | Finland | 1.73 | 8 | Finland | 1.59 | 8 | Finland | 1.64 |
| 9 | England | 1.57 | 9 | Singapore | 1.59 | 9 | Austria | 1.64 |
| 10 | USA | 1.54 | 10 | Austria | 1.57 | 10 | Singapore | 1.63 |

Source: Atlas Media Database



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## PRODUCT SPACE THEORY

It was once quite difficult to assess the economic complexity and knowledge and skill levels of countries. By means of product space theory, however, these phenomena have become observable (Ferrarini & Scaramozzino, 2016). Product space theory was introduced by Hausmann and Klinger (2006) and developed by Hidalgo, Klinger, Barabasi, and Hausmann (2007). Later, Hidalgo and Hausmann (2009) and Hidalgo (2009) contributed more significant studies to product space theory. Product space theory provides the opportunity to observe economic complexity in a visual way.[2] Hidalgo et al. (2007) tried to visually represent products whose manufacture and knowledge and skill level were similar. Hidalgo et al. (2007) and Hausmann et al. (2007) defined the product space as the relatedness of products that are subject to world trade. This means that product space is the network between products. In this network, products requiring similar knowledge, skills, and capabilities are grouped together. A new product that is similar to those in the existing product group is more likely to be added to the production basket. Therefore, countries tend to expand and diversify in sectors that are strongly related to their current activities (Boschma & Capone, 2015, p. 2). For instance, let's suppose that country A does not manufacture anything related to machinery equipment products, while country B manufactures machinery tools for different fields. Accordingly, in which country is it more possible to produce a new jet engine? (Hidalgo, 2011, p. 1). In such a context, it is essential for the country to consider the previously manufactured products in their efforts to produce the new one. If this new product requires similar infrastructures, physical factors, and organizations to products produced in the past, it will be more likely to be produced (Hidalgo et al., 2007). This fact is supported by empirical studies as well. For example, in their industry-based studies, Klepper (2002) and Klepper and Simons (2000) discovered that the success of companies who start to manufacture in new sectors/industries is built on their previous experience in a similar industry and their use of this experience in their new industry by means of knowledge, skills, and capabilities.

Using classifications by STIC of 1006 products (4-digit level of desegregation), Hausmann and Klinger (2007) first assessed the comparative advantages of a country from a given product. They then checked the relationship of this product to the remaining 1005 products. The more the product was connected to the other products, the more central its position in the product space.

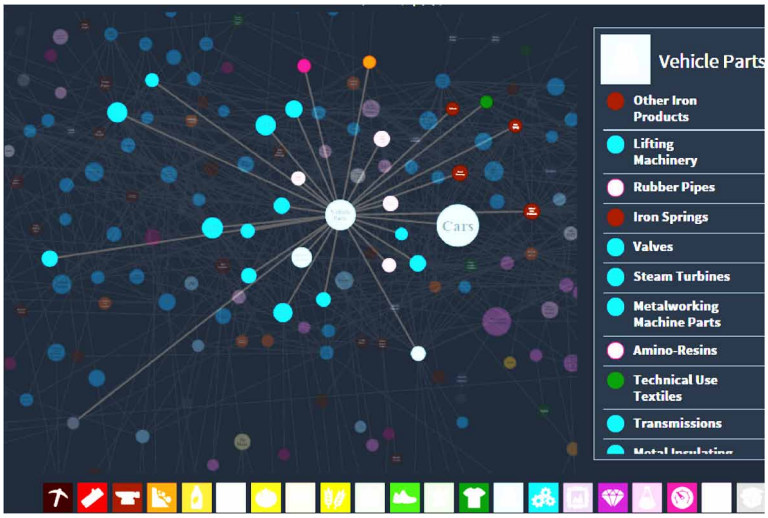
Figure 2 demonstrates this phenomenon. "Vehicle parts" is located in the center of the product space. It is connected to 27 products. Some of these products are as follows: other iron products, lifting machinery, rubber pipes, cars, valves, steam turbines, and metalworking machine parts. If a country can manufacture vehicle parts, it is highly likely that it can produce the 27 other products. This was explained in detail in the economic complexity section. What is more significant for countries are whether they can manufacture the products that are in the center of the product space and that have extensive network connections.

In product space theory, each circle represents one product. The size of this circle shows the product's weight in terms of world trade. In accordance with Leamer's (1984) classification scheme, each color represents a product group. Leamer's classification scheme consists of 10 different product groups. The lines connecting the circles reveal the relatedness of the products. This relatedness does not indicate physical similarity between products but rather a country's likelihood of exporting a product on the basis of its export of a similar one (Felipe, Kumar, & Abdon, 2010, p. 3). In the product space, the outermost products are the non-sophisticated ones that do not require much knowledge and skills to produce (Hidalgo, 2011, pp. 3-4). The center of the product space is mostly occupied by machinery, chemical, and metal products, whereas petroleum, raw materials, vegetable and animal products, and labor- and



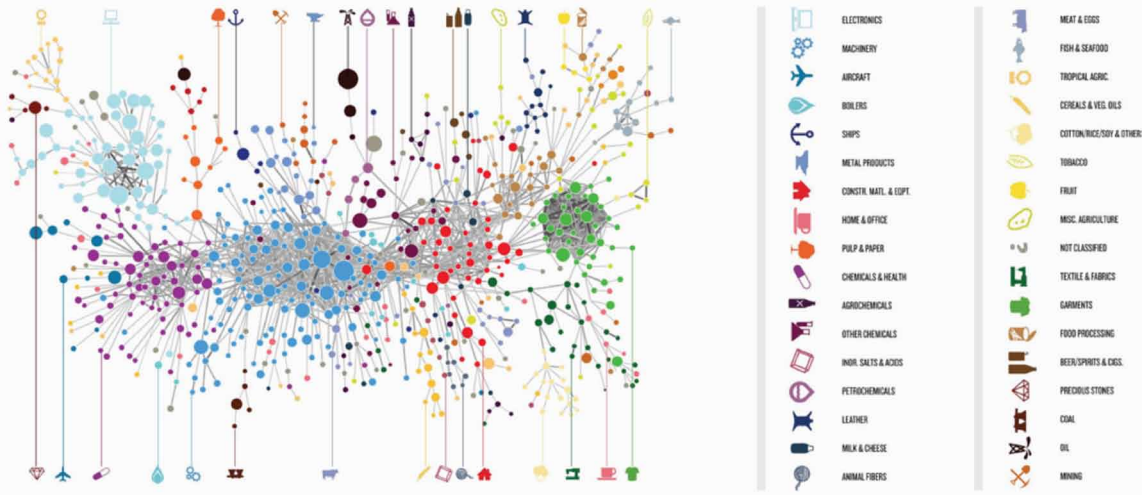
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*Figure 2. Backward-forward connections in product space*
*Source: Atlas Media Database.*




capital-intensive goods (except metal products) are located on the outer border. The closer the products a country manufactures to the center (core), the easier it is to manufacture new goods because the existing capabilities can be redeployed to realize this production (Felipe et al., 2010, p. 4). Hausmann and Klinger (2006) symbolized each product in the product space as a tree, the product basket of a country as a forest, and the country's knowledge and skills as monkeys. The closer the trees are to one another, the higher the likelihood of the monkeys jumping from one tree to another. Moreover, the more individual connections the products in the product space have, the higher the possibility of the country facing frequent and longer recessions (Hausmann & Klinger, 2006).

*Figure 3. A sample of product space*
*Source: The Atlas of Economic Complexity and Hausmann et al. (2011, p. 45).*






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Product space is reviewed from left to right. As can be inferred from Figure 3, the products located on the right-hand side of the space consist of agriculture and clothing products, which mostly require less knowledge and skills. On the other hand, products on the left-hand side of the space are sophisticated products that require advanced knowledge and skills (Stafforte & Tamberi, 2012, p. 101). Complex products with a high spillover effect are located in the center of the space. Human capital also has a crucial role in the product space. Quality human capital makes the manufacturing of products that are close to one another easier. In other words, the more qualified the human capital of the country, the easier it is for the country to head toward the other areas in the product space. It has been observed that products sometimes become intensified in specific areas. Such intensification is the most significant indicator of the comparative advantages of a country (Hausmann & Klinger, 2007).

## THE EFFECTS OF ECONOMIC COMPLEXITY AND PRODUCT SPACE THEORY ON EMPLOYMENT

In today's modern economies, the most basic productivity growth source is the manufacturing industry. In essence, the manufacturing industry contributes greatly to the productivity of other sectors by producing intermediate inputs such as machinery and chemicals. Furthermore, the industry is regarded as the first area in which new organizational abilities appear. Productivity growth, especially in the last two centuries, cannot be explained solely by technological advancement. It is a well-known fact that the new organizational abilities that have appeared in the manufacturing industry have had a considerable role in productivity growth (Chang et al., 2013, p. 11). However, it is almost impossible to claim that this productivity growth has had a positive impact on employment in the manufacturing industry. Quite the contrary, productivity growth is one of the factors contributing to decreased employment in this industry (Harrison, Jaumandreu, Mairesse, & Peters, 2014, p. 30). As they grow, companies add new technologies (automation, computerization, etc.) to their production lines in order to decrease their costs. These types of applications negatively affect the low-skilled workforce. In countries that have completed their structural transformation, it has been observed that low-skilled occupations have started to disappear. On the other hand, the same structural transformation period leads to the emergence of high-skilled occupations. This has been specifically observed in the information technology industry (Gesthuizen & Wolbers, 2010).

It is essential to discuss this phenomenon in the context of economic complexity and product space theory. One can comfortably assert that new employment opportunities emerge as economic complexity increases because transformation from the lower productivity of agriculture to sectors with higher productivity also results in the creation of new jobs. Intensity in the center of the product space means increased employment (number of persons) in the manufacturing industry. However, industries such as textiles, which are significant in the initial stages of development and create new employment opportunities, are also part of the manufacturing industry. From this point of view, the intensity in the center of the product space of a country (showing an increase in economic complexity) might affect areas such as textiles negatively. For example, it is expected that employment will decrease in related industries. When evaluated in general, even though intensity in the product space means an increase in the number of people employed in the manufacturing industry, it can be claimed that the manufacturing industry's share in the total employment of the country could decrease. This may vary depending on the industri-



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alization stage of the country that is being studied. If a country cannot complete the industrialization process in the relevant period, the total share of employment in the manufacturing sector is expected to increase initially and then to decrease.

Established companies in high-income countries tend to move their production lines to countries with lower production costs, and this leads to changes in the existing production structure of the world. In this context, countries' previous expertise differentiates them from one another (Corcoles, Diaz-Mora, & Gandoy, 2014, p. 33). For instance, a century ago, textile products were manufactured in today's developed countries, including England, Germany, Japan, and Korea. However, today it is not possible to claim the same thing. Nowadays, it is a well-known fact that textile manufacturing has moved to countries with lean production in East Asia and other parts of the world. The most prominent underlying reasons for this are increased production costs and high wages in the developed countries.

In order to manufacture sophisticated products of increased economic complexity, a serious amount of R&D spending is needed. What companies are trying to create here is "innovation." One example of this is smartphones. Let's assume that a company invested a great deal of money in a new application that is to be used on smartphones. The company needs to form a team to develop this application, which means increasing employment in the service sector. Moreover, to launch this application, the company might need to receive service support from other firms with no prior connections to the company. This new application will, therefore, contribute to employment both in the company itself and in other firms in the same sector. The company might also invest more money to develop the specifications of this smartphone application in order to compete with its competitors in the market. It can be suggested that when this company researches new software that makes playing games on smartphones easier, both the company and other companies in the sector will increase the number of their employees. Acquired innovation can be said to have a positive impact on employment because new products manufactured as a result of this innovation lead to the emergence of new employment opportunities. Additionally, the increasing market demand for new products has an active role in increasing employment (Harrison et al., 2014, pp. 29–30). Another industry that has caused increases in the service sector is the pharmaceutical industry. This industry intensively requires knowledge and skills. Scientists perform various tests on the manufacturing of a drug for years, and therefore manufacturers work with a number of different teams. For example, let's assume that a medicine manufacturer invests in R&D for a drug that has not been produced previously. In this case, it will not be possible for this manufacturer to develop a new drug with its existing team. The company has to form a new team for this new drug, and this will lead to increased employment in the service sector.

The financial and education sectors both have a huge impact on the formation of complex economic structures (Cristelli, Tacchella, & Pietronero, 2015). The reason for this is that companies are unable to produce new complex products with their own capital. Therefore, companies might need support from bank loans. As the economic complexity in the country increases, the number of people who are employed in finance is expected to increase too. It is possible to claim the same thing about the education field. Human capital is one of the key factors in the increase of economic complexity. Educational investments made in qualified human capital play an important role in the increase of employment in the service industry. In the agricultural industry, farmers whose education levels increase begin to use advanced farming equipment in agricultural production (Cochrane, 1993). This leads to a decrease in the use of old methods of production in the agricultural industry, leading to a decrease in employment in the industry as a whole.



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It would not be right to claim that increased employment in the service sector can be maintained only through innovation and knowledge-skills-based production. Structural changes also lead to the introduction of low-skilled service jobs, mainly in the catering and cleaning industries (Gesthuizen & Wolbers, 2010). Call center jobs, which require fewer qualifications, are also an example of such a job. Call center employees have the ability to speak properly, which is an important skill for people employed in the service sector. These employees may have good knowledge and skills in physics, chemistry, and mathematics, but such knowledge is not important in the context of their sector.

Moreover, the increase in retail stores, especially in the last 20 years, also lies behind the employment increase in the service sector. These stores are operated by national and international companies. They offer a wide range of products at cheap prices to consumers, which have led to the emergence of new employment opportunities. This phenomenon has affected not only developed countries but also the other country groups (Cho, Chun, & Lee, 2015, pp. 559–560). Increasing a country's economic complexity (increasing the intensity in the center of the product space) leads to an increase in per capita income in the country, which is a factor that has paved the way for the opening of many different retail stores. In other words, an increase in economic complexity in the country will result in the opening of more retail stores, and the number of people employed in the service sector will grow. In addition, increased economic complexity makes a significant contribution to the expansion of the country's export markets and the increase of its exports, which in turn cause an increase of employment in the transport sector.

According to Hallak (2006), complex and more sophisticated goods are generally purchased by high-income countries and, within countries, by those segments of consumers that have been less exposed to external shocks and may guarantee a more stable demand. Moreover, as the substitution of complex products is also quite difficult, it would not be wrong to claim that countries that specialize in complex product groups could have some advantages. Countries specialized in more complex goods are less exposed to external shocks and have higher stability in their overall sales (Maggioni, Turco, & Gallegati, 2014). When this is considered in terms of employment, big fluctuations are not expected to result from the impact of external shocks. However, the impact of external shocks to the agricultural sector is different because the income elasticity of agricultural products is very solid. Even if their prices decline, there will not be a big change in the demand for agricultural products. What is significant here is that if prices rise in countries that manufacture agricultural products, purchasing countries are then directed to where they can get cheaper products, which might also negatively affect the employment structure in the country specializing in agricultural products. Also, being exposed to the seasonal impacts of the agricultural sector is a major disadvantage in terms of employment.

## Structural Transformation of South Korea Economy: A Brief Overview

Korea is a well-known case of successful economic catch-up achieved through state-sponsored manufacturing and export-oriented strategy. Korea is one of the few recent examples of a country that has managed to rapidly transform its agriculture-based economy to the extent of becoming a leading industrial power (Organisation for Economic Co-operation and Development [OECD], 2014, p. 32; Chung, 2010; Chen & Suh, 2007, p. 4). The main focus of South Korean industrial development shifted from light to heavy and high-tech industry in the 2000s. The Korean form of catch-up was shaped by strong state leadership, a state-controlled banking system, and the dominance of the chaebol—large, highly diversified family-owned companies[3] (Organisation for Economic Co-operation and Development [OECD], 2009, p. 13, 60).



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The origins of many of the larger chaebol can be traced to the period after Japanese colonialism. Most of these companies started small; however, the South Korean government from 1961 to 1987 actively supported chaebol operations through successive strategies and policies as a means of pursuing the government's industrialization objectives. The chaebol has therefore played a central role in Korea's economic development (OECD, 2009, p. 62).

It is necessary to focus primarily on the processes of South Korea's economic transformation in the 1960s and 1970s. In the literature, there is a widespread belief that many institutional and economic changes occurred that led to fast growth during this period. The three main periods of South Korea's economic transformation are as follows: first, the imitation era of import substitution/ protectionist policies that encouraged exports (the 1960s and 1970s); secondly, the transformation era, during which structural arrangements were made, liberalization policies were promoted, and the private sector established its own R&D structure (1980s); and third, the innovation era, during which policies in favor of technological development were encouraged, and rather than large R&D-based companies, dynamic and innovative SMEs gained importance (the 1990s onwards) (OECD, 2009, pp. 173–176).

Park Chung Hee, who rose to power after a military coup d'état in 1961, spearheaded two developments. First, he encouraged companies' exports by transferring foreign aid to the entrepreneurial firms. Second, he initiated a shift from light industry to heavy manufacturing and high-tech industry (Kim, 2000). In the 1960s, South Korea began developing its agriculture (e.g., rice) and labor-intensive light manufacturing industries (e.g., textiles and bicycles) (Chen & Suh, 2007, 7; OECD, 2009, p. 58). In this process, the realization of the country's export-oriented production efforts occurred. Export-oriented policies have contributed to the fall in the unemployment rate and the opening of new manufacturing companies throughout the country. Initially, the development of basic industry for the promotion of exports (cement, fertilizer, etc.), light industry based on manpower (textiles, footwear, etc.), and basic infrastructure (communications, electricity, etc.) was encouraged (Chung, 2007). South Korea's biggest problems in this process were inadequate technological capabilities and inadequate domestic capital. Therefore, capital accumulation was encouraged, and the government made significant investments in education. These investments allowed a gradual transition toward more sophisticated products. The key to this transition was the acquisition of new technologies through foreign licensing and the adaptation of them to domestic manufacturing (Chen & Suh, 2007, p. 7; OECD, 2009, p. 58).

Selection and assimilation of appropriate technology required a reasonable level of local R&D capacity and S&T (science and technology) infrastructure. To address these needs, in the 1960s research institutes[4] such as the Korea Institute of Science and Technology (KIST) were established. These institutes aimed to carry out R&D in key technological fields, with a view to supporting the industrial upgrading strategy, facilitating the adoption of new technologies in industry, and developing projects for private companies (OECD, 2014, p. 32; OECD, 2009, p. 58). Furthermore, in order to investigate export opportunities in foreign markets, Korea Trade Promotion Corporation (KOTRA) was founded (Lee, 2000, p. 145). Subsequently, the Ministry of Science and Technology (MOST) was established, and the Science and Technology Promotion Law was enacted. In this process, foreign direct investment (FDI) played an important role in the transfer of technology (Ernst, 2000). Strong commitment to economic independence led to economic policies based on long-term loans to finance industrial development instead of FDI. These loans were then allocated to the South Korean government to make direct investments in selected sectors. This process led to the import of a significant proportion of foreign capital goods. Later, reverse engineering methods were used to obtain the necessary technologies (Chung, 2010).



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In the 1970s, Park Chung Hee made efforts toward the establishment of high technology and heavy industry. At the same time, the state continued to encourage research to meet the needs of industry. In this process, foreign- owned companies were given limited access to the South Korean market. In other words, mostly protectionist policies were implemented in the country during this period (OECD, 2009, p. 58; Park, 1997). In the mid-1970s, the government's use of a well-targeted industrial policy resulted in a major shift toward the development of heavy industries (e.g., chemicals, shipbuilding). Along with industrial targeting, policies were enacted to further improve technological capabilities, together with improving access to and quality of technical and vocational training (Chen & Suh, 2007, p. 7). The government also played a key role in developing domestic R&D capability by establishing industry-oriented government research institutes (GRIs) in areas such as machinery, electronics, chemistry, and shipbuilding (OECD, 2009, p. 58). For this reason, it is possible to claim that the role of government as a major planner of strategic industrial policy was very important in South Korea's industrialization process (Park, 1997).

In the 1980s, South Korean industry dependence on imports of technology and increasingly expensive domestic labor made it difficult to compete in international markets. To overcome this situation, South Korea created a new domestic center for research and innovation (Bartzokas, 2007). Additionally, the first national R&D program initiated by MOST was introduced in 1982. Shortly afterward, similar R&D programs were set up in various institutions. In particular, a separate directorate to support industrial R&D was set up inside the Ministry of Industry. In addition to public funding of R&D, the private sector was encouraged to actively engage in absorbing and improving technologies from countries operating at the technological frontier (OECD, 2014, p. 33).

South Korea continued to pursue high-value-added manufacturing in the 1990s by promoting domestic high-technology innovation (Chen & Suh, 2007, p. 7; OECD, 2009, p. 59). Since the second half of the 1990s, the Korean government has been pressured to change its catch-up-oriented industrial development policy, which is based on extensive labor and capital input, and to seek new growth engines. Economic growth, which averaged more than 8% a year from 1960 to 1997, has slowed from the mid-1990s to a yearly average of 5%. The Asian financial crisis in 1998 caused negative Gross Domestic Product (GDP) growth and led to a high increase in mass unemployment (Chen & Suh, 2007, p. 13; OECD, 2014, pp. 33-34).

In the post-2000 period, South Korea underwent a comprehensive and innovation-oriented transformation in all areas. Its Vision 2025 program proposed the following fundamental shifts in technology policy (OECD, 2014, p. 35):

1. Moving from a government-led and development-oriented innovation system to a private-industry-led and diffusion-oriented innovation system,
2. Moving from a closed R&D system to a globally networked R&D system,
3. Moving from a supply-dominated investment enhancement strategy to an efficient utilization and investment-distribution strategy,
4. Moving from a short-term technology-development strategy to a long-term market-creating innovation strategy,
5. Moving toward a science-and-technology-led national innovation system.



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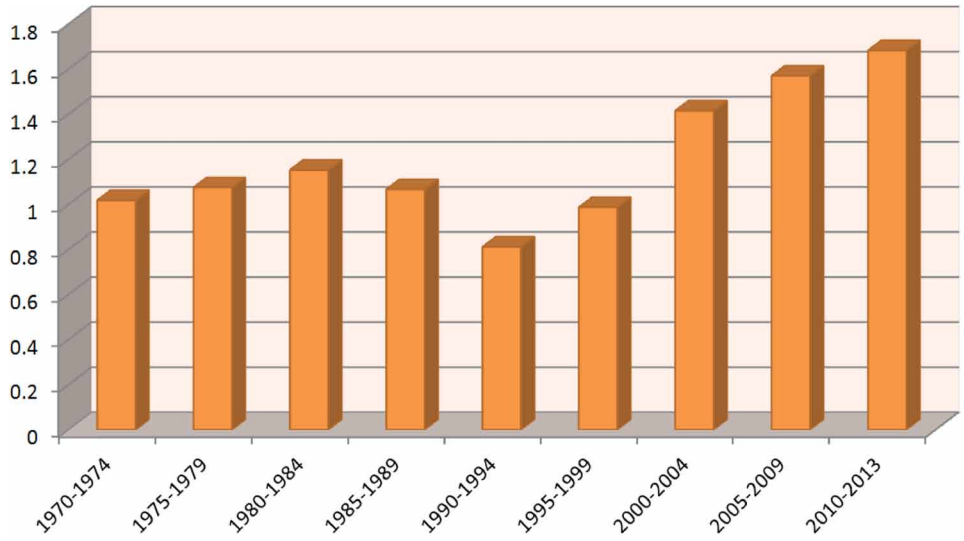
In brief, several factors appear to be behind South Korea's achievements. In particular, state-oriented plans for the realization of economic development efforts can be regarded as the roots of the South Korean miracle. In addition, these plans have been revised according to the circumstances and needs of a given period. Strict adherence to these strategies could be the underlying reason for the high likelihood of coming across a South Korean product in most of today's houses.

## South Korea's Economic Complexity and Product Space: An Evaluation in the Context of Employment

This section examines South Korea's economic complexity and product space. In addition, the effects of the transformations encountered in economic complexity and product space on employment are discussed. Figure 4 shows the development of South Korea's economic complexity. Economic complexity index values, except for those in the 2010–2013 period, have been calculated as five-year averages.[5] When South Korea's economic complexity is analyzed, we observe that its index value during the period 1970–1974 is below one. The index values of 1975–1979, 1980–1984, and 1985–1989 are above one. The 1990–1994 period, however, shows a significant decline in South Korea's economic complexity. This is because products produced by South Korea in previous periods began to be manufactured by many other countries in this period. But as can be seen from the chart, the manufacturing structure during the period between 1995 and 1999 recovered and complex production increased. This rise accelerated in the 2000–2004, 2005–2009, and 2010–2013 periods. In the most recent period, South Korea's economic complexity index value was over 1.6.

South Korea's economic complexity world rankings in the above-mentioned periods can be seen in the table. According to Atlas Media Database, South Korea ranked 23rd in economic complexity in 1970, 18th in 1980, 24th in 1990, 22nd in 2000, and 7th in 2013.

*Figure 4. South Korea's economic complexity index*
*Note: Economic complexity is calculated as five-year averages.*



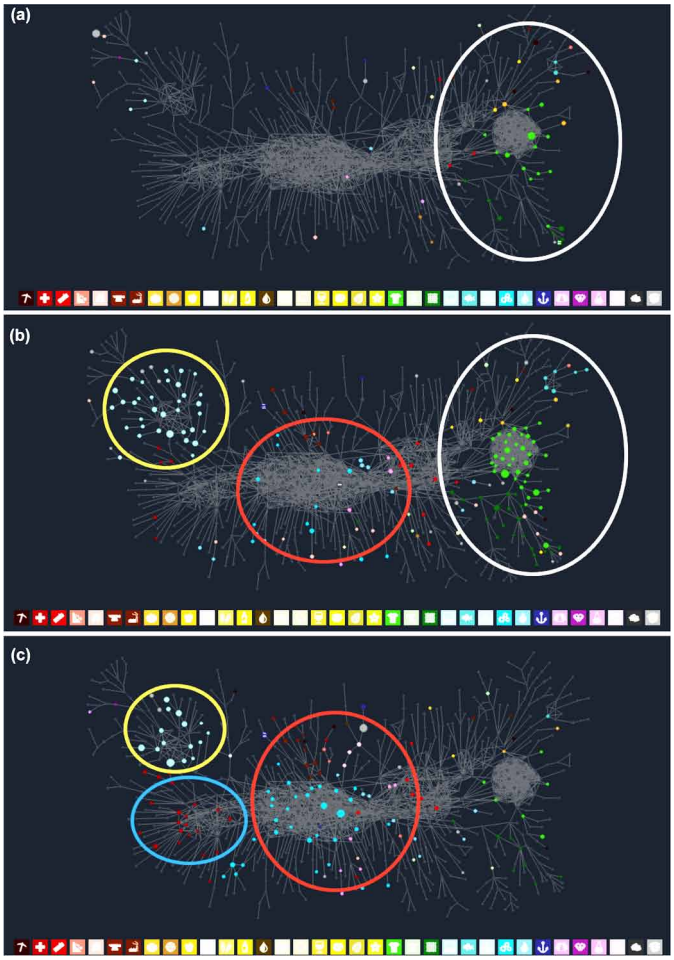



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In addition to its evolving economic complexity, South Korea's product space changes should be examined. In 1970, as seen in Figure 5 (part "a"), the product space is mostly concentrated on the right-hand side (in the large white circle). Additionally, the left-hand side and the center of the product space are almost empty. The most conspicuous product group on the left side is miscellaneous manufactured goods (in the upper left corner). The right-hand side of the product space consists of knit clothing accessories, footwear, embroidery, pharmaceutical flora, silk-woven fabrics, dried vegetables, crustaceans, and mollusks, etc. On the basis of this data, we can claim that South Korea had a mainly textile manufacturing structure in the 1970s and specialized in agricultural products.

In the 1990s, South Korea's product space was divided into three main sections, as seen in Figure 5 (part "b"). What is significant is that less sophisticated products, which mainly comprise textile and agriculture products, are centered on the right-hand side of the product space (see white circle). Especially when compared with the 1970s, there is a visible increase in this section. In addition to the products from the 1970s on this side, there is a concentration of the products of leather accessories, miscellaneous men's outerwear, knitted outerwear, synthetic woven fabrics, frozen fish, and temporarily preserved fruit.

*Figure 5. South Korea's product space in 1970 / 1990 / 2013*
*Source: Atlas Media Database. Please note that (a), (b) and (c) represent 1970, 1990 and 2013 respectively.*






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We can see that more new products started to appear in South Korea's product space in 1990 in comparison with the 1970s. This section is indicated by the red circle. Among these products are cars, fasteners, electric heating devices, car tires, and metal cables. Almost nonexistent in 1970, the products on the left-hand side of the product space in 1990 are indicated by a yellow circle. This area represents the production of complex products whose spillover effect is limited to spread to other sectors. Some of these products are electronic microcircuits, color TVs, computer peripherals, telecom parts and accessories, toys and games, and vehicle stereos.

There are significant differences in South Korea's product space in 2013 compared to 1990. As seen in Figure 5 (part "c"), in 2013, the products that were located on the right-hand side of the product space have disappeared. Additionally, there are relatively fewer products compared to 1990 in the upper-left side of the product space, which is composed of electronic products and indicated by a yellow circle. Two condensation areas are seen at the center of the product space. These areas are those in which backward and forward connections among the sectors are strong. There are also important changes in the area marked by the red circle when compared with the 1990s. In addition to the products manufactured in the 1990s, the country started to specialize in construction machinery, circuit breakers and panels, air pumps and compressors, vehicle parts and accessories, piston engine parts, miscellaneous heating and cooling equipment, and miscellaneous machinery products. Another major development occurred in the area marked by the blue circle involving chemicals and health-related products. This section is not included in the previous periods. However, it is believed that South Korea's space expanded into this area because of past R&D investments. Remarkable products in this section are polymerization products, synthetic rubber, acrylic polymers, cyclic hydrocarbons, silicones, and polycarboxylic acids.

All in all, it can be said that the South Korean economy was based on agriculture in the early development phase. In the 1970s and 1990s, it can be understood from the product space that the South Korean economy attached importance to industrialization. We have observed that South Korea focused on the textile industry, especially in the 1970s and 1990s. However, the textile industry was subsequently abandoned in the manufacturing area. This can be ascertained from the concentration of products in the center and left-hand side of the product space. When this process is evaluated in terms of employment, initially increasing and then decreasing percentages of people employed can be expected in the manufacturing sector. Moreover, while the tendency toward complex manufacturing in the product space negatively affects the number of people employed in the agriculture sector, it brings a remarkable increase in the service sector.

## The Effects of Structural Transformation on South Korea's Employment

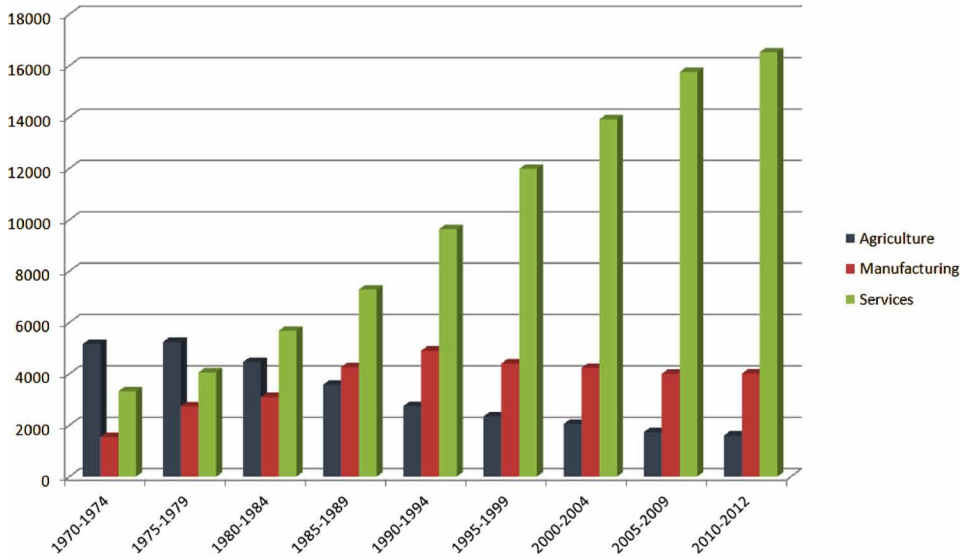
The structural transformation of the South Korean economy has been discussed in the previous sections. It is obvious that this structural transformation would have economic effects as well. In this chapter, the effects of structural transformation on employment in South Korea's economy will be evaluated in the context of economic complexity and product space.

As can be seen from Figure 6, the agricultural sector was significantly superior in the 1970s in terms of the number of people employed. During this period, the number of people employed is understood from the graph to be around five million. However, in the 1980s, we can see that a downward trend in the number of people employed in agriculture started. This process continued regularly until the 2010–2012 period. The development of this process is easily understood from the graph. Whereas there was around a 50% share of the agricultural sector in total employment in the 1970s, Figure 7 shows that this share was



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*Figure 6. Number of employed people by sector in South Korea (Thousands)*
*Note: Numbers are considered as averages. Data sets were obtained from the Bureau of Labor Statistics.*




around 5% in the period 2010–2012. This is supported by the South Korean product space as well. As you recall, the right-hand side of the product space in the 1970s was dominated by agriculture-oriented textile manufacturing and consisted of mostly agriculture-based products. However, in the following years, this trend changed, and this section on the right side of the product space disappeared.

The number of people employed in the manufacturing area seems to have steadily increased until the period 1990–1994. This is clear from Figure 7 with regard to the share of the manufacturing sector in total employment. The most important factor in the emergence of this trend is the production structure based on the textile industry. As you recall, there was a serious increase in the concentration on the right-hand side of the product space in the 1990s. This situation had an effect on employment as well. With the increased concentration in the center of product space in the following period, we can deduce that the number of people employed in the manufacturing industry decreased. These industries require mostly complex knowledge and skills and are areas in which automation and computerization are necessary instead of manpower.

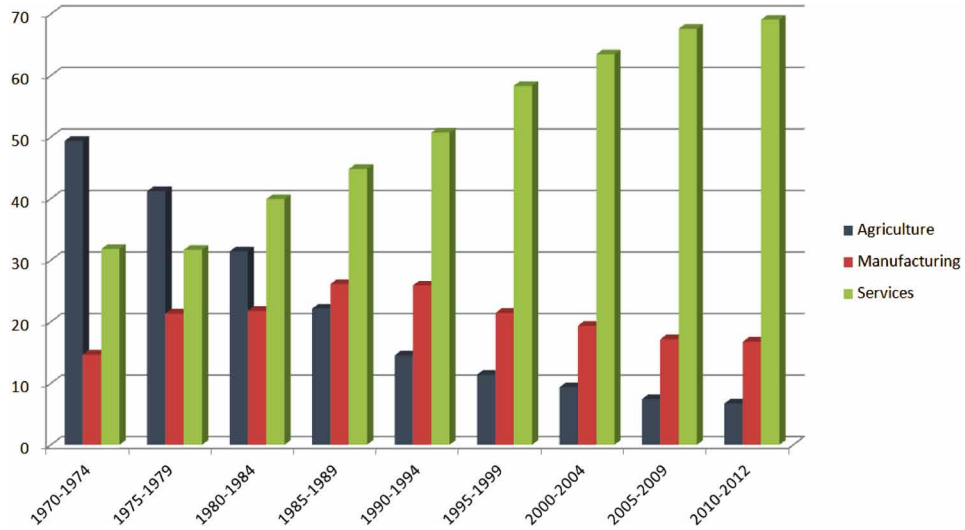
Considering Figure 6 and Figure 7 in terms of the service sector, we are faced with a very different picture from the other two sectors. It can be inferred from both Figure 6 and Figure 7 that the number of people employed in the service sector consistently increased between the years 1970 and 2012. This trend is seen in South Korea's product space too, if you recall the parts marked with yellow and red circles in 1990. The industries in this sector require knowledge and skills, and intensive research and development. In addition to the concentration in these two areas, in the 2013 product space, we have a blue marked area comprising health-related products. This area is among the main reasons for the increase of employment in the service sector, as serious research and development activities must be carried out for production to be made in this field.

When evaluated in general terms, the structural transformation of the South Korean economy was also reflected in employment. This transformation process has been observed primarily in the steady decline of the agricultural sector. The manufacturing sector initially experienced an increase and then



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*Figure 7. South Korea's sector shares in total employment (%)*
*Note: Numbers are considered as averages. Data sets were obtained from the Bureau of Labor Statistics.*




a decrease. The biggest reason for this was the use of automation instead of labor in the manufacturing sector, along with technological progress. On the other hand, the service sector experienced steady growth in the number of people employed because of the greater need for knowledge and skills with the increase in economic complexity (represented by intensity in the center of the product space).

## Structural Transformation of the Japanese Economy: A Brief Overview

Contrary to common belief, the Japanese miracle did not start after World War II. The main foundations of the process were laid in the 18th and 19th centuries. Japan realized its most striking transformation in the 1540–1856 (Edo) and 1868—1914 (Meiji) periods. During the Edo period, Japan adopted a practice of isolation from the world. The country banned entrances and exits, and all commercial relations were operated only from Nagasaki. Also in this period, developments in European countries were closely followed, and new discoveries were transferred to Japan. In particular, a strong industrial infrastructure was formed during this closed economic period by absorbing and assimilating many technical innovations from China, which were imported through South Korea (Derya, 2015).

In the 1850s, Western states made great efforts toward Japan's adoption of liberal economic policies. With the development of international trade, Japan was forced to restart trade relations with the West as a result of the need for its ports to meet demands for water and steam for steamships. Using their military power, the U.S. and other Western countries signed a number of trade agreements[6] with Japan, indicating that these countries had achieved a number of privileges (Fletcher, 1996). Once the country was free of the unequal treaties in 1913, there was a major switch in Japan's trade policy. Japan gained full autonomy because of this change in policy (Hunter, 1998, p. 86).

Japan's economic development process started at the beginning of the Meiji Restoration. During this time, the government embarked on a plan to create a modern infrastructure. Investments were carried out by the state or state-aided private sectors. The origins of "sector selection," which can be regarded as the



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basis for Japan's industrial policy, can also be traced back to the Meiji period (Derya, 2015). The textile industry, which is the pioneer of the industrialization process, is an example of sector selection because the state invested in this industry and played a direct role in its development. Public policies contributed to the formation of the necessary human resources for the development of this industry. Within nearly 40 years of the Meiji period of recovery/development policies, Japan had achieved economic and social transformation. The country also achieved trade surpluses in this process (Ito, 1996).

After the First World War, despite Japan's greater industrialization compared to other Asian countries, Western countries still viewed Japan as an agricultural country. During this period, Japan dominated a large part of the Asian market by filling the industrial gap that had emerged in the world with its modern and effective institutions (Derya, 2015). In the 1900s, Japan's productivity, technology, and industrial infrastructure were clearly inferior to that of the West. However, receiving a strong impetus and pressure from abroad, Japan made earnest efforts to mobilize its civil service and people to catch up (Ohno, 2003, p. 38).

The Japanese economy expanded at an average annual rate of about 3 percent for more than a half century before the Second World War. This long period of sustained growth was accompanied by rapid structural change from an agrarian to an industrialized economy (Ito, 1996). The agricultural sector played an important role at the beginning of this period of high growth in Japan. The increase in productivity in the agricultural sector and the mobility of the workforce contributed significantly to this process. Labor productivity in Japan doubled[7] during the Meiji Restoration (1881–1920) (Asian Development Bank, 2013, p. 9). However, after the Second World War, the Japanese economy entered a very troublesome phase. As productive resources had been either diverted to military use or destroyed in the war, real output fell by half from 1944 to 1946. Recovery was quick, however. By the mid-1950s, GDP had regained its 1943 level, and by 1960, it was at the level predicted by its prewar trend. In the post-war period, the economy shifted from labor-intensive sectors to capital-intensive heavy industry (Ito, 1996).

Japan experienced a period of rapid export-led growth from 1953 to 1973 (Yülek, 1997). Until the oil crisis of 1973–1974, the main purpose of industrialization in Japan was to increase wealth. In the process of industrialization, the Japanese government acted by connecting trade, finance, and industry policies (Yülek, 2013, p. 4). In 20 years' time, the country had become a highly industrialized country with more complex (sophisticated) technology. Japan's annual growth rate in the postwar years was around 10%. The determining factor in the rapid growth of Japan was its concrete support of promising industries (Ito 1996; Ifo Institute for Economic Research, 1997, p. 46; Beason & Weinstein, 1996). In this process, the country focused on heavy industry products. But by the 1970s, Japan's priority was no longer capital-intensive heavy industry. During this period, the country focused on research-intensive high-tech products. Automobile manufacturing and electrical machinery production, in which technology plays a decisive role, gained importance. On the other hand, the intermediate products (e.g., iron and steel) provided by the labor-intensive textile industry and heavy industry lost their significance (Kohama, 1990).

The growth trend of the 1960s slowed suddenly after the first oil crisis, in 1973–74. Possible reasons for this abrupt decline are the Japanese economy's transition to different industries leading to a reduction in high-yield investments; high oil prices; pollution prevention arrangements.[8] Additionally, the annual growth rate from 1975 to 1990 was roughly half of that achieved in the previous two decades. Another interesting feature of this period was the sharp nominal increase in the value of the Japanese yen: its value tripled from 1970 to 1995. However, the growth rate did not rise above 1 percent between 1992 and 1995 (Ito, 1996).



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In Japan's Meiji and other rapid growth periods, strengthening the industries' implementation of traditional industrial policy and the state's direct intervention in the market played an important role in economic transformation. In later periods, rather than managing coordination and dissemination of information through government intervention, Japan found a better way. After the 1980s, a transition to policies based on technology and innovation occurred. Thereafter, liberal policies in Japan gained weight, and traditional policies were dropped from the agenda. Transformation taking place alongside the liberalization experienced in recent years has been shaped around "new generation" policies. These policies and the government's role in shaping them are different from the traditional industrial policies. Innovation in sophisticated production structures and R&D stand out in the new generation policies (Yülek, 2013, p. 22). Hence, structural transformation is expected to play a significant role in leading the Japanese economy to be among the modern industrial and service economies in the 21st century as well (Asian Development Bank, 2013, p. 59).

## Japan's Economic Complexity and Product Space: An Evaluation in the Context of Employment

In this section, Japan's economic complexity and the changes in its product space will be discussed. In addition, the possible effects of changes in economic complexity and product space on employment will be evaluated. Innovation is an important stage in the creation of a complex production structure. The unit of analysis is the national economy, and the major players involved in innovation are the government, universities, government-sponsored laboratories, and private companies. While companies and laboratories endeavor to develop new products, universities contribute to this process by educating scientists and engineers. The government is among the actors in the process that leads to technological development. Japan is considered to be one of the most successful countries in terms of innovation, and this success is thought to be closely linked to the country's innovation system. Thanks to harmony in innovation, the country has achieved a considerable growth rate (Lee & Han, 2002).

Looking at Japan's economic complexity index, we observe that the index value is under two in the 1970s. Figure 8 shows that this index value exceeded two in the 1980s and maintained stability until the end of this period. The period 2000–2004 was when Japan had the most complex economy. The index value was over 2.5 during this period.

Japan's economic complexity rankings for the period between 1970 and 2013 can be found in the Atlas Media Database. In 1970, Japan was ranked third for economic complexity. It ranked first between the years 1972 and 1990. Between the years 1990 and 2000, the country's ranking varied between 1st and 3rd. From 2000 to 2013, Japan was ranked 1st.

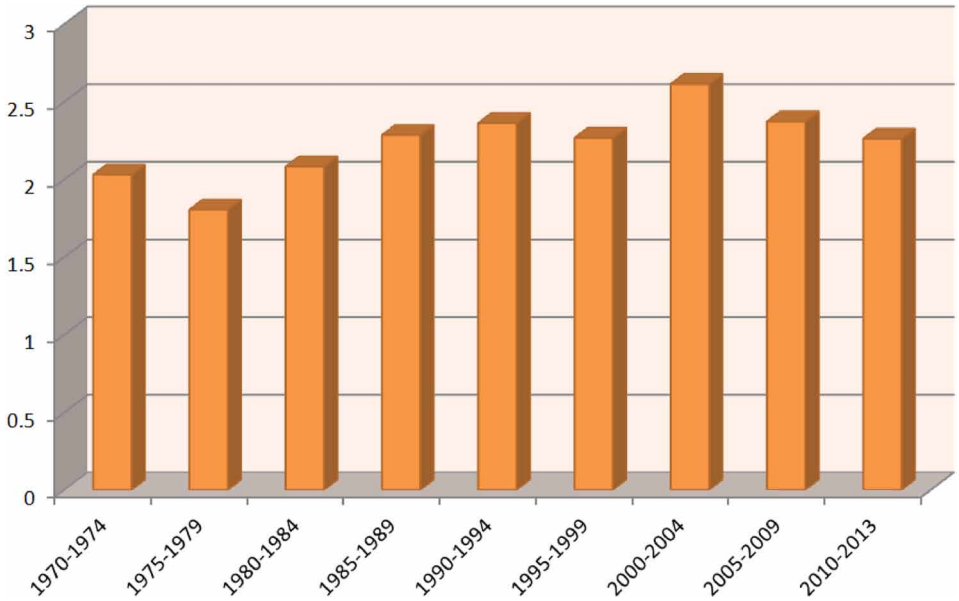
We shall now have a look at the country's product space. As can be seen from Figure 9 (part "a"), in 1970, manufactured products were concentrated in three main areas. The white circle represents weak complexity areas, including agriculture and agro-based industries. Some of these products are footwear, linens, blouses, embroidery, finished cotton fabrics, rice, pasta, silk-woven fabrics, prepared fruit, and temporarily preserved fruit.

In the same period, there were also many products in the center of the product space. This situation is an indicator of Japan's ability to produce many complex products in the 1970s. Some of the manufactured products marked by the red circle include cars, trucks and vans, seamless iron tubes, motorcycles, railway track fixtures and fittings, roller bearings, fasteners, metal cables, thin iron sheets, and iron coils. In the same year, there is a concentration marked by a yellow circle in the top left corner of the



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*Figure 8. Japan's economic complexity index*
*Note: Economic complexity is calculated as five-year averages.*



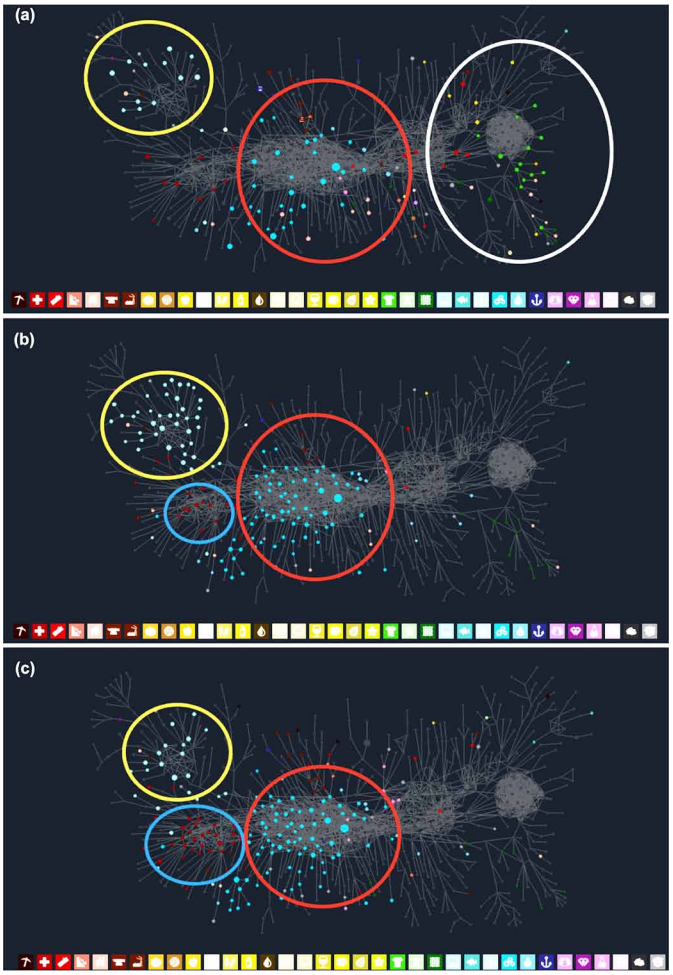

product space. This area includes cameras, calculating machines, clocks, sporting goods, and toys and games. When evaluated in general, Japan's economy in 1970 was mainly based on both agriculture and manufacturing (including agro-textiles).

There were dramatic changes to Japan's product space in 1990 (Figure 9, part "b"). For instance, the area marked by the white circle in 1970, which represented agricultural manufacturing, disappeared. This can be interpreted as arising from the decline of the share of manufacturing and agriculture in total employment. In comparison with 1970, there is an increase in density in the red and yellow areas. The causes of increased density in the red zone are vehicles parts and accessories, valves, pulley system parts, motor vehicles piston engines, construction machinery, DC motors, car tires, and miscellaneous parts of stream power units. The reasons for the increased density in the yellow zone are color TVs, TV tubes and cathode rays, computer parts and accessories, computer peripherals, video and sound recorders, miscellaneous electrical machinery, telecom parts and accessories, and printed circuits. Additionally, there is a newly added blue circle, which was non-existent in 1970. This area consists of health-related products. Some of the manufactured products included in this area are synthetic rubber, monocarboxylic acids, photographic film, x-ray equipment, cyclic alcohols, heterocyclic compounds, medical instruments, and regenerated fiber. We can infer that Japan began to manufacture new products. This meant the emergence of new business opportunities in the service sector and the manufacturing industry in terms of employment. In this context, the manufacturing industry in the 1990s could be expected to increase the number of people employed. However, it seems that there might have been a decline in the share of the manufacturing sector in total employment, because instead of labor automation, computerization became more important in the center of product space. It is also possible that there was an increase in the number of people employed in the service sector and an increase in the share of total employment in the service sector.



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*Figure 9. Japan's product space in 1970/1990/2013*
*Source: Atlas Media Database. Please note that (a), (b) and (c) represent 1970, 1990 and 2013 respectively.*




When Japan's product space in 2013 is assessed (Figure 9, part "c"), greater density in the red-marked area is observed in comparison with the 1990s. The underlying reason for this is that more new products were being manufactured compared to the 1990s. Some of these products are transmission belts, miscellaneous centrifuge and filtering machinery, miscellaneous pump parts, electrical insulators, control instruments of gas or liquid, and valves. Moreover, there is also a significant reduction in the yellow area when compared with the 1990s. The reason for this may be the shifting of manufacturing in this area to different regions across the world. For example, today, even though the originating country of cameras and digital cameras is Japan, most of them are manufactured in China. This could be the underlying reason for the decline in the yellow area. Furthermore, the blue area in the product space is denser in comparison with the 1990s. Some of the new products appearing in this area are regenerated fiber, photographic chemicals, photographic film, chemical products, ethers and acetyls, inorganic esters, printing ink, analog instruments for physical analysis, and glycosides and vaccines.

We can conclude that overall, the Japanese economy was well structured in terms of the agriculture, manufacturing, and service sectors in the 1970s. However, in the 1990s, agriculture and agro-based



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manufacturing sector production disappeared. This led to a decline of the manufacturing sector's percentage share in total employment. There was also a higher concentration in the product space in the areas involving complex manufacturing. This situation is an indication of the emergence of new business opportunities in the manufacturing and service sectors. In 2013, we can deduce from the figure that there was a decrease in the production of electronic devices while there was an expansion in the production of health-related products. This signifies an employment increase in the service sector but a decline (both in terms of percentage share of employment and number of people employed) in the manufacturing industry.

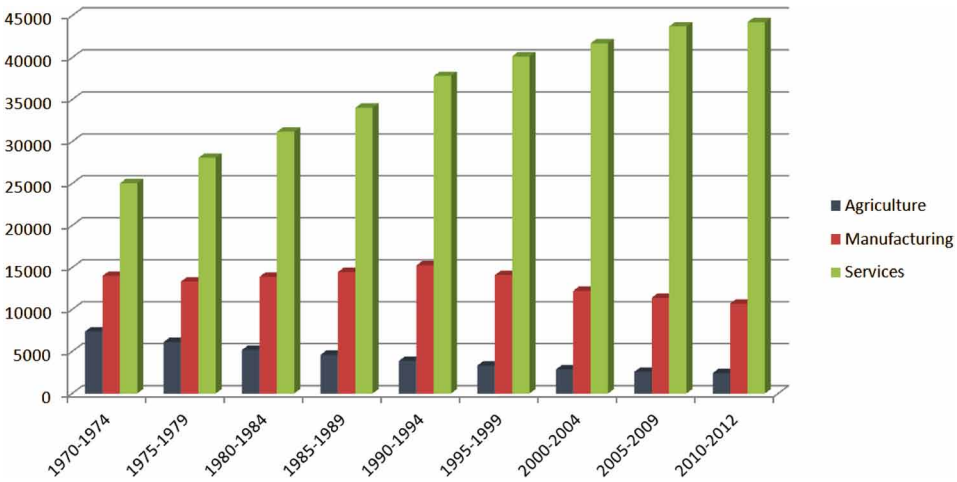
## The Effects of Structural Transformation on Japan's Employment

The structural transformation of the Japan economy has been discussed in the previous sections. It is obvious that this structural transformation would have economic effects as well. In this chapter, the effects of structural transformation on employment in Japan's economy will be evaluated in the context of economic complexity and product space.

As can be understood from Figure 10, agricultural employment in Japan in the period 1970–1974 was over five million. A steady decrease is observed in the number of people employed in agriculture in subsequent periods. This was also observed in Japan's product space in the 1970s and 1990s. As you recall, agro-production, which was on the right-hand side of the product space (marked by the white circle) in 1970, disappeared 20 years later, in 1990. The effects of this are also reflected in the number of employed people, which can be seen in Figure 11. For instance, the percentage share of agriculture in total employment was around 15% between the years 1970 and 1974 but decreased to 4% in the 2010–2012 period.

In terms of the manufacturing sector, both the agro-based textile industry (white circle) and the other manufacturing sectors (red and yellow circles) were present in the product space in the 1970s. It can be inferred from Figure 10 that the number of people employed in manufacturing in 1970 was around 14 million. Moreover, Figure 11 shows that the manufacturing sector's share in total employment was around 28% in the 1970–1974 period. However, in the 1990s, there was a concentration mainly in the

*Figure 10. Number of employed people by sector in Japan (thousands)*
*Note: Numbers are considered as averages. Data sets were obtained from the Bureau of Labor Statistics.*



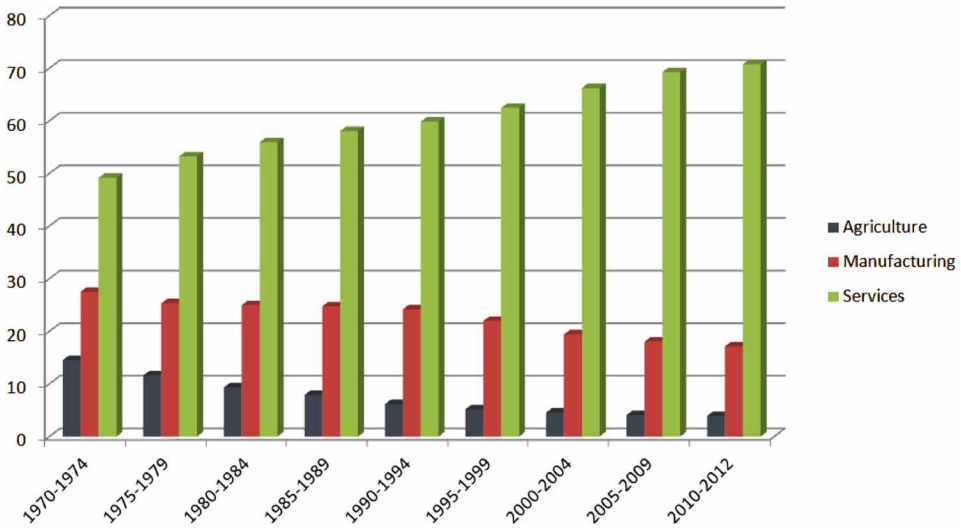



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red and yellow areas of the product space. This is also reflected in the number of people employed in these areas. Approximately 15 million people were employed in the manufacturing industry from 1990 to 1994. The share of the manufacturing sector in total employment is close to that of the previous period. In the 2010–2012 period, on the other hand, there was a significant decline in the number of people employed in the manufacturing industry compared to the previous period. During this period, the total number of people employed was around 10 million. The manufacturing sector's share of total employment was around 17% in this period. This can be explained by comparing the product spaces of 1990 and 2013. As you remember, we saw that there was a concentration in the yellow area in 1990. This area primarily consisted of electrical and electronic equipment. However, in 2013, the country abandoned the manufacturing of the products in this area, which was an important factor in the decline in employment in the manufacturing sector. Besides, when compared with 1990, more products were manufactured in the blue circle area in 2013. We previously mentioned that this area was knowledge-skills intensive.

Figure 10 shows that the total number of people employed in the service sector in the 1970–1974 period was around 25 million. Furthermore, Figure 11 indicates that the share of the service sector in total employment was approximately 49% during this period. The same table also shows that this share in employment continually increased over time. In 2010–2013, the total number of people employed in the service sector was 45 million. Also during this period, the share of the service sector in total employment climbed to 70%. These developments can be observed in the product space too. For example, we observed that the Japanese product space in 1970 and 1990 was mainly composed of the red and yellow circled areas, which mean R&D had a significant role in the manufacturing of these products. Besides, there was a significant increase in the manufacturing of health-related products (marked by the blue circle) in 1990 and 2013. In line with this development, it is possible to claim that the concentration in red, yellow, and blue areas, where knowledge- and skills-intensive manufacturing is performed, had an impact on the employment increase in the service sector.

*Figure 11. Japan's sector shares in total employment (%)*
*Note: Numbers are considered as averages. Data sets were obtained from the Bureau of Labor Statistics.*






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When Japanese structural transformation is evaluated with regard to employment, it is obvious that there has been a steady decline in the agricultural sector. The underlying reason for this is that the increase in economic complexity has led to increased productivity in the agricultural sector. Additionally, the manufacturing industry has experienced a steady decrease in employment (of a percentage basis). This situation can be interpreted as a negative effect of automation on the manufacturing industry. In the service sector, on the other hand, there has been an increase both with regard to people employed and in percentage terms. This can be interpreted as a positive contribution of knowledge- and skills-intensive manufacturing to the service sector.

## CONCLUSION

Structural transformation is a concept often discussed in today's economic literature. To realize sustainable growth and development objectives, countries have to succeed in structural transformation. Success in structural transformation has the power to influence many economic parameters, one of which is the employment structure of the country. In this chapter, changes in the employment structure of South Korea and Japan, both of whom have successfully completed the structural transformation, were studied in terms of economic complexity and product space theory. Economic complexity refers to a country's knowledge and skills production structure. The product space, on the other hand, is a visual representation of economic complexity. As a result of our research, we found out that increased complexity of a country's economy (increased intensity of the product space center) first affects agriculture. The basic dynamic of structural transformation is to shift from agriculture to other industries. However, the process of employment in the manufacturing industry differs depending on the development level of the country. If industrialization of the country is not fully completed, then initially there may be an increase in employment in the manufacturing industry, followed by a decrease through the effects of automation and computerization. On the other hand, if industrialization of the country is fully completed, then a decline in employment in the manufacturing sector on a regular basis may be expected. By contrast, growth in economic complexity may lead to an increase in the service sector. In other words, concentration in the center of the product space may lead to an increase in employment in the service sector both in terms of percentage share in total employment and the number of people employed.

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## KEY TERMS AND DEFINITIONS

**Capabilities:** Abilities of a country including human and physical capital, legal system, institutions and infrastructure.

**Economic Complexity:** A country's whole knowledge and skills used in manufacturing.

**Employment:** An agreement between an employer and an employee that the employee will provide certain services on the job.

**Japan:** An island country in East Asia.

**Product Space:** Relatedness of products which are subject to world trade.

**Production:** A process to transform tangible and intangible inputs into goods or services.

**Sophisticated Product:** A product which needs more knowledge, experience or education for being manufactured.

**South Korea:** A country in the southern part of the Korean peninsula.



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**Structural Transformation:** The reallocation of resources across the agriculture, manufacturing, and services.

## ENDNOTES

1 Hausmann et al., (2011: 20) example was re-adapted.

2 See for details Simoes & Hidalgo (2011).

3 See Hahm (2003).

4 Institutes established by the Korean government in order to adapt to the technologies brought in from foreign countries are as follows: Korea Institute of Machinery and Metals, Electronics and Telecommunications Research Institute, Korea Research Institute of Chemical Technology, Korea Research Institute of Standards and Science, Korea Institute of Energy Research, and Korea Ocean Research Institute (See Kim &Nelson, 2000).

5 The economic complexity index for 1962-2013 is available in the Atlas Media Database.

6 These agreements are known as "the unequal treaties" because Japan was forced to sign them under military pressure from western powers despite the agreements' inclusion of articles against Japan.

7 See Minami (1994).

8 See Ito (1992). That the growth trend is downward is because the government encouraged excessive fiscal in the second half of the 1970s. See Ito (1992, chapter 6) and Asako, Ito, & Sakamoto (1991).

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# Chapter 60
# Investigating the Relationship between Foreign Direct Investment and Corporate Social Responsibility:
## Central Bank Independence and Inflation

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## ABSTRACT

*Should regulatory incentives which incorporate the lowering of environmental and labor standards, generate life threatening and environmental repercussions, as well as those resulting in moral hazard and excessive risk taking levels, be encouraged? This chapter not only investigates whether central bank independence is positively correlated with inflation, but also highlights other variables which could impact the relationship between Corporate Social Responsibility and Foreign Direct Investment. It will highlight why a continuous need for updating of data is necessary given the inability to capture data specific variables and why the introduction of complementary standards would serve to bolster measures aimed at promoting financial stability and encouraging investors – rather than incentives aimed at diluting such standards. In so doing contributes to previous and current literature on the topic – by way of reference to investigations and studies which have revealed concerns in the ability to adequately capture data – particularly in light of the recent 2008/2009 Financial Crisis.*

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## INTRODUCTION

The recent introduction of Enhanced Supplementary Leverage Ratios in several jurisdictions, despite arguments related to the burdensome nature of requirements and conditions attached to their implementation, as well as competitive advantages or disadvantages, not only underlies the importance of these regulations in aiming to avert disastrous consequences which could arise where systemically relevant institutions are threatened, but also highlights the importance of sending appropriate signals to foreign investors that the jurisdiction is relatively stable in terms of financial stability and regulatory measures.

The OECD Guidelines highlight the fact that:

- The ability of multinational enterprises to promote sustainable development, is greatly enhanced when trade and investment are conducted within the context of open, competitive and appropriately regulated markets (OECD, 2008).

Why should standards which have the potential to facilitate the realization of CSR goals and objectives be relaxed as a means of accommodating and attracting foreign investment?

Should cost benefit considerations apply where such standards are so crucial to the realization of CSR goals? Should economic and profit considerations supersede those relating to ethical, and legal obligations?

Does this necessarily mean that jurisdictions with less stringent standards – such as those pertaining to Basel III Leverage and Supplementary Leverage Ratios, have greater potential to attract foreign investment than those jurisdictions which have imposed more stringent requirements? (Ojo, 2014, 2015)

A financial environment which operates with the optimal level of regulatory requirements, which are crucial in facilitating a business environment built on trust, confidence – such that investors are able to rely on information being generated by the management and directors of an enterprise or business, as well as an environment which facilitates transparency, disclosure, should generally constitute incentives for investors to be attracted to such an environment. Further, as rightly, indicated in OECD Guidelines, a competitive market environment, should also serve as an engine which fosters growth and development.

Why is it then the case that foreign direct investment in certain jurisdictions does not necessarily translate to propellers of growth and development in such jurisdictions – whether these are developed, emerging or developing economies?

Whilst UNCTAD statistics reveal dramatic growth in certain jurisdictions, this cannot be said of others. [1]

One plausible reason can only be that certain jurisdictions have failed to consider the benefits of fully implementing or complying with regulatory, environmental or ethical standards, or are encouraging investment incentives which whilst aimed at encouraging growth and development, are not necessarily facilitating the generation of benefits which full implementation of certain regulatory and ethical standards would have facilitated.

It is definitely a trade game where you either implement the standards at a level such that costs of such implementation are minimal – whilst compromising certain Corporate Social Responsibility goals. Further, the environment within which such standards are supposed to be implemented may be negatively influenced by political, institutional and legal impediments, such that it warrants little effort to fully implement or even introduce such standards. In other words, profits dominate the firm or MNEs' corporate goals and objectives given such negative external influences.

According to UNCTAD (2014),



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- Investment incentives mostly focus on economic performance objectives, less on sustainable development. Incentives are widely used by governments as a policy instrument for attracting investment, despite persistent criticism that they are economically inefficient and lead to misallocations of public funds. To address these concerns, investment incentives schemes could be more closely aligned with the SDGs (Sustainable Development Goals).

The following incentives have been highlighted by UNCTAD as constituting means of attracting foreign investment (UNCTAD, 2014):

- Financial Incentives
- Fiscal Incentives
- Regulatory Incentives

Regulatory incentives, namely those which include the "lowering of environmental, health, safety or labor standards, as well as temporary or permanent exemption from compliance with applicable standards", will constitute greater focus of this chapter.

As well as responding to issues and concerns related to whether standards which have the potential to facilitate the realization of CSR goals and objectives should be relaxed as a means of accommodating and attracting foreign investment, whether cost benefit considerations should apply where such standards are so crucial to the realization of CSR goals, and whether economic and profit considerations should supersede those relating to ethical, and legal obligations, this chapter also aims to highlight why foreign direct investment in certain jurisdictions does not necessarily translate to propellers of growth and development, with the expected results in such jurisdictions – as is the case with other jurisdictions. It will attempt to address many of these questions by way of reference to other variables which may impact financial growth and development - variables such as inflation, external factors such as political influences on economic decisions and the importance of corporate governance and institutional frameworks aimed at ensuring that vital regulations and standards are complied with and effectively enforced.

## BACKGROUND AND LITERATURE REVIEW (CONCEPTUAL, THEORETICAL AND EMPIRICAL FRAMEWORKS)

In order to illustrate the impact of political interference on monetary and economic policies, as well as financial development in certain economies, reference will be made to the literature and empirical analyses relating to central bank independence and financial development. This will serve to consolidate the argument that other variables, namely inflation, can impact corporate social responsibility and goals, where political factors impact economic and monetary policies and decisions.

### Central Bank Independence

Central Bank Independence (CBI) is often cited as prescription to assure price stability in an economy. Cross-country empirical studies especially in industrial economies suggest a negative relationship between CBI and inflation. According to Hayo and Hefeker (2002), Central Bank Independence is neither necessary nor sufficient for reaching monetary stability.



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In relation to the debate on whether Central Bank Independence is evidential of low inflation, several theories have been propounded:

## High CBI and Low Inflation?

The following three theories have been put forward by Eijffinger & Haan (1996):

- The public-choice theory[2] whereby Buchanam and Wagner (1977) examine concepts of Keynesian economics.
- Sargent-Wallace (1981) theory
- Time-inconsistency theory problem of monetary policy as explained by Kydland and Prescott (1977), Calvo (1978) and Barro and Gordon (1983).

Based on the summary of empirical studies carried out by Cukierman et al. (1992) and Berger et al. (2001), they conclude that among industrial countries, legal CBI index is negatively correlated with inflation but TOR (turnover of central bank governors) has no correlation with inflation. They also conclude that among developing countries, legal CBI index is not correlated with inflation but TOR is significantly related to inflation.

The following five measures and indicators of financial development and financial systems are highlighted by Beck et al. (2000):

- DMCD: Ratio of deposit money banks assets to central bank assets
- LLGDP: Ratio of liquid liabilities to GDP[3]
- CBGDP: Ratio of central bank assets to GDP
- DMGDP: Ratio of deposit money banks assets to GDP
- INF: Inflation index $[\pi/(1 + \pi)]$

The following data, figures and tables reflect annual data collected between the period 1970 and 2003 and are based on the five above mentioned indicators.

## SUMMARY OF RESULTS (1)

Based on ADF unit-root test, in which all the time series data are integrated of order 1,

The Johansen cointegration results show:

- INF and DMCD are cointegrated
- INF and LLGDP are cointegrated
- INF and CBGDP are cointegrated
- INF and DMGDP are not cointegrated



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*Table 1. Data descriptive statistics*

| | INF | DMCD | LLGDP | CBGDP | DMGDP |
|---|---|---|---|---|---|
| Mean | 0.159 | 0.605 | 0.210 | 0.120 | 0.153 |
| Standard Deviation | 0.104 | 0.169 | 0.069 | 0.075 | 0.058 |
| Skewness | 0.963 | 0.106 | -0.076 | 0.220 | 0.483 |
| Kurtosis | 2.898 | 2.267 | 2.032 | 2.472 | 2.062 |
| Jarque-Bera Statistic | 5.269 | 0.824 | 1.361 | 0.668 | 2.568 |

*Table 2. Data correlation matrix*

| | INF | DMCD | LLGDP | CBGDP | DMGDP |
|---|---|---|---|---|---|
| INF | 1.000 | -0.455 | 0.143 | 0.518 | -0.027 |
| DMCD | | 1.000 | -0.306 | -0.892 | -0.155 |
| LLGDP | | | 1.000 | 0.516 | 0.903 |
| CBGDP | | | | 1.000 | 0.417 |
| DMGDP | | | | | 1.000 |

*Table 3. Unit root test results*

| | INF | DMCD | LLGDP | CBGDP | DMGDP |
|---|---|---|---|---|---|
| SERIES IN LEVELS | | | | | |
| ADF Statistic | -3.140 | -1.415 | -1.775 | -1.446 | -1.261 |
| KPSS Statistic | 0.171 | 0.382*** | 0.196 | 0.460*** | 0.194 |
| FIRST DIFFERENCE OF SERIES | | | | | |
| ADF Statistic | -5.910* | -6.114* | -4.979* | -4.185* | -4.500* |
| KPSS Statistic | 0.5000** | 0.229 | 0.153 | 0.261 | 0.115 |

*Table 4. Johansen Bivariate Co integration test results*

| λi | H0 | H1 | λ-max statistic | H0 | H1 | λ-trace statistic |
|---|---|---|---|---|---|---|
| (a) INFLATION AND DMCD<br>0.507<br>0.048 | r = 0<br>r ≤ 1 | r = 1<br>r = 2 | 22.647**<br>1.562 | r = 0<br>r ≤ 1 | r = 1<br>r = 2 | 24.209**<br>1.562 |
| (b) INFLATION AND LLGDP<br>0.359 | r = 0 | r = 1 | 14.225 | r = 0 | r = 1 | 17.952** |
| 0.110 | r ≤ 1 | r = 2 | 3.727 | r ≤ 1 | r = 2 | 3.727 |
| (c) INFLATION AND LLGDP<br>0.380 | r = 0 | r = 1 | 15.303** | r = 0 | r = 1 | 18.351** |
| 0.091 | r ≤ 1 | r = 2 | 3.048 | r ≤ 1 | r = 2 | 3.048 |
| (d) INFLATION AND DMGDP<br>0.325 | r = 0 | r = 1 | 12.566 | r = 0 | r = 1 | 15.082 |
| 0.076 | r ≤ 1 | r = 2 | 2.516 | r ≤ 1 | r = 2 | 2.516 |



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## SUMMARY OF RESULTS (2)

Inflation is negatively correlated with DMCD and DMGDP
Inflation is positively correlated with LLGDP and CBGDP

## Interpretation of Results

There is a long-run relationship between the level of financial development and inflation. The level of financial development is more appropriate than the existing indices of central bank independence. It is not logical to assume that all developing countries are homogenous in terms of the role and influence of central banks on price stability.

## Issues, Controversies, Problems

### Adequately Accounting for Data and Capturing of Data Following the 2008/2009 Financial Crisis

According to Beck, Demirguc-Kunt, and Levi (2010):

- While the previous indicators measure the liability side of financial intermediaries' balance sheets, indicators of the asset side capture credit allocation, one of the most important functions of financial intermediaries. Private credit by deposit money banks and other financial institutions to GDP is the ratio of claims on the private sector by deposit money banks and other financial institutions to GDP. It is a standard indicator in the finance and growth literature; countries with higher levels of private credit to GDP have been shown to grow faster and experience faster rates of poverty reduction. A somewhat narrower indicator—limited to deposit money banks—is private credit by deposit money banks to GDP.

Beck et al also add that whilst the data figures for the period ending 2007 do not fully capture the recent crisis, indicators of banking efficiency, profitability, and stability match the trends in the boom period leading up to the recent global financial crisis (Beck, Demirguc-Kunt, & Levi, 2010). Further, they make the following observations (Beck, Demirguc-Kunt, & Levi, 2010):

- That the lower margins for traditional lines of business and the search for higher returns were possible only through high-risk taking, especially in high-income countries.
- Integration into global financial markets has also increased, though the driving forces have differed for different income groups.
- While the increase in international lending and bond issues has been concentrated in high-income countries, low- and lower middle-income countries have benefited from higher remittance flows.

The following section hence makes reference to present and previous literature on variables impacting financial development, foreign direct investment and corporate social responsibility, as a means of highlighting and addressing gaps which may arise from inadequately accounting for data – as well as highlighting the importance of effective corporate governance mechanisms in realizing corporate social goals.



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## SOLUTIONS AND RECOMMENDATIONS

### Relationship between Foreign Direct Investment (FDI) and Corporate Social Responsibility (CSR)

Drawing on investigations carried out by Fortanier and Van Wijk (2010) - based on the analysis of three sub Saharan countries and in which it is ascertained by them that that MNEs crowd out local firms from the labour market by hiring their best-trained employees and where it is implied that human capital development in the hotel sector will not be driven by FDI, Kolk and Tulder (2010) conclude on this basis and are of the opinion that "well-developed institutions - in this case via training and education systems, are a prerequisite for positive effects from FDI" and that further, country-of-origin aspects were considered by Auger, Devinney, Louviere and Burke (2010), in terms of the products included in their study as well as consumers from six different countries.

Based on studies undertaken by Goyal (2006) and Kolk and van Tulder, (2010) they conclude that there has been a correlation between increases in CSR and increases in FDI since the 1990s.

However, as reflected by recent UNCTAD reports (2014), whilst positive effects of FDI are evidenced in certain countries, this cannot be said of others. Based on conclusions derived from Kolk and Tulder, as regards their opinions on training and education systems being pre requisites for positive effects from FDI, an argument can be made for the need to distinguish between those jurisdictions which are well equipped with the adequately balanced institutional, legal, and governance frameworks and those without such frameworks as constituting a basis for evaluating and analyzing the effects of FDI. In this respect, and drawing on Carroll's pyramid of Corporate Social Responsibility (DiGabriele & Ojo, 2016), training and education cannot constitute the sole pre requisites, particularly in jurisdictions with underperforming institutional structures, for determining the positive effects of FDI. As highlighted in the Chapter "Corporate Social Responsibility and Foreign Direct Investment: Engaging Innovation, Auditors and Stakeholders in Corporate Social Responsibility" (2016), compliance with laws, business principles and codes of conduct, without doubt, constitutes the most fundamental and strategic level of the pyramid since goals and objectives attributed to other levels of the pyramid, namely longer term goals of sustainability, and goals relating to nutritional, water and rural development, will not be realised to their maximum potential where compliance with regulations and other related laws and principles are not effectively implemented and enforced.

### Further Empirical Studies on the Relationship between Corporate Social Responsibility and Foreign Direct Investment

Based on results derived by Gonzalez Perez, Riegler and Riegler (2011), as regards the relationship between Corporate Social Responsibility and Foreign Direct Investment, investigations of which incorporated "two different approaches for the empirical examination of the relationship between FDI and CSR", such approaches in their opinion denoting and implying a significantly correlated relationship between the variables of interest (Perez, Riegler, & Riegler, 2011):

- It was concluded that the first approach implied a correlation between a CSR index and FDI, while the second approach suggests that FDI in Colombia is environmentally responsible because it reduces its negative externalities on CO2 emissions.



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- Further, they add that the first approach, whilst having the advantage of being more general, was also disadvantageous in the sense of ignoring any specific effects of the relationship and that even though the second approach provided deeper insight into the specific relationship between the variables, was limited in the sense that it only takes into account the actual results.

## FUTURE RESEARCH DIRECTIONS

Challenges involving private sector investment in the public sector, as well as efforts aimed at consolidating regional and international standards – particularly in matters of environmental matters, reducing pollution and dangerous chemical emissions continue to constitute focal points and whilst progress is being made in certain jurisdictions, evidence exists to support the fact that many developing economies still suffer from environmental consequences resulting from failures of their governments to implement and enforce required environmental standards and effective corporate governance mechanisms.

## CONCLUSION

Should regulatory incentives, namely those which include the "lowering of environmental, health, safety or labor standards, as well as temporary or permanent exemption from compliance with applicable standards" be encouraged where such incentives generate behavior which not only has life threatening and environmental repercussions, but also results in moral hazard and excessive risk taking levels? Given efforts being undertaken to address systemic risks, with particular reference to: recently introduced Enhanced Supplementary Leverage Ratios; as well as their applicability to systemically relevant institutions; the need to adequately balance interests of wider stakeholders;

The consideration of more damaging consequences of a major disruption to financial stability, as well as the need to implement reliable complements to present financial indicators, should take precedence over a dilution of standards which would only encourage reckless behavior emanating from the desire to place profit maximizing priorities at the fore.

The literature review concludes that legal CBI index is negatively correlated with inflation but TOR (turnover of central bank governors) has no correlation with inflation. It is also concluded that among developing countries, legal CBI index is not correlated with inflation but TOR is significantly related to inflation.

As reflected from the investigation and results from the data incorporated into this chapter, it is not logical to assume that all developing countries are homogenous in terms of the role and influence of central banks on price stability. Further, certain data may not adequately capture specific effects which exist between variables and such data need to be continuously adjusted to reflect actual results. In order to ensure that corporate social responsibility goals and objectives are maximally realized, more effective corporate governance mechanisms, standards and effective compliance and enforcement mechanisms should be in place. Training and education cannot constitute the sole pre requisites for determining the positive effects of FDI – particularly in those jurisdictions where political influences are of such impact that economic policies, legal and institutional frameworks are affected and environmental repercussions emanate as a result of such external social and political factors.



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## ENDNOTES

1 "Europe, traditionally the largest FDI recipient region, is at less than one third of its 2007 inflows and one fourth of its outflows. The United States and the European Union (EU) saw their combined share of global FDI inflows decline from well over 50 per cent pre-crisis to 30 per cent in 2013." See UNCTAD, "World Investment Report 2014: Investing in the SDGs: An Action Plan" see page x

2 "*Democracy in Deficit* paved the way in economics in endogenizing the role of government in discussions of macroeconomic theory and policy. The basic discovery was that Keynesian economics had a bias toward deficits in terms of political self-interest. That is, at the margin politicians preferred easy choices to hard ones, and this meant lower taxes and higher spending. Thus, whatever the merits of Keynesian economics in using government fiscal policy to "balance" the forces of inflation and deflation and employment and unemployment in an economy, its application in a democratic setting had severe problems of incentive compatibility; that is, there was a bias toward deficit finance. And, of course, there is no need to reiterate here the evidence in the United States and elsewhere for the correctness of the Buchanan insight on Keynesian economics." See J M. Buchanan and R E. Wagner, *Democracy in Deficit: The Political Legacy of Lord Keynes* (New York: Academic Press, 1977), volume 8 in the series.

3 "Liquid liabilities to GDP is a traditional indicator of financial depth. It is the ratio of currency plus demand and interest-bearing liabilities of banks and other financial intermediaries to GDP." See T Beck, A Demirguc-Kunt,and R Levine (2010) Financial Institutions and Markets across Countries and over Time: The Updated Financial Development and Structure Database. The World Bank Economic Review, Vol. 24, No. 1,pp. 77–92 doi:10.1093/wber/lhp016 Advance Access Publication January 11, 2010 Published by Oxford University Press on behalf of the International Bank for Reconstruction and Development

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# Chapter 61
# The Paradigm of the Investment Development Path:
## The Applicability for The European Union Members For 1990–2014 Period

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## ABSTRACT

*This article describes how foreign direct investments (FDI) is one of the most important forces that influences the global economy. Along the last two and a half decades, the motivations and the field of interest of multinational enterprises (MNEs) mutated to new forms under the influence of globalization and the international financial crisis. Those two events had a dramatic impact on the evolution of inward and outward flow of FDI. The main scope of this article is to analyze the advance of the EU28 member states through the stages of the Investment Development Path (IDP) in the period from 1990 to 2014 and to explore the viability of the original model in nowadays global economy realities. The results show that FDI is useful to gauge the economics of lesser developed countries.*

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## 1. INTRODUCTION

Foreign direct investment is no longer attributed to the exclusive use of the multinational enterprises (MNEs). There are new entities implicated in cross border mergers and acquisitions or green field projects like sovereign wealth funds, private equity firms, venture capital, state-owned MNEs or international financial organizations like International Financial Corporation (IFC) or European Bank for Reconstruction and Development.

In the last decades, a new trend can be observed. The FDI flows are initiated by companies from developing countries. New multinational enterprises from emerging economies, such as China, India or Brazil generate important FDI to developed economies such USA and European countries (Dohse et al.,2012). In fact, this trend has several waves:

- from the 1960s until the early 1980s, MNEs from developing countries (the main part from Latin America) made FDI in other developing countries, exactly neighboring economies;
- beginning in the 1980s, the MNEs (especially from Asia) have been oriented to growing foreign markets or invested in less developed economies than their home countries;
- in the last decade, MNEs from Asia have invested in developed countries and they are now net FDI exporters, a position specific to developed economies.

The developing countries removed barriers and they have engaged in a struggle to attract foreign capital, taking in considerations the positive effects of FDI on host countries (Zubovic et al. 2009; Subic et al. 2010; Zaman et al. 2011; Zaman et al., 2012, Iacovoiu 2013; Ivan & Iacovoiu 2008; Zaman & Vasile, 2012, Anghelache et al., 2014; Popescu, 2014; Munteanu, 2015; Anghel et al., 2016; Anghelache et al. 2016; Panait & Dusmanescu 2017; Podasca, 2017; Panait & Voica, 2017).

The developing countries have changed their optics on the FDI and MNEs that were consider tools of imperialism, one of the causes of persistent underdevelopment (Narula, Pineli 2016) and a threat to political and economic sovereignty of these countries (Narula and Driffield, 2012).

With the economic development of these countries, private state-owned companies invested abroad. Thus, from the receivers of FDI, these countries turned in FDI issuers. Specialists like Dunning and Narula (Narula & Dunning, 2010; Narula, & Guimon, 2010, Fonseca et al. 2016) observed that evolution of inward and outward FDI flows of a country varies in accordance with its relative level of economic development. So, a new model was designed: investment development path (IDP) model divided in five main stages that explain the nature and extent of FDI relating to the development level of the country.

With the development of a country, there is also a change to the conditions offered to local and foreign companies, with direct implications on FDI inflows. In turn, FDI influences economic structure and development of a country. Therefore, there is an interaction between the two elements. Governments can affect the conditions of a country through the creation of public goods, acting on competition and the advantages of ownership of local and foreign companies (Matei, 2004; Dracea, & Cristea, 2010; Cristea, & Drăgulin, 2016). According to this theory, countries go through five stages of development (Buckley & Castro, 1998, Narula & Dunning, 2010, Narula & Guimon, 2010).

- The first stage is specific to least developed countries (being in the pre-industrialization period): FDI flows (inward and outward) are almost nonexistent because the local market is small, the infrastructure is not adequate, and the workforce and the legal framework are poorly prepared.



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- The stage 2 is characterized by the development of specific location advantages (improving infrastructure, resources, increasing the size of the domestic market). This stage is characterized by increasing inward FDI concentrated in the traditional branches of manufacturing and labor-intensive industries (such as construction, distribution and trade). At this stage, we are witnessing faster growth of FDI stock received than GDP. The outward FDI stock is very low because the ownership advantages of local companies are still weak.
- The stage 3 is characterized by a less spectacular growth of FDI received. These are exceeded by outward FDI; for the first time, the countries recorded an increase in net FDI stock, even if sometimes recorded negative values. This change is given the benefits of ownership of local companies that become more specific to companies and less country-specific. The companies will become stronger and even more competitive, they will engage in investment to exploit the resources in less developed countries and the seeking of assets or markets in more developed countries. This stage is specific to countries that have managed to create a legal system and satisfactory infrastructure.
- The stage 4 is characterized by the predominance of FDI output compared with those received.
- The stage 5, the final stage is the characteristic of the most developed countries, the inward and outward FDI flows are very high, and the net position is nearly zero, alternating negative values with positive ones, depending on the evolution of exchange rates and business cycle.

The development investment path varies from country to country, depending on economic structure (market size, the availability of natural resources), such as type of FDI and government policy (Iacovoiu & Panait, 2014, Voica et al., 2015). The financial international crises affected the activity of companies (Zefinescu et al., 2015) and the flows of FDI that cut dramatically (Haralambie, 2010; Podasca 2010; Zaman&Geamanu, 2010, Voica &Panait, 2014).

In fact, in scientific literature, researchers discuss about the broad version and narrow version of the IDP (Narula & Dunning, 2010, Narula & Guimon, 2010), because the globalization has a dramatical impact on the MNEs` activities (Masca & Vaidean, 2010). So, the MNEs "have responded proactively to globalization modifying their strategies, their spatial organization and the modalities by which they interact with host economic actors"(Narula&Guimon, 2010). Taking in consideration aspects like the "idiosyncratic economic structures of countries, the heterogeneity of FDI and to the effect of government policies", a new version of IDP was developed. For example, some countries have a similar level of development measured by macroeconomic indicators, but the important determinants for FDI such "economic structure, industrial and technological specialization patterns" (Narula and Dunning, 2010) are different and has implication on FDI types and method of entry in the host countries. So, globalization and the activity of public authorities are shaping the flows of FDI at international level. (Serafim, 2011)

Taking in account these considerations, in this paper, the authors analyzed the connection between the development`s stage of a country and the inward and outward FDI flows and stocks for EU members for 1990-2014 period.

## 2. THE EVOLUTION OF IDP INDICATORS IN THE EUROPEAN UNION

In this paper, we will study the evolution of the IDP indicators for the 28 EU member states. We used as data source the statistics from United Nations Conference on Trade and Development regarding inward and outward stock of FDI, GDP and population for a time span from 1990 to 2014 and we calculate the



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NOI/capita (net outward investment/capita) and GDP/capita indicators. The monetary unit was the US Dollars at current prices and current exchange rates.

Analyzing the raw data, we observed that the inward and outward FDI stock had an ascending trend for the EU in the analyzed period. The inward FDI grew around 8.7 fold from 0.8 trillion USD in 1990 to 7.6 trillion USD in 2014. At the same time, the outward FDI stock grew around 9.3 fold from 0.9 trillion USD in 1990 to 9.2 trillion USD in 2014.

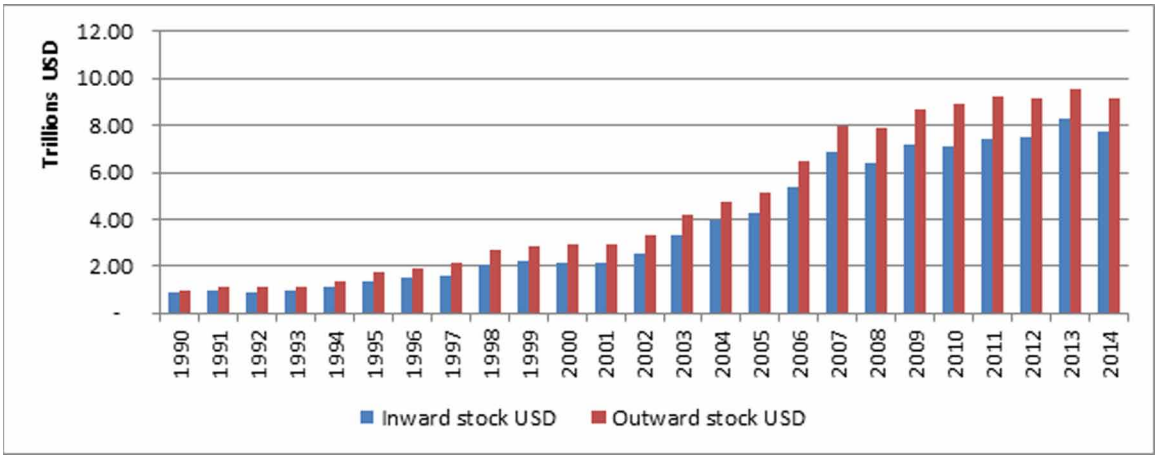
In Figure 1, we observe the evolution of inward and outward FDI stock from 1990 to 2014. The trend for both indicators was ascending through the analyzed period. The inward FDI stock registered an average rate of growth of 10.8% annually. The highest rates of growth have been registered in 1998 with a growth of 32%, 2002, 2003 with growth rates of 22% and 29% and 2006, 2007 with growth rates of 27%. Among these annual growth rates, we find some years with a negative growth and the most important are the year 2008 and 2014 with decreases of around 7%. The outward FDI stock registered an average rate of growth of 10.2% annually. The highest rates of growth have been registered in 1995 with a growth of 28%, 1998 with a growth of 25%, 2003 with a growth rate of 24% and 2006, 2007 with growth rates of 24% and 23%. Among these annual growth rates, we find some years with a negative growth and the most important is the year 2014 with a decrease of around 5%.

Next, we will make a comparative analysis between the EU member state as they evolve through the IDP stages between 1990 and 2014. In order to achieve a better understanding of the phenomenon, we group the states according to their medium value of GDP/capita and evolution through the IDP stages in sets of 5 countries.

The methodology used to group the states on the IDP stages is initiated around the GDP/capita indicator as it follows: stage 1 for GDP/capita lower than 2.500 USD, stage 2 for GDP/capita between 2.500 USD and 10.000 USD, stage 3 for GDP/capita between 10.000 and 25.000 USD, stage 4 for GDP/capita between 25.000 USD and 36.000 USD and stage 5 for GDP/capita higher than 36.000 USD.

In Figure 2, we study the first group of five states, Bulgaria, Romania, Latvia, Lithuania and Poland. All five countries have a similar evolution in concordance with the IDP theory which states that the NOI/capita will be negative. Romania, Bulgaria and Latvia are in stage 2 throughout the entire period;

*Figure 1. FDI inward and outward stocks in European Union 1990-2014 (Source: Authors calculation based on data from UNCTAD)*






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Lithuania and Poland started in stage 2 and advanced to stage 3 in 2012 respectively 2011. According to Figure 2, we can view the financial crisis influence on the stock of FDI, influencing the flow of FDI. Another important aspect is represented by influence of the communist breakdown since 1989 that can be observed at the start of the period in the GDP/capita indicator which had a decreasing trend in the first years generated by the transition from communist economy to capitalist economy with the change of the property from state owned to private owned.

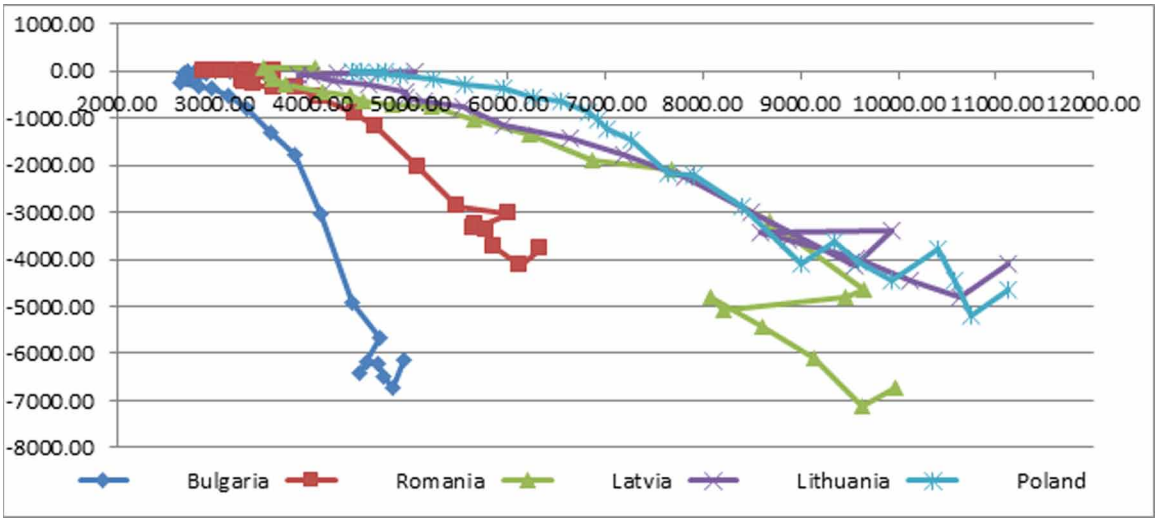
All five countries evolution of NOI/capita indicator was influenced mainly by the inward FDI evolution. Outward FDI had almost no influence on NOI/capita because of the low level registered in the analyzed period. As we can see from Figure 2, the evolution of the two indicators was smooth until 2008 when the financial crisis determined a chaotic evolution for all countries influenced by the disruption of FDI flows and lack of confidence between countries. The GDP/capita registered an important fall in 2008 and then recovered the ascending trend while the NOI/capita registered high variations from the main trend registered until then.

Forward, we analyze the next group formed of Estonia, Slovakia, Croatia, Hungary and Czech Republic. All these countries were in stage 2 of IDP in 1990 and they went to the next stage like this: Estonia in 2005, Slovakia in 2006, Croatia in 2005, Hungary in 2003 and Czech Republic in 1996. Since 2007, all these countries are in stage 3 of the IDP and the values of NOI/capita were negative in concordance with the IDP model. In this group, we also have former communist countries which registered a decreasing trend of GDP/capita at the beginning of the analyzed period, as we can observe from Figure 3.

In Figure 3, we see that the five countries have a similar evolution of the two indicators, in concordance with the IDP model.

Slovakia and Czech Republic had a similar evolution through the analyzed period with a high level of inward FDI and a low level of outward FDI, similar to the countries of stage 1 and 2 of the IDP model. The financial crisis of 2008 did not have a big influence on the evolution of the NOI/capita and GDP/capita indicators.

*Figure 2. The correlation of GDP/capita – NOI/capita for Bulgaria, Romania, Latvia, Lithuania and Poland (Source: Authors calculation based on data from UNCTAD)*






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Estonia, Croatia and Hungary received the shock of 2008 harder and with very high influence on both GDP/capita and NOI/capita. Estonia registered the highest decrease of GDP/capita, but recovered quickly and retook the trend registered before the crisis. Croatia on the other hand took the blow easier but didn't recover from it, the IDP graphic showing that the country is blocked in the same spot for the last three years.

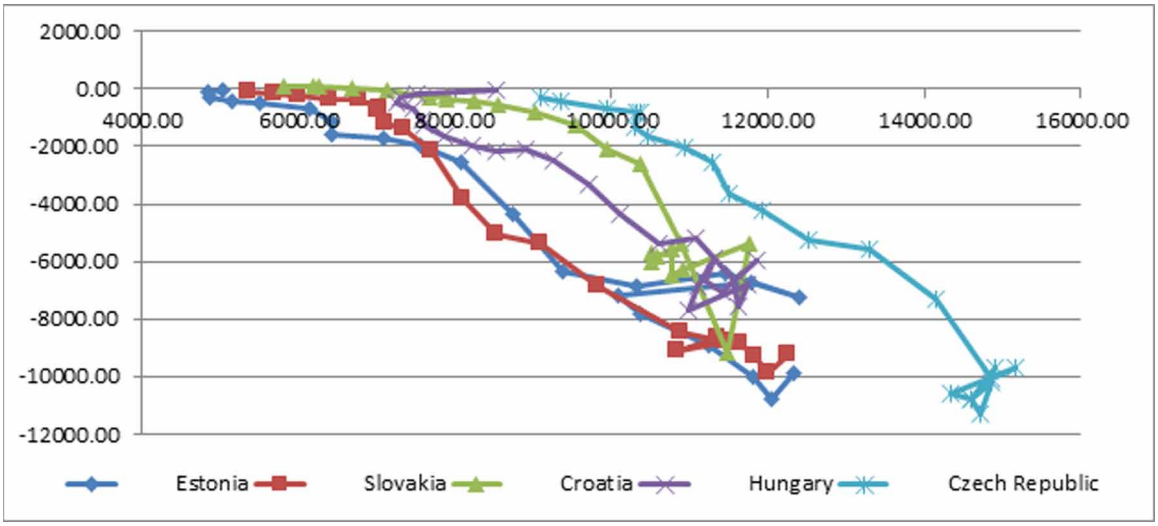
Slovenia, Portugal, Greece, Spain and Italy are the countries that compose the next group. Among them are some of the most competitive economies of the EU and also some of the most affected by the financial crisis.

In Figure 4, we observe that Slovenia Portugal and Greece remained in stage 3 of the IDP throughout the entire period, Spain started in stage 3 and advanced to stage 4 in 2002 while Italy was in stage 4 throughout the analyzed period. Slovenia, Portugal, Spain and Italy evolve in concordance with the IDP model while Greece. Slovenia and Portugal registered a negative NOI/capita according to stage 3 of the IDP. Greece and Spain went from negative to positive values of NOI/capita while Italy registered only positive values for NOI/capita in concordance with its stage 4 of the IDP.

Slovenia and Portugal had a similar evolution with a trend near the X axis which meant that the value of inward and outward FDI were almost similar and with a very high rise of GDP/capita for Slovenia, almost surpassing Portugal, but in 2008 the financial crisis stopped the evolution and the reduction of FDI flows pushed the NOI/capita towards more negative values.

Greece is a special case that went from negative to positive NOI/capita when the financial crisis stroke. This can be explained by the reduction of inward FDI stock while the outward FDI stock stayed almost the same. At the same time the public debt problem exposed by the financial crisis caused a lack of confidence from investors and pushed Greece into recession whit the need to take unpopular measures in order to ensure the future economic viability of the country. These actions had a negative influence on GDP/capita indicator which decreased almost to the levels of the first quarter of the analyzed period.

*Figure 3. The correlation of GDP/capita – NOI/capita for Estonia, Slovakia, Croatia, Hungary and Czech Republic (Source: Authors calculation based on data from UNCTAD)*






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Spain had a similar evolution like Greece, but in its case, the financial crisis had a lower influence on GDP/capita because Spain didn't have the public debt problem of Greece. Spain on the other hand had a structural problem with the real estate sector and the unemployment level. On this background the GDP/capita registered a decrease after 2008. The NOI/capita went back to negative values after the positive values of 3008, 2010 and 2011.

Italy is one of the most developed economies of EU and the only country situated in stage 4 of the IDP model for this group. Throughout the analyzed period the NOI/capita values have been positive in concordance with the IDP model.

The next group is formed from France, Germany, Finland, United Kingdom and Austria. All these countries started in stage 4 of the IDP model and advanced to stage 5.

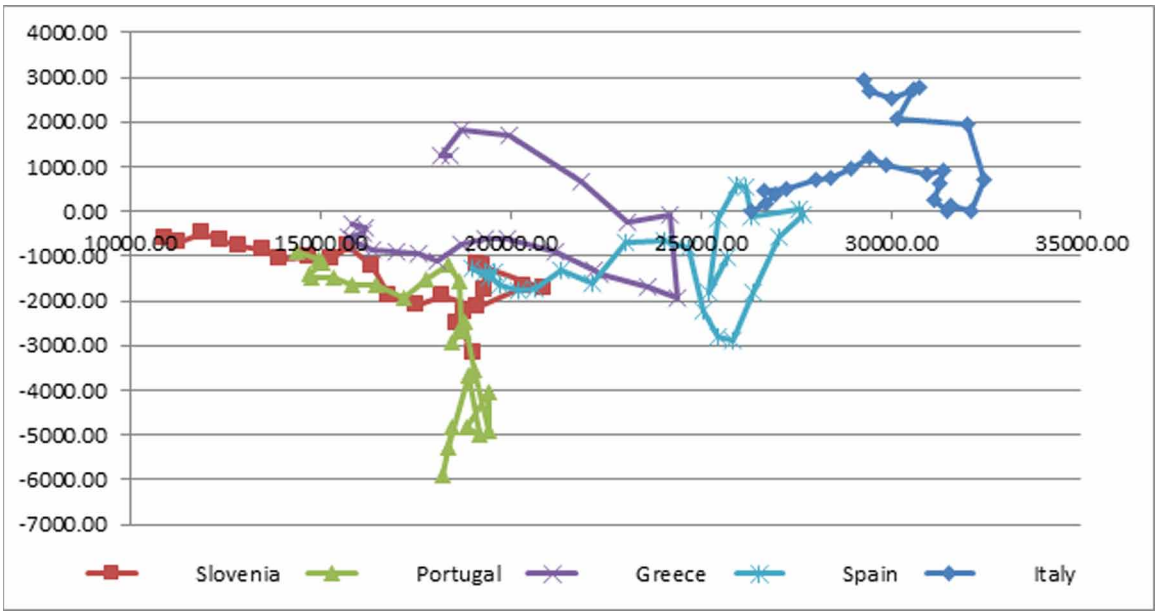
France is the only country that went from stage 4 to stage 5 in 2007, but in the next year it came back to stage 4 because of the effects of the international financial crisis. The other four countries went to stage 5 and stayed there as it follows: Germany in 2006, Finland in 2002, United Kingdom and Austria in 2001 (Figure 5).

The values of NOI/capita are positive for all of these countries with the exception of Austria which had negative values between 1990 and 2007 and positive value from 2008 onward. United Kingdom went from positive values of NOI/capita to negative values in 2013 and 2014.

In this group is formed from Netherlands, Sweden, Ireland and Denmark. These are the countries with the highest level of GDP/capita from the EU member states.

Netherlands started in stage 4 and advanced to stage 5 in 1998, but throughout the observed period the NOI/capita registered positive values, which is not in concordance with the IDP theory. The level of outward and inward FDI registered and ascending trend until 2007. In 2008, both indicators decreased

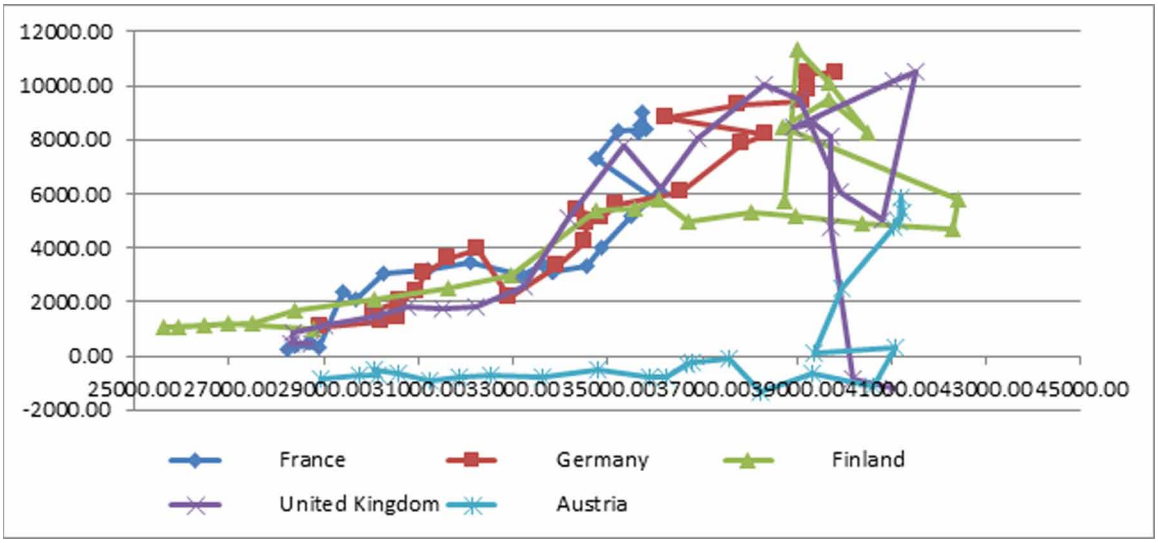
*Figure 4. The correlation of GDP/capita – NOI/capita for Slovenia, Portugal, Greece, Spain and Italy (Source: Authors calculation based on data from UNCTAD)*






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*Figure 5. The correlation of GDP/capita – NOI/capita for France, Germany, Finland, United Kingdom and Austria (Source: Authors calculation based on data from UNCTAD)*




and in the following years the inward FDI had an oscillating trend while the outward FDI had an ascending trend until 2014 when a sharp decrease has been experienced.

Sweden started in stage 4 and advanced to stage 5 in 1997 and registered similar evolution of NOI/capita, like Netherlands, with positive values throughout the analyzed period which is not in concordance with the IDP theory. Thought the analyzed period the inward FDI has been lower than the outward FDI, but the difference between the two indicators has been on a descending trend. In the analyzed period the inward and outward FDI registered an ascending trend. This trend wasn't registered in the first years between 1990 and 1993, in 2008 because of the financial crisis and 2014.

Ireland started in stage 3 of IDP, advanced to stage 4 in 1992 and then advanced to stage 5 in 1997. The NOI/capita evolution has been negative in the period 1990 – 2008 and positive since then. IDP theory says that, in stage 4 NOI/capita should be positive and in stage 5 should be alternant which did happened in the case of Ireland, but the change from negative to positive values for NOI/capita was highly influenced by the financial crisis. In the analysis of the inward and outward FDI evolution, we observe that the international financial crisis marked the point when outward FDI surpassed the level of inward FDI.

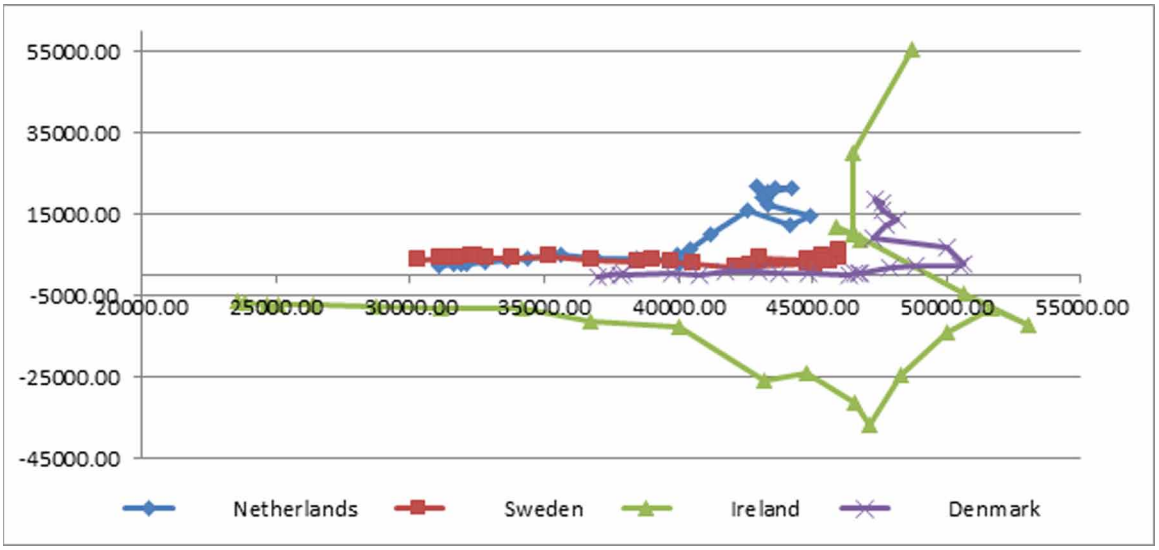
Denmark is the country that started in stage 5 and maintained it throughout the entire analyzed period. Its NOI/capita has been positive for the entire analyzed period except for two years, 1990 and 2000. Stage 5 countries should have alternant value for NOI/capita and in the case of Denmark this was true until 2003 when the values for NOI/capita were very close to zero, but after 2003 the positive values of NOI/capita went on an ascending trend until 2013 when we record the first decrease for the NOI/capita value (Figure 6). As a result, we conclude that this country doesn't respect the IDP theory for the entire period.

The last group is composed of countries that have very high variations of NOI/capita like Malta and Luxembourg and countries that have gaps in the data regarding the inward and outward FDI reported like Cyprus that has no data for the years 1990-1995 and 2001, Belgium for the years 2001-2004 and Luxembourg for 1990-2001.



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*Figure 6. The correlation of GDP/capita – NOI/capita for Netherlands, Sweden Ireland and Denmark (Source: Authors calculation based on data from UNCTAD and World Bank)*




Malta started in stage 2 and advanced to stage 3 in 1991 and for all the analyzed period his NOI/capita has been negative in accordance with IDP theory (Figure 7). The outward level of FDI indicator is very low compared to the inward FDI. This is a characteristic of countries that are in stage 1 or 2.

Luxembourg is the second of the two countries that was in stage 5 throughout the analyzed period. The recorded NOI/capita is available from 2002 onward and it has negative values before the financial crisis and after it has alternant values in concordance with countries from stage 5 countries. Luxembourg is different from the other countries because it has a small population and a high level of inward and outward FDI, so a small change in the inward-outward FDI equilibrium has an important impact on NOI/capita indicator. The outward FDI of Luxembourg wasn't influenced by the financial crisis while the inward FDI was heavily influenced, registering great falls in 2008 and 2012.

Cyprus started in stage 3 and advanced to stage4 in 2005 only to return to stage 3 in 2011. Cyprus has negative values for the NOI/capita in the years that the data is available. Cyprus felt a higher impact on the inward FDI which had an up and down evolution after the crisis. The outward FDI wasn't that affected at first, but in 2012 the stock of outward FDI decreased by 71%, because of the banking system collapse.

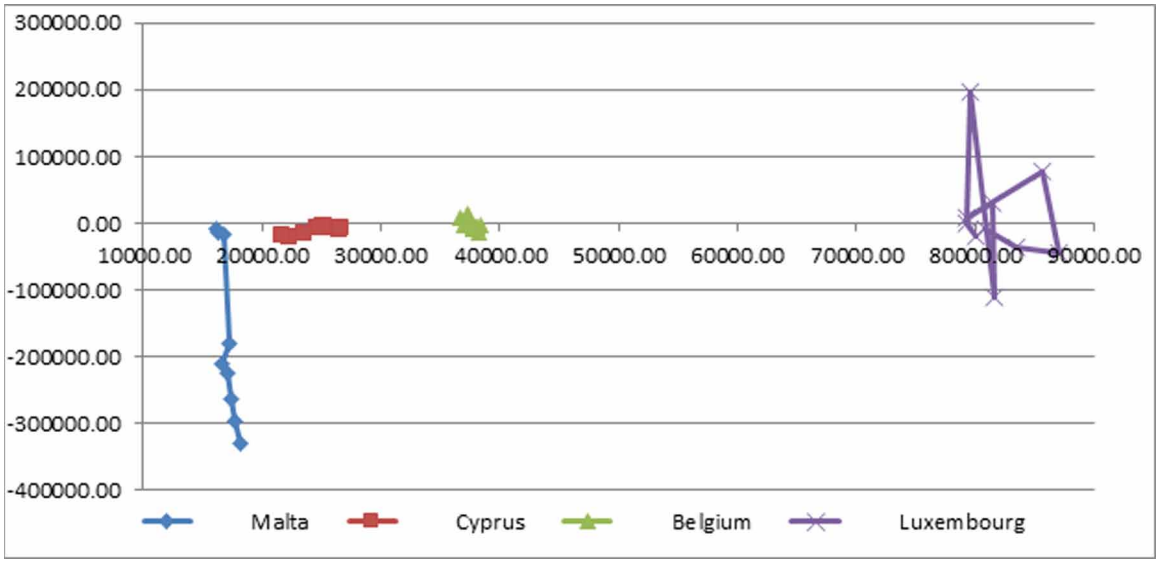
## 3. FUTURE RESEARCH DIRECTIONS

Taking in considerations the idea presented by representative specialists in this field, in many articles (Narula, Dunning, 2010), the IDP model could be applied in the case of regions within countries. These specialists observed major differences between the three macro-regions of China regarding the inward and outward FDI flows. The same situation is presented in Romania, where the FDI inward flows are concentrated in the south region. As future research direction, we intend to use the IDP model for the macro-regions of Romania and to analyze the activities of MNEs that have their headquarters in Romania.



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*Figure 7. The correlation of GDP/capita – NOI/capita for Malta, Cyprus, Belgium and Luxembourg (Source: Authors calculation based on data from UNCTAD and World Bank)*




## 4. CONCLUSION

The IDP theory is very useful to forecast the evolution of a country in its first three to four stages of development. However, it has its drawbacks when it comes to developed countries from stage four and five where there are more aspects that influence the development of a country. In fact, Narula and Dunning stress that "The IDP as a framework has been useful in making the point that an increase in FDI (or MNE activity) does not result in a concomitant increase in development".

IDP is a good benchmark for comparisons between countries and their path on development but it is no exhaustive, mainly because it uses only two indicators NOI/capita and GDP/capita, which cannot include all the aspects of the economic life.

We also find frequent exceptions which have different paths according to specific factors like, small country, valued target for foreign investors, factor endowments and so on. For the countries from Central and Eastern Europe, there are a few scientific results regarding the correlation between net outward investment and level of development. These countries are in stage two or three of IDP model. To explain this situation, we must consider certain particularities generated in large part by their political situation before 1990. The communist regimes have not allowed the access of foreign investors in their national economies, but encourage or tolerate investments abroad. In former communist countries, domestic capital formed with difficulties and in a first phase, the public authorities have not encouraged the export of capital. The accession of these countries to the EU has not boosted local firms to make foreign investment in EU countries, as access to the vast European market is secured by holding implicit EU membership. Companies in these countries are oriented mainly towards other less developed countries or in the neighborhood (Romanian investments in Republic of Moldova).

After foreign trade and inward FDI liberalization, the outward FDI could be a tool used by the former communist countries from Central and Eastern Europe in the process of reintegration at European and



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international level. The financial international crisis and globalization are the main determinants that reshaped the flows of FDI in these countries. But the public authorities could have the major impact of the country`s stage of IDP model by promoting the national economy as host for inward FDI and by supporting domestic companies to invest abroad.

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# Chapter 62
# Chinese Investment in the European Football Industry

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## ABSTRACT

*Outward foreign direct investment of Chinese firms in developed markets is a relatively new phenomenon. Since December, 2014 when the Chinese government announced a major investment program in sports, Chinese firms have particularly focused on foreign direct investments in the European football industry. We analyze the investment patterns, the determinants, and the motives of six investment cases of Chinese Outward Foreign Direct Investment (OFDI) undertaken in European football clubs. Based on Dunning's OLI paradigm and the determinants-framework from Holtbrügge and Kreppel, a within-case and cross-case analysis was conducted. We reveal that the main motives of Chinese investments differ between asset-seeking and market-seeking to a combination of both. The most important determinants of OFDI were the size of the host market and the level of know-how in it, while firm-specific resources and the strategic importance of the industry for the home government was a joint determinant for all Chinese companies.*

## INTRODUCTION

### Problem and Objective

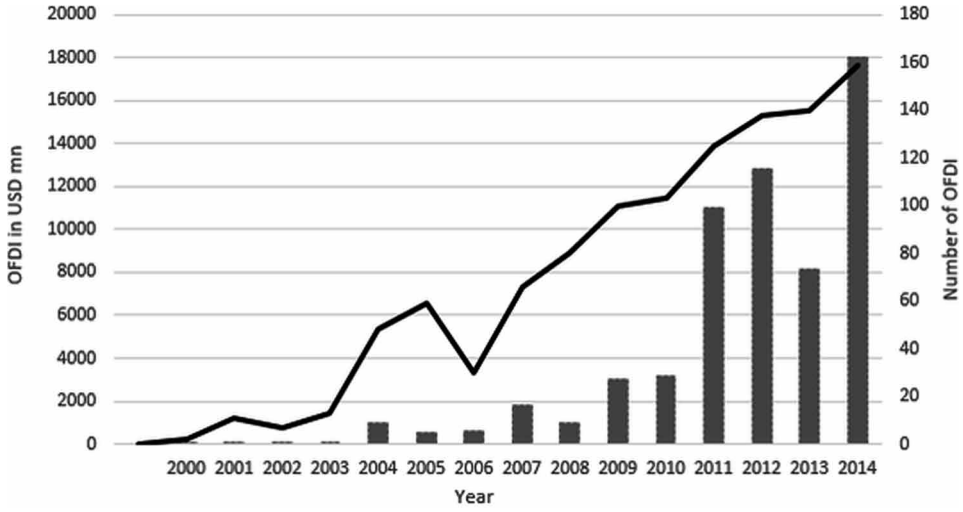
The rise of China's economy has brought a constantly growing number of Chinese firms which, being pushed by the Chinese government's GO GLOBAL POLICY implemented in 2001, entered into the international markets. These global activities of Chinese firms captured the attention of international managers, politicians, and scholars alike. Besides the remarkable pace and scope of Chinese outward foreign direct investment (OFDI) development, three further specifics account for this unprecedented

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*Figure 1. Chinese OFDI development in Europe*




phenomenon: First, mergers and acquisitions (M&A) gradually became the preferred form of Chinese OFDI. Second, since 2012 the majority of Chinese M&A has been targeting developed countries. Third, since 2011 Europe attracted twice as much annual Chinese OFDI as the United States, while in 2014 Chinese OFDI to Europe reached new record levels with US$18 billion (Baker & McKenzie, 2015; MOFCOM, 2013). Figure 1 illustrates the tremendous growth of Chinese OFDI in Europe.

Numerous studies exist that examine Chinese firms regarding either their market entry strategies, i.e., location choice (Kang & Jiang, 2012; Liu, Buck, & Shu, 2005), ownership mode (Globerman & Shapiro, 2009; Rui & Yip, 2008), entry mode (Cui & Jiang, 2009; Liu & Buck, 2009), or regarding their antecedents, such as determinants (Alon, 2010; Buckley et al., 2007), and motivations (Deng, 2004; Lu, Liu, & Wang, 2011). However, studies focusing solely on Chinese OFDI in Europe and on just one industry hardly exist (Di Minin, Zhang, & Gammeltoft, 2012; Milelli, Hay, & Shi, 2010). By considering both industry-specifics and host country-specifics, it can significantly contribute to a better understanding of the drivers and thus of the investment patterns of Chinese firms.

The common base line of most studies is that Chinese firms' internationalization shows some unique characteristics in their investment patterns. These include the active involvement of the home government (Luo, Xue, & Han, 2010; Nolan & Zhang, 2002), the search for strategic assets (Boateng, Qian, & Tianle, 2008; Duanmu, 2012), or the fast learning capabilities (Zhou & Li, 2007; Morck, Yeung, & Zhao, 2008). Because of these peculiarities, some scholars argue that Chinese OFDI cannot be explained by traditional internationalization theories and hence new theories must be generated (Barney & Zhang, 2009; Peng, 2012). On the opposite side, other scholars view existing theories as suitable for China's global operations (Rugman & Li, 2007), or just call for their extensions (Dunning & Lundan, 2008; Mathews, 2006).

Dunning's (1980) Ownership-Location-Internalization (OLI) paradigm has been widely used for investigating Chinese firms' investment motives and determinants (Berning & Holtbrügge, 2012; Wei, 2010). Asset- and market-seeking are found to be the two most important investment motives behind Chinese OFDI in developed countries (Marchand, 2015; Mathews, 2006). In particular, Chinese firms are driven by strategic asset-seeking motives (Luo & Tung, 2007) that results in both asset exploiting and



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asset augmenting (Cui & Jiang, 2010; Yiu, 2010), stronger emphasis on strategic intent than strategic fit (Rui & Yip, 2008), rapid setup of Chinese R&D laboratories (Deng, 2007), and the preference for M&A over greenfield investment in developed countries (Deng, 2009; Spigarelli, Alon, & Mucelli, 2015).

Regarding the investment determinants of Chinese firms, most existing research states that a single theoretical lens may be inadequate to explain them because of the complex and unstable external environments, as well as the heterogeneous internal resources and capabilities (Alon, Child, Li, & McIntyre, 2011; Lu et al.2011; Peng, Wang, & Jiang, 2008). A comprehensive and systematic framework to examine the determinants of Chinese and other emerging market firms' (EMF) OFDI was developed by Holtbrügge and Kreppel (2012) comprising country-, industry- and firm-level determinants. As this framework includes all idiosyncrasies of Chinese firms' internationalization, it enables a more fine-grained comprehension of how the investment motives are contingent on country, industry and firm factors.

The purpose of this chapter is to examine the investment patterns, motives and determinants of Chinese firms in developed European countries. In particular, the focus is on M&A undertaken in only one industry; namely, the football industry. The reasons for the choice of the football industry are threefold: First, this under-researched industry represents a good opportunity to examine if the overall Chinese trends and their unique specifics are also reflected here. Due to the high media attention the football industry receives, a lot of detailed information about these investments are available. Second, the European football industry became an economic heavy weight during the last two decades with revenues of more than €19 billion (Hamil & Chadwick, 2010). Third, China's government strongly focuses on football development and China's president Xi Jinping is a big football fan. Xi has already made football a compulsory part of the national curriculum for schoolchildren and has developed a series of football textbooks for students in primary and secondary school (MacFarlan, 2015).

The contributions of this chapter are as follows. By adding Dunning's typology of investment motives, this study extends the level-wise determinants-framework of Holtbrügge & Kreppel (2012). In order to test the explanatory power of this extended framework, a within-case and cross-case analysis is conducted. Moreover, by addressing the interplay between context-specifics and firm internationalization, this article considers the often-cited uniqueness of Chinese firms. In doing so, this chapter contributes to the above-mentioned academic debate about the applicability of traditional internationalization theories to China (Boisot & Meyer, 2008; Child & Rodrigues, 2005; Cuervo-Cazurra, 2012), i.e., regarding the key question of "why" outward foreign direct investment (OFDI) is undertaken, by suggesting a way of how to conceptualize a theoretical extension.

The remainder of this study is as follows. After a review on Dunning's OLI paradigm the country-, industry- and firm-level determinants-model with reference to distinct investment motives is outlined. Then the explanation of the methodology and the case studies' results are presented. A concluding section with theoretical and managerial implications, limitations and future research directions follow.

## Theoretical Background

### OLI Paradigm

Dunning's OLI paradigm is one of the most powerful tools to understand the extent and pattern of OFDI. It argues that firms internationalize because they have developed competitive advantages at home (O(wnership)-advantages), which can be transferred to specific countries to exploit location advantages (L-advantages) through foreign direct investment (I(nternalization)-advantages). O-advantages are de-



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fined as unique capabilities proprietary to the firm which are built upon managerial capabilities, product or process technology. These advantages are firm-specific resources and assets (Dunning, 1980, 2001).

Based on these O-advantages, the firm chooses the host country location following its specific motivation which is market-, efficiency- or asset-seeking. Market-seeking OFDI is undertaken to protect existing markets or to promote new markets (Dunning & Lundan, 2008). Apart from market size and expected market growth, firms engage in market-seeking OFDI because of the need to adapt products to local tastes, cultural norms or indigenous resources (Luo & Tung, 2007). Efficiency-seeking OFDI aims to rationalize established structures of resource-based investment in such a way that the investing firm can benefit from the common governance of geographically dispersed activities (Wei, 2010). These gains are essentially achieved through economies of scale and scope and risk diversification. Asset-seeking OFDI strives to acquire abroad particular resources of a higher quality at a lower real cost than could be obtained in the home country. These resources can be both tangible and intangible (Dunning, 2001). Strategic asset-seeking OFDI is a subgroup thereof, and is part of the firm's long-term strategic objectives, especially that of sustaining or advancing its global competitiveness (Rui & Yip, 2008).

In the case of Chinese OFDI, several studies highlight that additional factors of the current economic and political situation have an effect on Chinese firms' OFDI decisions which have to be integrated into existing theoretical perspectives (Alon et al., 2011; Nolan & Zhang, 2002; Wang, Hong, Kafouros, & Boateng 2012). The particular context of Chinese firms is key to an understanding of Chinese particularities, being the firms' background, ownership, administrative structure, and the landscape of political and institutional support and constraints they are bound to (Gugler & Boie, 2008). These are competitive advantages and disadvantages for Chinese firms which create considerably different starting points of analysis.

## Determinants-Framework

With reference to different levels of analysis, Holtbrügge & Kreppel (2012) developed a comprehensive framework to study the determinants of Chinese firms and other EMFs on the country-, industry- and firm-level (Table 1). Country-level determinants, such as the size of the host market, the potential of forward integration into the host market, and the level of technological and managerial know-how are relevant for all EMFs, whereas industry-level determinants differ between diverse industries. Firm-level determinants encompass the strength of firm-specific resources innate to particular firms.

When OFDI is motivated by market-seeking and growth opportunities outside the home market, the size of the host market is a crucial determinant. As several Chinese firms have invested in large and prosperous EU-28 countries (e.g., Lenovo, Haier), they do not only confirm this tendency, they also

*Table 1. Country-, industry-, and firm-level determinants of EMFs' OFDI*

| Level of Analysis | Determinant | | |
|---|---|---|---|
| Country-level | Size of the host market | Potential of forward integration into host market | Level of technological and managerial know-how |
| Firm-level | Strength of firm-specific resources | | |
| Industry-level | Strategic importance of the industry for home government | Competitive pressures in home market | |



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exhibit theoretical implications. They contradict traditional internationalization theories, like the Uppsala Model (Johanson & Vahlne, 1977) which suggests an incremental internationalization from psychically and culturally close to more distant countries. Thus, new theoretical perspectives, like the 'Springboard perspective' (Luo & Tung, 2007) and the 'Linkage-Leverage-Learning perspective' (Mathews, 2006) emerged reflecting the preference of OFDI into developed countries with attractive market size and market potential.

Another country-level determinant for EMFs' investment is the potential of forward integration into the host market. Chinese firms benefit from low labor and other cost advantages at home, but they lack marketing and sales know-how (Cuervo-Cazurra, 2007). In order to catch-up with the incumbent global giants as latecomers, Chinese firms hence engage in these asset-seeking OFDI aiming at moving up the value chain and thereby enhancing their global competitiveness (Deng, 2009).

Closely related hereto is the third country-level determinant, the level of technology and management know-how in the host market. Chinese firms are often driven to invest abroad because they want to learn and benefit from these strategic assets, like advanced technology, international known brands, management and marketing skills (Wei, 2010). The consequence is asset augmenting which was found to be another Chinese firms' unique characteristics (Demirbag, Tatoglu, & Glaister., 2009; Gammeltoft, 2008). The concept of O-advantages should therefore be extended to include combinative, dynamic, and innovative capabilities as well as absorptive capacity (Cui, Jiang, & Stening, 2011).

On the firm-level, the strength of firm-specific resources is the most important determinant of EMFs' OFDI activities. These resources are the origin of the firm's competitiveness and growth at home (Barney, 1991). The types of resource advantages of Chinese companies differ from the ones developed-country firms enjoy (Wright, Filatotchev, Hoskisson, & Peng 2005) as they are mainly home-country based (Rugman & Li, 2007), like exploitation of economies of large-scale, preferential access to raw material, institutional support, and recruiting the most qualified employees (Morck et al., 2008; Yiu, 2010) leading to a dominant position in their home market. The motive to invest abroad can be both asset- and market-seeking driven as asset exploiting as well as strategic intent of Chinese firms could be observed in the past (Narula, 2006; Yiu, Lau, & Bruton, 2007).

At the industry-level, the strategic importance of the industry for the home government is a key determinant of Chinese OFDI. The Chinese government does not allow unregulated investment in every industry, but explicitly names priority industries of national strategic importance (Buckley et al., 2007). These are listed in the Party's Five-Years-Plans or in the "Countries and Industries for Overseas Investment Guidance Catalogue". This means that all OFDI complying with this guidelines enjoy favorable treatment and institutional support (Luo et al., 2010). Additionally, the investment motive for Chinese firms is to acquire assets which can strengthen these strategically important industries.

Another industry-level determinant is the competitive pressure in the home market. After China's entry into the World Trade Organization (WTO), some domestic firms were confronted with declining market shares, growing competition from international rivals, lower demand and falling prices (Holtbrügge & Kreppel, 2012). Consequently, some Chinese firms started with market-seeking OFDI engagements.

Table 2 gives an overview of the distinct investment determinants with the associated investment motives. It is striking that efficiency-seeking OFDI cannot be related to one of the determinants. However, this fact can be backed by the current state of research which did not find any relevance of this investment motive either (Kang & Jiang, 2012; Liu, Lu, & Chizema, 2014; Peng, 2012).



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*Table 2. Investment motives and determinants of EMFs' OFDI*

| Level of Analysis | Determinant | | |
|---|---|---|---|
| Country-level | Size of the host market | Potential of forward integration into host market | Level of technological and managerial know-how |
| | Market-seeking | Asset-seeking | Asset-seeking |
| Firm-level | Strength of firm-specific resources | | |
| | Asset- & Market-seeking | | |
| Industry-level | Strategic importance of the industry for home government | Competitive pressures in home market | |
| | Asset-seeking | Market-seeking | |

## Methodology

As stated in the introduction, for the purpose of this study we focus on only one industry; namely, the football industry. Since OFDI of Chinese firms in developed markets is a relatively new phenomenon, an exploratory and qualitative research design seems to be appropriate. Case studies are recognized as an appropriate method to obtain a deeper insight into a new phenomenon and to explore factors which have been neglected in previous research (Eisenhardt & Graebner, 2007; Yin, 2004). The methodology of using multiple case studies creates comparisons which can determine whether a finding is ascribed to a specific case or consistently replicated by several cases (Eisenhardt, 1991; Eisenhardt & Graebner, 2007).

With reference to Eisenhardt (1989), a within-case analysis was conducted primarily aimed at understanding specific aspects of a case, and a cross-case analysis that explores similarities and differences between the cases. Thus, our study is qualitative in nature and based on secondary data retrieved from various company homepages, business reports, and periodical articles in German, English, and Mandarin Chinese. Due to the high media attention the football industry receives, a plethora of information about the motives and determinants of Chinese companies' investments into the European football industry is available online. In total, six investments by Chinese companies in 2015 have been identified (Table 3).

Investments occurred in the Czech football club SK Slavia Prague, French 2nd division club FC Sochaux, Dutch club ADO Den Haag, English club Manchester City and in two Spanish clubs, Atletico Madrid and Espanyol Barcelona. We collected information such as company name, amount invested, acquired club share, date, and European target clubs as well as determinants and motives of these investments.

China Energy Company Limited (CEFC), which is China's sixth largest private company and counts energy and financial services as core businesses, ventured a 60% majority ownership stake in Czech football club SK Slavia Prague. CEFC refused to give any information about the price of this acquisition. Despite being one of the most historic names in Czech football, Slavia Prague has been struggling financially. This investment was part of a bigger investment move by the firm into the Czech Republic. In 2014, it decided to establish a major European base in Prague by buying two historic properties in the city and a number of businesses. Slavia Prague avoided relegation last season and is now placed fifth in the table. CEFC also plans to support Czech football by becoming a partner of both the national team and youth football setup, and to promote cooperation between China and the Czech Republic.

Ledus, a Hong Kong based electrical components manufacturer, acquired 100% of French second division football club FC Sochaux from Peugeot for €7 million in July, 2015. FC Sochaux is the first



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soccer club in Europe under the full control of a Chinese investor. Founded in 1928, it is one of the oldest French professional clubs and until the sale to Ledus, Peugeot had always owned the club. It had spent 66 seasons in the top flight before being relegated in 2014. The aim of the investment is to return the club to Ligue 1 in the shortest possible time. With that intent, the new owners of the club promised to allocate a higher budget than the previous season.

China's United Vansen International Sports Corporation (UVISC) bought 98% of the Dutch soccer club ADO Den Haag for €8 million in January, 2015. ADO Den Haag is a 110-year-old club and was also struggling financially before the investment. It is the only major soccer club in The Hague, the seat of the Dutch government. UVISC focuses mainly on the sports industry, organizing the Italian Super Cup in Beijing for three seasons, helping to organize the closing ceremony of the 2008 Beijing Olympics, and bringing the French Super Cup to China in August, 2014. Wang Hui, the Chief Executive Officer of UVISC, wants to turn the team into a powerhouse capable of challenging the top Dutch clubs. The motivation of this investment was to take the club into European competition while sending the club's Dutch coaches to China to improve young players there. The investment should also provide opportunities for Chinese football players to play in Europa League and to establish an incubator for young Chinese talents in Europe. While a handful of ADO coaches went to Beijing to coach at the former school of Chinese president Xi Jinping, an avid soccer fan, the former Chinese national team coach Gao Hongbo was unveiled as an ADO assistant coach.

China Media Capital (CMC), China's leading media, entertainment, sports, and internet dedicated investment firm, and CITIC Capital, a state-owned investment company, invested €364 million to buy 13% of City Football Group (CFG). The City Football Group is a global football enterprise of linked clubs comprised of New York City FC (USA), Melbourne City FC (Australia), and Yokohama F. Marinos (Japan) under the leadership of Manchester City FC (UK). CMC will represent the consortium at the board level of City Football Group with its chairman, Li Ruigang. The investment will be used to fund City Football Group's growth in China, further international business expansion opportunities and to further develop CFG infrastructure assets.

Dalian Wanda property group purchased a 20% stake in Atletico de Madrid football club for €45 million. The Spanish club has also been struggling financially, but achieved remarkable success by winning La Liga and reaching the final of the UEFA Champions League in 2014. Wanda acquired its stake through capital increase. Miguel Angel Gil, the chief executive and leading shareholder, and Enrique Cerezo, the chairman, will continue to control the club. Dalian Wanda's chairman Wang Jianlin stated, "Wanda Group is delighted with the possibility of contributing to the growth of Atletico Madrid and the development of its brand in Asia, as well as being able to rely on their extraordinary experience in the training area, which no doubt will be very useful in the growth of base football in China" (Atletico, 2015).

Rastar Group, a leading Chinese manufacturer of model cars and related raw materials business, acquired 56% of Espanyol Barcelona for €17.8 million. The company hopes to expand its interactive entertainment business in the sports sector with this investment. Moreover, there are several rumors about Chinese companies making further investments which were not considered in this study as they have not yet been finalized. For instance, Spanish club Malaga CF are in talks to sell up to 95% of the club to a consortium of Chinese investors. Furthermore, Chinese corporate money has also been linked with takeovers of Aston Villa in the English Premier League and AC Milan in Italy's Serie A. We had to eliminate Hong Kong businessmen Carson Yeung's October 2009 investment into the English second division club Birmingham City FC because the deal was conducted via his company Birmingham International Holdings (previously Grandtop International Holdings) which is located in the Cayman Islands.



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*Table 3. Investment details of Chinese companies in European football clubs*

| Company Name | Investment Amount | Acquired Club Share | Date | European Target Club/ Country |
|---|---|---|---|---|
| United Vansen International Sports Corporation (UVISC) | € 8m | 98% | January 2015 | ADO Den Haag/ Netherlands |
| Dalian Wanda | € 45m | 20% | January 2015 | Atletico Madrid/ Spain |
| Ledus | € 7m | 100% | July 2015 | FC Sochaux/France |
| China Energy Limited (CEFC) | Refuse to give any information about the amount | 60% | September 2015 | SK Slavia Prague/ Czech Republic |
| Rastar Group | € 18m | 56% | November 2015 | Espanyol Barcelona/ Spain |
| China Media Capital (CMC) & CITIC Capital | € 364m | 13% | December 2015 | Manchester City/ United Kingdom |

## Findings

In the following section, the findings of our case analysis explores similarities and differences of internationalization determinants and motives are presented. An overview of these cases is presented in Table 4.

### Country-Level Determinants

- *Size of host market.* Our cases reveal that market-seeking motives are one of the main drivers for Chinese OFDI. These companies are obliged to search for growth opportunities outside their home markets. The size of the host market is a crucial determinant when OFDI is motivated by foreign market-seeking opportunities. Interestingly, most Chinese companies do not see these opportunities in neighboring countries, but rather in Europe. Chinese investments targeted professional football clubs in England, Spain, France, the Netherlands and the Czech Republic. This is in line with the Chinese OFDI stock since 2000, according to which Chinese investments in Europe mainly went to United Kingdom (€14.7 billion), Germany (€7.7 billion), France (€7.4 billion), Portugal (€6.2 billion), Italy (€5.1 billion) and the Netherlands (€3.7 billion) (Baker & McKenzie, 2015).

Furthermore, Chinese investments in the football industry targeted Spain (€1.4 billion) and the Czech Republic. No Portuguese or Italian club has yet been acquired, but China National Chemical Corporation has acquired Pirelli, part-owners of Serie A club Inter Milan, in a €7 billion deal (Chadwick, 2015a). This behavior contradicts classical models such as the Uppsala model of Johanson and Vahlne (1977). The reason is that European markets are more attractive in terms of market size and market potential (Luo & Tung, 2007). By investing in European football clubs, Chinese investors seek to promote their business in Europe, to raise corporate awareness, and subsequently to boost sales.

For instance, it is unlikely that Ledus will be able to build a fan base in China around the club. The new owners rather use Sochaux as a vehicle to develop the Ledus brand in France and Europe and to improve the company image (Wilson, 2015). Dalian Wanda wants to position Atletico Madrid as a hub in an entertainment axis that stretches from Beijing to Hollywood, while the Rastar Group hopes that



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the deal will help to expand its interactive entertainment business in the sports sector. This finding goes along with the fact that other investments are performed in targeted countries. For example, Dalian Wanda bought the landmark Edificio España tower in downtown Madrid for €265 million and the acquisition could also open the way for further investments in Spain.

Furthermore, CEFC's investment in Czech football club Slavia Prague was part of a bigger investment move as two historic properties in the city and a number of businesses were also purchased, thus establishing a major European base in Prague. CEFC with €680 million is the biggest Chinese investor in the Czech Republic. According to the chairman of CEFC, the investment is also the starting point of a "silkroad strategy" from the central government, in order to promote the friendship and cooperation between China and the Czech Republic (Ren, 2015). These investments can also be a powerful marketing tool for the Chinese market. Soccer in China has the highest marketing revenue and most TV viewers of any sport and European football matches accounted for half of all sports broadcasts on China Central Television in 2013 (Gu, 2014).

- *Potential of forward integration into host market.* China benefits from cost advantages at home, but they lack marketing and sales know-how (Cuervo-Cazurra, 2007). In order to catch-up with global giants, Chinese firms engage in asset-seeking OFDI aiming at moving up the value chain and thereby enhancing their global competitiveness (Deng, 2009). This determinant could only be confirmed for two of our six cases. Two Chinese investors, Dalian Wanda and UVISC, had established parts of their business in the sports industry and "want to move to the upper part of the value chain" to acquire marketing and sales know-how (NetEase, 2015). For the other companies, the potential of forward integration into the host market was not a relevant determinant for OFDI as their previous business activities were not related to the sports industry.
- *Level of technological and management know-how in the host market.* Resource-seeking motives are also vital for Chinese companies. While China's competitive advantage is mainly based on low labor costs, Chinese companies often lack recognizable management / marketing know-how or technological equipment (Holtbrügge & Kreppel, 2012). One way to overcome these limitations is to invest in firms in developed countries that possess these resources. Chinese business investors often have enough money, but they often do not have the knowledge or experience in football, an industry that is notoriously difficult for corporate owners to understand and in which to excel (Chadwick, 2015a).

In particular, because China currently lacks a proper football infrastructure and the national team performs poorly (FIFA-ranking: 82), many Chinese companies invest in European football clubs to acquire necessary football competencies which can then be transferred back to China. They seek know-how on youth development and professional coaching programs (CEFC), know-how on the building of facilities (Dalian Wanda), or simply want to provide opportunities for Chinese football players to play in a European league (CMC & CITIC). Sports business professor Simon Chadwick confirms, "But they need to learn more about football – that is crucial. With these club purchases, they have been going about acquiring competence" (Wilson, 2015).

While conventional theory views FDI as a firm's attempt to pursue the exploitation of firm-specific assets, firms from emerging markets tend to invest in developed countries to gain access to technological and management know-how. Thus, OFDI is aimed at acquiring new resources rather than exploiting existing ones (Holtbrügge & Kreppel, 2012). This asset augmenting is part of Dalian Wanda's investment in



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Spain. The company will invest €20 million annually over the next six years to support the development of 180 young Chinese soccer players in Spain. Moreover, Atletico plans to build a new youth training center for Chinese players studying in Spain to nurture future Chinese talent (Burkitt & Davies, 2015).

## Firm-Level Determinants

- *Firm-specific resources.* At the firm level, the strength of firm-specific resources is the most important determinant of OFDI. These firm-specific resources include different assets, organizational processes, information, and knowledge (Barney, 1991). Firm-specific resources lead to sustained competitive advantages in the domestic market and allow firms to grow there before entering the global marketplace (Holtbrügge & Kreppel, 2012). Several Chinese firms in our sample were already leaders in the Chinese market prior to expanding abroad. For example, Dalian Wanda is owned by China's 2nd richest CEO, Wang Jianlin, CEFC is China's 6th largest private company, and Rastar Group is a leading manufacturer of model cars and related raw material businesses. Furthermore, two companies are backed by the government, CMC is a public equity and venture capital firm and the CITIC Group Corporation is a state-owned investment company. The dominant position in their home market allowed them to develop strong firm-specific resources for their international activities, such as recruiting the most qualified employees and exploiting economies of large-scale.

## Industry-Level Determinants

- *Strategic importance of the industry for the home government.* The Chinese government does not allow unregulated investment in every industry, but explicitly names priority industries that are of national strategic importance (Buckley et al., 2007). These industries are listed in the Party's Five-Years-Plans or in the "Countries and Industries for Overseas Investment Guidance Catalogue". Chinese firms receive particularly strong government support to invest abroad in these strategic industries. In December 2014, the Chinese government announced a major investment program in sports that aims to create a domestic sports industry worth €780 billion by 2025. The entire global sports economy is currently estimated at only €370 billion (Wilson, 2015). China's government is therefore strongly focusing on the development of the football industry, in part because China's president Xi Jinping is a big football fan and has realized the potential in this industry. Xi has already made football a compulsory part of the national curriculum for schoolchildren and has developed a series of football textbooks for students in primary and secondary school (MacFarlan, 2015). The importance of this investigation is underlined by the fact that all Chinese OFDI in European football clubs occurred in 2015. One aim of these investments is to impress the government (Chadwick, 2015b). All OFDI complying with these strategic industries enjoys favorable treatment and institutional support (Luo et al., 2010). Chinese businesses that follow the wishes of their home government by supporting football development may be looked upon favorably by state authorities (Wilson, 2015). According to Rupert Hoogewerf, publisher of the Hurun China Rich List, "it is no coincidence that three of China's 10 richest people are all investing in football. There is an element of ego, and there is an element of business sense. Xi Jinping likes football and



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it is very good for developing local government relationships, and gives people access to networks they won't normally have access to" (Guo, 2014). Thus, Chinese firms may benefit politically from acquiring know-how from developed football clubs abroad and transferring it back to China.

- *Competitive pressures in the home market.* After China's admission to the WTO, several Chinese firms were faced with a declining market share, increasing competition from international brands, low demand and falling prices (Holtbrügge & Kreppel, 2012). As a consequence of the growing competition in its home market, Chinese companies are seeking market opportunities abroad. China's domestic football market is not very well developed because its growth has long been hindered by organizational problems and corruption (Hamil & Chadwick, 2010). Thus, we argue that competitive pressures in the home market was not a relevant determinant of Chinese investments. This is confirmed by our case analysis where no statement regarding competitive pressures in the home market was found.

Table 4 summarizes the case analysis and shows mixed results. Based on the analyzed statements, the main motive of two investments was primarily market-seeking, the motive of two investments was mainly asset-seeking and the other two investment combined both of these motives. Furthermore, we confirm several universal motives of OFDI with the help of our cases. One important motive was profit-making. The commercialism of and the subsequent organizational changes in the football industry have made clubs attractive to international investors (Nauright & Ramfjord, 2010).

Foreign investment in Europe is not limited to Chinese investors. In particular, foreign ownership is prevalent in the English Premier League. Since 2003, there has been a rapid expansion of foreign ownership and half of the 44 clubs in the Premier and Championship League now have foreign owners. For example, Chelsea is owned by Russian billionaire Roman Abramovich, Cardiff City was purchased by Malaysian Vincent Tan and US American Malcolm Glazer owns Manchester United. The main motive of these investments is profit-making (Duke, 2002) as in traditional companies (Carlin, Dorobantu, & Viswanathan, 2009). However, foreign investors must be careful as football is a very emotional product and local fans often see foreign investments as predatory (Duke, 2002).

*Table 4. Determinants and motives of Chinese investments in European football clubs*

| Company Name | UVISC | Dalian Wanda | Ledus | CEFC | Rastar Group | CMC & CITIC |
|---|---|---|---|---|---|---|
| Ownership | Private | Private | Private | Private | Private | State-owned |
| Size of host market | - | + | + | + | + | - |
| Forward integration | + | + | - | - | - | - |
| Level of know-how | + | + | - | + | - | + |
| Firm-specific resources | + | + | + | + | + | + |
| Strategic industry importance | + | + | + | + | + | + |
| Competitive pressures | - | - | - | - | - | - |
| Main motives of OFDI | Mainly asset-seeking | Asset-seeking/ Market- seeking | Mainly market-seeking | Asset-seeking/ Market- seeking | Mainly market-seeking | Mainly asset-seeking |



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There is often a lack of financial transparency and fans fear unsustainable management due to the short-term orientation of foreign investors. That is why only CMC and CITIC's investment in Manchester City and that of Rastar Group in Espanyol Barcelona confirmed profit-making as a motive. Rastar Group believes that the Spanish economy is now at the lowest point, thus they have bought the club at a very low price. On the one hand, when foreign investors buy stakes in a club, the club consequently receives greater media exposure in the native countries of the investors. Foreign owners also extend financial resources. It is also a great chance for Chinese companies, to use the emotional attachment of fans to their clubs in a positive way by respecting their culture and tradition.

On the other hand, particularly local fans argue that foreign owners do not understand the ethos of the team and are not sensitive to the needs of their fans. Foreign owners are often seen as interested in buying a club purely to turn a profit (Duke, 2002). They are not comfortable with the notion that foreign investors could suddenly halt investment or leave the club. Furthermore, foreign owners often ignore the history and the tradition of the club, as the example of Vincent Tan and Cardiff City shows. The Malaysian owner changed the main color of the logo and the team jersey from blue to red, and added a dragon instead of a bluebird to attract Asian fans, however he faced a major protest from local fans and was forced to change it back.

Another universal motive for OFDI is personal relationship, in particular in China, where the basic dynamic in personalized networks is important and referred to as "guanxi" or relationship (Chadwick, 2015b). For example, Wang Jialin and the CEO of Atletico Madrid have had a long personal friendship before the investment was done. The cases also do not reveal preferences for specific types of investment forms. Ledus completely acquired Sochaux (100%), ADO Den Haag was almost taken over completely (98%), CEFC and Rastar Group bought majority stakes in Slavia Prague (60%) and Espanyol Barcelona (56%), and two companies bought minority stakes in Atletico Madrid (20%) and Manchester City (13%). The reason for the differences in the investment form is related to the size of the club. Based on the UEFA club ranking, Atletico Madrid (5$^{th}$) and Manchester City (14$^{th}$) are very big and successful football clubs, hence the acquired club share is rather low. On the other hand the share percentage is higher (56%-100%) for smaller and less successful clubs such as FC Sochaux (139$^{th}$), Slavia Prague (179$^{th}$), ADO Den Haag (191$^{st}$) and Espanyol Barcelona (n.a.).

When companies mainly focus on asset-seeking motives, Chinese investors should target the Big Five. The Big Five are the five highest earning football leagues worldwide and represent half of the overall size of the European football market (Deloitte, 2012). The financial strength of these leagues is also evident in the Union of European Football Associations (UEFA) rankings, in which these countries occupy the first five positions (Walters & Rossi, 2009). In these countries, professional football is characterized by commercialization and a very good infrastructure. It is also interesting to see that the Netherlands and the Czech Republic are target countries. The fierce competition they face in European markets may help them to learn from competitors and to overcome disadvantages resulting from negative country-of-origin effects (Holtbrügge & Kreppel, 2012).

Chinese firms use international expansion as a springboard to acquire strategic resources and reduce their institutional and market constraints at home. Thus, they overcome their latecomer disadvantage in the global stage via a series of aggressive, risk-taking measures by aggressively acquiring or buying critical assets from mature multinational enterprises (MNEs) to compensate for their competitive weaknesses (Luo & Tung, 2007). Combined with the fast learning capabilities (Morck et al., 2008; Zhou & Li, 2007) of Chinese firms, this will help to support Xi Jinping's plan to qualify for the Football World Cup, to host the event and to win it as soon as possible.



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## CONTRIBUTIONS, LIMITATIONS, AND SUGGESTIONS FOR FUTURE RESEARCH

The purpose of this study was to analyze the investment patterns, motives, and determinants of Chinese OFDI in developed European countries. In particular, we focused on Chinese OFDI undertaken in the European football industry. This focus followed the call of Chadwick (2015b) and allowed us to take both industry-specifics and host country-specifics into account, and hence to significantly contribute to a better understanding of the drivers of investment patterns of Chinese firms. Based on Dunning's OLI paradigm (1980) and the determinants-framework from Holtbrügge & Kreppel (2012) a within-case and cross-case analysis was conducted. Using secondary data, our analysis revealed that Chinese firms have many similar motives for acquiring shares of European football clubs, but some differences were also observed. The main motives of the investments differ between asset-seeking and market-seeking to a combination of both. The most important determinants were the size of the host market and the level of know-how in it. Firm-specific resources and the strategic importance of the industry for the home government was a joint determinant for all Chinese companies.

A major theoretical contribution of our paper is the linking of Dunning's typology of investment motives (1980) with the level-wise determinants-framework for EMFs from Holtbrügge & Kreppel (2012). This extended framework enables the association of market-seeking and asset-seeking investment motives with distinct investment determinants on the country-, industry- and firm-level. Thereby it addresses one of the key questions of internationalization "why", and more specifically "what is the goals" and "what influences the OFDI decision".

Moreover, this chapter contributes to the analysis of OFDI from Chinese firms from a country-specific advantages (CSAs) perspective. Based on Rugman and Li's (2007) findings that China CSAs stem from cheap labor and natural resources, and that Chinese firms are knowledge-seekers, our work shows another CSA. The growing global importance of Chinese firms is closely linked with policies decreed by the Chinese government for which several studies provided evidence (e.g., Luo, et al., 2010; Nolan & Zhang, 2002; Yang & Stoltenberg, 2014). In addition, our study shows the strong impacts of and interplay between Chinese policies and investment motives (strategic asset-seeking) and determinants (strategically important industry). The substituting and supporting role of the Chinese government enables Chinese firms to invest in geographically and culturally distant countries, and hence constitutes another CSA for Chinese OFDI.

In doing so, this paper also contributes to the scholarly debate about the applicability of traditional internationalization theories to Chinese firms by supporting the view that existing theories need some extensions and modifications (Dunning & Lundan, 2008; Morck et al., 2008; Peng, 2012) in order to be able to provide explanatory power for Chines firms' internationalization behavior.

Another theoretical contribution lies in showing that traditional definitions and concepts must be broadened beyond their conventional scope in order to capture Chinese firms' internationalization (Moon & Roehl, 2001). In particular, the concept of firm-specific advantages (FSA) needs to be reconsidered as Chinese firms generally lack traditional FSA, such as globally recognized brands or internalized knowledge. But they apparently possess "non-traditional" FSA, like differentiated capabilities in catching-up by learning, dealing with weak and fast-changing institutions, or tolerating ambiguity. These absorptive capacities and dynamic capabilities also constitute sources of competitive advantages, and hence help Chinese firms to prosper overseas (Contractor, 2013).



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In addition, Chinese firms appear to define the role of internationalization differently (i.e., as a means to access new advantages and assets rather than to exploit existing ownership advantages). This has important implications for their host countries' location choice (Williamson, 2015). Because their main motivation is to learn and gain access to strategic resources, Chinese firms increasingly choose to invest in markets with rich opportunities for learning, such as Germany or UK. Therefore, traditional theories assuming that asset exploitation is the primary goal need some extensions to be suitable for Chinese firms.

From a practitioner's point of view, this study enhances our knowledge of the determinants and motives of Chinese OFDI. For example, firms from China which have not yet invested abroad may better understand the factors that influence the internationalization process of their competitors and may evaluate the relevance of these factors (Holtbrügge & Kreppel, 2012). Since OFDI often occurs in the form of acquisitions, this might be particularly important for European football clubs that either seek a Chinese partner or fear the risk of being acquired by one. Similarly, the employees of acquired firms may better understand the motives of acquirers from China.

Our analysis reveals that access to specific football know-how is one of the main determinants. One example is Li Wing Sang, chairman of Ledus' holding company who said, "We do not want to change anything in the club. The goal is to keep its culture and to make its history continue. We are not traders, we are there for the long term" (Xinhua, 2015). But there are also counterexamples. For instance, Jialin Wang seems to have lost his passion for ADO Den Haag after only one year because the club did not perform as expected. He even missed the deadlines to make another critical € 3.7m investment in the club. "After I pay the takeover, the club is mine. It is my business in terms of how much I will invest in the club" (Montague, 2016). Additionally, the fans from FC Sochaux felt betrayed and felt like a financial tool of Ledus. In particular in France, there have been disastrous examples of foreign businessmen taking over clubs and pushing them into bankruptcy, or nearly, such as Grenoble, Lens, Strasbourg. Sochaux fans feel they are next (Porteus, 2016).

Some limitations must be considered when interpreting and generalizing the study's results. One limitation is the sole use of secondary data from company homepages, business reports, and periodical articles. While secondary data is more objective and helps to improve the understanding of the problem, future research could use interview or survey data to complement the information on the investment motives and determinants. Furthermore, the relatively small number of cases (6) is another limitation. This fact is related to the quite recent appearance of the phenomenon of Chinese investment in European football overall as all existing cases were included. An investigation at a later point in time could lead to an increased sample size as well as shed some light on the development over time as we expect the importance of the topic to increase over time.

As Chinese OFDI is evolving quickly and the fast learning of Chinese firms is expected to continue (Lyles, Li, & Yan, 2014) their internationalization behavior might change as well. After the Chinese government announced the investment plans for the sports industry, six investments took place in 2015. Additionally, there have been many rumors about further acquisitions. For example, the Beijing Successful Investment Management company is considering putting up to €35 million into the Dutch premier division football club SC Heerenveen (Dutchnews, 2015). Chinese investors also agreed on a €210 million deal with English club West Bromwich Albion, but a Far East stock market dip with a loss of more than 30 percent in three weeks has caused the negotiations to be suspended.

Another prominent example is Italian club AC Milan which was supposed to be taken over from a Chinese Consortium, but Milan's owner Silvio Berlusconi did not want to sell the majority of his shares. Thus, Berlusconi sold 48% of the club to an investor from Thailand (Gladwell, 2015). While previous



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studies (Buckley et al., 2007; Kumar, 2007) mainly analyzed single countries, comparative studies could further analyze the similarities and differences between investors from different countries. For example, half of the 44 clubs in the Premier and Championship League now have foreign investors from many different countries.

Many Asian tycoons have been attracted to the European football industry for various reasons, from promoting their businesses to vanity projects and a declared love of the game. Last year Singaporean investor Peter Lim took a controlling stake in Valencia. Furthermore, AirAsia boss Tony Fernandes, together with the family of Indian steel tycoon Lakshmi Mittal, co-owns Queens Park Rangers of the U.K.'s Premier League. Finally, Vichai Srivaddhanaprabha from Thailand owns Leicester City. Similarly, a comparison of Chinese investments in other European sport industries could analyze if the football industry is unique in that regard.

Another avenue for further research is the European perspective of these investments. Future studies could investigate the aims of European companies. For example, Atletico Madrid was strategically looking for a Chinese investor to attract new fans and sponsors in China, while CMC and CITIC representatives and City Football Group executives have already been working together to identify China-based initiatives for the football clubs. Additionally, future research should consider the impact of these investments on the domestic Chinese football market. The recent developments in fact also have an impact on the domestic Chinese football market.

Only recently, China has unveiled a strategy to become a world football superpower by 2050, with plans to convince 50 million children and adults to play the game by 2020, including having at least 20,000 football training centres and 70,000 pitches in place by the same year. It establishes short, medium and long-term targets, including ensuring there is one football pitch for every 10,000 people by 2030. By 2050, China should be a first-class football superpower that contributes to the international football world (BBC, 2016). The growing financial impact is also shown by the latest transfer signings of Chinese football clubs. During the last winter transfer period, Chinese soccer clubs were buying players from the world's best leagues for big money. Chinese clubs were responsible for three of the four biggest deals in the winter transfer window. In January Chelsea's Brazilian midfielder Ramires went to Jiangsu Suning €28 million, Hebei China Fortune bought Ivorian striker Gervinho from AS Roma for €18 million and Shanghai Shenhua Inter Milan's Colombian international Fredy Guarin for €13 million (Fangjing, 2016).

Furthermore, the analysis of the growing number of Chinese sponsorships in European football clubs could yield interesting results. Although sponsorships are no classic FDIs with decision-making power, and thus are mainly having market-seeking motives, there have been recent examples which had also asset-seeking motives. For example, the Chinese LED manufacturer Ledman bought the sponsorship rights of the Portuguese second division with the aim to have 10 Chinese players included in the starting line-ups of the top teams. One of their motives was to train young Chinese players better in Portugal. After huge protests of Portuguese fans, the company had to row back on its demands.

Moreover, there are interesting developments in contiguous technological industries. For example, Alibaba Sports has decided to collaborate with _wige in bringing European sports to China, equipping Chinese sports venues with technical infrastructures and in the production and marketing of sporting events. Zhang Dazhong, CEO of the Alibaba Sports Group, confirms "We are very pleased to be a partner with _wige, as they are experts in sports broadcasting and operating with innovative digital technology and consistently making breakthrough in this area. Technology and science bring society progress, we'd like to have deep collaborations with _wige, dedicating ourselves to developing stadium intelligence and media presentation, bringing brand-new sports experience and making everyone a sports person." (Wige, 2016).



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# Chapter 63
# Trade Liberalization, Infrastructure Development, and FDI in India and China

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## ABSTRACT

*The two largest economies in Emerging Asia, China and India, are considered to be the 'power houses' of global economy. China and India adopted the policy of 'opening up to the outside world' respectively in 1978 and 1991. Trade openness and infrastructure development has been acknowledged as crucial pre-conditions for attracting foreign direct investment (FDI). China's path of development was guided by the so called fast growing nations, which laid substantial emphasis on building strong infrastructural base at great speed. But India, on the other hand did not adopt the strategy of building infrastructure base prior to the growth of demand, like the one which has been followed by most successful Asian countries achieving rapid infrastructure development. So early opening up and improved infrastructure has attracted more FDI in China than in India. So the present study seeks to examine the relationship between trade liberalization, infrastructure development and FDI inflows in India and China using secondary time series data in a comparative analytical framework.*

## INTRODUCTION

The relationship free trade and economic growth is a highly debatable issue and there is no general consensus regarding the impact of external liberalization on growth. In these context the experiences of newly industrializing countries (NICs), Hong Kong, South Korea, Singapore and Taiwan, have been analyzed with mixed conclusions. Of late, the two giants of Asia, India and China, with their domestic markets providing vast scope for diversified industrialization and trade, are classified by international agencies as emerging markets with potential for rapid economic growth. Both economies possess the capacity to become the 'power houses' of global economy. There are many similarities between the two

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economies such as vast pool of employable labour and abundance of natural resource endowments. Also both countries suffer from paucity of capital and a large part of population is still dependent on farm activities. Poverty and relatively poor standard of living continue to affect a large number of people in both the countries. Eradication of poverty and improvement in living standard, therefore, are seen as the basic objectives of development and acceleration in the rate of economic growth as the means to achieve them. Both India and China are home to the world's largest pools of skilled work force and are expected to be the engines of global economic growth in the present century (Bhat, Guha & Pal, 2006).

Foreign trade liberalization received little attention in early stages of the development policy of both India and China. To start with, both the countries adopted inward-looking import substitution policies with an emphasis on self-sufficiency. Later in 1978, China adopted the policy of 'opening up to the outside world' and in 1991, India initiated an import liberalization policy. Comparative advantage replaced self-sufficiency as the basic tenant of trade policy and both the countries are now pursuing market-oriented and outward-looking policies (Sahoo, 2010). India has been a member of the WTO since its inception and China joined the WTO in the year 2001. Both the countries are adhering to the WTO rules in conducting their international trade. Over the last twenty years many developing countries, including India and China have abruptly and substantially lowered tariffs and scaled back other trade barriers.

India's growth has been through information technology (IT), while China's economic growth has been led by manufacturing. To sustain growth, India strives to be a stronger player in manufacturing while China is striving to increase its presence in IT. For India to improve its manufacturing sector, it must increase its FDI inflows for manufacturing and improve basic infrastructure. Conversely, for China to increase its IT sector, necessary policy steps include: focus current IT industry on global exports; spur entrepreneurship and reduce dependence on central government; create a strong trade association to improve regulatory environment; and improve quality and approach of educational system.

The two largest economies in Emerging Asia, China and India, are expected to show different growth trends in 2015 and 2016. GDP growth is expected to accelerate in India (7.7% and 8% in 2015 and 2016, respectively) with expectations of reform under the new government. However, the apparent improvement in forecast growth rates for the Indian economy is also partly a result of significant revisions made by the country's to its GDP data, which raised the base growth rate through 2014 and of the lower oil prices. However, investment and export growth are slow and significant risks remain in theform of obstacles to further reform. China, on the other hand, should continue to see slowing growth momentum (to 7% in 2015 and 6.9% in 2016) despite the benefits of lower oil prices and small stimulus and structural reform measures implemented in 2014.

There is no denial of the fact that infrastructure plays a pivotal role in both the social and economic development of a nation. Direct investment on infrastructure (a) creates production facilities and stimulates economic activities, (b) improves competitiveness by reducing transaction and trade costs and (c) provides employment opportunity to the poor. Global investment (both domestic and foreign) in infrastructure has increased continuously since 2000, reaching a peak in 2008, and then decreasing slightly but maintaining levels reached in 2006. Throughout the 2000s, Asia received the largest amount of global project investment in infrastructure, followed by Latin America. In terms of sector, the number of projects conducted was largest within the power / energy sector during the 2000s in all developed, developing and transition areas, followed by transportation. In case of China, the massive development of physical infrastructure has been the major influencing factor behind its sustained high economic growth and increased competitiveness. But India, on the other hand did not adopt the strategy of building infrastructure base prior to the growth of demand, like the one which has been followed by most successful



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Asian countries achieving rapid infrastructure development (Kim & Nangia, 2008). So early opening up and improved infrastructure has attracted more FDI in China than in India. As per the Eleventh Five Year Plan, more than US$500 billion worth of investment is planned to flow into India's infrastructure by 2012. Construction projects account for a substantial portion of the proposed investments, making the Engineering &Construction sector one of the biggest beneficiaries of the infrastructure boom in India. The regulatory environment is relaxing to encourage further foreign direct investment (FDI).

## LITERATURE SURVEY

There has been an enormous body of literature, both theoretical and empirical, in the area exploring the interlinkages between external trade liberalization, infrastructure development and FDI flows. The following are the instances of some notable works in this area. Using time series data for the period 1960-2005, Ang (2008) studied the determinant of FDI in Malaysia. The author concludes that financial development, infrastructure development and trade openness promotes FDI inflow. Babatunde (2011) explores the relationship between trade openness, infrastructure, foreign direct investment (FDI) and economic growth using a panel of forty two sub Saharan Africa (SSA) countries over the period 1980-2003.Bhagwati and Srinivasan (1975) describes elaborately the nexus between foreign trade regime and economic development in India. The study by Bhat, Guha and Pal (2006) provides detailed analysis of the trade development policies adopted in China and India. It deals with the structure and potential of Indo-China bilateral trade and measures the degree of complementarities in trade between the two countries along with the impact of FDI. Bosworth and Collins (2007) examined the sources of economic growth in the two countries compared and contrasted their experiences over the past 25 years. The work of Kim and Nangia (2008) provides detailed comparative analyses of the infrastructure development of India and China. Kirkpatrick, Parker and Zhang (2006) provides an empirical examination of the relationship between the quality of the regulatory framework and foreign direct investment (FDI) in infrastructure in middle and lower income developing countries during the period 1990 to 2002. The results confirm that FDI in infrastructure responded positively to an effective domestic regulatory framework. Sahoo, Dash and Nataraj (2010) had argued that infrastructure development in China has significant positive contributions to growth. But they emphasized the need for appropriate policy design to improve physical infrastructure as well as human capital formation for sustained economic growth. In another paper by Sahoo, Dash and Nataraj (2012) an attempt has been made to understand growth accounting equations to investigate the impact of infrastructure development on output in China. Sahoo (2014) paper outlines India's foreign direct investment (FDI) policies and highlights challenges for foreign investors, recent policy developments, and the potential for foreign firms.A study by Shah (2014) assesses the importance of infrastructure availability in the host developing country in increasing its attractiveness for overseas investors. Srinivasan (2006) shows the influence import demand and export supply on the growth of China and India. He concludes that China is integrated to a greater extent than India with the world economy, but in the next two decades both countries will be economic powerhouses and their growth will have significant impacts on the world economy. Tan and Yu (2012) analyzes and compares the trade openness pattern of China and India since 2000 and reviews the results in the context of the respective national development strategies. Asiedu (2002) studied the determinant of FDI in 70 developing countries between 1988 and 1997 using OLS estimation technique. Mottaleb (2007) examined the link between trade openness, infrastructure and FDI and its impact on economic growth in developing



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countries empirically. The empirical research results of Liu (2014) demonstrated that there's a short-run equilibrium relationship rather than a long-run one between trade openness and economic growth and the import trade is related with the export trade. Report of the Committee GOI (2015), Department of Economic Affairs, Ministry of Finance highlights the importance of revisiting and revitalizing Public private partnership model of infrastructure in India.

## OBJECTIVE OF THE STUDY AND METHODOLOGY

The primary objective of the present study is to explore the relationship between trade openness, infrastructure, foreign direct investment (FDI) and economic growth using a time-series data two countries of Asia viz. India and China over the period 1996-2014. FDI flows in a country is taken as the dependent variable and the independent variables are (i) Trade- GDP ratio [(export + import) / GDP], denoted by TRADE_GDP, the most widely used measure of trade openness of a nation; (ii) real GDP growth, denoted by RGDP_GR (iii) Current account balance as a percentage of GDP, denoted by CAB_GDP (iv) Infrastructure Development, represented Electric Power consumption (kWh per capita) (ELEC_POWER) and Internet Users (per 100 people) (INT_USERS) (v) Consumer Price Index, denoted by CPI. Also, attempt has been made to examine the effect of all these variables on RGDP_GR. The data for the current empirical analysis pertaining to the period 1996 to 2014 compiled basically from HBSIE ('Handbook of Statistics on the Indian Economy 2014-15), World Economic Situation and Prospects (2006, 2015), World Development Indicator (WDI) (1996-2014), China Statistical Yearbook (2014),UNCTAD, FDI/ TNC database (2014)and DIPP (Newsletter), FDI Factsheet (2015). The empirical analysis has been done using statistical package e-views-7 to arrive at comparative results.

## RELATION BETWEEN TRADE OPENNESS AND ECONOMIC GROWTH

The major channels through which greater openness is supposed to stimulate the economy are the analyzed below:

- **Expansion of Demand and Cost Reduction Effect:** The basic macroeconomics demonstrates that an increase in net exports (NX) increases aggregate demand in an open economy. A sustained rise in this component has boosted the GDP growth in countries like Japan, NICs and more recently in China. In addition to demand enhancement, producers can take advantage of trade liberalization to import cheaper and better quality inputs and capital equipment from abroad. Demand expansion and cost reduction can increase profits which may lead to greater capital formation and faster growth.
- **Increase in Competitive Efficiency:** Openness induces domestic firms to improve its efficiency to survive in competition with the foreign firms. A protected domestic market paralyses competition and gives shelter to both efficient and inefficient firms. Greater competition raises average efficiency by forcing the less efficient firms to contract or shut down.



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- **Improvement in Learning and Developing Technology:** International linkages enhance the "learning effect" through better technical knowhow, managerial skill, marketing networks which again increases efficiency and competitiveness overtime. This is normally reflected in the improvement in total factor productivity (TFP) in an open economy. Growth in TFP as an index of efficiency remains a widely used measure despite of its various limitations.
- **Increase in Capital Mobility:** Openness in trade in goods and services also involves free movement of capital, both long term (FDI) and short term (FPI). Among the two FDI is permanent and less volatile in nature and acts as a vehicle of technical transfer and managerial skill. This has a positive impact on the supply side and is reflected in the growth of TFP, while FPI stimulates the stock market.

## Foreign Trade Regime in China and India Prior to 2000

Foreign trade was considered as a residual part of the economic planning in China in the early 1960s and 70s. A handful of state owned foreign trade corporations were responsible for carrying out the trade plan prior to 1978. Exchange rate and relative prices played little role in determining the magnitude and commodity composition of China's foreign trade since the planning process was carried out in physical terms, the. Since 1978, the Chinese economy went through a process of gradual transformation from a "centrally planned" to a "market-based" economy and this was implemented through a phased-manner liberalization of foreign trade and investment regimes. The system of physical planning of foreign trade was gradually dismantled in1980s and by the end of 1990s was largely abandoned. Direct trade controls were phased out and the system began to rely more on indirect instruments such as tariffs and non-tariff barriers to regulate the flow of imports and exports. On the import side, in the early years of the reform era, China maintained a complex and highly restrictive system of controls such as tariffs, quotas, and licensing requirements and an array of other tools. By the time China entered the WTO in 2001 the import regime had been entirely transformed. The average statutory tariff, which stood at the relatively high level of 56 per cent in 1982, was reduced to 15 per cent by 2001 (Sahoo, 2010).

Though India followed an inward looking import substitution policy, the foreign exchange crisis in 1956 - 57 put an end to the phase of liberalization and comprehensive import controls were introduced and maintained until 1966.In June 1966, under the pressure from the World Bank, India devalued the rupee from 4.7 to 7.5 rupees per dollar. But by 1968, intense domestic reaction to devaluation led India to turn inward and almost all liberalizing initiatives were reversed and import controls tightened. There was a general problem of poor quality and technological backwardness, which beset even low cost sectors with comparative advantage such as textiles, garment, leather goods, and primary industries such as cotton. To overcome the problems faced, a steady liberalization of imports of capital equipment and technology began thereafter. Against this backdrop, reforms were undertaken in late 1970s and 1980s.The pace of import liberalization picked up significantly in 1985. In response, the external sector registered a dramatic improvement in performance.

There was significant relaxation of industrial controls and related reforms beginning in 1985 In 1991, the government devalued the rupee by 22 per cent against the dollar. In February 1992, a dual exchange rate system was introduced, which allowed exporters to sell 60 per cent of their foreign exchange in the free market and 40 per cent to the government at the lower official price. The general direction has been towards liberalization with top rates coming down to 25 per cent in 2003-04 and further to 20 per



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cent in 2007-08. From February 1994, many current account transactions including all current business transactions, education, medical expenses, and foreign travel were also permitted at the market exchange rate. These measures culminated in India accepting the IMF Article VIII obligations, which made the rupee officially convertible on current account.

Openness and growth have proceeded in tandem in these two countries. The trade- GDP ratio [(export + import) / GDP], the most widely used measure of openness increased from a low value of 8 per cent in 1970s to 26 per cent in 2000-01 to 53 per cent in 2013-14 in the case of India. In this respect, China has had extraordinary achievements in raising the ratio of total trade to GDP to 65 percent in 2004 compared to 14 percent in 1978. But it fell sharply since the global financial crisis, from 57 percent in 2008 to 44 percent in 2013. India was at the same 14 percent of GDP in 1978 and for many years lagged far behind. Recently, however, India's trade has also expanded rapidly. The link between free trade and growth is a highly debatable issue and in the context of the experiences of NICs like Hong Kong, South Korea, Singapore and Taiwan no consensus has emerged from this debate.

There was a great divergence between trade-GDP ratios of China and India in the pre-crisis period, It started to narrow down from 2008 and this continued until 2010. After that India surpassed the ratio of China. So the adverse impact of crisis on trade-GDP ratio is more pronounced for China than India.

If one compares the export growth (as a percentage of GDP) in India and China (Figure 2) it will be seen that the difference between the two widened from 2002 till 2008 (with China showing a higher percentage than India). But thereafter it dipped down sharply and went below that of India in 2013. Almost picture emerges when we compare the import growth in the two countries (as a percentage of GDP). From 2009 onwards following the global financial crisis the imports share fell below that of India and since 2010 the gap between them has started to rise but in a reverse direction (Figure 3).

The difference in the trade balance ratio [i.e. (Export – Import)/ GDP, %] between the two countries for the period 1996- 2014 shows that throughout this entire period China maintained a positive trade balance or trade surplus compared to India which continued to have trade deficit except for the period 2001 to 2004. China's trade surplus recorded the highest in 2007 (10.02 percent). Though it dipped down sharply due to impact of the crisis in 2008 but it never became negative.

*Figure 1. Comparison of Trade Openness between India and China*
*[Source: World Development Indicator (World Bank) (1996 – 2014)]*






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*Figure 2. Comparison of exports (as percentage of GDP) (1996- 2014)*
*[Source: World Development Indicator (World Bank) (1996 – 2014)]*

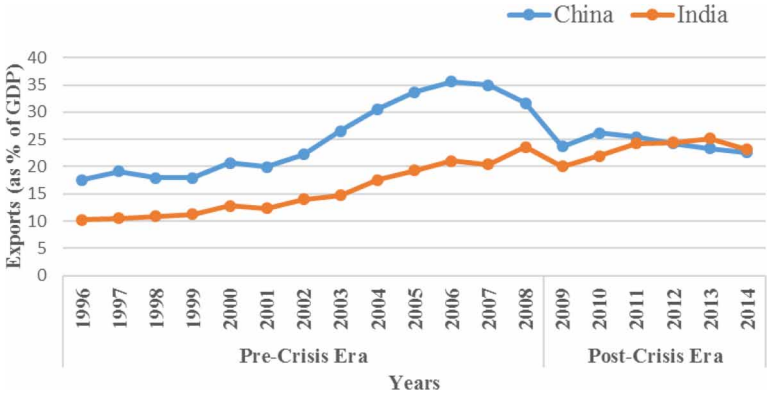



*Figure 3. Comparison of imports (as percentage of GDP) (1996- 2014)*
*[Source: World Development Indicator (World Bank) (1996 – 2014)]*

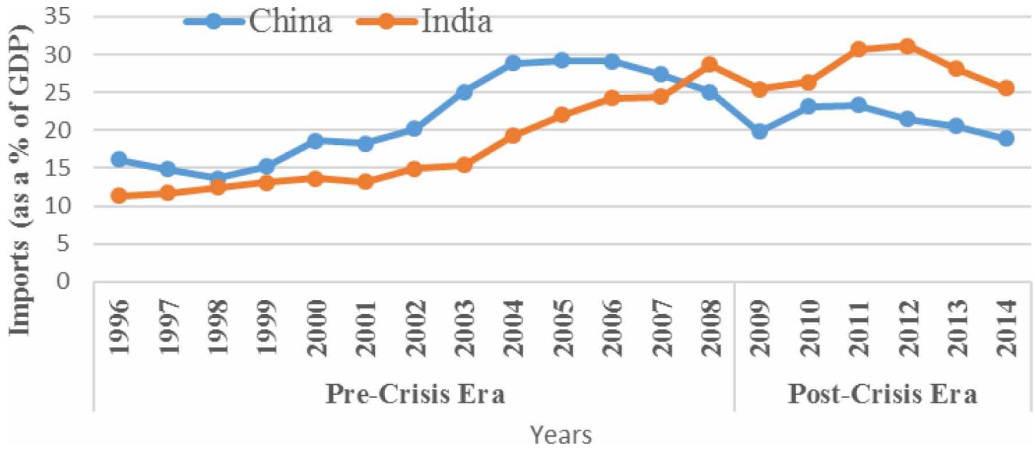
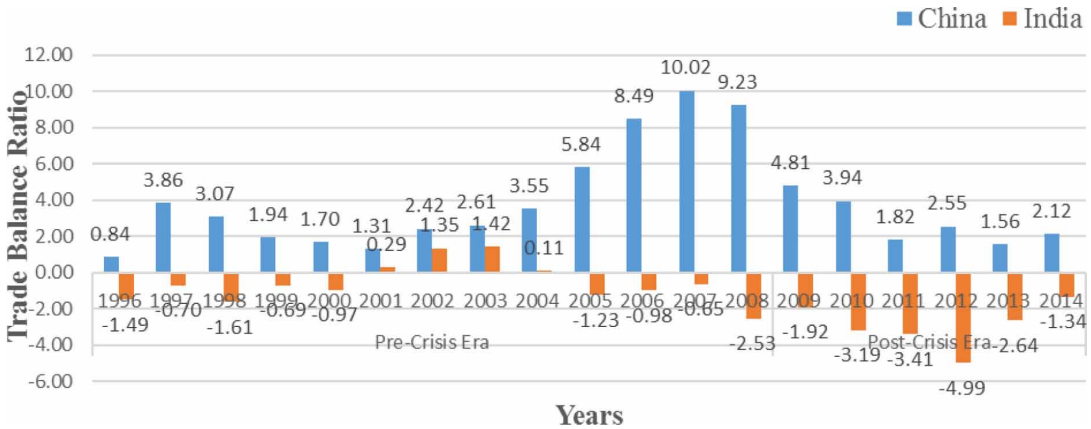



*Figure 4. Comparison of Trade Balance Ratio between India and China (1996- 2014)*
*[Source: World Development Indicator (World Bank) (1996 – 2014)]*





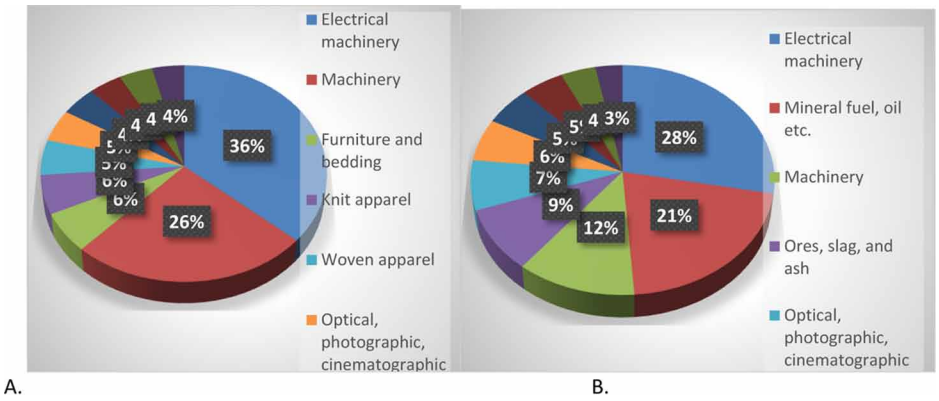

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## Comparison of Composition of Trade Between India and China

Economic reforms and trade and investment liberalization have helped transform China into a major trading power. China's abundance of low-cost labor has made it internationally competitive in many low-cost, labor-intensive manufactures. As a result, manufactured products constitute a significant share of China's trade.

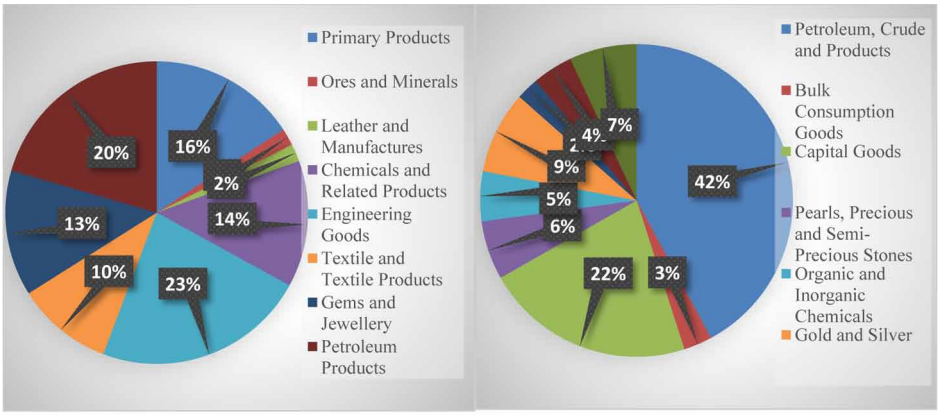
A substantial amount of China's imports is comprised of parts and components that are assembled into finished products, such as consumer electronic products and computers, and then exported. Electrical machinery, Machinery, Furniture and bedding, Knit apparel and Woven apparel occupies the major components of merchandise exports in China in 2014. Electrical machinery, Mineral fuel, oil etc, Machinery, Ores, slag, and ash are the major components of imports in China in 2014 (Figure 5a, 5b).

*Figure 5. (a) China's Exports (2014) (b) China's Imports (2014)*
**[Source:** *World Trade Atlas, using official Chinese statistics]*




A. B.

*Figure 6. (a) India's exports, 2014 (b) India's imports, 2014*
*[Source: Handbook of Statistics on Indian Economy, RBI, 2014]*




A. B.



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In the 1990s, the export growth was subject to wide ranging fluctuations and the base of the imports and exports enhanced considerably during the decade of 1990s along with considerable diversification in both exports and imports commodity baskets. The major components of export 2013-14 from India comprises of engineering goods, petroleum products, primary products (e.g. tea), gems and jewellery, textile products, chemical and related products. The major components of imports are petroleum crude and products, capital goods, Pearls, Precious and Semi-Precious Stones, Gold and Silver, Organic and Inorganic Chemicals etc.

## INFRASTRUCTURE DEVELOPMENT AND ECONOMIC GROWTH

The development of a country's infrastructure is vital to the growth of its sectors and the overall economy. The infrastructure sector primarily comprises of electricity, roads, telecommunications, railways, irrigation, water supply and sanitation, ports and airports, storing facilities, and oil and gas pipelines.

Over the last few years, researchers have devoted considerable attention to the role of not only to the trade and FDI but also to development of infrastructure in promoting growth. Many important contributions on the role of infrastructure in enhancing economic development has been well documented (e.g. Sahoo, Dash, & Nataraj 2010; 2012). More recently, increasing attention has also been paid to the impact of infrastructure on poverty and inequality (Murty & Soumya, 2006). Further, it has been found that social infrastructure such as education, health, and housing are essential to promote better utilization of physical infrastructure and human resources, thereby leading to higher economic growth and improving quality of life.

### China's Infrastructure Development

China's growth over the past two decades was primarily export-led driven by investment in infrastructure (China's spending on infrastructure increased from 5.7 percent of GDP in 1998 to about 14.4 percent of GDP in 2006) supported by domestic savings and foreign direct investment. The liberalization policy made it possible for the inflow of foreign direct investment (FDI) mainly to the manufacturing sector. The abundance of cheap labour and better than adequate infrastructure were important pre-requisites that led to a successful the export-led growth strategy in China. However, due to the global economic crisis since 2008, China's export-led growth suffered a set-backowing to in fall external demand. But unlike other WTO members, China responded to the crisis with a large economic stimulus package designed to boost domestic demand by investing in infrastructure and public services to help sustain economic growth. One of the remarkable feature of the Chinese infrastructure development was that China has followed the path of the "Asian Infrastructure Model" and fast growing economies, building impressive infrastructure ahead of demand at lightning speed. China's unparalleled growth and poverty reduction in the last two decades has gone hand in hand with development of infrastructure stemming from its export-led strategy. The bulk of infrastructure financing in China flowed from three major channels- (a) direct budget expenditure, (b) direct public financing and (c) borrowing and market based financing. But in recent years the Chinese economy started showing signs of overheating because of basic infrastructure constraints. The gap between the potential demand and the available supply of infrastructure to sustain high growth has been increasing given the importance of infrastructure development for sustainable economic growth and poverty reduction in China (Sahoo, 2010).



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## India's Infrastructure Development

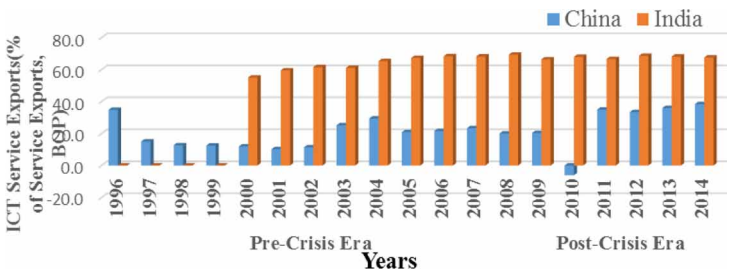
The Indian policy makers did not follow the successful Asian infrastructure model in building infrastructure ahead of demand. Its development strategy from time to time focused on redistribution of wealth rather than growth. Following the 1991 fiscal crisis in India, the Government of India adopted several reform measures to make the economy globally competitive. It recognized that the success of these policies would crucially depend on the expansion and improvement of physical infrastructure. In 1994, the Government set up an Expert's Group to recommend policy and reform program to guide the future course of infrastructure development. The Expert Group found that for India to maintain its target growth of 7-9% per annum, its infrastructure investments would need to increase from the 4-5% of GDP experienced in the 1980s and 1990s, to 8% in 2005 requiring a threefold increase in absolute levels. The Group recommended several strategies to encourage this investment, including privatization. With the exception of pricing reforms, most infrastructure reforms in India did not begin until the late 1980s and early 1990s. In the early 1990s, the telecom sector was the first one to allow entry of private sector firms in both basic and cellular telephone systems. Even though the telecom reforms had many ups and downs, the government was committed to allow growth of access of service and connectivity through entry of the private sector and the creation of markets. Inadequate infrastructure was recognized in the Eleventh Plan as a major constraint for rapid inclusive growth. The Plan had, therefore, emphasized on the need for massive expansion on investment in infrastructure based on a combination of public and private investment, the latter through various forms of Public Private Partnerships (PPPs).

## Comparative Overview of Infrastructure Development in China and India

Given the different level of importance given to infrastructure development in China and India, overall outcomes are very different today. Using various index related to various components of infrastructural development we can compare the path of the level of improvement in infrastructural facilities in the two nations. We begin with the ICT service exports (% of service exports, BOP). In ICT service exports India is far ahead of China during the period 1996 – 2014 (Figure 7). But recently, China policy emphasis on ICT has made the gap narrowed from 2011 to 2014.

In electric power consumption (kWh per capita) china maintained a constant gap with India. But from 2001 onwards and particularly after the global crisis the gap between them increased significantly (Figure 8). Generation and consumption of electricity is considered to be an important component of infrastructure, where India is lagging far behind of China.

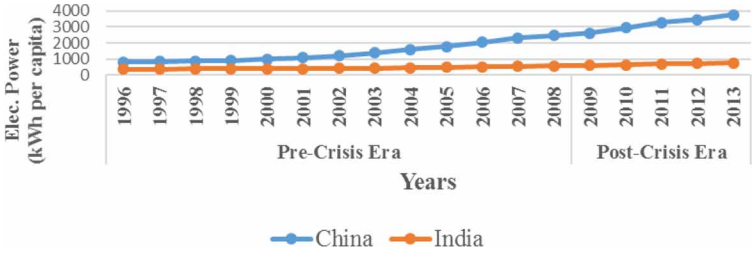
*Figure 7. Comparison of ICT Service Exports*
*[Source: World Development Indicator, World Bank]*






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*Figure 8. Comparison of Electric Power Consumption*
*[Source: World Development Indicator, World Bank]*




Road transport is useful for everyday movement of people to their workplaces or to meet every day needs. For efficient road transportation we need good quality roads. For lack of comparable data we have used length of High-ways (10,000kms.) as a proxy for road transport. Till 2004 India was ahead of China in the construction of highways, but there was a steep jump in the construction of Highways in 2005 and it surpassed that in 2005. After that China continued to maintain that same increment till 2011 (Figure 9).

In case of rail lines (total route-km) India was ahead of China till 2008. But after the crisis China surpassed that of India. But in case of air transport during the entire period of analysis China was well ahead of India and the gap widened after the crisis (Figure 10).

One of the most significant indicators of infrastructure development in the improvement in telecommunication and connectivity is the mobile phone and internet uses. Though in terms of mobile subscription and fixed broadband services there have not much significant difference between the two countries, but in terms of internet users India has been lagging way back of China (Figure 11).

*Figure 9. Comparison of High Ways*
*[Source: Chinese Statistical Year Book, 2014; Indian Statistical Year Book, 2013]*

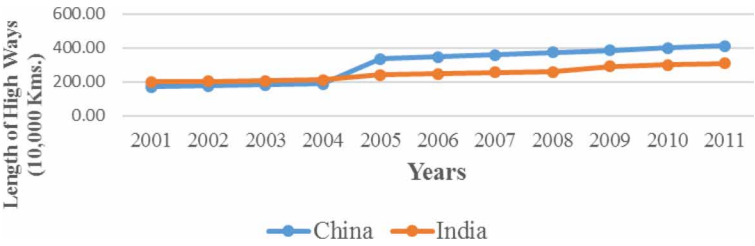


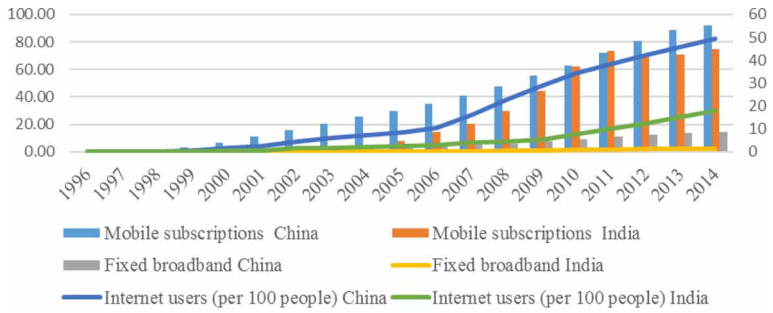

*Figure 10. Comparison of Air and Rail Transport*
*[Source: World Development Indicator, World Bank]*






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*Figure 11. Comparison of Mobile, Fixed Broadband & Internet Services*
*[Source: World Development Indicator, World Bank]*




## Comparison of Infrastructure on the Basis of Global Competitiveness Index (GCI)

According to the Global Competitiveness Report, 2015-16 the position of the two countries may be compared on the basis of Global Competitiveness Index, of which one of the major pillars is the infrastructure. India's present GCI rank is 55th compared to China's 28th (Table 1).

According to Global Competitiveness Infrastructure Index ranking China is in 39th position, well ahead of India (81st position).Though the differences are small with regard to quality of roads, quality of railroad infrastructure, but with respect to quality of air transport, quality of electric supply, mobile subscription, fixed telephone lines the divergences are quite large (Table 2).

## FDI AND ECONOMIC GROWTH

## Comparison of FDI Flows Between India and China

Prior to 1990s India followed a fairly restrictive foreign private investment policy as compared to most industrializing economies- relying more on bilateral and multilateral loans with long maturities. Besides reforms of capital markets and exchange controls, a much more liberal FDI and trade policy was pursued. The New Industrial Policy, announced on July 24, 1991 marked a major departure in respect of FDI policy with the abolition of industrial licensing system except for a few industries, creation of a system of automatic clearance of FDI proposals fulfilling the conditions laid down such as the ownership levels of 50/51/74/100 percent foreign equity and opening up of new sectors to foreign owned companies subject to sectoral caps. There was a marked increase in FDI inflows in India until 1997 (Figure 12).

*Table 1. Comparison of Global Competitiveness Index, 2015-16*

| | GCI Rank | Infrastructure | |
|---|---|---|---|
| | | Rank | Score |
| China | 28 | 39 | 4.73 |
| India | 55 | 81 | 3.72 |

[Source: Global Competitiveness Report, 2015-16]



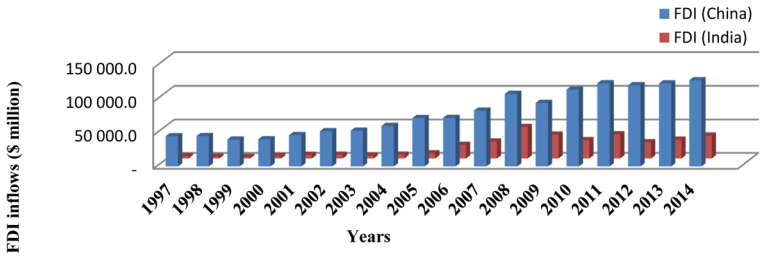
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*Table 2. Detail of the Components of Infrastructure Index in GCI, 2015-16*

| | China | | India | |
|---|---|---|---|---|
| | **Value** | **Rank/140** | **Value** | **Rank/140** |
| Quality of overall infrastructure | 4.5 | 51 | 4.0 | 74 |
| Quality of roads | 4.7 | 42 | 4.1 | 61 |
| Quality of railroad infrastructure | 5.0 | 16 | 4.1 | 29 |
| Quality of port infrastructure | 4.5 | 50 | 4.2 | 60 |
| Quality of air transport infrastructure | 4.8 | 51 | 4.3 | 71 |
| Available airline seat km/week, millions | 15491.1 | 2 | 3726.6 | 11 |
| Quality of electricity supply | 5.3 | 53 | 3.7 | 98 |
| Mobile telephone subscriptions/100 pop. | 92.3 | 107 | 74.5 | 121 |
| Fixed-telephone lines/100 pop. | 17.9 | 63 | 2.1 | 116 |

[Source: Global Competitiveness Report, 2015-16]

*Figure 12. Comparison of FDI Flows between India and China (1996-2014)*
*[Source:UNCTAD, FDI/TNC database (www.unctad.org/fdistatistics), 2014]*



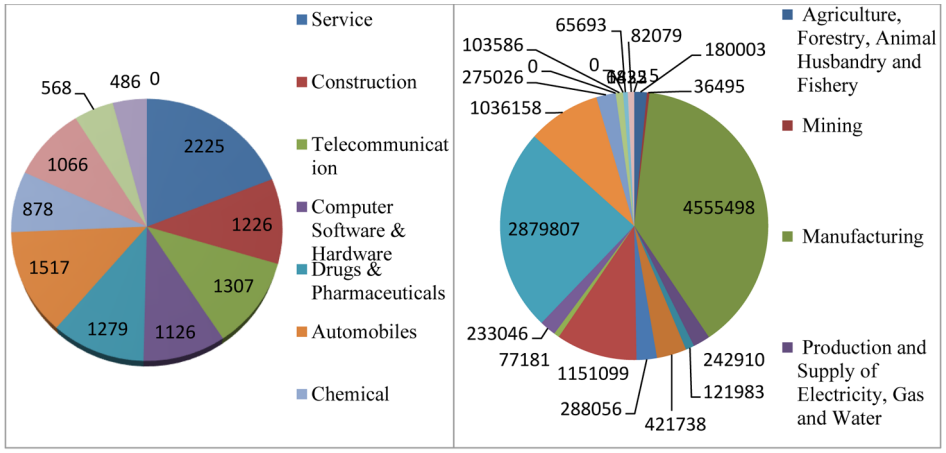

In the year 2000, a paradigm shift occurred, wherein, except for a negative list, all the remaining activities were placed under the automatic route. Caps were gradually raised in a number of sectors/ activities. Some of the initiatives that were taken during this period were that the insurance and defense sectors were opened up to a cap of 26 per cent, the cap for telecom services was increased from 49 per cent to 74 per cent, FDI was allowed up to 100 per cent in single brand retail and 51 per cent in multi-brand retail. Until 2005 there was a huge gap between FDI flows of china and India. But there was a steady increase in FDI in India between 2006 and 2008. After that the global financial crisis affected the FDI flows adversely in both the nations. But again from 2011 onwards there was a revival to the rising trend till 2014. In 2014, China recorded an FDI inflow of US$119.6 billion, up 1.7 percent from 2013. The stable FDI level shows that the country is still an attractive destination for foreign investments (Figure 13a and b).

A comparison of sector-wise composition of FDI between India and China reveals that in India service sector attracts the largest share of FDI, while in China the manufacturing sector grabs the lions share.



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*Figure 13. (a) Sector-wise FDI Flows, India (2014) (b). Sector-wise Flows, China (2014)*
*[Source: DIPP, FDI Factsheet, Jan, 2015][Source: China Statistical Yearbook (2014)]*




A. B.

## Position of Current Account Balance

Again if we compare the current account balance position as a percentage of GDP we find that from 2005 to 2014 it is negative in case of India, while it positive in case of China (though the magnitude has declined since 2009 following the global financial crisis) (Table 3).

## EMPIRICAL ANALYSIS

A number of studies have been carried out on empirically testing the link between trade openness, infrastructure and FDI and its impact on economic growth in developing countries (Asiedu, 2002 & Mottaleb, 2007). The literature demonstrates that the benefits of FDI are strongly dependent on how open a country is to globalization. In addition, the positive effect of trade on FDI has been found to be quite robust to the type of econometric method used and countries considered. Using time series data for the period 1960-2005, Ang (2008) studied the determinant of FDI in Malaysia. The author concludes that financial development, infrastructure development and trade openness promotes FDI inflow. The implication of this result is that trade liberalization leads to more FDI inflow in a host country. Asiedu (2002) studied the determinant of FDI in 70 developing countries between 1988 and 1997 using OLS estimation technique.

Our basic objective here is to establish the fact that economic growth of a nation is greatly influenced by the three factors – (a) trade openness or extent of liberalization; (b) infrastructural development and (c) FDI flows. Also, FDI flows in a nation are typically dependent on the growth of real GDP, extent of trade openness, infrastructure development and macroeconomic stability (measured by inflation). So, to assess the relationship between trade openness, infrastructure, FDI and economic growth we have tried to estimate the following two equations by least square technique.



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*Table 3. Current Account Balance as a Percentage of GDP*

| | India's CAB/GDP | China's CAB/GDP |
|---|---|---|
| 1997 | –0.7 | 3.8 |
| 1998 | –1.7 | 3.3 |
| 1999 | –0.7 | 1.6 |
| 2000 | –1.0 | 1.9 |
| 2001 | 0.3 | 1.5 |
| 2002 | 1.4 | 2.8 |
| 2003 | 1.5 | 3.2 |
| 2004 | 0.1 | 4.2 |
| 2005 | –1.3 | 7.2 |
| 2006 | –1.1 | 9.4 |
| 2007 | –1.3 | 10 |
| 2008 | –2.3 | 9.2 |
| 2009 | –2.8 | 4.8 |
| 2010 | –2.8 | 3.9 |
| 2011 | –4.2 | 1.8 |
| 2012 | –4.8 | 2.5 |
| 2013 | –1.7 | 1.6 |
| 2014 | –1.3 | 2.1 |

[Source: World Economic Situation and Prospects, 2006, 2015]

$$FDI_{it} = \alpha_0 + \alpha_1 RGDP_GR_{it} + \alpha_2 TRADE_GDP_{it} + \alpha_3 ELEC_POWER_{it} + \alpha_4 INT_USERS_{it} + \alpha_5 CAB_GDP_{it} + \alpha_6 CPI_{it} + \mu_{it.} \quad (1)$$

$$RGDP_GR_{it} = \beta_0 + \beta_1 TRADE_GDP_{it} + \beta_2 ELEC_POWER_{it} + \beta_3 INT_USERS_{it} + \beta_4 FDI_{it} + \beta_5 CAB_GDP_{it} + \beta_6 CPI_{it} + £_{it} \quad (2)$$

where,

$FDI_{it}$: net inflow of FDI in a particular country i, at time t.
$RGDP_GR_{it}$: Real GDP growth in a particular country i, at time t.
$TRADE_GDP_{it}$: Trade-GDP Ratio in a particular country i, at time t.
$ELEC_POWER_{it}$: Electric Power consumption (kWh per capita) in a particular country i, at time t.
$INT_USERS_{it}$: Internet Users (per 100 people)in a particular country i, at time t.
$CAB_GDP_{it}$: Current Account Balance as a percentage of GDP in a particular country i, at time t.
$CPI_{it}$ ; Consumer Price Index in a particular country i, at time t.



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Trade relates to the openness of the economy to the rest of the world. However, due to lack of time series data for the measure of openness, the sum of import and export as a ratio of GDP is used to proxy trade. This is justified by arguing that the more open a country is to globalization, the more attractive it is to FDI. According to the literature, countries with better infrastructural development tend to attract more FDI when compared with others, which implies the positive effect. Infrastructural development is measured using Electric Power consumption (kWh per capita) and Internet Users (per 100 people) in a country. A positive relationship between FDI and infrastructure development is expected.

On the other hand, a higher GDP per capita growth is assumed to imply better market opportunity and increases the attractiveness for FDI, thus a positive relationship is expected.The interaction of trade and Electric Power consumption (kWh per capita) and Internet Users (per 100 people) in a country is the variable of interest and its relationship with FDI is uncertain. CPI, consumer price index denotes macroeconomic stability. According to Asiedu (2003), countries with high (low) inflation rate tend to be unattractive (attractive) to FDI, hence, a negative relationship with FDI is expected.

## Empirical Results

See Tables 4, 5 and 6.

*Table 4. Summary Statistics for China*

| | RGDP_GR | TRADE_ GDP | ELEC_ POWER | INT_USERS | FDI | CAB_GDP | CPI |
|---|---|---|---|---|---|---|---|
| Mean | 9.205882 | 47.52941 | 1976.208 | 15.92158 | 76539.56 | 4.276471 | 2.082353 |
| Median | 9.200000 | 46.00000 | 1783.868 | 8.523257 | 72406.00 | 3.300000 | 2.600000 |
| Maximum | 14.20000 | 65.00000 | 3762.077 | 45.80000 | 123985.0 | 10.00000 | 6.000000 |
| Minimum | 7.100000 | 32.00000 | 852.7407 | 0.032395 | 40318.71 | 1.500000 | -1.400000 |
| Std. Dev. | 1.857576 | 10.77101 | 982.6977 | 16.06574 | 31758.94 | 2.890832 | 2.330299 |
| Skewness | 1.432843 | 0.179637 | 0.428956 | 0.695027 | 0.373713 | 0.978551 | 0.080647 |
| Kurtosis | 4.564082 | 1.830818 | 1.842134 | 1.954886 | 1.566861 | 2.540312 | 1.816848 |
| Jarque-Bera | 7.549776 | 1.059712 | 1.470972 | 2.142365 | 1.850545 | 2.862772 | 1.009987 |
| Probability | 0.022940 | 0.588690 | 0.479273 | 0.342603 | 0.396423 | 0.238978 | 0.603509 |
| Sum | 156.5000 | 808.0000 | 33595.54 | 270.6669 | 1301172. | 72.70000 | 35.40000 |
| Sum Sq. Dev. | 55.20941 | 1856.235 | 15451116 | 4129.730 | 1.61E+10 | 133.7106 | 86.88471 |
| Observations | 17 | 17 | 17 | 17 | 17 | 17 | 17 |



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*Table 5. Summary Statistics for India*

| | RGDP_GR | TRADE_ GDP | ELEC_ POWER | INT_USERS | FDI | CAB_GDP | CPI |
|---|---|---|---|---|---|---|---|
| Mean | 6.529412 | 38.64706 | 515.4581 | 4.162637 | 16779.57 | 1.747059 | 7.117647 |
| Median | 6.400000 | 41.00000 | 469.3687 | 2.388075 | 7621.769 | 1.400000 | 6.400000 |
| Maximum | 10.50000 | 56.00000 | 765.0034 | 15.10000 | 47102.42 | 4.800000 | 13.20000 |
| Minimum | 3.900000 | 22.00000 | 376.6451 | 0.070768 | 2168.000 | 0.100000 | 3.700000 |
| Std. Dev. | 2.023538 | 12.23183 | 129.9000 | 4.567939 | 14597.45 | 1.285067 | 3.161336 |
| Skewness | 0.587864 | -0.022690 | 0.632330 | 1.225880 | 0.585797 | 1.062516 | 0.489409 |
| Kurtosis | 2.166408 | 1.474883 | 2.032409 | 3.338794 | 2.011868 | 3.417792 | 1.912020 |
| Jarque-Bera | 1.471359 | 1.649030 | 1.796049 | 4.339182 | 1.663901 | 3.322303 | 1.517097 |
| Probability | 0.479180 | 0.438448 | 0.407374 | 0.114224 | 0.435200 | 0.189920 | 0.468346 |
| Sum | 111.0000 | 657.0000 | 8762.787 | 70.76484 | 285252.7 | 29.70000 | 121.0000 |
| Sum Sq. Dev. | 65.51529 | 2393.882 | 269984.3 | 333.8570 | 3.41E+09 | 26.42235 | 159.9047 |
| Observations | 17 | 17 | 17 | 17 | 17 | 17 | 17 |

*Table 6. Results of Unit Root Test (Using Augmented Dickey-Fuller Test)* **For China**

| Variable | | t-Statistic | Probability | Critical value (at 5% Level) |
|---|---|---|---|---|
| RGDP_GR | | -1.875950 | 0.3350 | -3.040391 |
| TRADE_GDP | | -1.716019 | 0.4060 | -3.052169 |
| FDI | | 0.042464 | 0.9510 | -3.040391 |
| INT_USERS | | 0.625404 | 0.9856 | -3.065585 |
| ELEC_POWER | | 4.203276 | 1.0000 | -3.052169 |
| CPI | | -1.495736 | 0.5099 | -3.065585 |
| CAB_GDP | | -3.198188 | 0.0406 | -3.081002 |
| RGDP_GR1 | | -4.634080 | 0.0026 | -3.065585 |
| TRADE_GDP1 | | -2.716750 | 0.0916 | -3.052169 |
| FDI1 | | -5.457792 | 0.0005 | -3.052169 |
| INT_USERS1 | | -1.858971 | 0.3412 | -3.065585 |
| ELEC_POWER1 | intercept | -0.942609 | 0.7424 | -3.098896 |
| | Intercept & trend | -3.836813 | 0.0441 | -3.759743 |
| CPI1 | | -5.678261 | 0.0004 | -3.065585 |
| CAB_GDP1 | | -2.502242 | 0.1331 | -3.065585 |
| RGDP_G2 | | -4.173382 | 0.0057 | -3.052169 |



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## Modifications After Unit Root Test for China

$$FDI1 = \alpha_0 + \alpha_1 RGDP_G1 + \alpha_2 RGDP_G2 + \alpha_3 ELEC_POWER1 + \alpha_4 CAB + \alpha_5 CPI1 + \mu_{it} \tag{3}$$

$$RGDP_GR1 = \beta_0 + \beta_1 ELEC_POWER1 + \beta_3 FDI1 + \beta_4 CAB + \beta_5 CPI1 + £_{it} \tag{4}$$

where,

$$RGDP_GR1 = RGDP_G - RGDP_G(-1)$$
$$RGDP_G2 = RGDP_G1 * RGDP_G1$$
$$TRADE_GDP1 = TRADE_GDP - TRADE_GDP(-1)$$
$$FDI1 = FDI - FDI(-1)$$
$$ELEC_POWER1 = ELEC_POWER - ELEC_POWER(-1)$$
$$CAB1 = CAB - CAB(-1)$$
$$CPI1 = CPI - CPI(-1)$$

## Modifications After Unit Root Test for India

$$FDI1 = \alpha_0 + \alpha_1 RGDP_G1 + \alpha_2 RGDP_G2 + \alpha_3 ELEC_POWER1 + \alpha_4 TRADE - GDP1 \alpha_5 CAB + \alpha_6 CPI1 + \mu_{it} \tag{5}$$

$$RGDP_GR1 = \beta_0 + \beta_1 TRADE_GDP1 + \beta_2 ELEC_POWER1 + \beta_3 FDI1 + \beta_4 CAB_GDP1 + \beta_5 CPI1 + £_{it} \tag{6}$$

where,

$$RGDP_GR1 = RGDP_G - RGDP_G(-1)$$
$$RGDP_G2 = RGDP_G1 * RGDP_G1$$
$$TRADE_GDP1 = TRADE_GDP - TRADE_GDP(-1)$$
$$FDI1 = FDI - FDI(-1)$$
$$ELEC_POWER1 = ELEC_POWER - ELEC_POWER(-1)$$
$$CAB1 = CAB - CAB(-1)$$
$$CPI1 = CPI - CPI(-1)$$



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*Table 7. Regression Results for China*

| Dependent Variable | Exp. Variable | Coefficient | Std. Error | t-stat | Prob. | DW-Statistic |
|---|---|---|---|---|---|---|
| FDI1 | Constant | 503.5858 | 3907.823 | 0.128866 | 0.8998 | 2.081877 |
| | RGDP_G1 | 1.813389 | 1.060776 | 1.709493 | 0.1154 | |
| | RGDP_G2 | -0.000202 | 0.000408 | -0.495818 | 0.6298 | |
| | ELEC_POWER1 | 1.254529 | 17.94465 | 0.669911 | 0.9455 | |
| | CAB | 0.935780 | 0.758162 | 1.234273 | 0.2428 | |
| | CPI1 | 1.951840 | 0.559159 | 3.490672 | 0.0051 | |
| RGDP_G1 | Constant | -793.4199 | 948.4466 | -0.836547 | 0.4192 | 1.771043 |
| | ELEC_POWER1 | 4.061072 | 4.490299 | 0.904410 | 0.3836 | |
| | FDI1 | -0.148104 | 0.064342 | -2.301811 | 0.0401 | |
| | CAB | 0.183884 | 0.157952 | 1.164178 | 0.2670 | |
| | CPI1 | 0.277111 | 0.194297 | 1.426220 | 0.1793 | |

*Table 8. Results of Unit Root Test (Using Augmented Dickey-Fuller Test) For India*

| Variable | | t-Statistic | Probability | Critical value |
|---|---|---|---|---|
| RGDP_GR | | -3.287924 | 0.0311 | -3.040391 |
| TRADE_GDP | | -0.973711 | 0.7392 | -3.040391 |
| FDI | | -1.031904 | 0.7182 | -3.040391 |
| INT_USERS | | 8.287962 | 1.0000 | -3.040391 |
| ELEC_POWER | | 4.341250 | 1.0000 | -3.052169 |
| CPI | | -2.189943 | 0.2160 | -3.040391 |
| CAB_GDP | | -2.012779 | 0.2790 | -3.052169 |
| RGDP_GR1 | | -5.873399 | 0.0003 | -3.065585 |
| TRADE_GDP1 | | -4.283598 | 0.0046 | -3.052169 |
| FDI1 | | -4.647390 | 0.0022 | -3.052169 |
| INT_USERS1 | | -0.430725 | 0.8827 | -3.052169 |
| ELEC_POWER1 | intercept | -1.629355 | 0.4456 | -3.065585 |
| | Intercept & trend | -3.888635 | 0.0429 | -3.791172 |
| CPI1 | | -5.685200 | 0.0003 | -3.052169 |
| CAB_GDP1 | | -3.143832 | 0.0447 | -3.081002 |
| RGDP_G2 | | -3.093337 | 0.0463 | -3.052169 |

Initially, two regression equations (equations 1 and 2) were set to be examined following the standard literature in one, where FDI is the dependent variable and other, where real GDP growth (RGDP_GR) is the dependent variable. But after performing unit root test (following Augmented Dickey-Fuller Test), separately for the two countries, it was found that some variables have non-stationary problems and so they had to be dropped for the regression. So the modified regression equations in case of China are represented by equations 3 and 4 and in case of India by 5 and 6 respectively.



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*Table 9. Regression Results for India*

| Dependent Variable | Exp. Variable | Coefficient | Std. Error | t-stat | Prob. | DW-Statistic |
|---|---|---|---|---|---|---|
| FDI1 | Constant | -2039.466 | 3615.965 | -0.564017 | 0.5865 | 1.584332 |
| | RGDP_G1 | 0.593864 | 1.037830 | 0.572217 | 0.5812 | |
| | RGDP_G2 | -0.000352 | 0.000233 | -1.507346 | 0.1660 | |
| | ELEC_POWER1 | -37.69013 | 128.4711 | -0.293374 | 0.7759 | |
| | TRADE_GDP1 | 1.196936 | 0.714156 | 1.676015 | 0.1281 | |
| | CAB1 | -2.612503 | 1.901965 | -1.373581 | 0.2028 | |
| | CPI1 | 0.338304 | 0.673494 | 0.502312 | 0.6275 | |
| RGDP_G1 | Constant | 291.1037 | 1102.643 | 0.264005 | 0.7971 | 1.552524 |
| | ELEC_POWER1 | 17.81124 | 36.66971 | 0.485721 | 0.6376 | |
| | FDI1 | -0.101373 | 0.086381 | -1.173550 | 0.2678 | |
| | TRADE_GDP1 | -0.290760 | 0.213915 | -1.359234 | 0.2039 | |
| | CAB | -0.348472 | 0.563030 | -0.618922 | 0.5498 | |
| | CPI1 | 0.027245 | 0.210159 | 0.129638 | 0.8994 | |

From the regression table it follows that in case of China change in the real GDP growth, change in electric power consumption (which has been used as a proxy for infrastructure development), current account balance and change in CPI overtime have positive influence on FDI, whereas the coefficient of RGDP_G2 (which denotes the change in slope) has a negative impact. Moreover, in China infrastructural development has a positive impact (the coefficient of ELEC_POWER is positive) on the change in growth of real GDP. But the impact of FDI on real GDP growth is negative. In case of India change in real GDP growth, trade openness (i.e. trade-GDP ratio) has a positive impact on FDI, but the impact of infrastructural development on FDI has turned out to be negative. Again, increase electric power consumption has a positive influence on real GDP growth in India. One aspect is common in both the nations and that is infrastructural development has a positive influence on the change in real GDP growth in both China and India, but it is just the opposite in case of impact on FDI in both the nations.

The R-squared value in all the regressions are high (expect one) which shows that the explanatory variables explain a greater percentage of variations in the dependent variables. R-squared is a statistical measure of how close the data are to the fitted regression line. It is also known as the coefficient of determination, or the coefficient of multiple determinations for multiple regressions. It is the percentage of the response variable variation that is explained by a linear model. Or: R-squared = Explained variation / Total variation. An interesting feature is observed if we look into the DW statistics of the variables in the two countries. The Durbin-Watson test statistic tests the null hypothesis that the residuals from an ordinary least-squares regression are not autocorrelated against the alternative that the residuals follow an AR1 process. The Durbin-Watson statistic ranges in value from 0to 4. A value near 2 indicates non-autocorrelation; a value toward 0 indicates positive autocorrelation; a value toward 4 indicates negative autocorrelation. In almost all the cases the values are nearer to 2 here.



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## POLICY SUGGESTIONS FOR INDIA AND CHINA

This study may provide important policy suggestion for the policy makers in both China and India. As China's economic growth has been driven by substantial investment in infrastructure and FDI liberalization in a phased manner, so in future the policy makers may continue to give more emphasis on these two areas. But for the development of the service sector, particularly the IT sector, more emphasis should be laid on building up of human capital formation along with the rapid development of physical infrastructure. In India there is no denial of the fact that openness to current account trade has indeed played a significant role in India's growth surge. Removal of trade restrictions and development of information and communication technology has boosted the growth of knowledge-based IT sector, which is supposed to enjoy demographic dividend in future. But the manufacturing sector did not perform its desired role mainly due to poor quality infrastructure, persistence of inefficiency and declining public investment. FDI has failed to effect any major supply side changes mainly because of availability of complementary inputs and technological improvement. But strict vigilance on movement of foreign funds by the RBI has acted as an insulator to mitigate the terrible impact of the financial crisis to which a large number of fast developing nations, including China, got affected. Moreover, investment in health and education needs to be emphasized more for a sustainable development goal.

## CONCLUSION

The chapter clearly reveals that though China is integrated to a greater extent than India, Openness to current account trade has indeed played an important role in the growth surge of both the countries. China's economic growth has been led by manufacturing, while India's growth has been through information technology (IT). China's GDP is equivalently contributed by the secondary and tertiary sectors while India has a sectoral imbalance as the corresponding contribution to GDP is more for the tertiary sector than the secondary sector. During the period of analysis china's trade –GDP ratio was quite higher than that of India (except in recent times). China's share of world export rose steadily during the period 2000 to 2008 but India's share remained stagnant at 1 per cent in spite of a jump in the volume of exports. For the entire period China maintained a trade surplus while India was adversely affected by the trade deficit. But one of major limitations of the present study is that it didn't consider export trade openness and import trade openness separately due to lack of comparable data, which would have thrown a more detailed idea about the extent of trade openness in the two countries.

The present chapter analyzes the role of the interaction between trade openness and infrastructural development in the attraction of FDI and in fostering economic growth in the two fastest growing countries of Asia. The results indicate that trade openness and infrastructural development encourages the inflow of FDI in both the countries. In China and India trade openness and infrastructural development has a positive impact on growth in real GDP and FDI. So India and China should develop their macroeconomic policies and structural reform programs in such a manner so as to encourage economic openness, infrastructural development to attract foreign investments for sustainable growth.



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## KEY TERMS AND DEFINITIONS

**Economic Growth:** Economic growth of a nation is generally measured by the growth of per capita income or real GDP. It provides the first hand measure of the level of standard of living of the population of a particular nation. Economic growth captures only the GDP or income growth and so it is a necessary but not a sufficient condition for development of a nation.

**FDI Flows:** Real investment in factories, capital goods, land and inventories where both capital and management are involved and the investor retains control over the use of the invested capital. Among the various forms of private foreign investment, foreign direct investment (FDI) flows are usually preferred over other forms of external finance because they are non-debt creating, non-volatile and their returns depends on the performance of projects financed by the investors. FDI can complement local development efforts in a number of ways, including boosting export competitiveness; generating employment and strengthening the skills base; enhancing technological capabilities (transfer, diffusion and generation of technology); and increasing financial resources for development.

**Foreign Trade Regime in India and China:** Liberalized foreign trade regime is the basic condition for fostering foreign trade and FDI. Opening up of foreign trade is a watershed in development policy of both India and China. To start with, both the countries adopted inward-looking import substitution policies with an emphasis on self-sufficiency. Later in 1978, China adopted the policy of 'opening up to the outside world' and in 1991, India initiated an import liberalization policy.

**Global Competitiveness Index (GCI) in Infrastructure:** Competitiveness is defined as the set of institutions, policies and factors that determine a country's level of productivity. The level of productivity, in turn, sets the level of prosperity that can be reached by an economy.The GCI combines 114 indicators that capture concepts that matter for productivity. These indicators are grouped into 12 pillars- institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labor market efficiency, financial market development, technological readiness, market size, business sophistication, and innovation. Effective modes of transport—including high-quality roads, railroads, ports, and air transport, uninterrupted electricity supplies, solid and extensive telecommunications network ensures the effective functioning of the economy.

**Infrastructure Development:** Infrastructure has been used as an umbrella term for many activities. The development of a country's infrastructure is vital to the growth of its sectors and the overall economy. The infrastructure sector primarily comprises of electricity, roads, telecommunications, railways, irrigation, water supply and sanitation, ports and airports, storing facilities, and oil and gas pipelines.



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**Time Series Data:** A set of statistics, usually collected at regular intervals. Secondary time series data for two countries of Asia viz. India and China over the period 1996-2014 has been used to provide an empirical support to the various comparative analysis. Correlation and regression analysis are used to arrive at the results.

**Trade Liberalization:** Opening up of foreign trade or external liberalization. Opening up of foreign trade is a watershed in development policy of both India and China. The trade- GDP ratio [(export + import) / GDP] is the most widely used measure of trade openness of a nation. Following the WTO rules it implies substantially lowered tariffs and scaled back other trade barriers and a gradual movement towards a free trade regime.

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# APPENDIX

## For China

*Table 10. Estimated Equation: FDI1 c RGDP_G1 RGDP_G2 ELEC_POWER1 CAB CPI1*

| Dependent Variable: FDI1 | | | | |
|---|---|---|---|---|
| Method: Least Squares | | | | |
| Date: 09/10/16 Time: 22:19 | | | | |
| Sample (adjusted): 1997 2013 | | | | |
| Included observations: 17 after adjustments | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 503.5858 | 3907.823 | 0.128866 | 0.8998 |
| RGDP_G1 | 1.813389 | 1.060776 | 1.709493 | 0.1154 |
| RGDP_G2 | -0.000202 | 0.000408 | -0.495818 | 0.6298 |
| ELEC_POWER1 | 1.254529 | 17.94465 | 0.669911 | 0.9455 |
| CAB | 0.935780 | 0.758162 | 1.234273 | 0.2428 |
| CPI1 | 1.951840 | 0.559159 | 3.490672 | 0.0051 |
| R-squared | 0.701447 | Mean dependent var | | 4834.440 |
| Adjusted R-squared | 0.565741 | S.D. dependent var | | 9028.948 |
| S.E. of regression | 5949.929 | Akaike info criterion | | 20.49071 |
| Sum squared resid | 3.89E+08 | Schwarz criterion | | 20.78479 |
| Log likelihood | -168.1710 | Hannan-Quinn criter. | | 20.51994 |
| F-statistic | 5.168868 | Durbin-Watson stat | | 2.081877 |
| Prob(F-statistic) | 0.011040 | | | |



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*Table 11. Estimated Equation: RGDP_G1 c ELEC_POWER1 FDI1 CAB CPI1*

| Dependent Variable: RGDP_G1 | | | | | |
|---|---|---|---|---|---|
| Method: Least Squares | | | | | |
| Date: 09/11/16 Time: 23:59 | | | | | |
| Sample (adjusted): 1997 2013 | | | | | |
| Included observations: 17 after adjustments | | | | | |
| Variable | Coefficient | Std. Error | | t-Statistic | Prob. |
| C | -793.4199 | 948.4466 | | -0.836547 | 0.4192 |
| ELEC_POWER1 | 4.061072 | 4.490299 | | 0.904410 | 0.3836 |
| FDI1 | -0.148104 | 0.064342 | | -2.301811 | 0.0401 |
| CAB | 0.183884 | 0.157952 | | 1.164178 | 0.2670 |
| CPI1 | 0.277111 | 0.194297 | | 1.426220 | 0.1793 |
| R-squared | 0.382580 | | Mean dependent var | | -111.7647 |
| Adjusted R-squared | 0.176773 | | S.D. dependent var | | 1698.853 |
| S.E. of regression | 1541.402 | | Akaike info criterion | | 17.75870 |
| Sum squared resid | 28511024 | | Schwarz criterion | | 18.00376 |
| Log likelihood | -145.9490 | | Hannan-Quinn criter. | | 17.78306 |
| F-statistic | 1.858925 | | Durbin-Watson stat | | 1.771043 |
| Prob(F-statistic) | 0.182560 | | | | |



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## For India

*Table 12. Estimated Equation: FDI1 c RGDP_G1 RGDP_G2 ELEC_POWER1 TRADE_GDP1 CAB1 CPI1*

| Dependent Variable: FDI1 | | | | |
|---|---|---|---|---|
| Method: Least Squares | | | | |
| Date: 09/12/16 Time: 00:16 | | | | |
| Sample (adjusted): 1998 2013 | | | | |
| Included observations: 16 after adjustments | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | -2039.466 | 3615.965 | -0.564017 | 0.5865 |
| RGDP_G1 | 0.593864 | 1.037830 | 0.572217 | 0.5812 |
| RGDP_G2 | -0.000352 | 0.000233 | -1.507346 | 0.1660 |
| ELEC_POWER1 | -37.69013 | 128.4711 | -0.293374 | 0.7759 |
| TRADE_GDP1 | 1.196936 | 0.714156 | 1.676015 | 0.1281 |
| CAB1 | -2.612503 | 1.901965 | -1.373581 | 0.2028 |
| CPI1 | 0.338304 | 0.673494 | 0.502312 | 0.6275 |
| R-squared | 0.552505 | Mean dependent var | | 1536.278 |
| Adjusted R-squared | 0.254175 | S.D. dependent var | | 8453.892 |
| S.E. of regression | 7300.881 | Akaike info criterion | | 20.92901 |
| Sum squared resid | 4.80E+08 | Schwarz criterion | | 21.26702 |
| Log likelihood | -160.4321 | Hannan-Quinn criter. | | 20.94632 |
| F-statistic | 1.851992 | Durbin-Watson stat | | 1.584332 |
| Prob(F-statistic) | 0.194857 | | | |



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*Table 13. Estimated Equation: RGDP_G1 c ELEC_POWER1 FDI1 TRADE_GDP1 CAB1 CPI1*

| Dependent Variable: RGDP_G1 | | | | |
|---|---|---|---|---|
| Method: Least Squares | | | | |
| Date: 09/12/16 Time: 00:26 | | | | |
| Sample (adjusted): 1998 2013 | | | | |
| Included observations: 16 after adjustments | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 291.1037 | 1102.643 | 0.264005 | 0.7971 |
| FDI1 | -0.101373 | 0.086381 | -1.173550 | 0.2678 |
| TRADE_GDP1 | -0.290760 | 0.213915 | -1.359234 | 0.2039 |
| ELEC_POWER1 | 17.81124 | 36.66971 | 0.485721 | 0.6376 |
| CAB1 | -0.348472 | 0.563030 | -0.618922 | 0.5498 |
| CPI1 | 0.027245 | 0.210159 | 0.129638 | 0.8994 |
| R-squared | 0.504871 | Mean dependent var | | -12.50000 |
| Adjusted R-squared | 0.257307 | S.D. dependent var | | 2620.655 |
| S.E. of regression | 2258.471 | Akaike info criterion | | 18.56276 |
| Sum squared resid | 51006927 | Schwarz criterion | | 18.85248 |
| Log likelihood | -142.5021 | Hannan-Quinn criter. | | 18.57760 |
| F-statistic | 2.039353 | Durbin-Watson stat | | 1.552524 |
| Prob(F-statistic) | 0.157958 | | | |



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# Chapter 64
# Integration to the WTO and Economic Transition in the South Caucasus Economies

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## ABSTRACT

*Economic transition story in the South Caucasus economies started after the collapse of the Soviet Union. Theoretically, integration to the World Trade Organization (WTO) system should improve the economic transition performance. This research uses the yearly transition indicators by the EBRD to discover the relationship between economic transition performance and integration to the WTO in the contexts of before-and-after WTO membership and before-and-after the end of concession period defined for a new member to implement all obligations. Author employs bivariate de-trended regression analysis estimated by using Ordinary Least Squares (OLS), individually for Armenia and Georgia, and within a panel analysis covering all three countries of the region. Research findings provide strong evidence of significant positive or acceleratory effect of integration to the WTO on economic transition in the South Caucasus. Surprise finding is insignificant impact over competition policy index, which is supposed to be affected by integration.*

## INTRODUCTION

When Georgia acceded to the World Trade Organization (WTO) in June 14, 2000, WTO Director-General Mike Moore expressed that "this accession is particularly noteworthy given Georgia's remarkable transition to a market economy" (International Centre for Trade and Sustainable Development, 2000). This research investigates the role of integration to the WTO over the economic transition performance of South Caucasus economies, namely Georgia, Armenia, and Azerbaijan.

The WTO encompasses most of the world countries as the largest trade organization in the world of today. Founding of the organization started in the second half of the 1940s or more precisely, by signing the General Agreement on Tariffs and Trade (GATT). From the end of the 1940s until now, the GATT

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has been a subject to many trade negotiations and was transformed to the GATT 1994 when the WTO was established. As the aim of this organization is enhancing trade liberalization and opening trade to all countries to benefit, its role in economic transition of former centrally planned economies is a subject of this study. Thus, the WTO has several compulsory principles, which must be followed by all member countries. Moreover, a country that wants to join the WTO passes several stages and undertakes obligations for the WTO until its accession as a full member.

After the establishment of Bretton Woods system, the idea of the GATT was purposed due to the aim of increasing the living standards, continuous rising of real income and effective demand, achieving the full employment, the "full use" of world resources and enlargement of goods production / trade (Irwin, 1995). In order to achieve these aims, the GATT would decrease tariff and non-tariff barriers over trade and remove discriminatory trade policies in international trade in the context of "reciprocal and mutually advantageous arrangements" (Irwin, 1995, p. 324).

After 1947, the scope and the sphere of influence of the GATT were enlarged as a result of the rounds of negotiations in Geneva (1947), Annecy (1949), Torquay (1951), Geneva (1956), Dillon (1960-1961), Kennedy round (1964-1967), Tokyo round (1973-1979), and Uruguay round (1986-1993) (Oatley, 2008, p. 26). After Uruguay round, the WTO was established on the basis of the GATT-1994, General Agreement on Trade in Services (GATS), Trade-related Investment Measures (TRIMs), Trade-related Aspects of Intellectual Property Rights (TRIPS) within "Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations Marrakesh Agreement Establishing the World Trade Organization" (World Trade Organization, 2011).

Despite the expectations from the WTO to make better of all countries through the tools mentioned above, it is still under question if the organization does this. As the direct impact is over international trade, many empirical studies investigated if the WTO really increased trade, some of them found insignificant effect (Rose, 2004a, 2004b, 2004c; Gowa & Kim, 2005; Park, 2009; Eicher & Henn, 2011; Roy, 2011; Swinnen, Olper, & Vandemoortele, 2012) while many others revealed significant impact of the WTO over trade (Subramanian & Wei, 2007; Tomz, Goldstein, & Rivers, 2007; Tomz, Rivers, & Goldstein, 2007; Balding, 2010; Liu, 2009; Dutt, Mihov, & van Zandt, 2013; Konya, Matyas, & Harris, 2011; Kim, 2008; Grant & Boys, 2012; Herzl & Warner, 2011; Chang & Lee, 2011; Anderson, 2010; Mansfield & Reinhardt, 2008; Jansen, 2010; Buthe & Milner, 2008; Shah, Hasnat, & Li, 2010). However, none of those has analysed the impact of the WTO membership over economies in transition.

This study attempts to fill this gap partially, for the South Caucasus economies. The South Caucasus region covers three independent countries – Armenia, Azerbaijan, and Georgia, which all had centrally planned economic system within the Soviet Union until its collapse in 1991. All three declared the desire of liberalization or from economic point of view, economic transformation towards market economy immediately after the declaration of their independence. Integration process of these economies into the WTO will be discussed in the following section. Before, it is noteworthy to mention what determines the economic transformation.

In a centrally planned economy, trade and all other aspects of international exchange of goods and services are controlled by the government institutions such as ministries and state owned trading enterprises (Michalopoulos, 2000, pp. 65-66). Here, the data for economic transition of these countries are the yearly transition indicators, output of European Bank of Reconstruction and Development (EBRD). Instead of calculation an overall transition indicator, the EBRD divides the transition into 6 categories: 1) large-scale privatization, 2) small-scale privatization, 3) governance and enterprise restructuring, 4)



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price liberalization, 5) trade and forex system, and 6) competition policy. Despite the official declaration of the government that economic transition is ended, real empirical data analysis is employed, not political considerations.

The issue is that all three countries launched accession process to the WTO in 1995-1997. Georgia and Armenia completed the accession negotiation in 2000 and 2003, respectively, while Azerbaijan still continues its negotiations. For each year, before-and-after the accession, transition indicators are available for Georgia and Armenia. Therefore, empirical analysis is applicable for these two countries individually, and for the all three within one model.

This research investigates the differences in economic transition performances of those three economies before and after accession to the WTO. The regression analysis is conducted for Georgia and Armenia before and after the relative concession periods. While pooling all three within one model, the analysis shows if the WTO membership matters for the economic transition performance of a member country in comparison with a non-member one. For this purpose, the following section reviews accession experience of these economies to the WTO. Later, the author looks for relationship between economic transition and the WTO membership by discussing theoretical considerations and available literature. The remaining parts include graphical analysis of transition indicators, empirical methodology representation, results and their interpretation.

## BACKGROUND

For a non-member country, achieving full membership status in the WTO is a long lasting process, which usually takes several years. "Accession to the WTO – Procedures for Negotiations under Article XII" defines the accession procedure or the framework of an accession process to the WTO for a nonmember country (Williams, 2008) (Figure 1).

Nevertheless, the organization provides an observer status to a non-member for five years to ensure the country is well informed about the WTO and its activities before the accession (Markovic, 2009, pp. 118-119). This status does not impose any commitment on that country.

Shortly describing the accession process, it is a six-staged process towards full membership (Markovic, 2009, p. 119). More precisely, the process starts with submission of an official request by the government of the candidate country. This request must indicate the willingness of the candidate to adopt the Marrakesh Agreement and to become a full member of the WTO, which should be submitted to the WTO's General Director. Afterwards a request is introduced to all members of the organization and added to the agenda of General Council's next meeting. Upon acceptance of the request, a Working Party is formed for accession negotiations in which all members can participate.

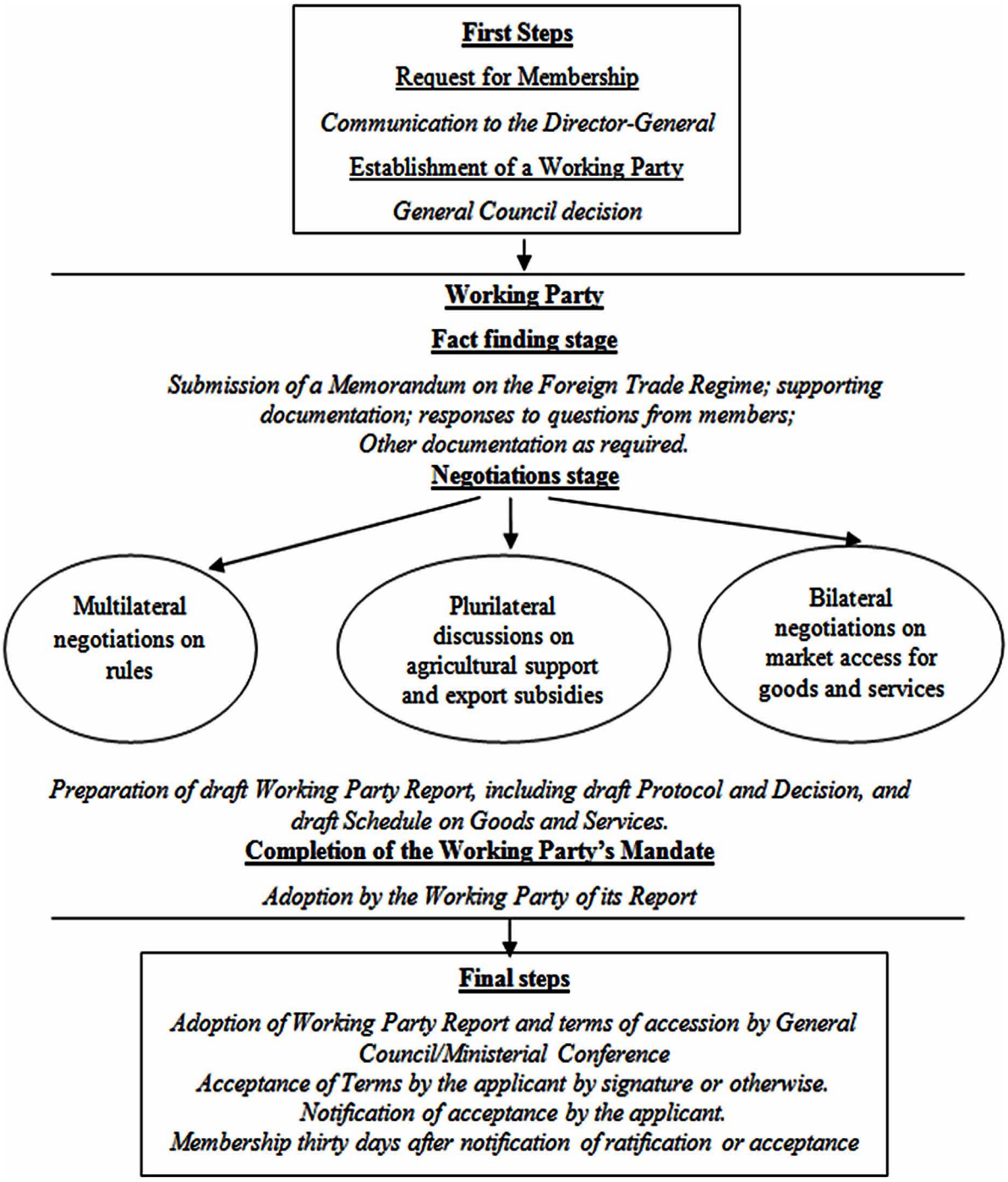
Accession process continues with stages of submission of "Memorandum on the Foreign Trade Regime" which clarifies policies and institutions of a candidate country. Further information can be found in Eromenko (2010) and Markovic (2009) among others. This memorandum is very crucial for the accession as all the following stages refer to, discuss and decide based on it. The following and the most time-taking stage is successfully ending bilateral negotiations with all Working Party members.

At the end, the WTO Secretariat prepares the "Accession Package" for a candidate country, which covers "Working Party Report", "Protocol of Accession", "Schedule of Specific Commitments on Services", and "Schedule of Concessions and Commitments on Goods" (Eromenko, 2010, p. 44). After



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*Figure 1. Accession process step-by-step*
*Source: World Trade Organization, 2011*






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all, if the Working Party accepts the Package in its last meeting, the Package is confirmed by General Council of the Ministerial Conference, and the candidate country approves the Protocol of Accession, gains membership status, and becomes full member of the WTO.

The WTO history of the South Caucasus economies started after the first half of the 1990s. Before 1991, all economies were part of centrally planned Soviet Union economy. However, after gaining independence, these countries declared the desire of market economy and initiated reforms, which are all covered by the notion of economic transition. Integration process to the international organizations is also essential in this context. As the largest trade organization, the WTO became at the interest of these countries and in 1995-1997, all three requested to launch the accession process.

Georgia's accession process lasted four years, and the country became the 137th member of the WTO in 2000. Following Georgia, Armenia completed its accession process in 2003 and gained full membership status. Despite a launch of accession process in 1997, Azerbaijan has not completed the process, and bilateral and multilateral negotiations continue at the moment.

There are several reasons behind delaying Azerbaijan's accession process to the WTO. The biggest issue is the structure of Azerbaijan economy even in time of application. Thus, Azerbaijan's main imports and exports were based on oil industry under the framework of "Contract of the Century" special agreements (Kavass, 2008). Another reason was the unawareness of Azerbaijan government about the procedure and preparation of documents, which is called as "weak follow-up" by Michalopoulos (2000). As stated by Kavass (2008), despite of organizing the first meeting of the Working Party on Azerbaijan's application five years after launch of the process, in 2002, no significant improvements related to preparing of required documents were done by the applicant country, as well as the questions asked by the Working Party members were not answered.

This issue was resolved soon after by the support of the European Union (EU), the USA, and World Bank trainers. Consequently, eleven more meetings of the Working Party were held until March 2015. However, final agreement still has not been achieved on Azerbaijan's application. Vital reasons behind the current delaying are several major disputable economic issues, for example, status of the membership, bound level of tariffs, government support of agriculture, participation in sectoral initiatives, etc. (Aliyev, 2014). Azerbaijan insists on joining to the WTO with developing country status to be able to acquire longer concession period to implement all the WTO commitments and several other concessions while joining, such as 10% de minimus opportunity to subsidize its agricultural sector.

Despite many disputable economic and non-economic reasons (harmonization of Azerbaijan's legislation with the WTO standards), observed in the Working Party meetings, most probably, the issue behind the delaying is different. As stated by Azerbaijani economist, V. Bayramov, "As long as the oil price remains high there is no incentive" for the country's WTO membership from the government's point of view (Center for Economic and Social Development, 2012). While discussing "to join or not to join" to the WTO in case of Azerbaijan, Aliyev (2014) also stresses the similar issue and argues that in the situation, when Azerbaijan's domestic production, especially exports, is strongly dependant on oil and gas, while competition experience of entrepreneurs is fairly weak, accession to the WTO is not beneficial for Azerbaijan at the moment. However, this situation cannot be maintained in the long-run, and the country must implement reforms to develop competitiveness of the domestic economy. In this context, the incentive for Azerbaijan government to join the WTO should increase.



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Overall evaluation of the current situation in the South Caucasus in terms of integration to the WTO shows that Georgia and Armenia had completed the transition by 2005, which was the last year of concessions. However, the biggest economy of the region in terms of its natural deposits, Azerbaijan, has been undergoing negotiations since 2002 (first Working Party meeting). Now the question is how integration to the WTO affected economic transition of these economies.

## MAIN FOCUS OF THE CHAPTER

### Theoretical Framework

The measurement method of economic transition used in this research refers to the methodology of EBRD. Thus, EBRD measures economic transition performance of an economy under six different categories: large-scale privatization, small-scale privatization, governance and enterprise restructuring, price liberalization, trade and foreign exchange system, and competition policy. Detailed description of the categorization and evaluation scores are provided in Appendix.

It is noteworthy to look for the solution of the question asked above in existing theoretical framework related to the WTO effects. In fact, transition from planned to market economy is a complex process which requires significant structural, institutional, and behavioral changes (Melo, Denizer, & Gelb, 1996). Despite the fact that the WTO does not exclude explicitly a socialist country or a country with centrally planned economic system from membership, some obligations can be carried out only through having market economy (Laird, 1998).

Note that first two categories measuring economic transition performance (large-scale privatization, small-scale privatization) represent the performance of structural changes in economy. Governance and enterprise restructuring, and trade and foreign exchange system categories mostly embody institutional changes in economy. Remaining ones – price liberalization, and competition policy demonstrate both institutional and behavioral changes.

As discussed above, accession process towards becoming a full member of the WTO is a long and multiple-stage process. More precisely, the WTO is built on several founding principles, and all WTO negotiations are aimed at integration of those principles to the economic environment of the accessing country.

There are strong reasons, which affect economic transition throughout the accession process. The candidate country should harmonize its legislation basis with those of the WTO standards. This is expected to bring better performance at the first sight. However, much more affecting factor is bilateral negotiations in which all the Working Party members intend to get the best for their own interests, especially in the domestic market of the candidate country under the WTO principles (principle of nondiscrimination, reciprocity, enforceable commitments, transparency, and safety valves).

The principle of nondiscrimination means that the same level of tariffs must be imposed on imported goods from all the WTO members in case of accession (Bagwell & Staiger, 1999, p. 217) and follow nondiscriminatory behavior in all cases. Nondiscriminatory behavior in the GATT/WTO agreement includes two main principles emphasized in the articles of the Agreement: Article I "General Most Favored Nation" (MFN) and Article III "National Treatment on Internal Taxation and Regulation" (Srinivasan, 2005, p. 72). Nondiscrimination principle is expected to affect economic transition mostly through competition policy channel, which brings fair competition.



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Reciprocity is another basic principle of the GATT/WTO system. According to this principle, a country admits to decrease the degree of its protection over trade as a response to the "reciprocal concession" from another country as its commercial partner (Bagwell & Staiger, 1999, pp. 216-217). This implies the "ideal" level of reciprocal shifts in trade policy of different countries that lead to approximately same shifts in amount of imports between trade partners (Bagwell & Staiger, 1999). Bagwell and Staiger (1999) consider that as the key principle of tariff negotiations where participants try to acquire a "balance of concessions". Joining the negotiations is optional and requires willingness to set "reciprocal and mutually advantageous" decreased level of tariffs (Bagwell & Staiger, 1999, p. 225). In this context, reciprocity principles may accelerate economic transition mainly through governance and enterprise restructuring, and trade and foreign exchange system channels.

The third principle – bindings and enforceable commitments – encompasses implementation of the commitments by member countries in accordance of Articles II, VII, and XI of the GATT/WTO Agreement. Thus, countries are not allowed to apply tariffs higher than bound level or the highest level of allowed level of tariffs without renegotiating this issue with other members as well as non-tariff measures over imports and other commitments of agreed documents (Hoekman, 2002, p. 43). Obviously, this principle is also related with economic transition performance through governance and enterprise restructuring, and trade and foreign exchange system channels.

Another principle, which plays crucial role in the WTO activities and is expected to affect economic transition performance of a country, is the principle of transparency. Thus, following this principle means ensuring stable and predictable trade law arrangements of the WTO members (Matsushita, 2004, p. 368). Matsushita (2004) emphasizes that the "rule-oriented" foreign trade policy is based on this principle including both publishing of all appropriate regulations due to make any changes achievable for all parties before application, and notifying the WTO and all member countries about the actions of the member country's government. Transparency principle is represented in Article X of GATT 1994, Article III of GATS, and Article LXIII of TRIPS, as well as in some other WTO agreements.

The last principle of the WTO is the principle of safety valves. Unlike the other ones, this principle is for a government to restrict trade in some conditions such as maintaining fair competition or avoiding dumping, and in case the government's intervention to the market due to some economic causes and non-economic objectives is needed (Reis, 2009, p. 49). Correlation between the principle of safety valves and economic transition performance is controversial. However, the channels of influence certainly are governance and enterprise restructuring, trade and foreign exchange system, and competition policy.

For more information about background of each principle see Hoekman (2002), Bagwell and Staiger (1999), Srinivasan (2005), Matsushita (2004), Reis (2009) among others. Considering possible correlation between the WTO principles and economic transition performance, it is expected that the WTO membership might lead to better economic transition indicators. Theoretically, the WTO membership might accelerate economic transition performance in the South Caucasus economies.

## Literature Review

According to the theoretical framework of this relationship, integration to the WTO and economic transition are expected to be highly correlated with each other. If a country does not perform well in liberalizing its economy in accordance with market economy requirements, it should be out of the WTO system. However, this is only a theoretical statement. Further empirical investigations are required to prove it. Unfortunately, the literature in this sphere is too limited, and most of the sources are rather theoretical.



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While discussing the effects of accession to the WTO on policy making in sovereign states, Drabek and Bacchetta (2004) review the experience of the WTO members among transition economies on market access, governance, government budget, structural reforms, trade and investment with regional partners, and macroeconomic management.

Related to market access, authors reveal that opening markets in transition countries is not due to the WTO membership or its "unreasonable pressures", even WTO commitments of those countries are relatively less liberal while the real tariff levels are taken into consideration (Drabek & Bacchetta, 2004, p. 1093-1094). In other words, actual applied tariff rates are generally lower in comparison with the bound tariff rates of the countries committed to the WTO. Governance is another main issue affected by the WTO membership although hardly measurable. Employing institutional quality index provided by the International Monetary Fund (IMF) as a proxy variable for governance provides evidence in favor of the WTO increasing quality of governance (Drabek & Bacchetta, 2004, pp. 1096-1100). Drabek and Bacchetta (2004) conclude that "accession to the WTO has played an important albeit not exclusive role in this process of liberalization".

Several researchers attempted to analyze competition policy impact of the WTO membership (Hoekman & Mavroids, 2002; Bilal & Olarreaga, 1998) without empirical applications. Within the WTO framework, the impact seems to exist as also mentioned above in the Theoretical Framework section. However, existence of the relationship could not be approved without empirical analysis in a single country or in a group of economies in transition.

American economist, Andrew Rose has made significant empirical contributions to the literature about the effectiveness of the GATT/WTO system (Rose, 2004a, 2004b, 2004c). First two works of Rose provide the research on how the WTO affects trade, and the latter one studies the question if the WTO members' trade policy is more liberal in comparison with non-members. Therefore, the results are useful for this research. In his research, Rose (2004b) implements 68 different measures of trade policy and trade liberalization used by various authors to found out if "membership in the WTO and its predecessor the GATT is associated with more liberal trade policy". The conclusion is that there is no significant correlation.

The role of the WTO membership in accelerating transition process in former centrally planned economies has not been studied sufficiently yet. The evidence is a few studies in the existing literature not directly related to the issue. Theoretically, the relationship between the WTO membership and performance of the economies in transition seems to be correlated, but empirically it is not. This chapter partially fills this gap on a case of the South Caucasus economies.

## Data

Used data is taken from the EBRD yearly transition indicators database and publications, and covers the period 1989-2014. Detailed description of the data and meaning of transition scores for each transition category are provided in Appendix. Transition indicators are categorized under six measures: large-scale privatization, small-scale privatization, governance and enterprise restructuring, price liberalization, trade and forex system, and competition policy.



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## Graphical Analysis

Figure 2 and Figure 3 embody time-trend lines for each of the transition indicator categories in 1989-2014. Because all countries of the region regained their independence in 1991, real analysis of economic transition performance starts after 1991 for all indicators.

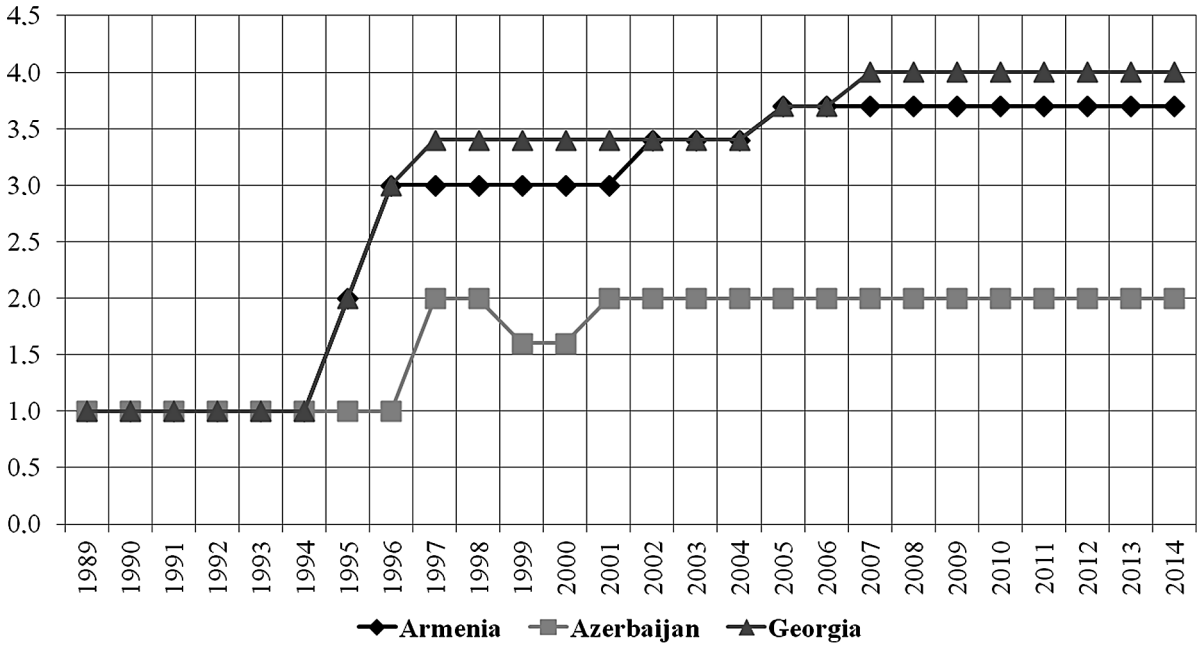
EBRD transition indicators show that large-scale privatization in Armenia and Georgia was initiated after 1994, and in Azerbaijan after 1996. Clearly, the biggest large-scale privatization index belongs to Georgia followed by Armenia. Azerbaijan's score remains on the same level (2) throughout the years of new millennium.

Figure 2 presents the large-scale privatization trends for Armenia and Georgia before-and-after the WTO accession.

When Georgia and Armenia acceded to the organization, in 2000 and 2003 respectively, their large-scale privatization indices did not change immediately. The indices were changed only in 2005, increased from (3+) to (4–) for both countries. In the following years, Armenia's score remained the same, while the index again changed towards positive from (4–) to (4). The year of 2005 was the last year of concessions to implement the WTO commitments for each country. As a non-member country, Azerbaijan's large-scale privatization index is significantly lower than that of Armenia and Georgia.

When small-scale privatization index is considered as an indicator of economic transition, it seems that Georgia realized fast privatization of small entrepreneurship and reached high score even before the launch of the accession process to the WTO. However, Armenia's index increased from (4–) to (4) after the country's accession to the WTO in 2003. For Azerbaijan, it increased to (4–) in 2002 and remained

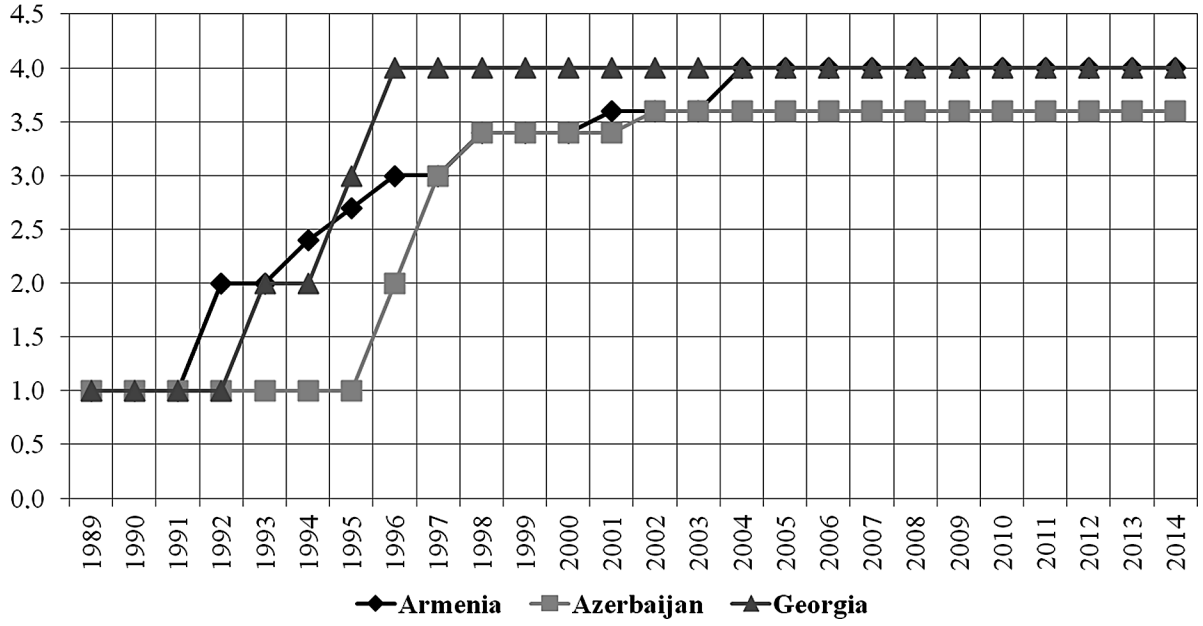
*Figure 2. Large-scale privatization index by country*
*Source: Author's own development based on the European Bank for Reconstruction and Development (2015)*






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*Figure 3. Small-scale privatization index by country*
*Source: Author's own development based on the European Bank for Reconstruction and Development (2015)*




on that level during all the following years. Therefore, the conclusion from the Figure 3 is that the WTO membership has not affected small-scale privatization in Georgia, but has had a positive effect in case of Armenia. Azerbaijan's small-scale privatization index is lower than the one of both countries.

Another indicator of economic transition process is governance and enterprise restructuring (Figure 4). The scores for the three countries are not very high. Until 2001, the scores for Armenia and Georgia were equal (2), while Azerbaijan's score was (2–). In 2002, Armenia's score increased up to (2+), and the same happened for Georgia in 2005. Another low index is observed for Azerbaijan. It increased up to (2) and has remained on that level until now.

In before-and-after WTO membership context, the score did not change for Armenia after the country's accession in 2003. For Georgia, the score increased from (2) to (2+) after the end of the concession period in 2005.

Regarding price liberalization, the countries have gained nothing from the accession. Thus, Figure 5 shows that all countries liberalized price regulations already during their first years of independence, before the launch of the accession processes. The scores did not change after Armenia and Georgia joined the WTO.

Theoretically, the WTO membership is expected to make the trade system more liberal. However, there is a doubt on this expectation (Rose, 2004b). Figure 6 embodies transition performance of the economies in trade and forex system context.

Georgia's and Armenia's trade and forex were scored with (4) or evaluated as highly liberal already in 1996 and 1997, respectively. After accession of those two countries to the WTO, the scores increased up to (4+) level for both of them. In other words, trade and forex systems in Georgia and Armenia are considered as highly liberalized as a result of the WTO accession negotiations, ended with the full



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*Figure 4. Governance and enterprise restructuring index by country*
*Source: Author's own development based on the European Bank for Reconstruction and Development (2015)*

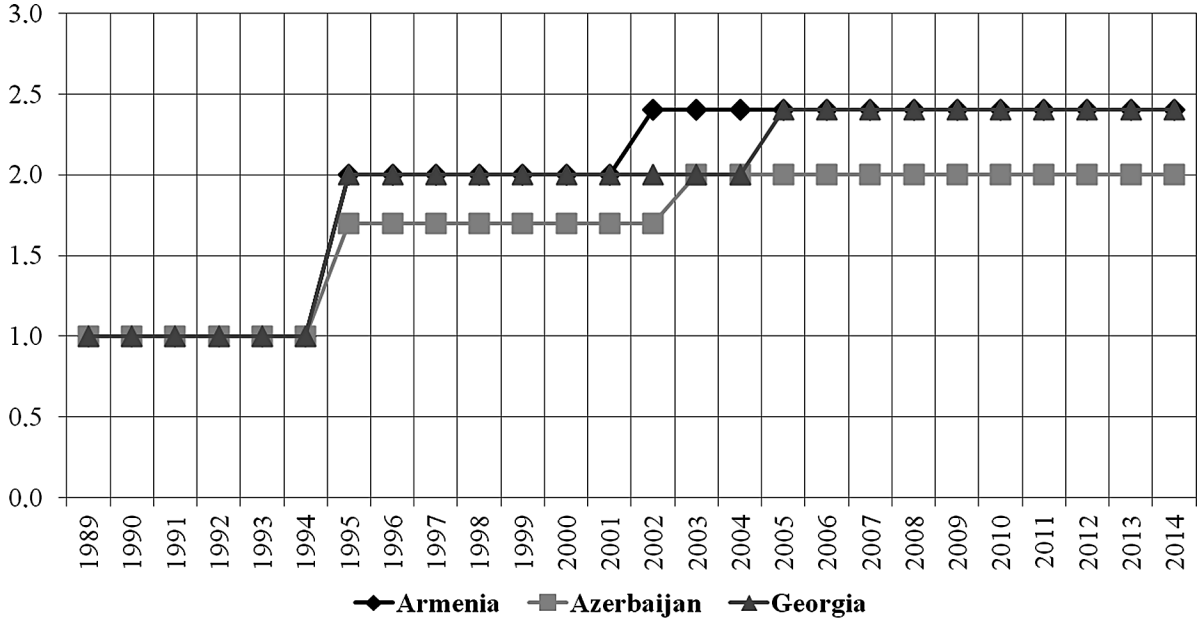
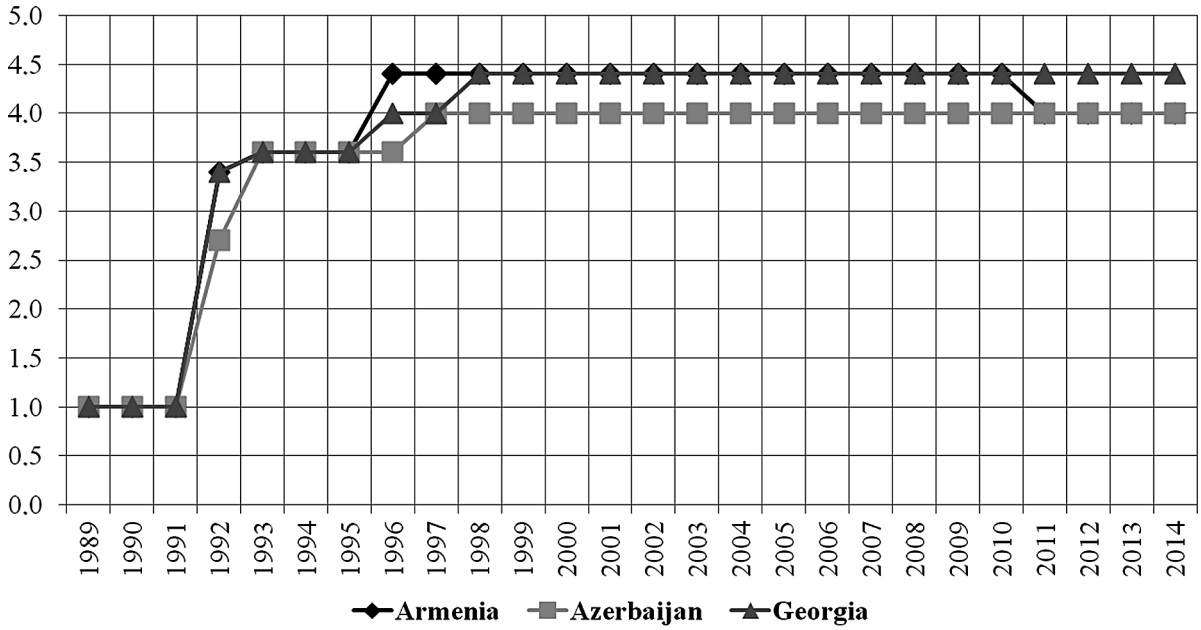


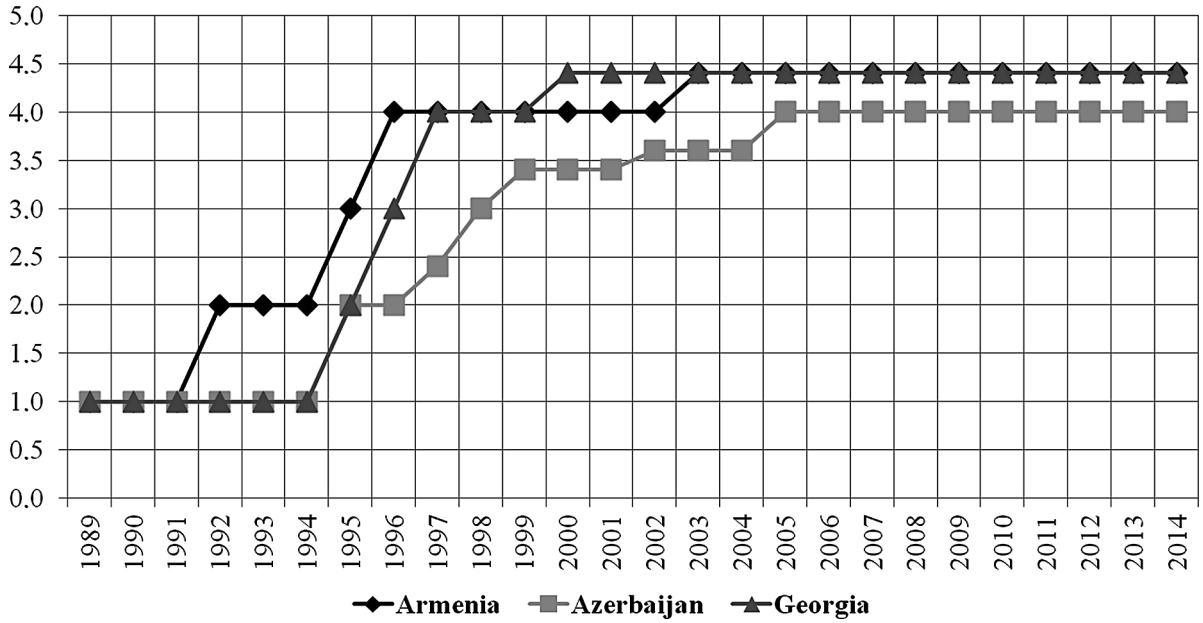

*Figure 5. Price liberalization index by country*
*Source: Author's own development based on the European Bank for Reconstruction and Development (2015)*






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*Figure 6. Trade and forex system index by country*
*Source: Author's own development based on the European Bank for Reconstruction and Development (2015)*




membership. The score of Azerbaijan, which is a non-member country, is less than other two countries in the region, but is fairly high still (4). Considering all these trade and forex system indices, positive impact of the WTO membership over economic transition is revealed.

Unlike index values of previous categories, competition policy is not sufficiently high for all three countries. The upper bound of the index is (4+) also for competition policy category. Nevertheless, the highest competition policy score (which is (2+) only) belongs to Armenia. The second most competitive country in South Caucasus is Georgia with index value equal (2). Azerbaijan's score was similar with that of Georgia until 2011, but later decreased down to (2–) (Figure 7).

Although most of the WTO foundation principles imply better competition situation in the economies after their accession to the organization, data for these countries does not provide any evidence of significant positive impact. For Armenia, the score increased up to (2+) only after the end of the concession period in 2005, not immediately after the accession. In case of Georgia, there was no change in competition policy score after the accession year (2000) as well as after the end of the concession period (2005). It has remained at (2) which means rather insufficient transition performance in this category.

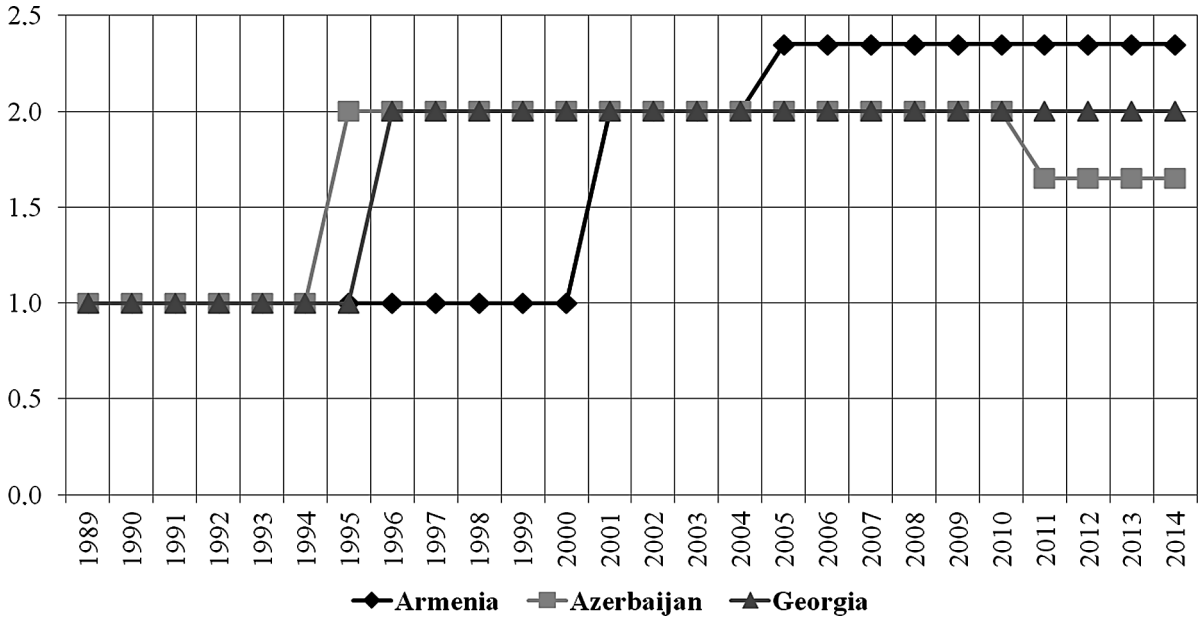
## SOLUTIONS AND RECOMMENDATIONS

By using bivariate regression analysis, empirical results would light the relationship of interest more successfully. For each category used for measuring transition performance, the model regressed against the dummy variable, named "WTO membership" equals 1 throughout the years after joining to the WTO, otherwise 0. Three models are run in total, two are time-series analysis for Armenia and Georgia, individually, and one is a panel data analysis covering also Azerbaijan.



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*Figure 7. Competition policy index by country*
*Source: Author's own development based on the European Bank for Reconstruction and Development (2015)*




The general model equation is as follows:

$$\log(Y_{t,i,n}) = \beta_{0,i,n} + \beta_{1,i}D1_{t,i} + \beta_{2,i}t + u_{t,i,n} \quad (1)$$

$$\log(Y_{t,i,n}) = \beta_{0,i,n} + \beta_{1,i}D2_{t,i} + \beta_{2,i}t + u_{t,i,n} \quad (2)$$

Where:

Y – transition performance index for each category, separated by *n* equals 1, 2, …, 6.
*D1* – dummy variable "WTO membership", which provides comparison of transition performance before-and-after the WTO membership, respectively 2000 and 2003 for Georgia and Armenia.
*D2* – dummy variable with the same meaning, but showing the transition performance difference before-and-after the end of the WTO concession period, 2005 for both Georgia and Armenia. The end of the concession period means the end of the period given to the new member countries to implement admitted obligations while joining. Because Azerbaijan is still out of the WTO system, dummy variable gets always 0 value in panel data analysis. Hence, the same equation will be used for the panel of all three countries of the region, as well in addition to individual time-series analysis for Georgia and Armenia.
u – error term.
t – time.
i – target country, more precisely, Georgia, Armenia, and the panel data set of all three.



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Estimation is done by using E-Views 8 econometric software. Standard errors in all regressions are robusted against heteroscedasticity and autocorrelation.

## Empirical Results

All empirical findings are included in the Table 1 below. Remember that the independent variables *D1* and *D2* are dummy variables. Former one is to show the economic transition performance of the countries under research before-and-after the WTO membership, while the latter one does the same in the context of before-and-after the end of the concession period.

## Georgia

Because Georgia's small scale privatization index, price liberalization index and competition index have never changed after the country's accession to the WTO; models (1) and (2) are not applicable. In other words, the WTO did nothing for price, small-scale privatization or competition policy aspects of economic transition in the country.

However, the model reveals significant impact of integration to the WTO for the remaining aspects, i.e. large-scale privatization, governance and enterprise restructuring, and trade and foreign exchange system.

The role of the WTO membership in expanding large-scale privatization and developing governance and enterprise restructuring is statistically insignificant and negative in before-and-after WTO membership context, while the same is statistically significant and the signs of coefficients are positive in before-and-after the end of the concession period. Moreover, joining the WTO means immediate significant positive impact over transition of trade and foreign exchange system. This provides evidence for the theoretical view that implementation of the WTO commitments leads to better economic transition performance in these three categories of economic transition in case of Georgia.

## Armenia

Armenia's experience is somewhat different. All categories have been affected by the integration to the WTO. It is noteworthy to emphasize that all coefficients are positive, which confirms that the accession to the WTO is a driving force of economic transition in Armenia. Statistical significance of coefficients also supports this point of view.

The impact over large-/small-scale privatization, governance and enterprise restructuring, and price liberalization are statistically significant in before-and-after WTO membership context. Nevertheless, the size and significance of the impact over large-scale privatization is greater in the context of before-and-after the end of the concession period.

Unexpectedly, the WTO membership does not significantly increase economic transition performance in terms of trade and foreign exchange and competition policy, as the coefficients are positive but statistically insignificant.

## Three Countries Put Together

This model includes all three countries of the region and shows the difference in economic transition performances throughout the years due to the WTO membership status. For Azerbaijan as a non-member



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country, the model demonstrates what effect is expected in case of the accession or gaining the WTO membership status (Table 1).

Model findings from the panel data analysis presented in the third panel of the Table 1 also support the general expectations of positive effect. Thus, in all categories of transition indicators, the impact of the WTO membership is positive and statistically significant. Especially, effect over large-scale privatization is considerably large.

*Table 1. Empirical findings*

| Country | Dependent Variable | D1 | D2 | t | C |
|---|---|---|---|---|---|
| Georgia | log(large) | -0.031191 | - | 0.018197*** | 1.124602*** |
| | | - | 0.098094** | 0.008811** | 1.147371*** |
| | log(small) | - | - | - | - |
| | log(governance) | -0.023294 | - | 0.012260*** | 0.662498*** |
| | | - | 0.083857** | 0.004414 | 0.682849*** |
| | log(price) | - | - | - | - |
| | log(trade) | 0.129857** | - | 0.001514 | 1.310589*** |
| | log(competition) | - | - | - | - |
| Armenia | log(large) | 0.097590* | - | 0.008363** | 1.078777*** |
| | | - | 0.120764*** | 0.006020* | 1.100284*** |
| | log(small) | 0.098341* | - | 0.008640* | 1.164821*** |
| | log(governance) | 0.096502*** | - | 0.002452 | 0.703305*** |
| | log(price) | 0.040178* | - | -0.006767*** | 1.485682* |
| | | - | 0.028928 | -0.006090** | 1.489066*** |
| | log(trade) | 0.053855 | - | 0.005443 | 1.331285*** |
| | log(competition) | 0.335977 | - | 0.030035* | 0.068164 |
| | | - | 0.051543 | 0.050411** | 0.050411 |
| Three countries put together | log(large) | 0.522945*** | - | -0.010292 | 0.931248*** |
| | | - | 0.537782*** | -0.012908* | 0.988898*** |
| | log(small) | 0.076434* | - | 0.007232* | 1.208986*** |
| | | - | 0.056690 | 0.008003* | 1.213568*** |
| | log(governance) | 0.087177*** | - | 0.004379** | 0.087177*** |
| | | - | 0.132114*** | 0.003904** | 0.644190*** |
| | log(price) | 0.131882*** | - | -0.002737*** | 0.630267*** |
| | | - | 0.046694*** | -0.002597*** | 1.435114*** |
| | log(trade) | 0.087177** | - | 0.009653** | 1.241129*** |
| | | - | 0.052264 | 1.244180*** | 0.011184*** |
| | log(competition) | 0.131132** | - | 0.008572 | 0.504522*** |
| | | - | 0.121291* | 0.008630 | 0.516599*** |

Note: *, **, *** denote statistical significance at 10%, 5%, and 1%, respectively
Source: E-Views output by author's own



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Considering the situation of Azerbaijan economy, it is obvious that the WTO membership will make the domestic economy much more transited to the market economy with comparatively higher transition indicators calculated by the EBRD. Throughout bilateral and multilateral negotiations, members of the Working Party established specially for the applicant country (in this case Azerbaijan since 1997) push the government to implement some reforms in consistent with the WTO principles (Aliyev, 2014). Clearly, those countries participating in the Working Party negotiations pursue their own interests, what leads to a much more advanced economic transition. Summarizing, the findings are consistent with theory and practice.

## FUTURE RESEARCH DIRECTIONS

This chapter addressed the issue on how integration to the WTO affects economic transition in the countries of the South Caucasus. However, several crucial shortcoming points should be taken into consideration in the future researches.

First shortcoming is related to the econometric methodology and the data. The data is obtained from the European Bank for Reconstruction and Development (2015) on an annual basis. Apart from proxy variable for economic transition at each category, some other variables would describe the relationship in a clearer manner. Second shortcoming is that the research shows only the relationship, numerically. Within this framework, it is difficult to reveal the reasons and measure the weight of impact channels. Use of various proxy variables, control of some variables, and measurement of weight of different impact channels are promising directions for future researchers.

Beyond shortcomings, this chapter is concluded with "magical relationship" between the WTO membership and competition policy during economic transition. The magic behind the found evidence of the WTO's ineffectiveness for liberalizing competition policy is a good point to start new research for the countries of the South Caucasus region, with cross-sectional data for this specific category.

## CONCLUSION

Integration of the South Caucasus economies to the market economy has always been at the center of interests. In this context, all three economies are expected to integrate to the international organizations. As international trade is one of the most important aspects of market economy, the interest of each country to the WTO membership is understandable.

The theory also supports the views on driving role of the WTO in accelerating economic transition of planned economies to market ones, what is in line with the fundamental principles of the WTO. However, existing literature does not provide clear and common approach to the discussed issue. From this point of view, the current study contributes to the literature with graphical and empirical analysis of the relationship between the WTO membership and economic transition performance on the case of three South Caucasus economies, which all left centrally planned system after the collapse of the Soviet Union in 1991.

Empirical findings are generally consistent with the expectations but show differences across countries, i.e. Georgia and Armenia. Common results are that implementation of the WTO membership commitments leads to higher large-scale privatization, and governance and enterprise restructuring performance.



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The impact over trade and foreign exchange system, which is a strongly expected one, is insignificant in Armenia, but significant in Georgia.

Surprisingly, as individual case analysis shows, the WTO membership does not lead to any change in competition policy index in Georgia and insignificantly affects that in case of Armenia, while the indices for both countries are low. Hence, this finding is in converse with maintaining "the principle of nondiscrimination". Despite gaining the WTO membership status and completing concession period, the study discovered almost no improvements related to the competitiveness of the economies of the region, as well as restrictions to enter domestic markets, and reductions of abuse of market power in both countries. This is a novel interesting evidence, which requires further research related to background reasons.

While considering the region as a whole by including Azerbaijan as a non-member country to the model, coefficients strongly change. In this case, the WTO membership is found as a strongly affecting factor for the economic transition performance. Graphical analysis also presented Azerbaijan as the evidence of less transited economy in comparison with Georgia and Armenia. Therefore, it is expected that Azerbaijan's economic transition will accelerate in case of successful completion of accession negotiations, gaining membership status, and carrying out of the WTO commitments until the end of the concession period.

Summarizing, the conclusion is about supporting the hypothesis that accession negotiations and obligations over an applicant country lead to accelerating economic transition process, in short positive relationship. It is statistically significant in most categories except competition policy index and partially governance and enterprise restructuring index. Thus, these two category indices are not high in all three countries of the region.

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## KEY TERMS AND DEFINITIONS

**Accession Negotiations:** The WTO is open to any state or customs territory to become a member. However, there is a condition that all members of the WTO must agree on the terms. The process of achieving these agreements with the Working Party members from the WTO side is called accession negotiations.

**Bivariate Regression:** A regression analysis, which includes a single independent variable.

**Dummy Variable:** The variables, which indicate an absence or presence of some categorical effect, equal 0 or 1.

**EBRD Transition Indicators:** The indicators presented by the European Bank for Reconstruction and Development (EBRD), reflect country-specific progress of a country in transition. Classification system for the scores is provided in Appendix.

**Economic Transition:** A process of changing the economic system from centrally planned to a market economy, which requires a set of structural transformations intended to develop market-based institutions.

**Ordinary Least Squares (OLS):** The method of estimation in regression analysis producing unknown parameters in a linear regression model.

**WTO:** The World Trade Organization, which currently has 161 member countries as of April, 2015.

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## APPENDIX

*Table 2. Measuring economic transition: methodology*

| Variable | Definition | Score |
|---|---|---|
| **Large-Scale Privatization** | Little private ownership | 1 |
| | Comprehensive scheme almost ready for implementation; some sales completed. | 2 |
| | More than 25 per cent of large-scale enterprise assets in private hands or in the process of being privatized (with the process having reached a stage at which the state has effectively ceded its ownership rights), but possibly with major unresolved issues regarding corporate governance. | 3 |
| | More than 50 per cent of state-owned enterprise and farm assets in private ownership and significant progress with corporate governance of these enterprises. | 4 |
| | Standards and performance typical of advanced industrial economies: more than 75 per cent of enterprise assets in private ownership with effective corporate governance. | 4+ |
| **Small-Scale Privatization** | Little progress. | 1 |
| | Substantial share privatized | 2 |
| | Comprehensive programme almost ready for implementation. | 3 |
| | Complete privatization of small companies with tradable ownership rights. | 4 |
| | Standards and performance typical of advanced industrial economies: no state ownership of small enterprises; effective tradability of land. | 4+ |
| **Governance and Enterprise Restructuring** | Soft budget constraints (lax credit and subsidy policies weakening financial discipline at the enterprise level); few other reforms to promote corporate governance. | 1 |
| | Moderately tight credit and subsidy policy, but weak enforcement of bankruptcy legislation and little action taken to strengthen competition and corporate governance. | 2 |
| | Significant and sustained actions to harden budget constraints and to promote corporate governance effectively (for example, privatization combined with tight credit and subsidy policies and/or enforcement of bankruptcy legislation). | 3 |
| | Substantial improvement in corporate governance and significant new investment at the enterprise level, including minority holdings by financial investors. | 4 |
| | Standards and performance typical of advanced industrial economies: effective corporate control exercised through domestic financial institutions and markets, fostering market-driven restructuring. | 4+ |
| **Price Liberalization** | Most prices formally controlled by the government. | 1 |
| | Some lifting of price administration; state procurement at non-market prices for the majority of product categories. | 2 |
| | Significant progress on price liberalization, but state procurement at non-market prices remains substantial. | 3 |
| | Comprehensive price liberalization; state procurement at non-market prices largely phased out; only a small number of administered prices remain. | 4 |
| | Standards and performance typical of advanced industrial economies: complete price liberalization with no price control outside housing, transport and natural monopolies. | 4+ |

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*Table 2. Continued*

| Variable | Definition | Score |
|---|---|---|
| **Trade and Foreign Exchange System** | Widespread import and/or export controls or very limited legitimate access to foreign exchange. | 1 |
| | Some liberalization of import and/or export controls; almost full current account convertibility in principle, but with a foreign exchange regime that is not fully transparent (possibly with multiple exchange rates). | 2 |
| | Removal of almost all quantitative and administrative import and export restrictions; almost full current account convertibility. | 3 |
| | Removal of all quantitative and administrative import and export restrictions (apart from agriculture) and all significant export tariffs; insignificant direct involvement in exports and imports by ministries and state-owned trading companies; no major non-uniformity of customs duties for non-agricultural goods and services; full and current account convertibility. | 4 |
| | Standards and performance norms of advanced industrial economies: removal of most tariff barriers; membership in WTO. | 4+ |
| **Competition Policy** | No competition legislation and institutions. | 1 |
| | Competition policy legislation and institutions set up; some reduction of entry restrictions or enforcement action on dominant firms. | 2 |
| | Some enforcement actions to reduce abuse of market power and to promote a competitive environment, including break-ups of dominant conglomerates; substantial reduction of entry restrictions. | 3 |
| | Significant enforcement actions to reduce abuse of market power and to promote a competitive environment. | 4 |
| | Standards and performance typical of advanced industrial economies: effective enforcement of competition policy; unrestricted entry to most markets. | 4+ |



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# Chapter 65
# Recent Status of Capital Market Regulations in Bangladesh: Capital Market Regulations in Bangladesh

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## ABSTRACT

*The capital market of Bangladesh perceived a self-important growth which is not in line with developed economy. The Securities and Exchange Commission (SEC) tried to correct the irregular behaviour observed in the market, lack of proper decisions from the regulator's side which has contributed to the creation of market instability. This study tried to identify the factors on market crash and regulatory failure. Government had reform SEC to soothe the market but unsuccessful as investors' confidence is in the bottom level. The reasons behind the stock market crash are found irrational market behavior, inconsistency in regulations, excess liquidity in the market, stock split by companies, faulty listing system, issuance of right shares and preference shares by companies at high price, stock manipulations by insider trading, serial trading and excessive greed of investors. Government and regulators should work together to detect the main speculators and should bring investors back to the market.*

## INTRODUCTION

Stock market is one of the most important financial institutions and it releases door for companies to nurture huge amount of capital from individual investors in and out of a country. Sound capital market is an indispensible part of an economy and without the efficient capital market; economic development could be hampered as capital market delivers long term funds to entrepreneurs. The capital market of Bangladesh is the third largest in South Asia and one of the smallest in Asia. There are two full-fledged automated stock exchanges namely Dhaka Stock Exchange (DSE) and Chittagong Stock Exchange

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(CSE). Bangladesh Securities and Exchange Commission (BSEC) was established in 1993 to regulate the businesses of the exchanges, confirm proper issuance of securities and agreement with laws and protect the interests of securities investors.

The global economic crisis in 2008 and 2009 was known as a volatile year but during this year Bangladesh economy benefited from low prices of imported goods and was able to avoid negative pressure on its export of goods and services (CPD, 2011). Regulators had taken some measures to stabilize the market with the introduction of central depository, circuit breaker, online trading, etc. to attract investors. As a result, the market started to grow and investors started to invest again. Unfortunately, investors had lost their money when the bubble started to burst in December 2010. The Benchmark index came down to 3616 points in early February 2012 from its highest point of 8918. After the crush of the capital market in 2011, a continuous fall in turnover is observed. In FY 2011-12, the turnover in DSE dropped to Tk. 117145.07 crore from Tk. 325879.77 crore of the previous FY in 2010-11, which was a decrease rate of 65.05 percent. The regulators had failed to take proactive measures to avoid the market from crashing and caused losses for millions of investors.

The volatility of the capital market of Bangladesh is an abnormal phenomenon and such volatility tends to create economic instability. In the state of market growth, role of regulators has been questioned in two accounts. Firstly, whether regulators act promptly to address the volatility of the capital market and secondly, whether frequent changes in regulators' decisions contribute negative impact on the sustainable development of the market. Again, as volatility raises many questions on the regulatory capability of the Securities Exchange Commission (SEC), it is unknown whether the stock market fluctuation is due to regulatory failure or due to irrational behaviors of investors. It is necessary to determine the main reasons of the stock market crash in Bangladesh and the roles of the regulators. Eventually, some guidelines will be recommended for better regulations to strengthen the capital market of Bangladesh.

## Background

The history of Bangladesh Capital Market started on the 28$^{th}$ of April, 1954 when Bangladesh was known as East Pakistan and the market was known as East Pakistan Stock Exchange. In April 28, 1954 where Bangladesh was still known as East Pakistan as East Pakistan Stock Exchange Association Ltd, the journey of stock market started while Bangladesh used to be ruled by Pakistan. But trading on this market started in 1956 with a total paid up capital of Taka 4 billion and 196 securities were listed on this market. The exchange was renamed on in June 23, 1962 as DSE Limited. Trading on DSE was suspended from 1971 to 1976 because of liberation war and its post-independence weak economy. Then the trading was resumed in 1976 with 9 listed securities having a total paid up capital of Taka 137.52 million (Hassan et al., 2000). By 1987, the number of listed companies in DSE increased up to 92 and the development of the market is noticeable in the 1990s since its establishment (Economy watch, 2010).

### Dhaka Stock Exchange (DSE)

Dhaka Stock Exchange is the first stock exchange regulated by its Articles of Association rules & regulations along with the Securities and Exchange Ordinance 1969, Companies Act 1994 & Securities & Exchange Commission Act 1993. DSE was used to trade in the open outcry system, installed on 10th of August, 1998. The latest upgrading was done on 21st of December, 2008. There are 238 members and total of 507 listed securities in DSE. The working days of DSE are 5 days in a week excluding Saturday,



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Sunday, public holidays & other government holidays. The trading time is from 11:00 am to 15:00 pm (local time). Investment options for an investor are ordinary share, Debenture and Bond & Mutual funds. There are three different indices of DSE which are DSI (All share), DGEN (A, B, G & N) and DSE 20 (www.dsebd.org).

Functions of DSE:

A. Listing of Companies (As per Listing Regulations).
B. Providing the screen based automated trading of listed Securities.
C. Settlement of trading (As per Settlement of Transaction Regulations).
D. Gifting of share / granting approval to the transaction/transfer of share outside the trading system of the exchange (As per Listing Regulations 42).
E. Market Administration & Control.
F. Market Surveillance.
G. Publication of Monthly Review.
H. Monitoring the activities of listed companies (As per Listing Regulations).
I. Investor's grievance Cell (Disposal of complaint by laws 1997).
J. Investors Protection Fund (As per investor protection fund Regulations 1999).
K. Announcement of Price sensitive or other information about listed companies through online. (Source: www.dsebd.org)

## Chittagong Stock Exchange (CSE)

Chittagong Stock Exchange is the 2nd stock exchange introducing modern technology & sophisticated logistic support. It was incorporated as a self-regulated non-profit organization on 1995 and started its automated trading on 2nd June, 1998 and internet trading service on 30th May, 2004. CSE has 147 members and 238 of listed securities. There are four different markets in CSE which are public, Spot, Block & Odd and Lot market. Five categories of company namely A, B, N, G and Z listed in CSE of which none company is in G category. The trading time of CSE is between 11:00 am to 15:00 pm. The working days & holidays of CSE are similar with DSE. CSE consists of 25 members of whom 12 are elected through election of its members, 12 members are elected from different major economic & social arena of Bangladesh. CSE has 3 indices in the stock exchange namely All Share Price Index (CASPI), CSE Selective Index (CSE30) and CSE Selective Categories' Index (CSCX) (www.cse.com.bd).

## Security and Exchange Commissions (SEC)

The Government of Bangladesh is founded SEC on 8th of June, 1993 under the Securities and Exchange Commission Act, 1993. The commission is consists of a chairman and four members. The Chairman & members of security exchange commission are appointed by the government of Bangladesh. According to Securities and Exchange Ordinance, 1969 SEC has been empowered to control the self-regulatory institutions for instance Stock Exchanges.

Responsibilities of SEC:

A. Conducting transparent trading, stop fraudulent practices like market manipulation, insider trading, short selling.



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B. Ensuring submission of transparent accounts as per rule, statements, reports and returns.
C. Carrying out inquiry to alleged irregularities and taking legal action for all kinds of violation of securities law and regulations.
D. Ensuring submission of annual financial statement in time containing balance sheet, profit and loss account, cash flow statement and notes to the accounts.
E. Examining audited financial statements, ensure that audit conducted in accordance with prescribed rules and take necessary action for deficiencies.

Functions of SEC:

A. Registering and regulating the business operation of DSE, CSE, stock brokers, merchant banks, underwriters, share transfer agents, portfolio managers and other intermediaries.
B. Developing investor`s education, providing training for intermediaries, executing market research and publishing.
C. Controlling every authorized self-regulatory organization.
D. Inspecting and controlling fraudulent and unfair trading in security markets.
E. Auditing and investigating of any intermediaries or stock exchanges.
F. Collective investment scheme registering & controlling.
(www.secbd.org)

### Central Depository Bangladesh Limited (CDBL)

CDBL was incorporated as a public limited company on 20th August, 2000. The owners of CDBL are DSE, CSE, banks, Investment Corporation of Bangladesh and some other financial institutions.

Functions of CDBL:

A. Operate and maintain the Central Depository System (CDS) of Electronic Book.
B. Recording and maintaining securities accounts and registering transfer of securities.
C. Changing the ownership without any physical movement or endorsement of certificates.
D. Supervision of Depository participant activities.
E. Providing different investor services including providing a platform for the secondary market trading of Treasury Bills and Government Bonds issued by the Bangladesh Bank (www.cdbl.com).

## MAIN FOCUS OF THE CHAPTER

### Regulatory Renovations and Market Developments

From return perspective, the year 2012 seemed to be an unfortunate; it included some regulatory changes and progresses as follows:

A. Implementing Mandatory shareholding requirement from BSEC by corporate directors.
B. Development of draft guidelines on Research and Investment Advisor services.
C. Amending Margin Loan Rules.



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D. Progress in Omnibus account closeout.
E. Developing BSEC Roadmap for capital market.
F. Initiation of demutualization process for the Exchange.
G. Implementing New MSA-Plus Software for Trading.
H. Amendment in the Mutual Fund Rules.
I. Inaugurating Surveillance system by BSEC.
J. Progress in introducing new Indices for DSE.

The impact of these changes in market development was not found significant for most of these events.

(Capital Market Review 2012, IDLC Investments Ltd., January 2013.)

## Regulatory Problems

SEC could not identify and investigate many irregularities that happened in the process of the stock market bubble. To restructure SEC with skilled human capital is one of the major constraints. Both SEC and the stock exchanges failed to monitor the issue of IPO and rights shares. Overpricing through overstating EPS (earning per share) and NAV (net asset value) was found to be the problem. The SEC did not allow merchant banks to make forced-selling when share prices started to fall.

(Source: Bangladesh Economic Update, Volume 4, No. 3, 1-27, March 2013).

## Comparison of Stock Market volatility of DSE with Other Markets

Price fall in DSE was sudden and persistent which caused a significant loss of paper wealth and was abnormal in nature as compared to other stock markets.

From Table 1, it was observed that during December 2011 to January 2012, Bombay Stock Exchange index (BSE-30) was fallen by 14% while SET index of Thailand increased by 55.62% and Dhaka Stock Exchange general Index (DGEN) was fallen by more than 50% during this period, i.e., DGEN lose its value by 50% during the period which indicated that this was not a simple volatility and it can be defined as a collapse. On the other hand, Standard deviations of index return for BSE-30 and SET index were recorded to be 7.8% and 5.84% respectively. But for DSE, the standard deviation of index return was 11% which was much higher than the other two indices.

*Table 1. Comparison of DSE Volatility with Other Markets*

| Name of the Index | Index Return (Dec'10-Jan'12) | Std. Dev. of Index Return (Dec'10-Jan'12) |
|---|---|---|
| DSE | 50% | 11% |
| BSE-30 | 14% | 7.8% |
| SET | 55.62% | 5.84% |



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## SOLUTIONS

### Rules and Stock Market Crash of Bangladesh in 2010-11

During the military-backed regime in 2007, investment in real sectors as well as in Foreign Direct Investment (FDI) decreased but the inflow of foreign remittance was increased. Banks & other financial institutions had a lot of excess liquidity due to less business opportunities in the recession period of 2009-10. These financial institutions & its officials as well as other people took loan and invested in the share market in order to minimize the cost of bearing excess liquidity. It was seen that the daily transaction in the share market was on an average from Taka 20,000 to Taka 30,000 million in 2010 and the figure was doubled comparing to 2009 (Raisa, 2011). Investors tried to find alternative investment sector to invest their savings and found stock market as an attractive alternative (Khaled, 2011).

The total number of BO Account holders on 20th December, 2010 reached to 3.21 million though the number was 1.25 million in December 2009. Internet-based trading operation, opening branches of brokerage houses across the country, easy access to the market information, arranging a countrywide 'share mela (fair)' are the factors for increasing investors. But supplies of new securities through IPOs were not enough to chase huge capital of too many investors in the market (CPD, 2011).

The directives of 6th & 7th December 2010 applied by SEC were cancelled on 8th December 2010. The reason of cancelling these directives was a significant fall of share prices on 8th December. SEC changed directive of margin loan ratio by increasing it from 1:0.5 to 1:1 on 13th December and later it was again hiked to 1:1.5 & 1:2 because of free fall of share prices (Bhuiyan, (2011). As the Institutions & banks started selling their shares from the beginning of December 2010, the turnover of DSE was the highest ever in its history on 5th December 2010. On 19th December 2010, DSE witnessed its biggest one day fall in 55 years history until the date with a loss of 551.76 points or 6.71 percent. The losing index was even higher than 284.78 points or 3.32 percent in 12th December 2010 (Raisa, 2011).

On 11th January 2011, market recovered 15.6 percent of General index by initiating with Institutional buyer for instance merchant banks, state owned banks & non-financial institutions and made a record in Bangladesh stock market history of gain (Chowdhury, 2011). Moreover, Ahmed (2011) mentioned that institutional buyers were asked not to sell shares rather to buy. Though steps were taken and applied by the government, BB and regulators to improve the market conditions and bring the investors' confidence, nevertheless market index declined heavily on 20th January 2011 DGEN by slipping 599.77 points or 8.68 percent. From 26th of January 2011 there was an increase trend of index. But finally Index stood at the lowest point which is 5579 from 7th to 14th February 2011. (Khalid, 2011)

Bangladesh Bank (BB) adopted accommodative monetary policy during the high inflation periods to support investment and pegged Taka against dollar to support exports. The policy that was adopted by BB to grow economy by increasing exports & investment eventually misguided and ended up blowing the mother of all bubbles. Government again fuelled the bubble after permitting whitening of black money through tax breaks and schemes (Rahman, 2011).

Due to the poor monitoring of SEC & market surveillance share prices of Z Category Companies and small companies increased dramatically. Some initiatives taken by SEC were not effective and changing directives frequently such as; it changed directives of margin loan ratio 19 times (Raisa, 2011).



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## Recent Trends in Capital Market and Regulators

The current most important problems of the capital market are lack of confidence of investors and lack of liquidity of the capital market. After the crush of the capital market in 2011, a continuous fall in turnover has been observed, revealing the crisis of liquidity in the capital market. In FY 2011-12, the turnover sunk to Tk. 117145.07 crore from Tk. 325879.77 crore, meaning a fall of 64 percentages. In FY 2012-13, the volatility capital market followed a declining trend. DSE index movement was found not normal and the fall was so abrupt that it caused huge loss for investors. In FY 2011-12, the market capitalization ratio was 21.12 percent, which sharply declined from 29.55 percent of the previous FY 2010-11. In January 2013 total market capitalization of DSE was Tk. 184545.2 crore, a less of 4.5 percent than that of previous FY 2011-12.

In FY 2012-13, the market capitalization and investment ratio witnessed a downward trend, reaching at 83.01 percent. This indicates the descent in ratio between capitalization and investments, revealing a continuous fall in the capital market. In January 2013, a declined trend of market capitalization was witnessed for the banking sector, reaching at Tk. 49251.80 crore, a sharp drop Tk. 1986.9 crore than in FY 2011-12 in which year the banking sector contributed a total amount of Tk. 51238.60 crore. From FY 2010-11 to January 2013 falling rate of contribution in banking sector in market capitalization was 2 percent which came down from 29 percent in FY 2010-11 to 27 percent in January, 2013 (Bangladesh Economic Update).

## Factors Contributed to Capital Market Crash in Bangladesh

The contributed factors to the crash are commonly accused by different market analysts, economists and stakeholders. As Hossain (2011) evaluated "this time liable factors are -omnibus account, placement share, book building method, rumors and so on. Misuse of those factors causes the capital market debacle". Again Haque (n.d.) stated "Combination of wrong information to the investors, illegal participation of banks and institutions in the stock markets, weak accounting functions are at the core of the crisis that saw billions of Tk. wiped out".

The *"Ibrahim Khaled share market probe Committee"* identified the following factors that caused the capital market to crash:

A. Primary issue related problems
    i. Direct listing in Primary issue.
    ii. Abuse of Book Building Method of IPO.
    iii. High premium for stock listing.
    iv. Illegal Private placement market.
    v. Asset Revaluation of Companies before listing to charge higher premium.
B. Secondary market related problems
    i. Circular trading in Secondary market.
    ii. Block trading.
    iii. Stock Price Manipulation through Omnibus Accounts.
    iv. Most of the market players are identified in the report.
C. Irregularities in issuance of Right Share/Preference Share/Repeat IPO etc.
D. Recommendation of Stock Dividend by companies against unrealized Profits.



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E. Regulatory Failure
   i. Inconsistency in regulatory activities.
   ii. Supporting and legalization of unethical activities of Big Investors.
   iii. Irresponsible Behavior/Weakness in many areas.
   iv. Formulating policies to support market Players (Manipulators).
   v. Lack of Due Diligence.
   vi. Lack of Co-ordination between SEC and Stock exchanges.
   vii. Allowing Financial Institutions to invest in capital market aggressively.
   viii. SEC Failed to take measure against manipulation of financial statements.
F. Stock Exchange Demutualization
   i. Formulating policy for Capital Market financing by FI's.
   ii. Ensuring transparency in dealing with Omnibus Accounts.
   iii. Prohibit share trading by some Government Officials (e.g., SEC, DSE, CSE, Bangladesh bank, Commercial bank officials).
   iv. Asset Revaluation by companies should be reviewed by SEC.
   v. Review the Book-Building Method of IPO.
   vi. Restructuring of SEC.
   vii. Uniform face-value of all companies.
   viii. Legal actions against market players/manipulators.

## RECOMMENDATIONS

The following recommendations for stronger capital market in Bangladesh are in line of this study.

A. Demutualization of Stock Exchanges.
B. Strengthening the Market Surveillance Systems.
C. Ensuring Integrity and Efficiency of SEC Members and Staffs.
D. Co-ordination between SEC and Stock Exchanges.
E. Bank Finance in Capital Market.
F. Introduction of Asset Revaluations Policy.
G. Consistency in Regulation.
H. Supply of adequate securities.
I. Transparency in listing procedure.
J. Serial Trading and Manipulation.

The *Ibrahim Khaled share market probe* Committee recommended some suggestions to the Government to recover the capital market crash. There are:

A. Restructuring of SEC
   i. Termination of SEC chief and some other corrupt members.
   ii. Comprehensive inspection of their corruption and necessary legal actions.
   iii. Recruiting qualified accountants/financial analysts/experts/Talents for SEC.
   iv. Increase the remuneration of SEC staff to attract talents.



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v. Ensuring integrity of SEC personnel.

B. Stock Exchange Demutualization
   i. Form Committee within DSE to give report regarding demutualization process within 3 months.
   ii. If DSE fails to give report on time, Government should take steps after 3 months.
   iii. Government can take advisory supports from World Bank or any other international organization.
   iv. Government can employ an "Administrator" to DSE to implement the demutualization process.
C. Co-ordination between SEC and stock exchanges for better regulation.
D. Capital Market financing by Financial Institutions (FI's).
   i. Formulate policy for capital market investment by FI's in the line of such policies in India and Pakistan.
   ii. Take measures against FI's who are involved with the recent stock market manipulation.
   iii. Central Bank should monitor FI's aggressive stock investment very strictly.
E. Formulate clear policy for Pre-IPO placement.
F. Ensure transparency in dealing with Omnibus Accounts.
G. Prohibit share trading by some Government Officials (e.g., SEC, DSE, CSE, Bangladesh bank, Commercial bank officials).
H. Asset Revaluation by companies should be reviewed by SEC.
I. Review the Book-Building Method of IPO.
J. Make uniform face-value of all companies.
K. Take legal actions against market players/manipulators.
L. Government should be more aware about the capital market and they should be free from influence of top market players (Salman F. Rahman, Rakibur Rahman etc.).
M. SEC should Open Investors advisory support services to avoid rumor-based trading.

## FUTURE RESEARCH DIRECTIONS

The results of this study is of a great interest to academics, policy makers and local and foreign listed and unlisted companies and have an important practical implications to different capital market participants such as investors, managers and regulatory authorities. This study identified the factors on capital market crash and regulatory failure would be of a great benefit to investors at home and abroad. Researchers can further study in finding new tools, strategies, directives, rules and regulations for market development and to prevent the stock market from crash in future. Finally, it may also be useful for international organizations (such as the World Bank, IMF, WTO) and governments of development partners who are interested in the development of capital markets in the emerging countries.

## CONCLUSION

The study endeavored to find out the major reasons for the stock market to crash of in Bangladesh and the role of different regulatory organizations including DSE, CSE, and SEC of the country. It reviewed the background of the capital market crash with reasons. The continuous fall in the capital market exhibited lack of confidence by the investors. In January 2013, the continuous fall in the contribution of banking



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sector was observable. The capital market could not revive after the crush and in certain circumstances the fall continued, despite the announcement of certain measures such as tax rebate, exemption of credit for marginal level investors. SEC did not come forward to stop while thousands of totally inexperienced investors open by the brokers from remote areas to the overpriced market. Most of promises by the government like Bangladesh fund, market stabilization fund, bank investments remained unfulfilled eroding investor confidence seriously and it was wondering why SEC did not come forward to take necessary action to stop these irresponsible comments and acts. Due to poor regulatory framework, capital market of Bangladesh was found to be highly speculative and lacks of market's transparency and the recommendations of Ibrahim Khaled committee have not been implemented. It was observed that developing faulty accounting practices and methods, recruiting honest officials, providing education on the stock market to the general investors and taking strict actions against manipulators are crucial.

In addition, it was observed that the stock market boom and fall was due to following reasons:

1. Direct Listing and Book Building in IPO, high indicative price for IPO, Misuse of Book Building method of IPO, and pre-IPO Private placement activity.
2. Circular trading, Block Trading and unusual trading of securities where few numbers of investors/ institutions are involved.
3. Issuance of Right Share, Preference share, Repeat IPO at excessive price.
4. Excessive Greed of Investors and Institutions.

SEC responsibility need to ensure in a market that where various kinds of manipulation, insider trading, circular trading, pump and dump practices may prevail and create market distortion. Again, they need to concentrate on transparent listing procedure, proper IPO pricing, adequate financial disclosure, market surveillance and monitoring and promote investor confidence. The regulators and government is required to introduce new tools, strategies, directives, rules and regulations for market development and to prevent the stock market crash in future. SEC should stop excess bank investment violating provision of law.

Actions should be taken against those who were involved in this stock market crash

1. Improving security laws and penalty for breaking those.
2. Balancing of demand and supply of shares.
3. Follow-up the market and protect against any kind of manipulation.

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## KEY TERMS AND DEFINITIONS

**Capital Market:** A capital market is a market for both debt and equity securities, where business enterprises and governments can raise long-term funds. It is defined as a market in which money is provided for periods longer than a year (Sullivan et. al., 2003). Bangladesh capital market has two full-fledged automated stock exchanges namely Dhaka Stock Exchange (DSE) and Chittagong Stock Exchange (CSE). It consists of a regulator, the Securities and Exchange Commission (SEC), since, it implements rules and regulations, monitors their implications to operate and develop the capital market. It consists of Central Depository Bangladesh Limited (CDBL), the only Central Depository in Bangladesh that provides facilities for the settlement of transactions of dematerialized securities in CSE and DSE.

**Demutualization:** Demutualization of a stock exchange is the process of transforming a non-profit member-owned mutual organization into a profit seeking Shareholder Corporation. Exchanges all over the world have been demutualizing due to increasing international competition and technological challenges to traditional modes of securities trading.



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**Generally speaking:** crashes usually occur under the following conditions, a prolonged period of rising stock prices and excessive economic optimism, a market where P/E ratios exceed long-term averages, and extensive use of margin debt and leverage by market participants (Galbraith, 1979/1988).

**Omnibus Account:** Omnibus account is a type of account between two futures merchants (brokers). Transaction of individual accounts is combined in this type of account that allows easier management of portfolio by the futures merchant. But this type of account could be used to manipulate stock as many individual transactions are kept hidden over there.

**Present Coverage:** Chittagong, Dhaka, Sylhet, Rajshahi, Khulna, Barisal, Tangail and Coxsbazar.

**Share Category: "A":** Category Companies: Companies which are regular in holding the Annual General Meetings (AGM) and declared dividend at the rate of 10 percent or more in a calendar year. **"B"** Category Companies: Companies which are regular in holding the AGM but failed to declare dividend at least at the rate of 10 percent in a calendar year. **"G'** Category Companies: Greenfield companies. **"N'** Category Companies: All newly listed companies except Greenfield companies are placed in this category. **"Z'** Category Companies: Companies which failed to hold the AGM or failed to declare any dividend or which are not in operation continuously for more than six months or whose accumulated loss after adjustment of revenue reserve, if any is negative and exceeded its paid up capital.

**Stock Market Bubble:** A stock market bubble is one kind of economic bubble that takes place in stock markets when market participants drive stock prices above their value in relation to some system of stock valuation (Smith et.al. 1988).

**Stock Market Crash:** "Stock market crash is a sharp and unexpected decline of stock market prices for a very short period of time, usually accompanied with the decline of many other assets' prices" mentioned by stockmarketcrashes.net. Amadeo (2012) defined stock market crash as more than 10% loss within few days in a stock market. But stock market crash has differentiated from stock market correction where the loss is 10% or less.

**Stock Market:** Fellowes (2008) described that stock market has same features like a normal market with buyers, sellers and agreed price. There will be a middleman who guides investor to deal offers of buying and selling shares in the stock market. Stock exchange, regulatory organizations, investors, listed companies with securities, broker houses, merchant banks, and other intermediary organizations are found in a stock market with co-operation of central bank and government of the country.

**Trading System:** Fully automated screen-based. Nation-wide online trading network.

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# Chapter 66
# Export-Led Recovery in Portugal: Can It Also Sustain Growth?

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## ABSTRACT

*The recent expansion of Portuguese exports can not only promote post crisis recovery but also accelerate economic growth if the theoretical predictions on the relationship between exports and growth are correct. The export-led growth hypothesis advocates that export expansion is key in promoting long run performance. However, controversies remain on the causal relationship between the variables. We investigate this nexus for Portugal over the period 1970-2012 by estimating a bivariate VAR model with output and exports and applying cointegration, Granger causality and impulse response analysis. The results show a long-run equilibrium relationship between exports and output supporting the export-led-growth hypothesis. We also investigated the growth impact of exports of manufactured and non-manufactured products. The findings point to the existence of a positive impact of manufactured exports on output and a "limiting" effect of non-manufactured exports supporting in this way the view that what a country exports matters for growth.*

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## INTRODUCTION

After joining the European Economic Community (EEC) in 1986, the Portuguese economy enjoyed a phase of sustained economic growth until the early 2000s, recording an annual average growth rate of real GDP per capita of more than 3 per cent (Andrade, Duarte & Simões, 2014). However, since around the year 2000 up to 2010 growth receded to less than 1 per cent a year (accompanied by declining exports performance) and the recent evolution of the Portuguese economy has been strongly affected by the austerity policies recommended by the Troika (the IMF, the European Central Bank and the European Commission) following the sovereign debt crisis, which resulted in Portugal agreeing to a bailout programme in May 2011 and exiting the three year Economic Adjustment Programme in June 2014. The need to reduce the deficit and public debt are the main objectives that have underpinned austerity policies and resulted in a depleted domestic demand and the need to promote exports as a driver of recovery. According to the OECD (2014), p. 4 "The authorities have been implementing a wide-ranging structural reform agenda, which is helping to rebalance the economy towards the export sector." Portugal showed impressive export growth (as high as 10% a year), especially when compared with other Southern European countries like Spain and Italy, with Portuguese exports going from 27 per cent of GDP in 2009 to 39 per cent of GDP in 2013 (Arnold, 2015).

Besides their role as a driver of economic recovery, given the dismal growth prospects faced by the Portuguese economy an even more important question is whether exports have the potential to ignite and sustain economic growth in Portugal. The potential of exports to be the engine of growth is known in the economic literature as the Export-Led Growth (ELG) hypothesis and has given rise to substantial research (Giles & Williams, 2001a; 2001b; Palley, 2011). A fundamental issue that remains open to debate concerns the existence of a feedback relationship between exports and output that implies a Growth-Led-Export hypothesis (GLE) (Kónya, 2006). The ELG hypothesis is justified on the basis that competition in international markets fosters economies of scale and increases efficiency by concentrating resources in sectors in which the country has greater comparative advantage. These positive externalities promote economic growth (Balassa, 1978). On the contrary, the GLE hypothesis advocates that economic growth leads to productivity gains, creating a comparative advantage for the country that facilitates exports (Santos, 2012). Additionally, countries that record high growth rates but have relatively low absorption rates must necessarily export the surplus of goods and services (Mishra, 2011). In any case, the two hypotheses are not mutually exclusive and a reciprocal/feedback relationship between the two variables may exist (Kónya, 2006).

This chapter investigates the dynamics among exports and output over the period 1970-2012 for Portugal. The main aim is to examine whether the expansion of Portuguese exports may constitute an opportunity for its long run macroeconomic performance. For this purpose, we estimate a bivariate VAR model with output and exports and apply cointegration, Granger causality and impulse response analysis to take into account both the ELG and GLE hypotheses. Following the suggestion of several authors according to whom what a country exports matters for growth (Herzer, Nowak-Lehmann & Siliverstovs, 2005; Hausmann, Hwang & Rodrik, 2007), we will also take into account the composition of exports by investigating the separate effects of manufactured and non-manufactured exports on output.

The chapter is organized in three sections, besides the introduction. Section 2 gives an overview of the theoretical and empirical literature on the relationship between exports as a whole and economic growth, and the relationship between the composition of exports and growth. In section 3, we describe the estimation methodology and present and discuss the results obtained. Finally, section 4 contains the main conclusions.



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## EXPORTS AND ECONOMIC GROWTH: AN OVERVIEW OF THE LITERATURE

There is by now an extensive and rich literature on the relationship between exports and economic growth that has been carefully and thoroughly surveyed by Gilles & Williams (2001a, b), Hausmann, Hwang & Rodrik (2007) and Palley (2011), among others. However, the relationship between the two variables is still controversial, given the lack of consensus in the results obtained. The aim of this chapter is to present an overview of the theoretical and empirical literature on the relationship between exports and economic growth. In the first part, we concentrate on the relationship between aggregate exports and economic growth and in the second part we address the issue of exports composition.

Although we do not explicitly address it in this chapter, we are aware that the nature of exporting activity, in particular which industries, what share of domestic produced value added and which regional destination, is also a potentially important determinant of the economic growth impact of exports. Gkagka and Zarotiadis (2011) constitutes an example of a recent study that tries to distinguish the growth impact of exports according to destination by considering the exports of 15 EU member states over the period 1995-2007 to three different markets: other EU countries, China and the rest of the world. The results obtained indicate that exports destination matters with a positive growth impact of intra-EU exports, a negative growth impact of exports to China and a non-significant impact of exports to the rest of the world. Santos, Ribeiro and Carvalho (2013) also conclude, for a sample of 23 EU members over the period 1995-2010 that higher growth is fostered by export diversification across member states while enlarging destination to less developed and more distant countries has a negative growth impact. The authors also find evidence that export specialization in high value-added products, such as manufactures and high technology, accelerates economic growth. Pistikos and Zarotiadis (2014) deals with the importance of destination for exports performance based on a sample of 19 EU member states over the period 2002-2012. The main concern of the authors is identifying how crises affect intra-EU net exports, concluding that export intensity declined in the crisis period in countries whose main exports destinations were other EU member states that recorded important GDP decelerations or declines after the crisis. On the other hand, EU member states outside the Euro Zone and that were thus able to devaluate their currency were able to increase the respective exports intensity. Finally, the fragmentation of production across different countries makes it increasingly difficult to measure a country's export performance and its contribution to domestic output growth since it is necessary to evaluate the value added that exports create in a given country. A high import content of exports will result in weak linkages between exports and the rest of the economy and thus economic growth.

A slightly different but related issue concerns the importance of competition in domestic markets for export performance. Based on a review of empirical literature, Goodwin and Pierola (2015) claim that intense domestic competition is a pre-requisite to export more. According to the authors, for more productive firms to enter the domestic markets there must be effective competition. In this way, the most productive competitors will gain additional market share, which in turn improves aggregate productivity levels and leads to higher exports levels. This claim is supported, for instance, by empirical studies that find that higher domestic concentration is associated with a smaller domestic share in world output and fewer net exports while other studies obtain a positive relationship between domestic rivalry and export performance. Moreover, Goodwin and Pierola (2015) provide evidence from previous studies that anti-trust policy for input product and services markets contributes to export competitiveness of downstream sectors.



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## Aggregate Exports and Economic Growth

The idea that international trade is associated with faster economic growth goes as far back as the mercantilist theory that dominated Europe from the 16th to the 18th century and gained a renewed interest with the classical and neo-classical schools of economic thought through the 19th and 20th centuries until today. The Export-Led-Growth (ELG) hypothesis in particular argues that export expansion is a key factor in promoting long-run output growth. Several arguments support this view. From a demand-side perspective, increasing the degree of openness of an economy expands the market, overcoming the effects of a possible deceleration or exhaustion of domestic demand (Herzer, Nowak-Lehmann & Siliverstovs, 2005). On the supply-side, export expansion can promote economic growth through an increase in productivity, achieved through three different mechanisms. First, an increase in exports may promote specialization in sectors where a country has greater comparative advantage and lead to a reallocation of resources from (relatively) inefficient sectors to more productive export-oriented sectors (Santos, 2012). Second, exporting requires facing stronger competition, which encourages the exploration of economies of scale and stimulates not only an improvement in product quality, but also the reduction of inefficiency in domestic production (Akbar & Naqvi, 2000). Finally, export growth could positively affect productivity through spillovers effects to the rest of the economy. According to Chuang (1998), the possible sources of spillovers are increased competitiveness, access to more efficient forms of management and organization, labor training, the acceleration of technological progress and increased knowledge of international markets. The Growth-Led-Export (GLE) hypothesis, on the other hand, argues that it is the fact that economic growth enables the development of human and technological capacities by a country that improves efficiency, creating comparative advantages in certain areas, lowering the prices of domestic production and consequently promoting exports (Kónya, 2006).

The early empirical literature from the 1960s and 1970s that examined the exports-economic growth relationship applied the Spearman's rank correlation index to determine the degree of association between exports and growth (Emery, 1967; Kravis 1970; Michaely 1977). This first group of research was followed by a second one that applied cross-country regression analysis (usually ordinary least squares) to estimate an augmented production function that included exports as an independent variable, in addition to investment and human capital accumulation (Balassa 1978; Tyler 1981; Ram 1987). The results from both groups of studies reveal a positive correlation between exports and economic growth. However, as noted by Rodriguez & Rodrik (2001), these studies do not address the problem of endogeneity, questioning the robustness of the results. The methodologies applied do not investigate the cointegration properties of the variables involved, nor the potential bidirectional relationship between exports and growth. More recent studies try to overcome these drawbacks by applying methodologies that better take into account the potential bidirectional relationship such as cointegration techniques, estimating VAR models (or VECM, depending on the results), which treat all variables as endogenous, and applying Granger causality analysis. Overall, this group of empirical studies has obtained four different types of results corresponding to:

1. Support for the ELG hypothesis, that is those that confirm a unidirectional relationship from exports to economic growth;
2. Support for the GLE hypothesis, that is those that confirm a unidirectional relationship from economic growth to exports;
3. Results that indicate a bidirectional relationship between exports and economic growth; and



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4. Results that find that the behavior of both variables is independent of one another.

Table 1 contains a summary of some empirical studies (according to the date of publication) that examined the relationship between aggregate exports and economic growth belonging to the last group of studies identified above.

As far as the Portuguese economy is concerned, Oxley (1993) applied stationarity, cointegration and Granger causality tests to Portuguese annual data (log of real GDP and log of real exports), over the period 1865-1985, and found support for the GLE hypothesis. Kónya (2004) considered a sample of twenty-five OECD countries over the period 1960-1998 to study the relationship between real GDP and real exports. The author found support for: the ELG hypothesis in Iceland, Australia, Austria and Ireland; a unidirectional relationship from growth to exports in Canada, Japan, South Korea, Finland, United States and Portugal. As for the case of Luxembourg, Netherlands, Denmark, France, Greece, Hungary and Norway the author found no evidence of causality between the two variables, while for Sweden and the UK he found evidence of a bidirectional relationship.

In light of such varied results, some researchers tried to improve the existing empirical models by taking into account the structure (composition) of exports and its impact on economic growth.

## Exports Composition and Economic Growth

The composition of exports is a relevant factor when analyzing the impact of exports on economic growth. Hausmann, Rodrik & Hwang (2006) suggest that the type of exports in which a country specializes has significant effects on subsequent economic performance. Their results show that countries

*Table 1. An overview of some empirical studies*

| Author | Period | Sample | Variables | Conclusions |
|---|---|---|---|---|
| Jung and Marshall (1985) | 1950-1981 | 37 Developing Countries | Real GDP, real GNP, real Exports | ELG hypothesis valid for 4 countries |
| Dutt and Ghosh (1994) | 1953-1991 | Israel and Turkey | Real GDP, real GNP, real Exports | ELG hypothesis valid for both countries |
| Khalafalla and Webb (2001) | 1965-1996 | Malaysia | Real GDP, real Exports, real Imports | Bidirectional relationship |
| Kónya (2006) | 1951-2004 | India | Real GDP, real Exports, real Imports | ELG hypothesis valid |
| Jordaan (2007) | 1970-2005 | Namibia | Real GDP, real GDP per capita, real Exports, real Imports | ELG hypothesis valid |
| Elbeydi, Hamuda and Gazda (2010) | 1980-2007 | Libya | Real GDP, real Exports, | Bidirectional relationship |
| Amiri and Gerdtham (2011) | 1961-2006 | France | Real GDP, real Exports, real Imports | ELG hypothesis valid |
| Tang and Lai (2011) | 1960-2007 | Hong Kong, Korea, Taiwan and Singapore | Real GDP, real Exports, exchange rate | ELG hypothesis valid for Singapore and Hong Kong |
| Mishra (2012) | 1970-2009 | India | Real GDP per capita, real Exports | GLE hypothesis valid |

Source: Authors' own elaboration



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that export goods associated with higher productivity levels grow faster. According to Santos (2012), the probability of developing production and consumption goods associated with more advanced technologies is higher in more developed countries. From a demand-side perspective, this is explained by the higher demand for more innovative goods in wealthy countries. On the supply-side, Grossman & Helpman (1991) argue that the most advanced economies have technological advantages, particularly when it comes to Research and Development (R&D). Thus, the more developed a region is, the higher is its level of technology, production and exports of sophisticated goods and, consequently, the greater the impact on economic growth.

An interesting way forward consisted in analyzing exports taking into account the respective technological intensity. Cuaresma & Wörz (2005) tested the hypothesis of high-tech exports having a stronger impact on productivity for 44 industrialized and developing countries between 1981 and 1997. Applying a random effects model, the authors found that high tech-intensive exports have a significant impact on economic growth in industrialized countries, while low tech-intensive exports have a negative effect on economic growth.

Previous empirical studies have also pointed out the need to distinguish between the impact of primary and manufactured products exports on economic performance. Several authors suggest different arguments to explain why primary products exports may become an obstacle to productivity increases. According to these authors, primary products are not a sustainable source of knowledge spillovers and an increase in exports of such products can draw resources away from the externality-generating manufacturing sector (Herzer, Nowak-Lehmann & Siliverstovs, 2005). In addition, exports of primary products are more likely to suffer from price and volume fluctuations and therefore increasing such exports could lead to greater GDP volatile and macroeconomic uncertainty. In turn, the high volatility and economic uncertainty may affect negatively investments' efficiency.

Ghatak, Milner & Utkulu (1997) examined the ELG hypothesis for Malaysia and the effect of manufactured and primary exports on growth, over the period 1955-1990. Using cointegration and causality techniques, the authors found that aggregate exports Granger-cause economic growth, but not the other way around. This relationship is driven mainly by manufactured exports, given the negative effect of non-fuel primary exports on GDP.

Herzer, Nowak- Lehmann, & Siliverstovs (2005) investigate the impact of primary and manufactured exports on economic growth, in Chile. Using annual time series data from 1960 to 2001, the study applies cointegration techniques and the Granger methodology. The results show unidirectional causality from manufactured exports to economic growth, and the presence of a bidirectional relationship between primary exports and GDP. The main conclusion of this work is that although both types of exports contribute to the Chilean GDP, manufactured exports are especially important because of the increased productivity they provide and therefore induce sustained economic growth. In a similar study, Ngumi, Kimuyu & Gakure (2013) analyzed the influence of manufactured exports on economic growth in Kenya over the period 1970-2007. The authors found a long-run equilibrium relationship between GDP, manufactured and non-manufactured exports, imports and the terms of trade. The results from the causality analysis also point to an independent relationship between manufactured exports and growth. According to the authors, a possible justification for this result is the relative low weight of this type of exports relative to total output of the sector representing on average around 27% of total sectoral output. As to non-manufactured exports, the impact of these on GDP is negative because of the instability of the respective prices.



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From this literature overview, it is clear that exports can have a key role on a country's economic performance. Despite the large number of studies that have been conducted to test the ELG hypothesis, the results concerning the direction of causality between exports and economic growth are not consensual depending on the specific country under analysis. Accordingly, this chapter will investigate the direction of causality between exports and economic growth for Portugal, also taking into account the structure of exports, which allows for more specific and detailed results.

## DATA, METHODOLOGY, AND RESULTS

This section examines the causal relationship between exports and economic growth in Portugal over the period 1970-2012 within a VAR model with two variables, exports and output. We apply cointegration analysis, Granger causality tests and impulse-response functions to analyze the existence of a long-run relationship, the direction of causality and check how unexpected changes influence growth. VAR models allow us to take into account inter-dependencies and dynamic relationships between variables by explaining the behaviour of the endogenous variables by their own past values. Theoretical predictions point to increased export performance as being able to generate faster growth. However, richer countries also tend to export more. Thus, estimating a single regression with output growth as the dependent variable can lead to misleading results since it does not adequately capture the relationship under analysis if inverse causality applies. In a VAR model all variables are considered as potentially endogenous making this a suitable framework to model interdependent variables as is the case in this study. In summary, we estimate a country-specific model in a VAR-framework with all variables treated as endogenous, which avoids the often arbitrary classification, within a growth framework, of variables as endogenous or exogenous, and the imposition of restrictive specifications on the dynamic adjustment mechanisms inherent in the structural approaches, such as those associated with the estimation of cross-country growth regressions (Gobbin & Rayp, 2008; Frank, 2009). Cointegration, granger causality and an impulse response analysis are used to determine the sign of the association between variables.

Our basic VAR model can thus be generically represented as:

$$X_t = \alpha + \beta_1 X_{t-1} + \beta_2 X_{t-2} + ... + \beta_p X_{t-p} + \varepsilon_t, \quad (1)$$

with vector X including the variables under analysis:

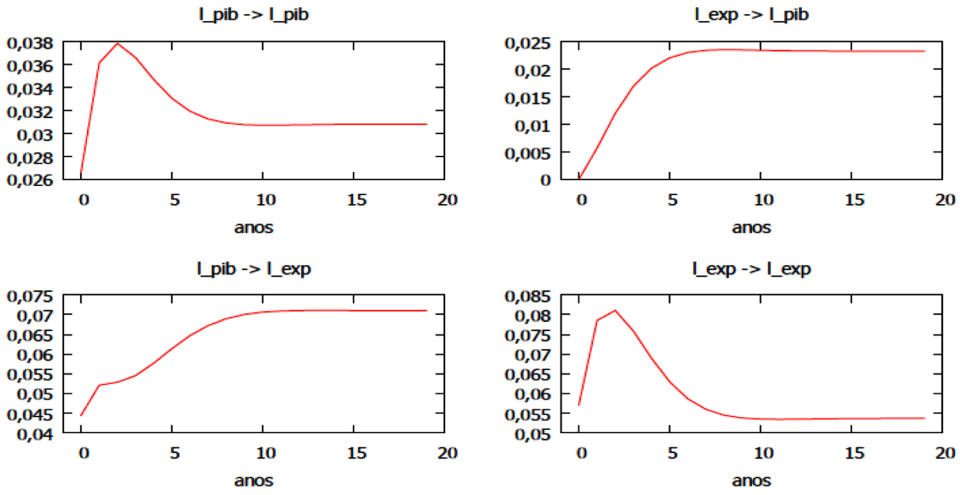
$$X = \left[ l_GDP \quad l_\exp \right]' \quad (2)$$

where "l" stands for the logarithm; "GDP" is the real Gross Domestic Product at 2005 prices and "exp" refers to real exports of goods and services at 2005 prices, either total or of manufactured or non-manufactured products (the last two variables are considered as a ratio of total exports). All variables were taken from the World Development Indicators database, from the World Bank, with an annual frequency. The evolution of all the series is shown in Figure 4 in the Appendix..



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*Figure 1. Impulse-response functions - l_GDP and l_exp*




As a preliminary step to investigate the link between exports and growth in Portugal, we test for the order of integration of variables, a necessary condition to perform Granger causality analysis. We examine the unit root properties of the variables by applying the augmented-Dickey-Fuller (ADF) unit root test (see Dickey & Fuller (1979)). This test considers as the null hypothesis (H0) the presence of a unit root in the series against the alternative hypothesis (Ha) that the series is stationary. This can be expressed as, for any series *y*:

$$\Delta y_t = C + \beta T + \delta * y_{t-1} + \theta_1 \Delta y_{t-1} + \theta_2 \Delta y_{t-2} + \ldots + u_t \quad (3)$$

where C is a constant and T a time trend, included according to the characteristics of the series. The test for a unit root is conducted on the coefficient of $y_{t-1}$ in the regression. If the coefficient is significantly different from zero, then the hypothesis that *y* contains a unit root is rejected. Rejection of the null hypothesis implies stationarity. If H0 cannot be rejected for the series in levels, we next apply the test to the first differences of the series ($\Delta$) and so on until the series becomes stationary.

Given the low power of the ADF test in small samples such as ours, we also applied the Kwiatkoswaski, Phillips Schmidt and Shin (KPSS) stationarity test ((Kwiatkoswaski et al., 1992)). This test considers as the null hypothesis that the series is stationary against the alternative of non-stationarity and is used in the literature as a complement to the ADF test. The interpretation of the results of both tests combined is summarized in Table 2. If the series are non-stationarity in their levels, the tests are applied to their first differences to determine the respective order of integration.

If the series are integrated of order one, we next perform cointegration analysis that allows for the identification of long-run relationships between variables and to avoid the problem of spurious regressions. We say that the variables are cointegrated if they have the same order of integration (one, in our case), and if there is a linear combination of the variables that is integrated of order zero. To test the number of cointegration vectors in our model we follow the Johansen procedure (see Johansen & Juselius



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*Table 2. Possible outcomes of the ADF and KPSS tests combined*

| KPSS Test | ADF Test | |
|---|---|---|
| | **Do Not Reject $H_0$** | **Reject $H_0$** |
| **Do Not Reject $H_0$** | Inconclusive outcome | Stationaraty |
| **Reject $H_0$** | Non-stationary | Inconclusive outcome |

Notes: the null hypothesis indicates non-stationarity in the ADF test and stationarity in the case of the KPSS test
Source: Nusair (2003)

(1990); Johansen (1995)). If there is no cointegration vector, we can continue to estimate a VAR in first differences in order to perform causality analysis. If there are one or more vectors, we must estimate a Vector Error Correcting Mechanism (VECM) system.

## Aggregate Exports and Economic Growth: Estimation of a VECM Model

We begin by analyzing the relationship between output and aggregate exports considering total real GDP and total real exports, respectively, as proxies.

Table 3 contains the results obtained with the ADF and KPSS tests, with constant and trend (CT) for the variables in levels and only with constant (C) for the first differences. The results obtained with the ADF test reveal the presence of a unit root in the variables in levels since the p-value is greater than 0.05; when applied to the variables in first differences the null hypothesis is rejected. For the KPSS test, it is possible to verify that the only variable that is not stationary at a 5% significance level is l_GDP. Comparing the results of both tests, we conclude that a single differentiation is sufficient to make the series stationary, so we can say that both series are integrated of order one, *I*(1).

Since the series are integrated of the same order, *I*(1), the next step is to determine the optimal number of lags to consider in the estimation of the VAR model in order to eliminate the autocorrelation of the residuals. The optimal number of lags corresponds to the minimum value of three information criteria: AIC (Akaike Information Criterion), BIC (Bayesian Information Criterion) and HQC (Hannan-Quinn Criterion). Note that the inclusion of too many lags implies the loss of degrees of freedom (low power

*Table 3. Results of the ADF and KPSS tests - l_GDP and l_exp*

| Variable | ADF Test | | | Teste KPSS | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Lags | p-value | Rej. $H_0$ | Statiscal Test | Critical Values | | | Rej. $H_0$ | Conclusion |
| | | | | | 10% | 5% | 1% | | |
| *l_GDP* | *1* | *0.995* | No | 0.19515* | 0.122 | 0.149 | 0.212 | Yes | *NS, I(1)* |
| *Δl_GDP* | *2* | *0.023*** | Yes | 0.46936** | 0.352 | 0.472 | 0.720 | No | *S, I(0)* |
| *l_exp* | *4* | *0.791* | No | 0.11462*** | 0.122 | 0.149 | 0.212 | No | *IO, I(1)* |
| *Δl_exp* | *1* | *4.32e-006**** | Yes | 0.09251*** | 0.352 | 0.472 | 0.720 | No | *S, I(0)* |

Note: Δ - series in first differences; Rej. $H_0$- rejection of the null hypothesis; NS – non-stationary; S - stationary; IO – Inconclusive Outcome. All tests were performed with a maximum of 4 lags. ***, **, * indicate that the coefficients are statistically significant at 1%, 5% and 10% significance levels, respectively. In the KPSS test we reject $H_0$ if the statistical test is greater than the critical value at the 5% significance level
Source: Authors' own calculations



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tests) and increases the risk of collinearity. However, an estimation with insufficient lags may lead to biased estimates. From the inspection of Table 4 it can be seen that the optimal number of lags is two according to the three criteria used.

We next investigate the existence of a cointegration relationship between the variables, in other words, we determine if there is a long-run equilibrium relationship between the two series. To this end, we use the methodology proposed by Johansen (1995), which applies two statistical tests to determine the number of cointegration vectors: the trace test (λ trace) and the maximum eigenvalue test (λ max). In the trace test, the null hypothesis ($H_0$) is that the number of cointegration vectors is $r \leq p$, where r is the number of vectors and $p = n - 1$ (where n is the number of variables included). As for the maximum eigenvalue test, the null hypothesis ($H_0$) is whether there are at most r cointegrating vectors, against the alternative that there are exactly $r + 1$. The cointegration analysis results are shown in Table 5. It can be seen that there is one cointegrating vector since the null hypothesis of both the trace and the maximum eigenvalue tests for the presence of at least one cointegrating vector was not rejected at a 5% significance level (p-value greater than 0.05). Thus, the two variables of our VAR model show a long-run equilibrium relationship between them, although short-run deviations can occur relative to this equilibrium.

The cointegration equation between GDP and exports is reported in Table 6. Based on the estimated cointegration vector corresponding to the long-run equilibrium relationship between the variables, we can say that our results confirm the theoretical predictions on the relationship between exports and output for Portugal over the period under analysis with the estimated coefficients presenting the expected sign and also being statistically significant. An increase in exports as a positive long-run effect on output, probably because it enables access to larger markets by the Portuguese economy, with the associated increase in competition that leads to higher efficiency in order for the exporting firms to stay competitive, allowing for the exploration of scale economies. Higher exports seem also to have encouraged technology diffusion and knowledge spillovers that contribute to faster productivity growth

*Table 4. VAR Lag Selection – l_GDP and l_exp*

| Lags | Likelihood Log. | P(LR) | AIC | BIC | HQC |
|---|---|---|---|---|---|
| **1** | 141.94781 | | -6.79739 | -6.54406 | -6.70579 |
| **2** | 152.33208 | 0.00035 | -7.11660* | -6.69438* | -6.96394* |
| **3** | 153.89839 | 0.53588 | -6.99492 | -6.40381 | -6.78119 |

Source: Authors' own calculations

*Table 5. Results of the Johansen Cointegration tests- l_GDP and l_exp*

| Trace Test | | | | λ Max Test | | | |
|---|---|---|---|---|---|---|---|
| $H_0$ | $H_1$ | λ Trace | p-value | $H_0$ | $H_1$ | λ max | p-value |
| r = 0 | r > 0 | 17.190 | 0.0258 | r = 0 | r = 1 | 16.266 | 0.0218 |
| r ≤ 1 | r >1 | 0.92456 | 0.3363 | r = 1 | r = 2 | 0.92456 | 0.3363 |

Notes: The number of lags used was two, determined by the criteria AIC, BIC and HQC
Source: Authors' own calculations



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*Table 6. Cointegration Equation – l_GDP and l_exp*

| Beta | Coefficient | Standard Error |
|---|---|---|
| l_GDP | 1.0000 | 0.0000 |
| l_exp | -0.43398 | 0.034691 |

Source: Authors' own calculations

The presence of cointegration between the two variables implies a causality on at least one direction. To determine the direction of causality between the series we proceeded to the estimation of a VECM model, which is identical to a VAR model with variables in first differences. However, the first includes an error correction term, which aims to correct the deviations from the long-run equilibrium through a series of partial short-run adjustments. The VECM model to estimate is given by the following two equations:

$$\Delta l_{GDP} = \beta_0 + \beta_1 \Delta l_GDP_{t-1} + \beta_2 \Delta l_exp_{t-1} + \delta_1 EC_{t-1} + \varepsilon_{1t} \quad (4)$$

$$\Delta l_{exp} = \alpha_0 + \alpha_1 \Delta l_GDP_{t-1} + \alpha_2 \Delta l_exp_{t-1} + \delta_2 EC_{t-1} + \varepsilon_{2t} \quad (5)$$

where EC are the error correction terms corresponding to the cointegration vector identified before.

When the variables are *I* (1) and cointegrated, Granger causality should be analyzed based on the results of the estimation of the corresponding VECM model, and it can be said that there are two sources of causality: via the lagged differences and via the error correction term. For instance, if the estimated coefficient of the error correction term is negative and statistically significant in the equation for l_GDP, this variable is also influenced/caused by l_exp via adjustments / corrections of the deviations from the long-run equilibrium between the variables. Table 7 shows the estimation results for the Δl_GDP equation (equation (4)) and the Δl_exp equation (equation (5)) in our VECM model. According to the estimation results for equation (4), since the estimated coefficient of the error correction term is negative and statistically significant, we can conclude that in the long-run real exports Granger-cause GDP. The fact that the estimated coefficient of lagged exports is not statistically significant indicates the absence of causality in the short-term. In turn, the estimation results for equation (5) indicates that there is no causality from real GDP to exports since the estimated coefficients on lagged GDP and the variable of adjustment to the long-run equilibrium (EC) are not statistically significant in this equation.

From the results above, we can conclude that, in the long-run, there is a unidirectional causal relationship from exports to GDP, which means that the ELG hypothesis is valid. This result contradicts the conclusion of some of the works that analyzed the Portuguese economy, like Oxley (1993) and Kónya (2004), who found results supporting a unidirectional causal relationship from economic growth to exports. However, the period under analysis used in both of these studies are distinct (1865-1985 and 1960-1997, respectively), thus covering quite different institutional and commercial arrangements and so it is not surprising that we found different results.

Finally, we performed impulse response functions analysis that shows how a one standard deviation shock in one of the variables of the model affects the contemporaneous and future values of all endogenous variables in that same model. The impulse response analysis is thus an alternative way of obtaining



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*Table 7. Results of the estimation of the VECM Model*

| | *Δl_GDP* **(4)** | **Δl_exp (5)** |
|---|---|---|
| **Const** | 1.87723 * (1.944) | −2.14106 (−0.8157) |
| ***Δ_l_GDP_1*** | 0.315036 * (1.858) | −0.478711 (−1.038) |
| ***Δ_l_exp_1*** | 0.0465734 (0.7366) | 0.437380 ** (2.544) |
| **EC** | −0.122543 * (−1.933) | 0.143444 (0.8322) |
| **$R^2$** | 0.299234 | 0.160202 |

Notes: ***, **, * indicate that the coefficients are statistically significant at a significance level of 1%, 5% and 10%, respectively. The value in parenthesis corresponds to the t-statistic

Source: Authors' own calculations

information regarding the relationships among the variables since these functions allow us to analyse the sign and duration of the reaction of the different variables in the model to an exogenous shock in one of the other variables. The responses of each variable over a 20 year timeframe are shown in Figure 1.

As can be seen, an unexpected shock to exports has a gradual positive effect on GDP over the first 5 periods, reaching a clear long-term equilibrium above the baseline, thus, an increase in exports causes an increase of GDP and the adjustment is quite fast. This effect again confirms the predictions of the theoretical literature since, for instance, exports growth originates productivity gains achieved by a more efficiently reallocation of resources, by creating economies of scale and through the acceleration of technological progress that promotes economic growth. On the other hand, a positive shock to GDP has an increasingly positive effect on exports, stabilizing after 10 years in a higher equilibrium. This adjustment period is consistent with the modest value of the coefficient associated with the error correction term of the exports equation in the VECM model, which is the speed of adjustment to the long-run equilibrium (see Table 7). According to the theoretical predictions, economic growth promotes exports through the development of human and technological capacities, which cause an increase in efficiency, creating comparative advantages in certain areas and lowering the price of production, in this way improving exports performance. However, this is a lengthy process, which may explain the longer time horizon to reach the long-run equilibrium. On the other hand, the faster adjustment of GDP to a shock to exports reinforces the ELG hypothesis for the Portuguese case.

## Exports Composition and Economic Growth: Estimation of two VAR models

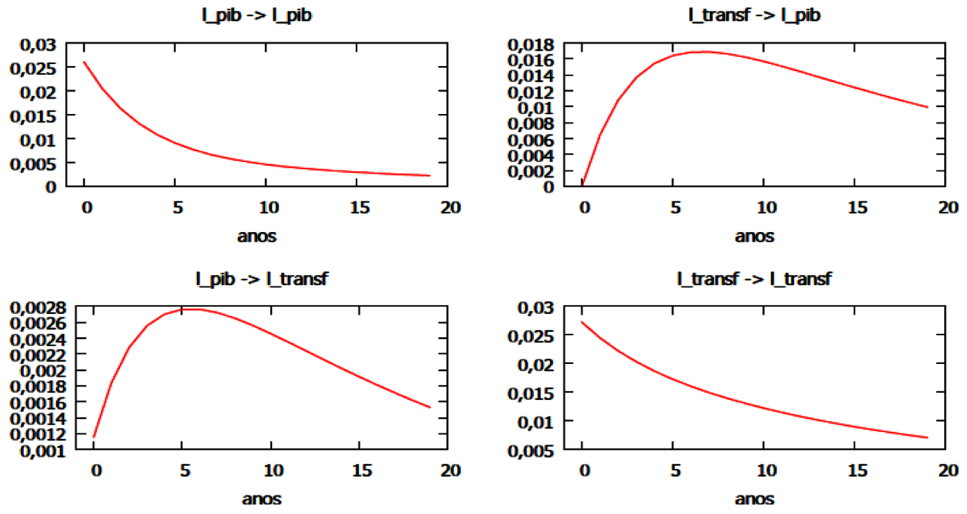
This section takes into account the composition of exports, disaggregated into manufactured and non-manufactured products, to analyze its impact on the Portuguese economic growth, replicating the methodology used in the previous section.

To study the relationship between manufactured exports and economic growth, vector X consists of:



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*Figure 2. Impulse-response functions - l_GDP and l_Manuf*




$$X = \begin{bmatrix} l_GDP \\ l_Manuf \end{bmatrix} \tag{6}$$

where l_Manuf is the ratio of manufactured exports to total exports.

To analyze the causal relationship between non-manufactured exports and economic growth, vector X consists of:

$$X = \begin{bmatrix} l_GDP \\ l_NonManuf \end{bmatrix} \tag{7}$$

where l_NonManuf is the ratio of non-manufactured exports to total exports. The evolution of the percentage of manufactured and non-manufactured products in total exports of goods is shown in Figure 5 in the Appendix.

Table 8 presents the results of the stationarity tests - ADF and KPSS - for the new variables l_Manuf and l_NonManuf variables. According to the approach proposed by Nusair (2003), which analyses the combined results of both tests, we conclude that the variables in levels are not stationary for a 5% significance level. When applied to the first differences the tests indicate that these are stationary, since their p-values are lower than 0.05 and their statistical test are lower than the critical value for the% significance level 5. We thus conclude that the series are integrated of order one, $I(1)$.

We next determine the optimal number of lags for each VAR model. According to the results of three information criteria - AIC, BIC and HQC, presented in Tables 13 and 14 of the Appendix, the optimal number of lags is one for both models. We can thus proceed to test for the existence of cointegration relationships between, on the one hand manufactured exports and output and on the other hand non-manufactured exports and output, again using the Johansen (1995) procedure. We report the results in Tables 13 and 14, respectively. As can be seen, the assumption of at least one cointegration vector was



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*Figure 3. Impulse-response functions - l_GDP and l_NonManuf*

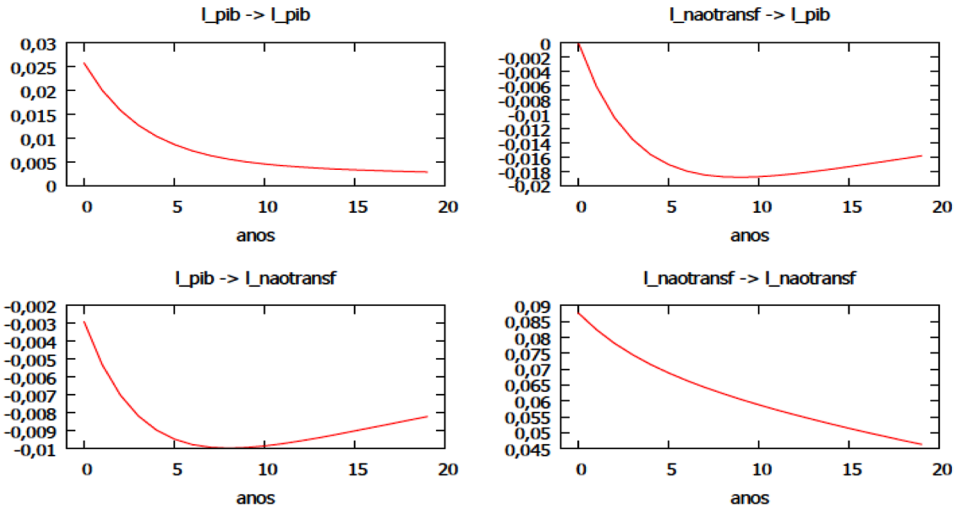



*Table 8. Results of ADF and KPSS tests - l_Manuf and l_nonManuf*

| Variable | ADF test | | | KPSS test | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Lags | p-value | Rej. $H_0$ | Estatistical Test | Critical Values | | | Rej. $H_0$ | Conclusion |
| | | | | | 10% | 5% | 1% | | |
| l_Manuf | 1 | 0.9779 | No | 0.21124* | 0.122 | 0.149 | 0.212 | Yes | NS, *I(1)* |
| Δl_Manuf | 1 | 0.0019*** | Yes | 0.41379** | 0.352 | 0.472 | 0.720 | No | S, *I(0)* |
| l_NonManuf | 1 | 0.9673 | No | 0.19044* | 0.122 | 0.149 | 0.212 | Yes | NS, *I(1)* |
| Δl_NonManuf | 1 | 0.0145** | Yes | 0.31074*** | 0.352 | 0.472 | 0.720 | No | S, *I(0)* |

Note: Δ - series in first differences; Rej. $H_0$- rejection of the null hypothesis; NS – non-stationary; S - stationary; IO – Inconclusive Outcome. All the tests were performed considering a maximum of 4 lags. ***, **, * indicate that the coefficients are statistically significant at the 1%, 5% and 10%, significance levels, respectively. For the KPSS test we reject $H_0$ if the statistical test is greater than the critical value at the 5% significance level

Source: Authors' own calculations

not rejected for the two models, at a 5% significance level (p-value greater than 0.05). It can therefore be concluded that there is a long-run equilibrium relationship between each of the exports variables and output.

The cointegration vector for the long-run equilibrium relationship between l_Manuf and l_GDP is presented in Table 15 in the Appendix. The results are consistent with the theoretical predictions. An increase in manufactured exports as a positive long-run impact effect on output, which indicates that an expansion of these type of exports is accompanied by an increase in GDP due to the high added value of such exports. As for the cointegration vector corresponding to the long-run equilibrium relationship between l_NonManuf and l_GDP, presented in Table 16 in the Appendix, the estimated coefficient of non-manufactured exports implies that decreasing the weight of such products in total exports will raise GDP. Several previous studies, Ghatak et al. (1997), Herzer et al. (2005) and Ngumi et al. (2013), found



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similar results, supporting the argument that, due to the fact that these products are not a sustainable source of positive productivity spillovers and their prices are volatile, higher non-manufactured exports increase macroeconomic instability, which in turn impacts negatively on capital accumulation, and thus GDP.

Again, the existence of one cointegration vector means that there is at least causality in one direction between the variables, but does not allow us to identify the direction of that causality. Contrary to what we have done in the model with aggregate exports, in this case, we will note estimate a VECM model, since the optimal number of lags is one for both models. Thus, using this methodology would lead to an increased loss of information about the dynamics of the variables since the VECM model would just include the error correction term as an explanatory variable. We thus decided to use the strategy proposed by Doan, Litterman, & Sims (1984) which consists on the estimation of a VAR model with the variables in levels and the analysis of the respective impulse-response functions. This strategy is also suggested by Kónya (2004) as an alternative to the VECM methodology when the variables are $I(1)$ and the system is bivariate as is the case of our variables.

The results of the estimation of the first order VAR model with manufactured exports model is documented in Table 11. As shown in equation (6a), given the statistical significance of the estimated coefficient for l_Manuf, it is possible to conclude that an increase in the ratio of manufactured products to total exports Granger-causes real GDP. Using the information from equation (6b), on the other hand, it is possible to conclude that there is no causality from l_GDP to l_Manuf, since the respective lag is not statistically significant in this equation.

Still focusing on manufactured exports, we next estimated the impulse-response functions for a 20-year time horizon. The results are presented in Figure 2. According to these, an unexpected shock to the ratio of manufactured products to total exports of goods causes a progressive increase in l_GDP, which reaches its peak in the sixth year, gradually decreasing from that period onwards. A similar effect, but less intense, is caused by a shock in real GDP in the ratio of manufactured products to total exports of goods.

*Table 9. Results of the Johansen Cointegration Tests - l_GDP and l_Manuf*

| Trace Test | | | | λ max Test | | | |
|---|---|---|---|---|---|---|---|
| $H_0$ | $H_1$ | λ Trace | p-value | $H_0$ | $H_1$ | λ max | p-value |
| r = 0 | r > 0 | 20.044 | 0.0084 | r = 0 | r = 1 | 16.314 | 0.0213 |
| r ≤ 1 | r >1 | 3.7296 | 0.0535 | r = 1 | r = 2 | 3.7296 | 0.0535 |

Notes: The number of lags used was one, determined by the criteria AIC, BIC and HQC
Source: Authors' own calculations

*Table 10. Results of the Johansen Cointegration Tests - l_GDP and l_NonManuf*

| Trace Test | | | | λ max test | | | |
|---|---|---|---|---|---|---|---|
| $H_0$ | $H_1$ | λ Trace | p-value | $H_0$ | $H_1$ | λ max | p-value |
| r = 0 | r > 0 | 18.804 | 0.0138 | r = 0 | r = 1 | 16.780 | 0.0176 |
| r ≤ 1 | r >1 | 2.0238 | 0.1549 | r = 1 | r = 2 | 2.0238 | 0.1548 |

Notes: The number of lags used was one, determined by the criteria AIC, BIC and HQC
Source: Authors' own calculations



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*Table 11. Results of the Estimation of the VAR Model– l_GDP and l_Manuf*

| | **l_GDP (6a)** | **l_Manuf (6b)** |
|---|---|---|
| **Const** | 4.63317** (2.25316) | −0.316356 (2.35757) |
| **l_GDP_1** | 0.775985*** (0.101705) | 0.0306952 (0.106418) |
| **l_Manuf_1** | 0.238104** (0.0925050) | 0.899006*** (0.0967918) |
| **time** | 0.00403648 (0.00260353) | −0.00118180 (0.00272419) |
| **$R^2$** | 0.994015 | 0.895512 |

Notes: ***, **, * indicate that the coefficients are statistically significant at a significance level of 1%, 5% and 10%, respectively. The value in parenthesis correspond to the standard errors

Source: Authors' own calculations

As for the relationship between output and non-manufactured exports, the estimation results for the respective first order VAR model composed of the equation for l_GDP (7a) and l_NonManuf (7b), can be found in Table 12. The statistical significance of the estimated coefficient for l_NonManuf in equation (7a) reveals that the ratio of non-manufactured exports to total exports of goods Granger-causes real GDP. In equation (7b), the absence of statistical significance in the respective lag invalidates the existence of causality from l_GDP to l_NonManuf.

Finally, we estimated the impulse-response functions for the VAR model with non-manufactured exports and output. The results can be found in Figure 3. As can be seen, an unexpected shock to non-manufactured exports a progressive decrease in real GDP that reaches its lowest value in the ninth year after the shock, growing slightly from that period onwards. A similar effect, but less intense, is caused by a shock to real GDP on non-manufactured exports.

*Table 12. Outcomes of the VAR Model Estimation – l_GDP and l_NonManuf*

| | **l_GDP (7a)** | **l_ *NonManuf* (7b)** |
|---|---|---|
| **Const** | 5.97758** (2.50807) | 2.64077 (8.54672) |
| **l_GDP_1** | 0.772077*** (0.0979584) | −0.100114 (0.333812) |
| **l_ *NonManuf*_1** | −0.0696456*** (0.0250692) | 0.940627*** (0.0854279) |
| **time** | 0.00421606 (0.00254233) | 0.00421341 (0.00866345) |
| **$R^2$** | 0.994158 | 0.913118 |

Notes: ***, **, * indicate that the coefficients are statistically significant at a significance level of 1%, 5% and 10%, respectively. The value in brackets represent the standard error

Source: Authors' own calculations



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## CONCLUSION

The increasing openness to international trade in the second half of the twentieth century is an undeniable feature of the Portuguese economy, especially after the accession of Portugal to the former EEC in 1986. Currently undergoing a recession following the financial and economic crisis that started in the USA in 2007-08 and resulted in the Portuguese sovereign debt crisis in 2011, export promotion appears as a crucial source to achieve sustained economic growth. To aid in the discussion on the role of exports as a driver of economic growth in Portugal, this study examined the causal relationship between exports and output in this country. For this purpose, we estimated a bivariate VAR model with real GDP and exports over the period 1970-2012. We first considered the relationship between aggregate exports and output and afterwards we disaggregated exports into manufactured and non-manufactured products to derive additional insights.

Taking into account the results of the stationarity and cointegration tests, they revealed the existence of a long-run equilibrium relationship between real GDP and overall exports and also between real GDP and exports disaggregated into manufactured and non-manufactured goods. Causality analysis showed a unidirectional relationship from exports of goods and services to GDP validating the Export-led-Growth hypothesis. This result goes in line with economic theory, since exports allow countries to overcome the limitations of its domestic market and contribute to productivity gains by creating economies of scale in sectors where the country has comparative advantage, allowing the countries to specialize in what they do best and thus lead to technological and overall productivity improvements.

Disaggregating exports of goods and services into manufactured and non-manufactured goods showed different effects on output from the two categories. The ratio of manufactured products to total exports of goods has a positive effect on GDP and the opposite applies to the ratio of non-manufactured products to total exports of goods. This result is justified by the fact that exports of non-manufactured products cannot be a sustainable source of spillovers and positive externalities and because this type of products are more likely to suffer from fluctuations in their prices, which may generate macroeconomic instability.

In conclusion, the results from this study indicate that Portugal should use exports, especially of manufactured products, as a strategy to accelerate economic growth and therefore decision makers should provide the institutional and macroeconomic conditions that promote exports (see Arnold, 2015).

In order to derive more precise and accurate policy implications, future research should focus on the identification of the sign of the relationship between more disaggregated types of exports (which industries) and output growth/productivity in Portugal, which can also involve the estimation of multivariate VAR models with a higher number of variables that can help clarify the nature of the relationship. This also applies to the study of the importance of the import content of exports and regional destination for economic growth. As Cardoso, Esteves and Rua (2013), p. 107 highlight: "the effect on domestic production resulting from an increase of the Portuguese exports is certainly lower if it is driven by a product such as fuels (which have a high import content) than tourism (since services related with hotels and restaurants present a low import content)." As for the second issue, the literature seems to agree that market diversification enhances the positive growth impact of exports but more recently research has focused on the importance of particular markets of destination such as more developed countries and regional trade agreements partners. Finally, domestic market competition has been identified as a pre-requisite for the growth enhancing role of exports that deserves further investigation as this can be a particularly important issue for Portugal. According to the OECD (2014), p.6, "… Portuguese exporters continue to be at a potential disadvantage vis-à-vis international competitors across a number of



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dimensions, notably with respect to access to inputs from non-tradable sectors…" Wider international comparisons applying panel data methodologies could also allow for important generalizations on the relationship under analysis.

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## APPENDIX

*Table 13. VAR Lag Selection – l_GDP and l_Manuf*

| Lags | Likelihood Log. | P(LR) | AIC | BIC | HQC |
|---|---|---|---|---|---|
| **1** | 174.78171 | | -8.439085* | -8.185753* | -8.347489* |
| **2** | 178.07738 | 0.15913 | -8.403869 | -7.981649 | -8.251207 |
| **3** | 180.71643 | 0.25993 | -8.335821 | -7.744714 | -8.122095 |

Source: Authors' own calculations

*Table 14. VAR Lag Selection – l_GDP and l_NonManuf*

| Lags | Likelihood Log. | P(LR) | AIC | BIC | HQC |
|---|---|---|---|---|---|
| **1** | 127.54181 | | -6.077091 * | -5.823759* | -5.985494* |
| **2** | 130.77886 | 0.16643 | -6.038943 | -5.616723 | -5.886282 |
| **3** | 134.28568 | 0.13517 | -6.014284 | -5.423176 | -5.800558 |

Source: Authors' own calculations

*Table 15. Cointegration Equation – l_GDP and l_Manuf*

| Beta | Coefficient | Standard Error |
|---|---|---|
| l_GDP | 1.0000 | 0.0000 |
| l_Manuf | -1.4677 | 0.69207 |

Source: Authors' own calculations

*Table 16. Cointegration Equation – l_GDP and l_NonManuf*

| Beta | Coefficient | Standard Error |
|---|---|---|
| l_GDP | 1.0000 | 0.0000 |
| l_NonManuf | 0.51350 | 0.19668 |

Source: Authors' own calculations



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*Figure 4. Ratio of Manufactured and Non-Manufactured Products to Total Exports of Goods*

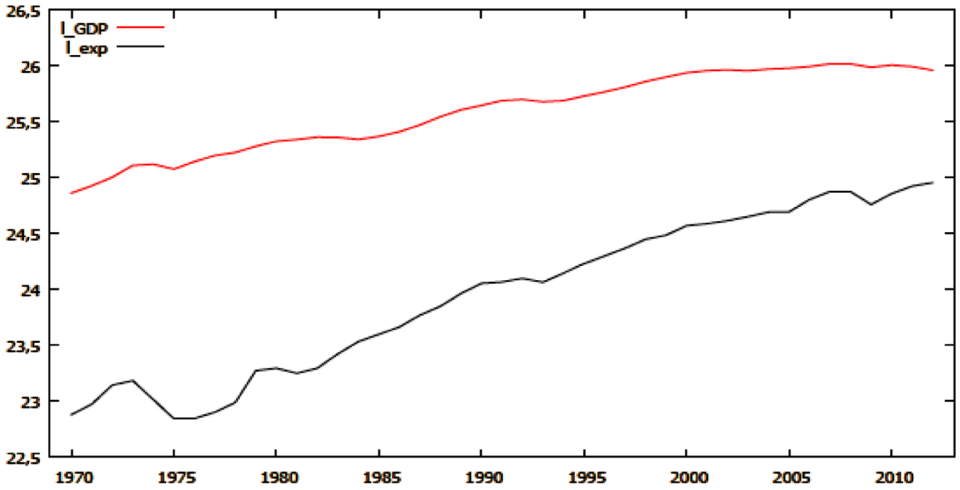
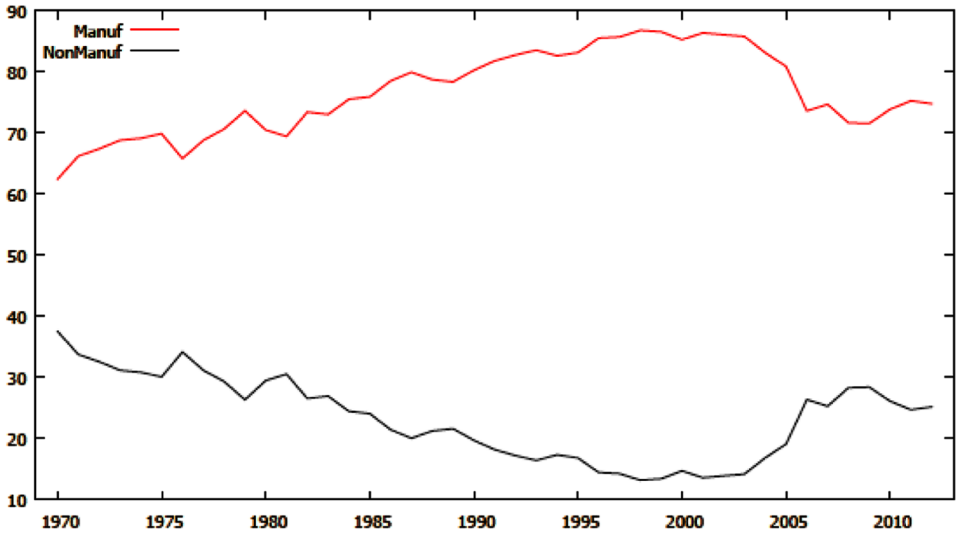



*Figure 5. Ratio of Manufactured and Non-Manufactured Products to Total Exports of Goods*






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# Chapter 67
# Investment Decision Making: Where Do We Stand?

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## ABSTRACT

*This chapter is a review of different approaches academics take to find right answers on the question how investors' community makes decisions on optimal portfolio of securities and how this process converges toward capital market equilibrium. Authors will try to reconcile the approaches that come from different intellectual traditions. The authors start with the Capital Assets Pricing Model (hereafter CAPM). For decades long the model has been a cornerstone of modern finance literature and a guide for investment decision making. The model assumes that the choice of investment portfolio is directed toward optimization between statistically defined risk and observable return of a universe of available investments, in the setting of rational and homogeneous agents where information is common knowledge. The rigidity of CAPM assumptions led to a plethora of studies where some of those assumptions are relaxed. An important breakthrough to the extant body of knowledge has been made by the introduction of the asymmetric information in the decision-making process.*

## INTRODUCTION

In the process or investment decision-making agents are imbued with beliefs about potential returns, but until mid-1960s it was rather difficult to find a comprehensive story that would link returns to the evaluation of risk. Markowitz (1952) examines the so-called second stage of portfolio construction in an attempt to link the beliefs to the final asset selection and refers to the relevance of both anticipated return and variance in the process, with a specific focus being paid to diversification. Depending on the level

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of risk averseness investors would choose to invest in cash, or a combination of cash and risky assets (Tobin, 1958). Following these studies an additional step seemed inevitable in an attempt to provide a more stylized theory on the selection of assets in a two-dimensional risk-return space.

Sharpe (1964) uses the utility theory to create a market equilibrium theory for asset prices and risks involved in asset allocation, and creates the early version of the Capital Asset Pricing Model. Investors select the universe of potential investment choices and then choose the most efficient portfolios, i.e. those that secure the highest return for the given level of risk or the lowest risk for the assumed expected return. By paying special attention to varying levels of risk aversion and probability assessments, including the cases of limited short sales and unavailability of riskless assets, Lintner (1965) further improves the model. Black (1972) examines the assumption that an investor can take a long or short position in any asset, which may not be readily confirmed in the investment process. Therefore, a more restrictive environment without riskless assets, borrowing or lending has been analyzed, just to conclude that the CAPM model is still valid with statistically significant beta coefficients in explaining individual returns.[1] In the CAPM modelling efficient portfolios could comprise short sales, since the expected value of the individual asset return could be smaller than the risk-free interest rate or the asset could be shorted so as to achieve diversification goals even though its expected value could be higher than the risk-free rate of return. In certain cases, shorted assets could account for as much as 50 percent or more of the entire efficient portfolio (Levy, 1983; Sharpe, 1991; Levy, 2010).

Merton (1973) extends the model to multiple periods, while Breeden (1979) applies this approach to a multi-good Consumption CAPM. Following attempts to find a comprehensive model in the international settings Stulz (1981) manages to evaluate the expected return without reference to the exchange rate risk. In addition, int order to assuage differences between *ex-ante* assumptions and *ex-post* testability a Conditional CAPM has been suggested. Fama and French (1992, 1993, 1996, 2013) suggest the introduction of a range of variables to examine the validity of beta coefficient estimates.

In this chapter we first examine the studies leading to the creation of the basic CAPM model. Then we'll discuss issues faced by empiricists in testing CAPM caused by the rigidity of *ex-ante* assumptions that cannot be easily confirmed *ex-post* due to the lack of stable betas and market proxies that do not represent all tradeable risky assets in respective markets. Then we shall discuss variations in CAPM, which have evolved over more than half a century of persistent research to find the best fit for markets and investors. Afterwards, our attention will turn to challenges faced by advocates of CAPM.

## CAPM

The CAPM is a market equilibrium theory with very strict requirements such as:

- Investors maximize the expected utility of their wealth at the end of the period
- Investors are risk averse and act as price takers. Normality of distribution has been assumed in addition to homogenous expectations across the investment universe
- Frictionless markets without imperfections are associated with costless information available to all investors.
- A risk-free rate is available and investors may borrow and lend without restrictions
- Assets are marketable, divisible and available in fixed quantities.



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Following these requirements, it is possible to create an efficient set of investments in the two-dimensional risk-return space. Less risk-averse investors will opt for higher return and a commensurate increase in risk, while cautious agents will be more inclined to achieve lower returns with a proportionate decline in risk. However, their investment choices should be aligned across the convex efficiency frontier, in Figure 1 depicted from point Q upwards. All choices below point Q, the so-called minimum variance portfolio, would render investors with comparatively lower returns for the same level of risk. All portfolios below Q on the convex curve and on the right-hand side from the curve offer inferior returns when compared to dominant portfolios on the efficient frontier.

The straight line connecting the risk-free rate ($R_f$) on y-axis with the market portfolio M is called a capital market line (CML). When all above-mentioned conditions are met investors could invest money only in a risk-free rate when σ, i.e. total risk, is non-extant, aim at the combination of risk-free and risky assets by moving along the upward sloping CML, invest all funds in the market portfolio M or even borrow at $R_f$ and invest proceeds in risky assets, thereby moving further along the upward-sloping line and away from M (Figure 1). Higher returns will be *ex-ante* justified by higher risk and this relationship is captured by the following formula for the CML:

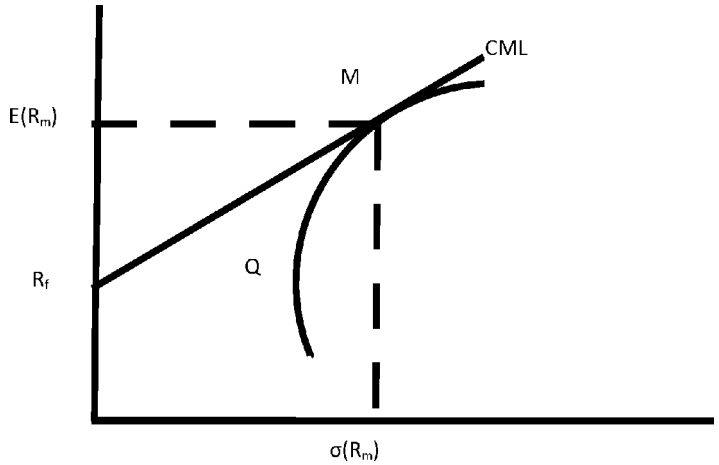
$$E(R_p) = R_f + [(E(R_m) - R_f)/\sigma(R_m)]\sigma(R_p)$$

The term within brackets denotes the slope of the firm and it is a market risk premium in excess of the riskless rate scaled by the unit of risk, the standard deviation of a market portfolio. Higher market risk premium will create a higher risk exposure and, consequently, higher portfolio *p* returns.

Assuming that an investor can invest in asset *i* a *c* amount of money and *(1-c)* in a market portfolio it is possible to partially differentiate the expected return and standard deviation of this portfolio with respect to *c*. Assuming that in equilibrium money will not be invested in any particular asset and all funds will flow to the diversified market portfolio, the final equation is rendered as:

$$E(R_i) = R_f + (\sigma_{im}/\sigma^2_m)[E(R_m) - R_f]$$

*Figure 1.*






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where $\sigma_{im}/\sigma^2_m$ is the slope of the security market line (SML) and it is more routinely referred to as beta ($\beta_i$). Accordingly, expected returns are linear with market risk (β), but not total risk (σ) (Sharpe, 1991).

If investors are not able to borrow or lend at the riskless rate Black (1972) offers a solution via the provision of a minimum variance zero-beta portfolio. Unlike the case of Sharpe-Lintner's CAPM, the investors allocate *c* amount of money to a market portfolio and (*1-c*) to the minimum variance zero-beta portfolio. When all investor's wealth is invested in the market portfolio, i.e. when *c* amounts to 100%, the tangential efficient market portfolio M has been selected (Figure 2). Partial derivations of expected returns and standard deviation with respect to *c* and further manipulations provide:

$$[E(R_m)-E(R_{zb})]/\sigma_m = [E(R_j)-E(R_m)]\sigma_m/(\sigma_{jm}-\sigma^2_m)$$

leading to

$$E(R_j) = (1-\beta_j)E(R_{zb}) + \beta_j E(R_m), \text{ subject to } \beta_j = \sigma_{jm}/\sigma^2_m$$

and

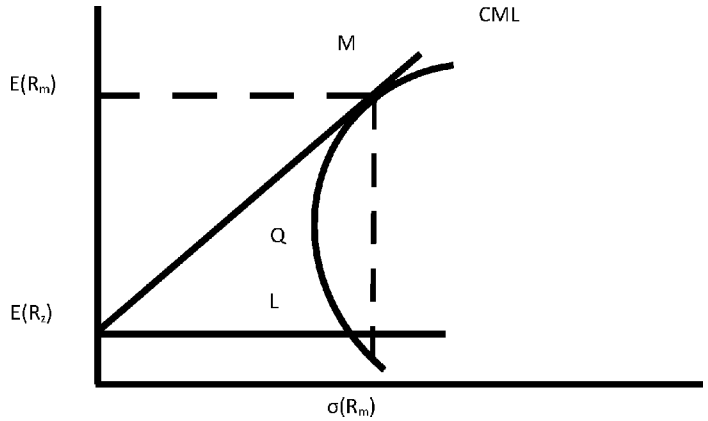
$$E(R_j) = E(R_{zb}) + \beta_j[E(R_m) - E(R_{zb})]$$

This is a two-factor model confirming that the CAPM is a linear model and $\beta$ still explains much of the variation in asset returns. However, this model is valid if there are no constraints in short sales, and a zero-beta portfolio comprises long and short positions, thus reflecting general investment patterns.

## TESTABILITY OF CAPM

CAPM faces challenges in empirical tests due to its initial assumptions. It is *ex-ante* valid, but test can be conducted in the *ex-post* environment since the inputs for the former analysis are not observable. The commonly accepted testing procedure comprises two steps. In the initial phase empiricists run a simple

*Figure 2.*






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regression with the market proxy return used as an independent and a return on any particular asset as a dependent variable:

$$R_{it} = \alpha + \beta i R_{mt} + \varepsilon_{it}$$

The values of these variables are not *ex-ante* assumed, but sourced from secondary data and thus analyzed *ex-post*. The coefficient estimates of market proxy returns are calculated over a period of 36 or more months and the calculation windows move by one period, i.e. one month so as to calculate a series of coefficient estimates. In the second step the expected value of asset *i* is calculated with the coefficient estimates of beta used as independent variables:

$$R_i = \lambda_0 + \beta_i \lambda_i + \nu_i$$

Where $\lambda_0$ should equal the risk free rate and $\lambda_i$ is expected to be close the market premium calculated as $E(R_m) - R_f$. Nevertheless, these claims are not generally purported in studies and regression $R^2$s are quite low. Therefore, a large amount of return variation is not explained by the inclusion of a single *ex-post* variable. Levy (1983) takes into account differences between *ex-ante* and *ex-post* betas and shows that after small modifications the second step could render an efficient portfolio as long as a range of *ex-ante* betas are used in the evaluations process. Levy and Roll (2010) apply reverse engineering to implement changes in parameters in order to make a market proxy mean-variance efficient. It has been shown that small modifications are necessary to achieve efficiency.

Early CAPM critiques are comprehensively analyzed in Roll (1977). Since the mean-variance efficiency of the market portfolio is the only hypothesis that could be independently tested it is impossible to examine the linear relationship between betas and returns without prior reference to efficiency. In addition, the market proxies[2] do not include all risky individual assets and the assumption about efficiency cannot be easily purported. The linear relationship between betas and returns can be achieved even for inefficient portfolios, while the market equilibrium theory does not make any claims about the expected value of parameters as opposed to simple linear relationships. Portfolios could comprise assets that demonstrate non-linear relationships, but these could be cancelled out cross-sectionally. Finally, it is not clear what is the meaning of non-zero Jensen's alpha, because in CAPM its value is expected to be zero across all aggregated assets. If a positive alpha has been reported it means that the market portfolio is inefficient. All further claims about superior (positive) or inferior (negative) performance could be questioned in the milieu of inefficient portfolios and the inappropriate selection of relevant benchmarks.

The mean-variance or stochastic dominance theory are not useful in making decisions even when a vast majority of economic agents would prefer a specific option vis-à-vis all others. Both theories relate to utility functions, but do not specifically determine the preferred option. Leshno and Levy (2002) modify the stochastic dominance approach so as to exclude the impact of extreme utility functions in the cumulative distribution. The so-called Almost Stochastic Dominance (ASD) theory allows for the ranking of available alternatives, excludes alternative options and creates a link between stock allocations in a portfolio and investments horizons tailored for specific groups of investors.

An important contention point in CAPM discussion is related to the type of distribution necessary to achieve equilibrium. In the mean-variance space initial reference is made to the Gaussian normal distribution, but *ex-post* model tests sample assets from the distribution that is non-normal. Early seminal



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papers refer to restrictive assumptions and a single investment period, while subsequent studies attempt to include multiple periods, consumption, international assets, alternatives to the mean-variance space and other conditions.

## VARIATIONS OF CAPM

Merton (1973) questions strict one-period CAPM requirements and extends the model to multiple periods. Assets are traded continually and the stochastic changes are explained by the Markov process. In addition, investment opportunity sets change in time and investors revise expected returns accordingly. It is evident that the assumption about the exclusion of transactions costs and taxes allows for investors to trade at any point in time and as frequently as possible. However, in the real investment world trading frequencies would vary and aggregated transaction costs could range from being negligible to an important return reducing factor in a portfolio.

Breeden (1979) extends Merton's (1973) methodology in the multi-good and continuous-time framework to obtain a single beta asset pricing model. In this manner the constraints imposed by not being able to recognize multi state variables have been circumvented. The asset beta in this Consumption CAPM is calculated relative to aggregate consumption and is not related to the market portfolio as Sharpe-Lintner-(Black) CAPM. The author manages to find an equilibrium model even if the riskless rate is not available, by calculating expected returns on the zero-beta portfolio relative to the portfolio that does not include returns on assets correlated with aggregate consumption. Campbell (1993) evaluates the problem of extending the one-period CAPM to multiple periods. With an increase in time lengths the stability of parameters is affected, and researchers may be urged to shorten time periods. However, Campbell claims that the variation in the consumption-wealth ratio is small, which allows for the loglinearity in intertemporal evaluations. The market equilibrium reached in this intertemporal CAPM could be tested without consumption data that are measured with errors and inconsistencies in aggregations across time.

Solnik (1974) assumes that the market portfolio comprises value-weighted stocks and a set of risk-free assets collected from countries across the globe. Risk aversions and net foreign investments seem to be the determinants of relative weights in a portfolio. In this model, the final version of the International Asset Pricing Model (IAPM) is quite similar to the initial CAPM, with $\beta$ representing the international systematic risk exposure of a particular security. However, inconsistencies in setting up utility functions and other assumptions made it impossible to create a comprehensive model (Solnik, 1983). Stulz (1981) introduces varying consumption opportunity sets across countries, while prices of commodities and exchange rates follow an Ito process, and the PPP is applicable to traded goods, only. In this model the expected return is not related to the exchange rate risk.

Major criticism about CAPM claims that beta has weak or non-extant relationship with expected returns and that it may not be the only relevant factor in explaining returns. Pettengill *et al*. (1995) purport that a two-step approach to testing the CAPM includes the reference to realized returns and market proxies, which could lead to the *ex-post* rejection of betas. The suggested Conditional CAPM evaluation separates the beta into two components, i.e. $\rho*\beta i$ if $Rm - Rf > 0$ and $(1-\rho)*\beta i$ if $Rm - Rf<0$. In this manner, large beta portfolios could underperform low-beta portfolios if excess market returns turn negative. Authors also claim that this beta decomposition is historically supported by the fact that the 90-day Treasury bill rates were larger than market returns in more than 40 percent of all observations. Regression results indicate a consistent and positive relationship between beta and expected returns. Jagannathan and Wang



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(1995) suggest another approach to conditionality by assuming that risk premia vary in time and occasional inaccuracies in *ex-post* CAPM tests indicate varying betas across multiple periods rather than the violation of theoretical assumptions per each period. The expected return on *j*th asset is:

$$E[R_{jt}|I_{t-1}] = \theta_{0t-1} + \theta_{1t-1}\beta_{jt-1}$$

with $\beta_{jt-1}$ calculated as $\beta_{jt-1} = Cov(R_{jt},R_{mt}|I_{t-1})/Var(R_{mt}|I_{t-1})$, $I_{t-1}$ representing the investment set available to investors at the end of the previous period, $\theta_{0t-1}$ being the conditional expected return on the zero beta portfolio and $\theta_{1t-1}$ representing the conditional market risk premium. The authors introduce two types of unconditional betas:

$\beta_j = Cov(R_{jt},R_{mt})/Var(R_{mt})$, i.e. market beta and

$\beta^{\theta}_j = Cov(R_{jt},\theta_{1t-1})/Var(\theta_{1t-1})$, a so-called premium beta

and claim that as long as betas are not linked via linear function unconditional returns could be calculated as:

$$E(R_{jt}) = \alpha_0 + \alpha_1\beta_j + \alpha_2\beta^{\theta}_j$$

Grauer (1978) questions the validity of the mean-variance space in providing the best support for CAPM and compares it against additional five utility-based models, such as square root, logarithmic, generalized logarithmic, negative one power and negative five power. All models are supportive for linearity and a positive relationship between risk and return. However, the last assumption about no restriction in riskless borrowing and lending is not supported. Kandel and Stambaugh (1995) question the assumption that as long as the market proxy lies on the efficient frontier that relation between expected returns and betas will be linear. OLS regressions can indicate that there is a linear relationship even though the market proxy may be inefficient, or linearity may not be confirmed even though there is a strong assumption about efficiency. In order to circumvent these constraints, the authors suggest the use of GLS regressions and confirm there is a linear relationship between expected return in betas when market proxies are efficient. Linearity weakens as the market portfolio moves away from the efficient frontier. The repackaging of assets within the portfolio allows for a removal of the market portfolio towards the efficient frontier while the linear relationship in the mean-beta space gradually strengthens until it finally reaches the highest point concurrently with the full efficiency of the market proxy.

## CHALLENGES FOR CAPM

The multitude of restrictive conditions associated with CAPM led to the provision of alternative models. Ross (1976) suggested a model that explains the random rate of return on *j*th asset:

$$\tilde{r}_j = E\left(\tilde{r}_j\right) + b_{j1}\tilde{\delta}_1 + \ldots + b_{jk}\tilde{\delta}_k + \tilde{\varepsilon}_j$$



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where $E\left(\tilde{r}_j\right)$ is the expected return on asset *j*, various *b* are factor loadings, i.e. sensitivity of the *j*th asset's returns to one of the factors ranging from 1 to k, while $\tilde{\varepsilon}_j$ is a zero mean noise representing the unsystematic risk of the *j*th asset. The Arbitrage Pricing Theory (APT) distinguishes between expectations that could be identical for all agents *ex-ante*, and anticipations for each factor, which may be divergent. The model allows for the creation of an arbitrage portfolio as the number of assets in a portfolio becomes very large and no wealth is being used in the process. For instance, agents could dispose of some assets and use the derived income to purchase others. In the process of arbitrage portfolio creation, it is necessary to eliminate not only the unsystematic, but also the undiversifiable systematic risk. Keeping investment changes at a low level, a large number of assets and making sure that the weighted sum is zero for the systematic risk components, i.e. all b factor sensitivities, will achieve these goals. Ross (1976) indicates that an increase in the number of assets will reduce the importance of the unsystematic risk term $\tilde{\varepsilon}_j$, but an increase in the risk aversion as the wealth of an agent becomes larger provides a counter effect that will allow for noise to persist in this model.

If CAPM establishes a simple relationship between the expected return and a single market-based factor, it is meaningful to explore whether other factors could be identified. Fama and French (1992) analyze the cross-sectional variation in average returns in the US from 1963 until 1990 with respect to market beta, size, book-to-market (B/M) ratios, earnings-to-price (E/P) ratios and leverage. Betas have weak or non-extant relationship with returns when other factors are included in the model. The coefficient estimates of size and book-to-market ratios are significant, and assume most of the explanatory power away from E/P and leverage. When stock markets have been analyzed concurrently with bond markets, the significance of the market proxy is evident in justifying the discrepancy between returns on stocks and one-month bills. The persistency of size and book-to-market variables in explaining stock returns is reconfirmed, and jointly with the market proxy their impact on returns can be extended to bond markets. Nevertheless, the inclusion of a term premium and a default premium eliminates the importance of stock market factors in explaining bond returns (Fama and French, 1993).

The search for explanations shedding light on occasional anomalies documented in contravention of CAPM postulates prompted Fama and French (1996) to regress a set of variables on a portfolio *i*th risk premium:

$$R_i - R_f = \alpha_i + \varsigma_i(Rm - Rf) + \lambda_i SMB + \varphi_i HML + \varepsilon_i$$

where SMB implies the discrepancy between the return on a portfolio of small stocks and the return on a portfolio comprising large stocks, and HML indicates the difference between the return on a portfolio that includes high-book-to-market stocks and the return on a portfolio of low-book-to-market stocks. The selection of variables in this multifactor models was influenced by findings published in previous papers, since the omission of leverage and earnings ratios due to rather poor explanatory power documented earlier, is noticeable. The three-factor model appropriately explains the average return of 25 portfolios made by combining five quintiles of size and book-to—market (B/M) rankings. Only portfolios in smallest size and smallest B/M intersections had non-zero excess returns, in addition to the largest size and smallest B/M quintile cell. The authors then allocate assets to ten portfolios, in accordance with ten deciles calculated for B/M, earnings-to-price (E/P), cash-flow-to-price (C/P) and five-year-sales-rank, and conclude that the suggested multifactor model explains the average returns for most of these portfolios, including the sales-rank. The latter result is important, since it is the only variable not derived



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from stock data. DeBondt and Thaler's (1985) claim that past winners will underperform in the future, and that past losers will become future winners is examined in conjunction with findings suggested by Jegadeesh and Titman (1993) and Asness (1995) that for short periods of up to one year, the momentum prevails. Rouwenhorst (1998) examines the short-term momentum in twelve European countries, and concludes that in the short-term periods of up to one year the one-month difference between winner and loser portfolios amounts to one percent. However, when companies are sourced from winning and losing industries, the momentum strategy is more successful than in the case of the selection of individual stocks. The best results are in the initial month and the difference dissipates until the end of the one-year period (Moskowitz and Grinblatt, 1999). Fama and French confirm that depending of the period selection (i.e. prior to or after 1963) the reversal story is valid for longer periods of time to varying extent. The reversal pattern is much stronger in the period prior to 1963. It has been found that in both long-term and short-term periods the loadings on HML and SML are quite strong for past losers. While in the long-term this relationship explains the reversal, it fails to capture the short-term momentum story.

By referring to the discounted dividend growth model Fama and French (2013) link profitability and investments to the market-to-book equity price. An increase in a firm's earnings, i.e. the proxy for profitability, would be related to an increase in the expected return. In addition, an investment in book equity would be converted to lower expected returns. The suggested five-factor model is an extension of the three-factor model:

$$R_i - R_f = \alpha_i + \varsigma_i(Rm - Rf) + \lambda_i SMB + \varphi_i HML + \nu_j RMW + \chi_j CMA + \varepsilon_i$$

with RMW as a difference between the returns on a portfolio with robust profitability and the returns on a portfolio with weak profitability, and CMA representing a difference between the returns on a portfolio of low (conservative) investment stocks and the returns on a portfolio with high (aggressive) investment stocks. The five-factor model is evaluated with the addition of the two decades of datasets as opposed to the previous three-factor study. Following various combinations of factors in the analysis, the authors conclude that the HML can be omitted, since its impact is fully accounted for by other four factors. The four-factor model without HML performs as satisfactorily as the initially outlined five-factor model.

The rigidity of CAPM assumptions led to a plethora of studies where some of these assumptions are relaxed. An important breakthrough to the extant body of knowledge has been made by the introduction of the asymmetric information in the decision-making process, not only by individual economic agents by also companies.

## INTRODUCING LIQUIDITY CONSIDERATION INTO FINANCIAL SCIENCE

So far we have explained a family of general asset pricing models that do not get into calculus the fact that actors may have available information set less than complete. In various fields of economic sciences, particularly in the field of finance, various forms of dilution of the omniscience assumption were frequently studied issue. We daresay that such discussions are as old as economic science itself. There is a clue:

When Walras sent his classic work devoted to general equilibrium theory to Henri Poincaré, Poincaré commented that Walras makes two critical assumptions:



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*…you regard men as infinitely selfish and infinitely farsighted. The first hypothesis may perhaps be admitted in a first approximation, the second may call for some reservations (quoted in Minsky, 1995).*

Thus, the assumption of perfect information was never considered as granted. But it was a sacrifice that academia was ready to accept in order to reach mathematically elegant solutions for complex economic problems. In contemporary times, as was the case in past times when economic science was given contours of an exact science, it is a dominant style of writing. However, occasionally, pendulum swung back to the other side and voices that claim that the perfect knowledge assumption reduces economic interactions to the level that real economic life in nothing more than a futile ground overpowers the voices that would rather stick to the old tradition. However, theories and models that explicitly incorporate dilution of omniscience assumption are rarely as elegant and complete as economic mainstream theories and models.

From the very beginning we would like to address reader attention on some concepts that at first glance may be seen as distinct phenomena: liquidity, uncertainty, and asymmetric information. The concepts appeared in different times, and have been cornerstones of flourishing intellectual debates for a long, and that continue up to contemporary times.

Let us start with liquidity. It is a concept that can be most easily understood. Put it simply, it is easy with which an asset can be traded. However, the concept has multiple dimensions. According to Kyle (1985, p. 1316) "market liquidity" is a slippery and elusive concept, in part because it encompasses a number of transactional properties of markets. These include "tightness" (the cost of turning around a position over a short period of time), "depth" (the size of an order flow innovation required to change prices a given amount), and "resiliency" (the speed with which prices recover from a random, uninformative shock). Although at first glance the first two dimensions show no direct link to informational features of asset, it is not the case with the third one.

In the very root liquidity is an informational phenomenon. In the informationally complete market (everyone knows everything) there is no need for money. Any asset may serve the roles of money, and there is no need for institutions that are inevitably important for modern economies (e.g. financial intermediaries, etc.). Gorton and Pennacchi (1990) have developed a notion of security liquidity based solely on asymmetric information. According to the authors, a liquid security has the characteristic that it can be traded by uninformed agents without loss to insiders. It means that a less informed trader aware of possibility to trade with better informed may react either asking for price concession in order to take trade offer, or give up from the trade. In the first case, transaction is accomplished but the price will absorb asymmetric information effect. If a trader operates with an incomplete set of information, and is aware of that, he or she might be reluctant to trade. If widespread, such situation will make trade less frequent or less likely to take place, and in its extreme a market may ultimately disappear. In theory this possible outcome is known as 'no trade equilibrium', or market autarchy (Glosten and Milgrom, 1985). We will return to this point latter in this chapter.

## INVESTMENT DECISION MAKING UNDER CONDITIONS OF RISK 'OR' UNCERTAINTY

Any discussion of informational impediments to market efficiency and investment process should start with prominent ancestors of what we have established today as asymmetric information paradigm. The



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first contribution to the research of uncertainty phenomenon is Knight's distinction between insurable and non-insurable risk. In his thesis (1921, pp. 21-22) he wrote: "uncertainty must be taken in a sense radically distinct from the familiar notion of risk, from which it has never been properly separated. The term 'risk', as loosely used in everyday speech and in economic discussion, really covers two things which, functionally at least, in their causal relations to the phenomena of economic organization, are categorically different … The essential fact is that 'risk' means in some cases a quantity susceptible of measurement, while at other times it is something distinctly not of this character; and there are far-reaching and crucial differences in the bearings of the phenomenon depending on which of the two is really present and operating. It … appear that a measurable uncertainty, or 'risk' proper, … is so far different from an unmeasurable one that it is not in effect an uncertainty at all". As well known, Knight offered an explanation of all entrepreneurial profit (and consequently the same explanation for an existence of firm) as a kind of award for exposing to pure uncertainty. The risk situations can be insured so that they cannot be priced in competitive markets the way that increases entrepreneurial award.

For a long time since Knight's pioneering attempt, academia has been trying to draw the line between the notions of risk and uncertainty. What we know for sure, now as we knew before, is that the boundary is elusive one. If we quote Knight (1921, p. 46) "while a single situation involving a known risk may be regarded as 'uncertain', this uncertainty is easily converted into effective certainty; for in a considerable number of such cases the results become predictable in accordance with the laws of chance, and the error in such prediction approaches zero as the number of cases is increased". It is the essence of insurance business, or 'raison d'être' of insurance companies.

Nevertheless, it was equally agreed long time ago (Samuelson, 1963, p. 113) that no matter how large the number in the sample, in every actuarial situation of mathematical probability, we are left with a finite sample, so "…in the appropriate limit law of probability there will necessary be left an epsilon of uncertainty even in so-called risk situations". Therefore, despite of diversification or actuarial probabilities, we have always to deal with uncertainty. This remark has great importance for the attempt to create a difference of risk and uncertainty in the economics of investment and decision-making.

It is empirical fact that investors seldom know accurately what most securities are worth. They undertake analysis to form as precise as possible estimates. However, this process may differ in that the same information may imply different estimates for different investors. There may not be enough available information to assign a reliable probability measure on all security prices (opposite to CAPM assumptions). Uncertainty will exist about the identity of the major factors that will influence the future path of prices of a given security. Uncertainty reduces to return variance only in the case where the distribution is restricted to a particular form whose corresponding parameters are known to everybody (Kane, 1999). Moreover, casual empiricism suggests that investors seldom bother to make themselves maximally informed. Since information is costly, investors will undertake gathering and processing information as long as benefits of this activity exceed costs. Opposite to traditional asset-pricing models, which assume frictionless markets without imperfections associated with costly information, in real life investment process investors have to deal with frictions of that kind. An investor who is not indifferent to risk may value the complete resolution of uncertainty more than a risk-neutral investor. According to Mehrez et al. (1984) there must be a premium related to incomplete knowledge, that one should not confuse with the conventional risk premium, since the latter stems from subjective averseness to risk while the former reflects the objective cost imposed by imperfect knowledge.

Although Knight's work did not even mention liquidity, he actually laid ground for future research in that field, by pointing out crucial difference between risk and (subjective) uncertainty phenomena,



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and its implications on market functioning. Shortly afterwards the notion of liquidity has taken place of the notion of uncertainty, and researchers have started using liquidity as a superficial manifestation of hard-to-operate notion of uncertainty.

Liquidity premium was an argument used by Keynes in his seminar work in order to explain the very essence of risk free interest rate. He set up two assets investment universe with investors choosing between default risk-free interest-bearing asset and zero-return money. The implication of the model was that investors have liquidity preference, or readiness to stick to the money, since they are not certain about future path of prices of interest bearing asset, or they fear that positive return may turn into (capital) losses. In the equilibrium, the zero-return asset which holds its value through time will be demanded by investors since the required return for the asset with uncertain value includes a liquidity premium. A couple of sentences derived from the 'General theory', we are of opinion, are exclusively able to express Keynes' (1936, p. 240) view. "The liquidity-premium … is partly similar to the risk-premium, but partly different; – the difference corresponding to the difference between the best estimates we can make of probabilities and the confidence with which we make them". By contemplating about the role of expectations in the process of economic decision making, he wrote: "The state of long-term expectations, upon which our decisions are based, does not solely depend on the most probable forecast we can make. It also depends on the confidence with which we make this forecast – on how highly we rate the likelihood of our best forecast turning out quite wrong. If we expect large changes but are very uncertain as to what precise form these changes will take, then our confidence will be weak" (Keynes, 1936, p. 148). Investment activity is always forward looking one. Investment return is what should be realized in future. If investors are not completely certain, or confident in their forecasts, that must influence their decision making.

This element of Mr. Keynes analysis is frequently misidentified with some other elements, or simply neglected. For example, one of his followers, Tobin, offered explanation for liquidity preference on the basis of investors' risk aversion. According to Tobin's interpretation, within the two-asset class model, investor will demand zero-return riskless asset (money) since risk-averse investors must be compensated for investing in risky interest bearing alternative. He stated (Tobin, 1958, p. 70): "when he [Keynes, added] refers to uncertainty in the market, he appears to mean disagreement among investors concerning the future of the rate rather than subjective doubts in the mind of an individual investor". We have found some points referring to Keynes's liquidity preference and asset pricing modelling in Woodward contribution (1983, p. 356) that matched with our point of view. Author admits that at least part of what Hicks and Keynes had in mind as a source of the liquidity premium was that the far future was inherently more uncertain that the near future, a proposition few of us would dispute.

These influencing ideas published decades ago, again are actualized recently. For instance, Holmström and Tirole (1996, p. 187) agree that "given incomplete insurance, assets will command liquidity premia (even though all agents are risk-neutral). Such liquidity premia correspond to risk premia in standard asset-pricing models, but the empirical implications can be rather different", and in the same paper later, "… liquidity premium on the asset depend on what the asset delivers conditional on the productive sector experiencing a high liquidity shock … While a liquidity premium is a form of risk premium, its structure is different from that seen in standard asset-pricing models. In particular, how the asset behaves when liquidity is abundant is less relevant than how it behaves when liquidity is tight."



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## MARKET MICROSTRUCTURE THEORY AND ASSET PRICING

Keynes's enlightening ideas, published nearly a century ago, inspired many authors. The idea that there is a spectrum of assets, which can be classified in the continuum from perfectly liquid to ultimately illiquid, further is developed in Davidson (2002). According to the author, an asset with perfect liquidity is the one able to convert (sell) into cash on the spot market where a market maker guarantees firm spot price expressed in money units. It follows an inspiring notion that such an asset will hold the full liquidity as long as the market maker has enough money at hands to support his given guarantee, or as long as investors believe that he will be able to do so. The author uses the word market maker in more general sense, so that any intermediary fits into his notion of market maker.

The institution of organized financial markets, opposite to what is believed out of academic circles, is not able to generate liquidity; per se. Davidson (2002) forceful analogy portrays liquidity generating financial markets as two-edged sword. In good times they make investment process easy, but in bad times they will bring additional instability to the system. Indisputably, financial markets are valuable invention. Markets are good since they make real investments that are fixed for the community to look liquid from the angle of an individual investor. However, the bad thing is that it only looks like that. Namely, as long as financial markets operate orderly, investors will believe that they have a fast-exit option that should be activated whenever they are not satisfied with the investment. In some extent, asset liquidity is possible to increase by organizational design of modern traded markets. It is called endogenous liquidity.

In the next section, we will review the basic results of the intellectual efforts of the market microstructure theory. This strand of economic literature appears in late 70's and focuses on organizational design of contemporary markets, but has equally forceful implications for the asset pricing.

Market microstructure theory brought back into the research focus the nexus between asset liquidity and its price. However, this time the issue was enlightened from the different angle. What was common for majority of researchers that tried to explain what influence asset liquidity might have on the price of financial assets from the market microstructure milieu is their focus on the transaction costs. Existence of transaction costs, which may appear as asymmetric information costs (e.g. adverse selection costs), costs of turning around position and other kinds of transaction costs, diminishes equilibrium value of assets. According to theory, this is why even a risk-neutral agent would demand return that has to compensate him for those extra costs (Amihud and Mendelson, 1986). The focus on the transaction costs as an observable liquidity dimension probably comes along with efforts to test empirically influence of asset liquidity on its price.

For instance, in his comprehensive empirical study, Lesmond (2005) found that in majority of emerging markets, rather high return on stock market investments (which corresponds to depressed stock prices), in some occasions even eighty percent annually, fully corresponds to low liquidity. Market liquidity assessed on the basis of bid ask spread varies from one percent in case of Taiwan to even nearly fifty percent in case of Russian stock market. Similarly, Amihud and Mendelson (1986, 2003) assigned large share of cross-sectional variation in securities return to the liquidity differences among the various kinds of financial and real assets, and markets. All the same, in a frequently cited paper, Amihud and Mendelson (1991) found the difference in bid-ask spread solely able to explain differences in rates of return of long term and short term governmental securities. On the same way, Shen and Starr (1998) found the conventional measure of risk (return volatility) unable to explain the return differences once the bid ask spread appears into the regression model. A rationale offered by authors is on the line with above



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argumentation. Namely, assets with different liquidity will trade with different bid-ask spread. When we shift to the stock markets this regularity is not as clear as in the case of markets for governmental securities. For instance, Madhavan (2000) found bid-ask spread as a proxy for asset liquidity less informative, and called for more sophisticated measures of liquidity.

The crucial feature of any financial market is the way that the role of providing liquidity is distributed among actors. It is in the very design of financial markets. Trading itself is a process of providing and absorbing liquidity, or buying and selling it. In quote driven markets, dealers are actors solely responsible for providing liquidity, since they create opportunity for other traders to trade, by standing ready to accept a trade proposal that comes from investors' community. Order-driven markets operate without dealers. Trade will take place with no dealer intervention, among traders themselves which will either place or take an offer to trade, in any specific case. Traders that submit standing limit order offer liquidity to other traders while traders that submit marketable limit orders or market orders will take offered liquidity (Harris, 2003). At the end, so called hybrid market structure combines both liquidity providing mechanisms. Hybrid markets either impose dealer role in order driven structure, or allow some traders to compete directly with dealers, changing that way pure order or quote driven structure, respectively. The very choice between different market structures depends on 'availability' of actors that are ready to create liquidity or sell liquidity insurance to other actors. However, the availability of actors that are ready to provide liquidity on the market is determined by informational reasons (Grossman and Miller, 1988). A trader that is ready to postpone execution of its trade demands better price that the trader which wants to execute trade immediately. The price concession belongs to the trader that creates liquidity (dealer or speculator). It is compensation for holding position open till the trade order arrives from the other side of the market, and the trade circle is accomplished. By holding position open for some time the trader exposes himself to risk. The asset price (or value of the position) may change either because of non-informative trade (utilitarian trading interest) takes place and moves the price away from fundamentals, or because new information arrivals bring the price to the new fundamental value. If the dealer is forced to trade with better informed counterparty, which possesses new information that is not yet available to the dealer, the dealer will ex post learn that the executed trade was mistake; loss will be inevitable. In order to avoid trading with better informed a rational dealer will quote less aggressively, increasing the ask (offer) quote and decreasing the bid quote for the amount high enough to compensate him for the perspective losses. Thus, bid-ask spread will include an informational component, known as adverse selection component in addition to other costs like costs of processing and executing orders, cost of financing position, and even costs of oligopolistic dealer market structure.

If informational disturbances are too high, it may even prevent establishing regular market. Namely, if traders are aware of possibility to trade with better informed they will be reluctant to trade and consequently their hesitation will influence transaction properties of market, diminishing market/asset liquidity.

Because of transaction cost financial markets behave like a network. They are susceptible to special sort of network externality, known as 'order flow externality'. From the pure theoretical point of view, the existence of transaction costs prevents traders to trade continuously. From the empirical point, high transaction cost will make transactions less frequent, even sporadic, and probably less balanced. Less frequent trade or less active markets will in turn further increase the transaction cost. Traders will find balancing inventory/position less likely, the position will longer stay open, and consequently the cost of financing inventory and position risk will be higher. Some traders will be forced to leave the market and circle will be closed when because of fewer traders the market become less competitive.



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From market microstructure theory we know that risk-averse dealers when selling the asset will command premium above buying (bid) price (Stoll, 1978, O'Hara, 2004). They demand to be compensated for holding position open till accomplishing round trip trade. In this tradition, bid-ask spread is simply market given award for taking inventory risk. It is crucial argument in so-called inventory models (Garman, 1976, Stoll, 1978, Amihud and Mendelson, 1980, Ho and Stoll, 1981). In new generation of models, information models (Milgrom and Stokey, 1982, Copeland and Galai, 1983, Easley and O'Hara, 1992) a dealer must quote ask price above the bid price in order to protect himself against better informed counterparty, which will trade if the dealer quotes are posted so that new market price (determined on the basis of information that dealer is not aware of) stays away of quotes. In both cases, dealer will record losses if unable to simultaneously buy and sell, faced with imbalance in order arrival. In inventory models order arrival process is stochastic, opposite to the case of information models, which assume that a dealer, by making quoting mistakes trigger loss-making trade with better informed counterparty.

We see that bid ask spread as the best proxy for dealership market liquidity can be seen as both as risk premium and a premium related to asymmetric information. The same conclusion holds for order driven markets where similar determinants are identified (Cohen et al. 1981). Theory opts for one or another depending on how much it relies on perfect information assumption. Nevertheless, mainstream theory operates with the concepts of risk and asymmetric information, trying to combine both influences in explanations of investors' decision making, and consequently market equilibrium. It is quite unusual that theory operates with some other informational concepts that are more close to genuine subjective uncertainty. A rare exception is Muranaga and Shimizu (2000) paper. In that study, the authors found that the level of confidence with which investors made their decisions influences assets liquidity. If investors underestimate risk, then they will be more active traders, consequently market 'depth" will increase, and vice versa. Moreover, the level of risk-aversion of market participants has identified as negatively connected to market liquidity. In this paper, levels of confidence and uncertainty are defined as divergence in investors' opinions, rather than subjective uncertainty. However, the divergence in investors' opinions is a consequence of the divergent perceptions of riskiness.

In order to summarize, we would say that followers of traditional models experimented with many variables that could possibly make the core models (CAPM) able to more fully fit real markets data. As expected, richer, more sophisticated models that add some more variables are better performing ones. However, the list of variables merely complies with those that are considered to be core determinants of asymmetric information. For instance, small capitalization stock differs from large capitalization stocks not only in terms of available utilitarian trading interest (existence of large number of shareholders) but also in terms of coverage by stock analysts, or generally the level and accuracy of information provided. Thus the size puzzle may indicate importance of asymmetric information (or liquidity) in asset pricing.

It seems that real life reconciles two strands of literature that rely on the different intellectual tradition. Perfect market models regress financial assets return solely on risk feature of assets, leaving no space for liquidity differences. However, it must be place for both.

Clear distinction between risk and liquidity is an academic issue which is not given definite theoretical answer, yet. Firstly, it is because risk (price volatility) goes hand in hand with liquidity. With no variations in price, there is no element on which traders have to disagree. Whatever measure of informational disturbances we take it will exist if the asset price is changeable. Secondly, even such measures of liquidity like bid-ask spread, contain both influences, meaning that they are elastic on variation in both risk and liquidity. We have seen that even in the ambience of perfect information dealers will command bid-ask spread.



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Traditionally, market microstructure microscope is placed over the attributes of individual assets. Just a few theoretical and almost no empirical papers are devoted to studying either common liquidity determinant, or their empirical manifestations (a rare example is Chordia et al. (2000)). Therefore, a promising field of research could be studies of correlated movements of individual assets' liquidity.

There are also valuable but isolated attempts to explore financial market equilibrium from the intellectual tradition of asymmetric information paradigm (Holmström and Tirole, 2001). In contrast to the logic of traditional asset pricing models based on perfect markets, corporation are not able to raise funds on the capital market up to the level of their expected income, and the corporate sector need a cushion against liquidity shock (Holmström and Tirole, 1996, 1998). Financial asset that serve as the cushion will command liquidity premium. Thus, the model belongs to market imperfections models, because it relies on influence of non-pledgeable part of future income, derived solely from asymmetric information nature of financial markets.

## CONCLUSION

Although there is a bulk of literature that is dealing with the models built on dilution of 'omniscience' assumption, little has been changed in traditional asset-pricing models. Since appearance of Sharpe (1964) path breaking paper, the traditional model (CAPM), thanks to many contemporary upgrades of them (CCAPM, ICAPM), still is a main reference point, or a cornerstone of modern finance literature. The choice of investment portfolio is directed toward optimization between statistically defined risk and observable return of a universe of available investments, while the equilibrium assets pricing is determined simply by copying the superior investment strategy, in the setting of rational and homogeneous agents (in all aspects but the degree of risk-affinity), where information is common knowledge (everyone knows everything).

An avalanche of empirical studies followed in order to test if the real life fits to the model-predicted outcomes. Despite of large and systematic CAPM pricing errors, the models based on separation of diversifiable and non-diversifiable risk continue to play an important role both in business community and amongst academics. For academics that stand up in defense of beta world-wide documented cross-section anomalies of securities return (e.g. the size effect, the earnings-yield effect, the market-to-book effect and many others), taken by opponents to be inconsistent with the traditional models, are stimuli to further rearranging the basic model, specifications and choice of data etc.

The recent advancement in market microstructure theory brought about a new momentum in exploring asset pricing modeling and risk-reward nexus on financial markets. Researchers assigned large share of cross-sectional variation in securities return to the liquidity differences among the various kinds of financial and real assets, and markets. For example, the size (stock market capitalization) is a good proxy for stock liquidity, meaning that the size effect, as some others can be plausibly linked to the differences in liquidity. It is now well accepted that both very market design and presence of asymmetric information amongst actors help in explaining liquidity differences, with both elements being largely mutually determined. This is why rather frequent re-designs of market clearing mechanism in emerging markets provided effects not even close to that of leading markets.



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## KEY TERMS AND DEFINITIONS

**Asset Liquidity:** A feature of an asset or market on which the asset is traded that is represented by the easy with which the assets is traded. An asset is more liquid if it is more certainly realisable at short notice without loss. The liquidity is usually measurable by various concepts of transaction costs.

**Bid-Ask Spread:** The difference between the bid and ask price quoted by a dealer or autonomously formed difference between current best priced sell and buy limit orders in the order book of a continuous auction market. It is used as a good proxy for market liquidity.

**CAPM:** Also known as capital assets pricing model, it is a single factor general equilibrium model that explains return of any asset, financial or real, as determined by its sensitivity to the market return.

**Diversification:** An investment strategy that relies on pulling multiple types of asset (or conducting different business activities) in order to make investment outcome less sensitive to specific (idiosyncratic) risk.

**Market Portfolio:** A virtual or real portfolio that is consisted of all assets available to investors on specific market, or globally.

**Portfolio Investment:** A process of selection of different securities and other investments in order to achieve investment goals, usually to increase return for the given level of risk, or to decrease the risk for a given level of return.

**Size Puzzle:** An empirical regularity not explainable by the traditional asset pricing models, i.e. small capitalization stocks are traded with a premium over large capitalization stocks.



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## ENDNOTES

[1] Accordingly, the CAPM model is routinely called Sharpe-Lintner or Sharpe-Lintner-Black models.

[2] Market proxies could be efficient portfolios, while market portfolios could be inefficient. Alternatively, market portfolios may be efficient, but sampled assets would not be allocated to an efficient portfolio (Roll, 1977)

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# Chapter 68
# Demographic Transition, Oil, and Institutions:
## Lessons from the Global Experience for Iran

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## ABSTRACT

*We examine political and economic drivers of demographic transition and the moderating role of institutions, macroeconomic instability and oil rents dependency in the final effects of increasing working age population on economic development and internal conflict. Using panel data estimations for more than 100 countries from 1984 to 2012 we find that demographic transition may lead to demographic dividend only if the country enjoys good quality of economic and political institutions, a diversified economy and stable consumer prices. Otherwise demographic dividend is not guaranteed. By contrast, we may expect a demographic curse. These results have important policy implications for the case of Iran which is expecting a significant transition in its population age structure since 1990s. Future of Iran is highly dependent on the proper use of potential demographic rent which can turn against the political stability if the wrong policies and institutions are in place and country dependence on oil rents continues as before.*

## 1. INTRODUCTION

Iran like most other countries in the Middle East and North Africa (MENA) is experiencing a significant demographic transition. Demographic transition is defined as increasing share of working age population (15-64 years of age) in total population. Countries at their initial stages of development have high birth and death rates. Over time by improving health and increasing levels of education, especially for women, the mortality rate falls while birth rate remains constant or falls with delay. In this second stage of development, countries face a baby boom period; i.e., population growth. Increasing young age dependency (% of working-age population) is a main characteristic of this second stage in demographic

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transition. Industrialization and modernization of the economy besides higher participation of women in labor market increases the opportunity cost of having more children. The third stage which accompanies with higher stability of political systems reduces the willingness of women to increase the size of family. Birth rates converge to death rates in the third stage. This is an important phase in demographic changes: babies of previous stage now enter into the working age population, increasing pressures on job market. Figure 1 shows the trend of birth and death rate (per 1000 people) in Iran from 1950 to 2100. The largest difference between birth and death rates is observed during 1985-1990 and 1990-1995. Both rates are approaching to each other over time. The projections show that death rate will exceed birth rate from 2060 onwards in Iran. The significant increases in population growth rate in 1980s and 1990s will enter into working age population in coming decades, creating an important source for either economic growth or political instability. Such an increase in working age population, *per se*, is positive news: decreasing age dependency ratio and increasing labor force means more saving and higher investment which consequently can lead to higher economic growth (Lee, Mason and Miller, 2001; Mason and Lee, 2004 and Lee and Mason, 2006). For example, in Iran from 1965-2007, the correlation between the share of working age population and domestic saving rates is 54%. Table 1 provides a summary of key demographic indicators in Iran from 1960 to 2012.

Total age dependency ratio is the ratio of dependents-people younger than 15 or older than 64-to the working-age population-those ages 15-64. Data are shown as the proportion of dependents per 100 working-age population. A high age dependency ratio indicates that the relative number of net consumers (children and elderly) is more than the number of net producers (working age population). This is a burden for the whole economy since more resources should be allocated for schooling and child care. As fertility rate declines, age dependency ratio initially reduces because there are fewer children and more working age population. This demographic window of opportunity closes when the population grows older and the relative share of elderly increases; i.e., higher old age dependency ratio. Age dependency was significantly high before revolution and continued to increase in early years after revolution and war

*Table 1. Demographic indicators of Iran (1960-2012)*

| Indicator Name | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 | 2000-2012 |
|---|---|---|---|---|---|
| Age dependency ratio (% of working-age population) | 91.99 | 87.91 | 92.42 | 84.04 | 46.62 |
| Age dependency ratio, old (% of working-age population) | 6.90 | 5.95 | 5.76 | 6.81 | 7.12 |
| Age dependency ratio, young (% of working-age population) | 85.08 | 81.96 | 86.66 | 77.23 | 39.50 |
| Birth rate, crude (per 1,000 people) | 45.15 | 41.63 | 41.60 | 25.73 | 17.75 |
| Death rate, crude (per 1,000 people) | 19.00 | 13.68 | 13.73 | 6.07 | 5.36 |
| Population growth (annual %) | 2.64 | 2.97 | 3.83 | 1.66 | 1.26 |
| Population ages 0-14 (% of total) | 44.31 | 43.61 | 45.03 | 41.82 | 26.75 |
| Population ages 15-64 (% of total) | 52.09 | 53.22 | 51.98 | 54.47 | 68.38 |
| Population ages 65 and above (% of total) | 3.60 | 3.16 | 2.99 | 3.71 | 4.87 |
| Population, female (% of total) | 48.63 | 48.58 | 48.68 | 49.09 | 49.12 |
| Fertility rate, total (births per woman) | 7 | 6 | 6 | 3 | 2 |
| Mortality rate, infant (per 1,000 live births) | 163 | 106 | 60 | 41 | 27 |

Note: average of indicators is presented for each time period. Source: World Bank (2013) and author calculations



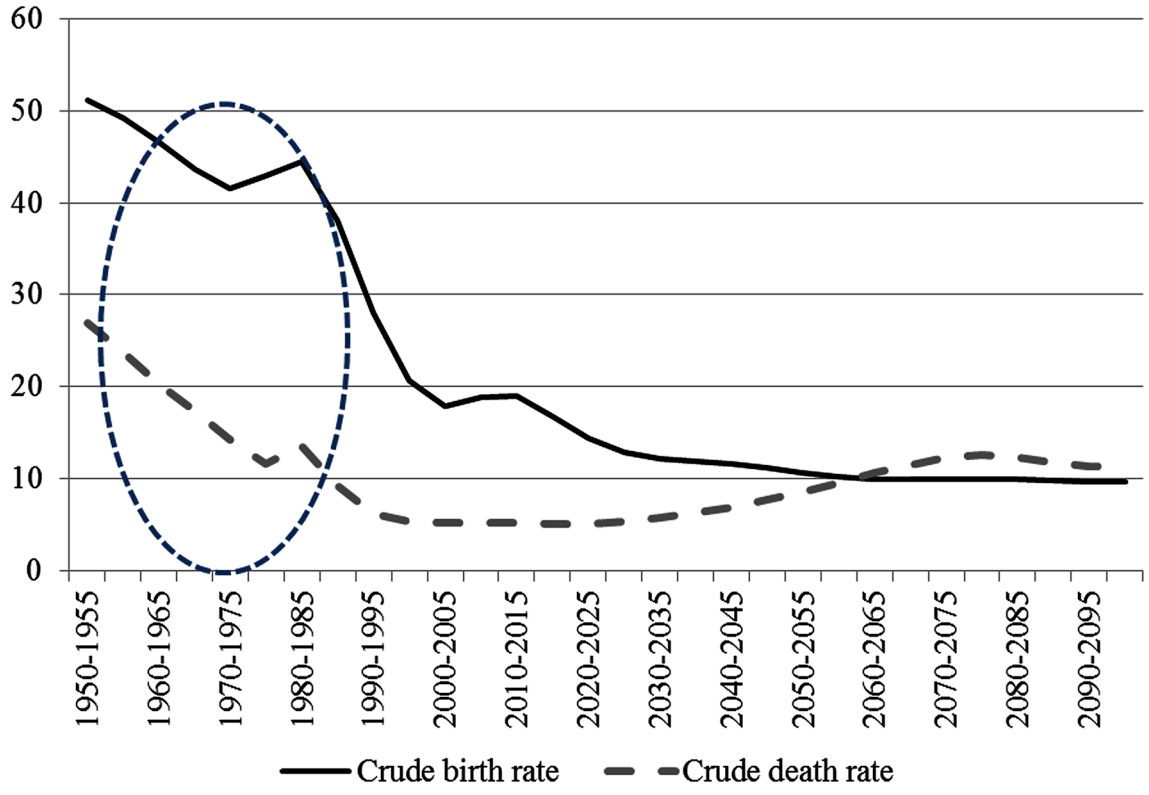
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with Iraq. It began to decrease since 1990s and especially during 2000s, following implementation of population control policies in Iran. Old age dependency ratio is a minor issue at present but will increase in coming decades. Young age dependency ratio has also decreased significantly in the last decade, freeing economic resources for production and investment: The period in which this positive growth effect of age structure is expected to happen is called a *Window of Opportunity*. If such a positive connection is seen between demographic transition and economic growth then we call it a demographic dividend, bonus, or gift. The prominent example of demographic dividend is in the South East Asia region, where the Asian Tigers emerged. Bloom and Williamson (1998) and Bloom et al. (2000) explain that one-third of economic growth in this region was due to appropriate use of demographic window of opportunity by their state.

The highest population growth in Iran is observed during 1980s which was, on average, 3.83% per year. This decade accompanies with ideological, political and economic incentives for larger size of families. The effective population control policies since 1990s has resulted in a significant reduction of population growth rate to an annual average of 1.26% in the 2000s. This demographic transition is realized by reduction of fertility rate from 7 children per woman in 1960s to 2 in 2000s similar to figures for fertility rate in the US and UK in 2000s.

The window of opportunity does not remain open for an unlimited time (see Figure 2 in which we show the time span of window of opportunity in Iran). To reap the demographic dividend, governments need to have good quality of political and economic institutions. In the absence of right institutions which

*Figure 1. Demographic transition in Iran (crude birth and death rates are numbers per 1000 people). Source: http://esa.un.org/unpd/wpp/*



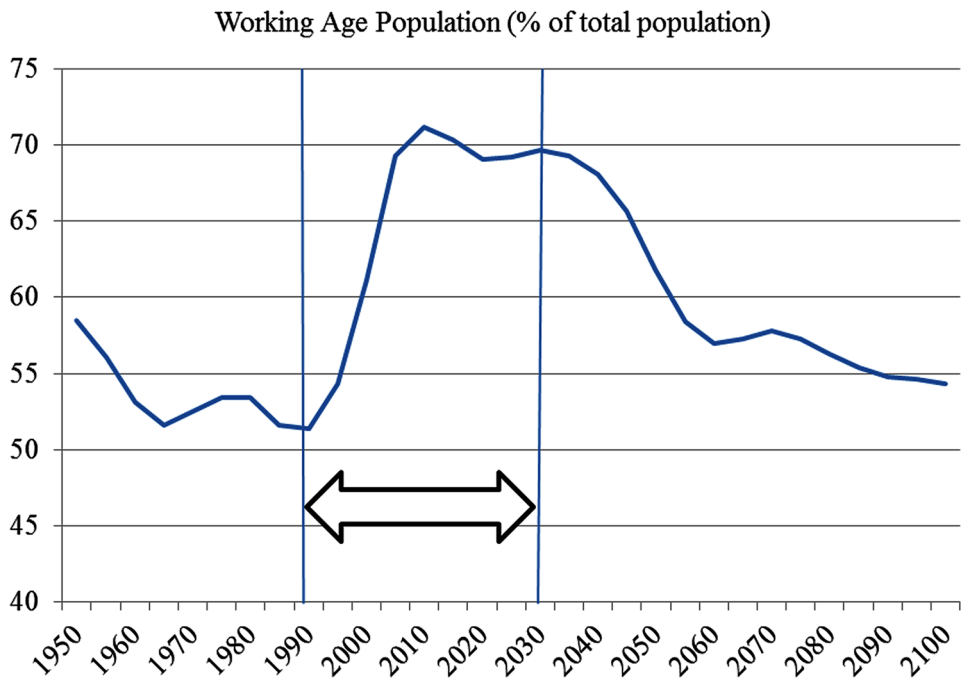



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define the rules of the game, we will not observe a demographic bonus. The key role of institutions in final income effects of demographic transition is emphasized by Bloom et al. (2007) for a sample of African countries. Bjorvatn and Farzanegan (2013) highlight the role of dependency on natural resource rents besides institutions in income effects of demographic transition. They show that higher dependency to resource rents lead to lower size of manufacturing in the economy, increasing unemployment rate and reducing the positive effects of increasing working age population on national income. In other words, increasing working age population as a proxy for demographic transition *per se* is positive for growth but such demographic dividend reduces significantly in resource rich countries, controlling for role of political and economic institutions. In extreme cases of dependency on resource rents, increasing working age population as a share of total population can even lead to negative income growth: a demographic curse.

The first question of our study is the reasons behind demographic transition: What are the political, economic and social factors behind demographic transition around the world? Upon having a better understanding of the drivers of demographic changes, the next question will be examined: Under which conditions increasing working age population can lead to the demographic dividend? Demographic dividend is examined in the context of income and political stability effects of population age changes. Global experience and derived empirical results from worldwide sample will help us to understand the future of Iran under its ongoing significant demographic revolution. Section 2 reviews the theoretical and empirical literature on drivers of fertility rates and transmission channels of demographic rent to economic growth. Section 3 presented data, methodology and results. Section 4 evaluates the situation of Iran and its opportunities and challenges in the context of demographic transition. Section 5 concludes the paper.

*Figure 2. Window of opportunity in Iran (1950-2100). Source: http://esa.un.org/unpd/wpp/*






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## 2. LITERATURE REVIEW

### 2.1. Determinants of Demographic Transition

There are two general approaches to explain the drivers of demographic transition in literature. The first approach emphasizes on the importance of modernization of economy in reduction of fertility rate, age dependency ratio and increasing working age population. Increasing income per capita accompanies with more production and investment opportunities which bring new job opportunities for all including women. According to modernization theory, more economic growth and improving health and education of citizens especially women has a critical effect in decision to have an addition child. In short, it will be enough to increase economic development to get rid of age dependency burden across societies. Easterlin (1983) uses urbanization, access to health and education facilities as indicators of modernization. Under reduction of mortality rates, the supply of children will increase and demand for having many children decreases. Low fertility rate is correlated with lower mortality rates (see Drèze and Murthi, 2001 for the case of India). Thus the economic value of children declines. As a result of the gap between supply and demand for children during modernization phase, the people seek methods to reduce the extra supply of children by reducing fertility rates, approaching to the equilibrium point. There is a review of modernization impacts on willingness to have children by Jensen (1995).

The second approach goes beyond economic modernity and refers to the role of political institutions in explaining the demographic transition. There are three main channels through which political institutions affect demographic structure: political freedom, political stability and policy certainty (Feng, 2003). Pro-democracy arguments highlight the reducing effect of political openness on fertility rate. This can happen by increasing property rights, investment and economic growth which can lead to more educational and job opportunities for women. Przeworski et al. (2000) show that population growth rate is faster under autocracies than in democracies. But we have also some examples of fertility reduction in "less democratic" or "autocratic" states (example of Iran or the Arab region since 1990s). Kricheli et al. (2010) show that dictatorships are significantly more effective than democracies at implementing population control policies such as male and female sterilization and reducing fertility rates. In other word, coordination of population control policies may be easier under a strong autocracy than in a multiparty political system. Political instability as a second aspect of political institutions can increase fertility rate. Internal conflicts push the loss probability of children upward, increasing incentive for larger families. Also such conflicts and instabilities reduce the opportunity cost of having children. Instability of political system reduces investment, production and economic growth which lead to lower job opportunities for the women. Having an additional child will not be anymore a costly decision under such condition. Policy uncertainty as a result of drastic and frequent changes in policies in a factionalized political system can also hamper population growth control efforts. The effect of policy uncertainty on fertility goes through instable investment environments which again shapes the participation of women in labor markets.

### 2.2. Income and Demographic Transition

What can we learn from literature on income effects of demographic transition? It is clear that there is no guarantee that increasing working age population following a reduction in fertility rate should lead to more economic growth. The positive effects of demographic transition on income depend on a set of institutional and economic factors. Without a well-functioning economic institutions and free flow



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of information governments may not be able to benefits from the potential dividend in demographic transition. Lack of rule of law, weak property rights, internal and external conflicts, extensive corruption and rent-seeking and lack of political freedom and government accountability, the increased working age population may not lead to prosperity. In such a weak institutional framework, such structural age changes may even turn into a political risk for the ruling system.

If, due to structural problems, an economy is unable to provide necessary job opportunities for a large army of working age population, then we may not observe a demographic bonus but a demographic curse. The level of education in general and for women in particular shows a significant increase after revolution of 1979 in Iran. While the enrollment rate at secondary school before revolution was 40%, it reached to 74% in the post Iraq-Iran war. For women this indicator shows an increase from 28% to 70% for the same period. We can also see the same significant improvement in enrollment rate at tertiary schools from 4% before revolution to 26% in post-war period, while for the women the figure has increases from 2.4% to 27%. This means more educated labor force for the economy. Given significant increases in working age population and human capital, we may expect to observe significant improvements in level of real income per capita in post-war Iran. But this has not been realized: real GDP per capita before revolution, on average, was $2364, falling to $1949 during war with Iraq and returning to $2360 in post-war period. Successful examples of Latin America and East Asian countries show the relevance of demographic transition for growth under good policies. Although levels of education for all, especially for women, have increased in post-revolution but the job market was not able to absorb the young educated population. Unemployment rate especially for the youth is significantly high. On average, 44% of women with tertiary education are unemployed in post-war period, while the figure for male is 13%. The unemployment rate does not change much for women with secondary education: 38.8%. But it increases significantly for men: 30%. 52% of men with primary education are unemployed while the figure for women is lower (15.2%). In short, higher education levels have not matched with job market demands especially for the women (see Table 2).

Of course, fragile job market for young people is not only limited to Iran. The whole MENA region has a global record in youth unemployment rate. The women suffer most in this respect. The last available data for 2008 show that the unemployment rate for the youth female in the MENA region is 39.60% which is significantly higher than OECD countries (13%), and Latin America (17.79%). This indicator for youth male in the MENA region is 18.78%, while for the OECD and Latin America is 13 and 11%. (World Bank, 2013).

Literature has emphasized on the role of good governance in realizing demographic dividend. Indeed without good quality institutions we may not experience higher growth and as a result demographic transition cannot turn into a blessing for the economy. Acemoglu, Johnson and Robinson (2001) were the first to show that not all institutions matter to the same degree in their growth effects. They show that institutions effecting the protection of property rights and the enforcement of contract seem to be one of the determinants of long-run economic growth. The core theoretical mechanism is that if property rights are secured, individuals have higher incentives to invest and to trade. Eicher and Leukert (2009) differentiate between different institutions in developed and developing countries. They show that economic institutions such as labor market and trade policies have a direct effect on output. They show that for non-OECD countries, economic institutions matter more. However, economic institutions under good quality of political institutions can perform even better. Studies by Bloom and Williamson (1998) and Bloom and Finlay (2009) show that the increase in the working age population had a significant positive income impact, leading to East Asia's economic miracle. Bjorvatn and Farzanegan (2013) show that



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*Table 2. Education, employment and income in Iran*

| Indicator Name | 1965-1979 | 1980-1989 | 1990-2011 |
|---|---|---|---|
| School enrollment, *secondary* (% gross) | 39.6 | 47.0 | 74.2 |
| School enrollment, *secondary*, female (% gross) | 28.7 | 38.3 | 70.5 |
| School enrollment, *tertiary* (% gross) | 4.1 | … | 26.5 |
| School enrollment, tertiary, female (% gross) | 2.5 | … | 27.3 |
| GDP per capita (constant 2005 US$) | 2364 | 1950 | 2360 |
| GDP per capita growth (annual %) | 4.7 | -4.1 | 3.3 |
| Unemployment, youth female (% of female labor force ages 15-24) | … | … | 32.7 |
| Unemployment, youth male (% of male labor force ages 15-24) | … | … | 20.5 |
| Unemployment with *tertiary education*, male (% of male unemployment) | … | … | 13.2 |
| Unemployment with *tertiary education*, female (% of female unemployment) | … | … | 44.8 |
| Unemployment with *secondary education*, male (% of male unemployment) | … | … | 30.0 |
| Unemployment with *secondary education*, female (% of female unemployment) | … | … | 38.8 |
| Unemployment with *primary education*, male (% of male unemployment) | … | … | 52.3 |
| Unemployment with *primary education*, female (% of female unemployment) | … | … | 15.3 |
| Unemployment with *primary education* (% of total unemployment) | … | … | 39.9 |

Source: World Bank (2013) and author calculations. Missing data are shown with "…".

quality of economic institutions does not differ much between East Asia region and MENA countries for a sample period of 1976-2006. They, however, acknowledge that quality of political institutions in the MENA region, on average, is lower than East Asia region. They discuss that there may be other reasons besides role of institutions which can shape the final income effects of demographic transition across countries. They aim to explain why the MENA countries have not benefited from their significant population rent. The authors model the moderating role of natural resource wealth dependency and show that resources hamper the positive growth effects of demographic transition even after controlling for the role of economic and political institutions. Resource rents dependency shape the structure of economy by de-industrialization of economy, reducing the size of productive jobs in manufacturing which is the engine of economic growth. Countries with large resource rents have also large size of government which may not necessarily provide productive job opportunities, reducing pool of knowledge. It is important to have right mechanism to reduce the asymmetric shocks of resource rents volatilities on the national economy.

Next section examines the drivers of demographic transition around the world, and in different geographical region. We also examine the conditional income and stability effects of demographic transition across countries. This analysis helps us to learn from global data pattern. We then use the empirical findings of global sample to understand the current situation of Iran and its possible future.

## 3. DATA, EMPIRICAL METHODOLOGY, AND RESULTS

Regarding determinants of demographic transition, we aim to test the following hypotheses (H1-H3) which are extracted from literature:



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**H1:** Higher income per capita reduces fertility and birth rates, *ceteris paribus* (modernization hypothesis).
**H2:** Higher political openness reduces fertility and birth rates, *ceteris paribus*.
**H3:** Higher political instability increases fertility and birth rates, *ceteris paribus*.

In order to examine the final income and stability effects of demographic transition, following hypotheses (H4-H6) are formulated:

**H4:** Increasing working age population can lead to demographic dividend if there is a good quality of economic and political institutions, *ceteris paribus*.
**H5:** Increasing working age population may lead to demographic curse if the economy is dependent on resource rents, *ceteris paribus*.
**H6:** Increasing working age population may lead to political instability if the economic situation is degrading (higher inflation rate and unemployment), *ceteris paribus*.

To examine the hypotheses related to determinants of demographic transition, we use the following model:

$$TFR_{it} = cons + \beta_1.DEMOC_{it} + \beta_2.CONF_{it} + \beta_3.GDPP_{it} + u_i + \theta_t + \varepsilon_{it} \quad (1)$$

$$CBR_{it} = cons + \beta_1.DEMOC_{it} + \beta_2.CONF_{it} + \beta_3.GDPPC_{it} + u_i + \theta_t + \varepsilon_{it} \quad (2)$$

$$WAP_{it} = cons + \beta_1.DEMOC_{it} + \beta_2.CONF_{it} + \beta_3.GDPPC_{it} + u_i + \theta_t + \varepsilon_{it} \quad (3)$$

where *i* indicates country and *t* for time period (1984-2012). Dependent variables are TFR (total fertility rate), CBR (crude birth rate) and WAP (share of working age population-15 to 64 years- in total population). TFR is the average *stock* of children per woman in their reproductive years. CBR is the number of birth per 1000 people which is *flow* variable adjusted for the size of population. Reducing TFR, CBR and increasing WAP are indicators of demographic transition. DEMOC is a democracy index. We use Polity2 index (Marshall et al., 2013) which is from -10 (full autocracy) to 10 (full democracy). This is subjective and widely used index of political institutions across countries.[1] We rescale this index from 0 to 1, the higher scores means higher political openness. CONF is an index for internal conflict from ICRG (2013). The internal conflict index of ICRG measures three major components of political (in) stability in a country: Civil War/Coup Threat, Terrorism/Political Violence, and Civil Disorder. The range of this index is from 0 to 12. The higher value of the internal conflict index means lower risk of internal conflict or higher levels of political stability. To stimulate the interpretation we reverse the index: the higher values show higher degree of internal conflict or political instability. GDPPC is the GDP per capita (in constant prices of 2000). According to modernization theory, higher levels of income should reduce fertility and birth rate, increasing working age population. We also control for the country and time fixed effects, reducing the risk of omitted variable bias which is common if we use cross country regressions. The country fixed effects for example control for time constant factors which may shape demographic structure such as geographical location, ethnical composition, religious and traditional norms, culture and history among others. All data except for DEMOC and CONF are from World Bank (2013).



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Table 3 shows the results of estimations. We start with pooled OLS regressions which show the general pattern in data. Pooled OLS regressions, however, suffer from omitted variable bias due to neglecting country unobservable characteristics. Also common time shocks such as oil price shocks which affect all countries in our sample can also shape the fertility pattern among population. Panel country and time fixed effects (models 3.4-3.6) control for these factors and thus the results of their estimations are more reliable than pooled OLS models (models 3.1-3.3). Following Feng (2003) we use log-log specification. The estimated coefficients show the percentage change in dependent variables in response to one percent increase in each of independent variables, *ceteris paribus*. The Pooled OLS results convey a robust message: countries which enjoy a more political openness (higher DEMOC), lower internal conflicts and higher income per capita (GDPPC) have lower fertility and birth rates and higher working age population.

As expected in theory, democracies encourage also liberalization of economy, increasing education and health conditions for all and especially for women, increasing employment opportunities for men and women and opportunity cost of increasing family size. Conflicts and instability lead to lower investment and production which causes lower job opportunities for all. It also increases the likelihood of human loss which encourages families to increase the number of children. Increasing GDP per capita as a main indicator of modernization provides facilities for women empowerment and increasing their preferences for the quality of family rather than the quantity. Models 3.4-3.6 control for both country and time unobservable effects which pooled OLS neglected. The latter estimations show that democracy is not anymore a significant driver of demographic transition. However, internal conflict and political instability still plays a major role in higher fertility rates and lower working age population. Modernization theory gets some empirical supports for its positive correlation with higher share of working age population.

A potential concern in previous estimations is the possible reverse feedback from dependent variables (demographic indicators) to independent variables. Higher fertility rates can also affect the national income per capita. Also it is also likely that the demographic effect of democracy, conflict and income on demographic variables realizes after some years and not immediately. In order to address these concerns, we use 5 and 10 years lag of independent variables in fixed effects estimations. Results are presented in Table 4. The only significant driver of fertility, birth rates and working age population relative share is

*Table 3. Political and economic determinants of demographic transition (1984-2012)*

| **Model** | **(3.1)** | **(3.2)** | **(3.3)** | **(3.4)** | **(3.5)** | **(3.6)** |
|---|---|---|---|---|---|---|
| **Method** | **Pooled OLS** | | | **Country & Time Fixed Effects** | | |
| **Variables** | *TFR* | *CBR* | *WAP* | *TFR* | *CBR* | *WAP* |
| *DEMOC* | -0.533*** | -0.434*** | 0.0348*** | -0.0694 | 0.0206 | 0.00639 |
| | (-15.64) | (-14.75) | (4.38) | (-1.08) | (0.41) | (0.41) |
| *CONF* | 0.131*** | 0.129*** | -0.0188*** | 0.0543*** | 0.0202 | -0.0122*** |
| | (11.13) | (12.27) | (-7.89) | (3.32) | (1.64) | (-2.87) |
| *GDPPC* | -0.190*** | -0.199*** | 0.0484*** | -0.000960 | -0.0447 | 0.0239** |
| | (-40.43) | (-49.58) | (48.07) | (-0.02) | (-1.16) | (2.00) |
| Observations | 3257 | 3258 | 3373 | 3257 | 3258 | 3373 |
| adj. R-sq | 0.62 | 0.66 | 0.59 | 0.55 | 0.61 | 0.48 |

Note: All models include a constant term (not reported). Standard errors are clustered at the country level and robust t-statistics are reported in parentheses. *, **, and *** indicate significance at 10%, 5%, and 1%, respectively.



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the internal conflict. Democracy and income do not show a statistically significant effect on demographic transition, using 5 and 10 years lag of them. Are these findings also valid for the MENA region? Table 5 shows the results restricting the sample to only MENA countries. There are some interesting similarities and differences between MENA and rest of the world.

Countries with better quality of democratic institutions in the last 5 years are experiencing a larger size of demographic rent (higher working age population) today. Democracies in the past 10 years do not show a statistically significant effect on demographic indicators today. The important result is long run effect of internal conflict and instability on fertility and birth rates in the MENA region. Here the MENA results are in line with global findings. Conflict has a more robust effect on decision of families to increase their size due to their survival concerns and lower opportunity costs for the women under internal conflict condition.

The significant difference between MENA and rest of the world is the effect of income per capita on fertility and birth rates. While modernization theory highlights the dampening effect of higher income levels on fertility indicators but the MENA region presents a different picture. Higher national wealth has a long term positive and statistically significant effect on fertility and birth rates (in 10 years). This is in contrast with modernization idea. One explanation can be the source of wealth in the MENA region.

The MENA is a natural resource (oil) rich region and oil rents form a major share of national wealth and growth in these countries. Thus it is important to differentiate between non-oil and oil based modernization. In oil rich economies the government transfers in a form of subsidies are higher. Family can receive higher subsidies depending on their family size. Also oil rents shape the structure of the economy which in long run lead to lower size of industry and manufacturing and higher unemployment in the

*Table 4. Political and economic determinants of demographic transition (1984-2012), 5 and 10 years lag*

| **Model** | **(4.1)** | **(4.2)** | **(4.3)** | **(4.4)** | **(4.5)** | **(4.6)** |
|---|---|---|---|---|---|---|
| **Method** | **Country and Time Fixed Effects** | | | | | |
| **Variables** | *TFR* | *CBR* | *WAP* | *TFR* | *CBR* | *WAP* |
| *L5.DEMOC* | -0.0318 | 0.0209 | -0.00562 | | | |
| | (-0.63) | (0.53) | (-0.36) | | | |
| *L10.DEMOC* | | | | -0.0324 | -0.0111 | -0.00712 |
| | | | | (-0.75) | (-0.31) | (-0.52) |
| *L5.CONF* | 0.0573*** | 0.0256** | -0.00930** | | | |
| | (3.87) | (2.53) | (-2.10) | | | |
| *L10.CONF* | | | | 0.0507*** | 0.0292*** | -0.0102** |
| | | | | (3.63) | (3.65) | (-2.16) |
| *L5.GDPPC* | 0.0315 | -0.0460 | 0.00873 | | | |
| | (0.91) | (-1.51) | (0.82) | | | |
| *L10.GDPPC* | | | | 0.0278 | -0.0420 | 0.00421 |
| | | | | (1.10) | (-1.56) | (0.46) |
| Observation | 2625 | 2626 | 2754 | 1985 | 1986 | 2114 |
| adj. R-sq | 0.29 | 0.33 | 0.25 | 0.25 | 0.31 | 0.21 |

Note: All models include a constant term (not reported). Standard errors are clustered at the country level and robust t-statistics are reported in parentheses. *, **, and *** indicate significance at 10%, 5%, and 1%, respectively.



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*Table 5. Political and economic determinants of demographic transition (1984-2012), 5 and 10 years lag, Middle East & North Africa (MENA) Sample, 18 countries*

| **Model** | **(5.1)** | **(5.2)** | **(5.3)** | **(5.4)** | **(5.5)** | **(5.6)** |
|---|---|---|---|---|---|---|
| **Method** | **Country and Time Fixed Effects** | | | | | |
| **Variables** | *TFR* | *CBR* | *WAP* | *TFR* | *CBR* | *WAP* |
| *L5.DEMOC* | -0.208 | -0.0556 | **0.143**** | | | |
| | (-0.85) | (-0.29) | **(2.50)** | | | |
| *L10.DEMOC* | | | | 0.0274 | 0.0671 | 0.0599 |
| | | | | (0.12) | (0.70) | (0.75) |
| *L5.CONF* | 0.0408 | 0.0211 | 0.00752 | | | |
| | (1.35) | (1.08) | (1.00) | | | |
| *L10.CONF* | | | | **0.0649***** | **0.0531***** | -0.00458 |
| | | | | **(2.97)** | **(4.90)** | (-0.46) |
| *L5.GDPPC* | 0.301 | 0.204 | -0.0534 | | | |
| | (1.72) | (1.68) | (-1.28) | | | |
| *L10.GPPC* | | | | **0.296*** | **0.215**** | -0.0452 |
| | | | | **(1.83)** | **(2.66)** | (-0.89) |
| Observation | 329 | 329 | 346 | 246 | 246 | 263 |
| adj. R-sq | 0.79 | 0.82 | 0.84 | 0.76 | 0.82 | 0.80 |

Note: All models include a constant term (not reported). Standard errors are clustered at the country level and robust t-statistics are reported in parentheses. *, **, and *** indicate significance at 10%, 5%, and 1%, respectively.

economy (the Dutch Disease). This means that there will be fewer jobs for women in long run in oil rich economies and consequently weaker representation of women in politics (Ross, 2012).

But can demographic transition automatically lead to higher economic growth? Hypotheses 4 to 6 indicate that it depends. If countries have already good quality institutions then an increase in the share of working age population can result in higher productive employment, production and growth. Also if countries are dependent on resource rents we may expect not to see demographic dividend. Also demographic transition may affect political stability if we have mismanagement of economy and fragile institutions. We examine these hypotheses using global sample. To examine the transmission channels of demographic rent to economic development, we use the following empirical models:

$$GDPPC_{it} = cons + \beta_1 WAP_{it} + \beta_2 INST_{it} + \beta_3 \left(WAP_{it} * INST_{it}\right) + \beta_4 Z_{it} + u_i + \theta_t + \varepsilon_{it} \quad (4)$$

where the *INST* is a simple average of control of corruption, government stability, rule of law, bureaucracy quality and investment profile from ICRG (2013). Higher scores mean better quality of economic institutions. Following Bloom et al. (2007), we expect that final income effect of increasing working age population depends on the quality of institutions ($\beta 3>0$).

$$GDPPC_{it} = cons + \beta_1 WAP_{it} + \beta_2 RES_{it} + \beta_3 \left(WAP_{it} * RES_{it}\right) + \beta_4 Z_{it} + u_i + \theta_t + \varepsilon_{it} \quad (5)$$



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where *RES* is the total natural resource rents (as % of GDP) from World Bank (2013). Following Bjorvatn and Farzanegan (2013) we expect that the higher RES, the lower the final positive income effects of WAP ($\beta_3<0$).

$$CONF_{it} = cons + \beta_1 WAP_{it} + \beta_2 INF_{it} + \beta_3 \left(WAP_{it} * INF_{it}\right) + \beta_4 Z_{it} + u_i + \theta_t + \varepsilon_{it} \quad (6)$$

In Eq. 6 we test the moderating role of macroeconomic instability in conflict-demographic transition nexus. We use inflation rate as a proxy for macroeconomic instability. Higher share of working age population may lead political instability if the economy suffers.

Table 6 shows how quality of economic and political institutions shape the final income effects of demographic transition around the world. In line with previous findings of Bloom et al., both political and economic institutions matter. Higher quality of institutions has a positive effect on the final income effects of demographic transition which is also statistically significant (see Models 6.3 and 6.5).

Bjorvatn and Farzanegan (2013) while acknowledging the role of institutions highlight the independent intermediary effect of natural resource rents dependency and in particular oil rents in hindering the demographic bonus. Regardless of quality of institutions, increasing the role of oil rents in the economy through its structural effects on the economy (downgrading manufacturing and increase the size of public services) can lead to decreasing pool of knowledge, increasing unemployment rates, and undermining the sustainable economic development. We re-examine this hypothesis using updated data. Table 7 shows the how oil rent dependency besides institutions shape the final income effects of demographic transition around the world.

*Table 6. Income, demographic transition and institutions (1984-2012)*

| **Model** | **(6.1)** | **(6.2)** | **(6.3)** | **(6.4)** | **(6.5)** |
|---|---|---|---|---|---|
| **Method** | **Country and Time Fixed Effects** | | | | |
| **Variables** | *GDPPC* | *GDPPC* | *GDPPC* | *GDPPC* | *GDPPC* |
| *WAP* | 0.739* | 0.684* | -1.113 | 0.738* | -0.0884 |
| | (1.90) | (1.76) | (-1.58) | (1.74) | (-0.17) |
| *ECON_INST* | | 0.128** | -4.361** | | |
| | | (2.39) | (-2.01) | | |
| *WAP*ECON_INST* | | | **1.118**** | | |
| | | | **(2.07)** | | |
| *DEMOC* | | | | -0.278*** | -9.221*** |
| | | | | (-3.13) | (-3.34) |
| *WAP*DEMOC* | | | | | **2.220***** |
| | | | | | **(3.25)** |
| Observation | 4969 | 3551 | 3551 | 4173 | 4173 |
| adj. R-sq | 0.37 | 0.44 | 0.45 | 0.41 | 0.43 |

Note: All models include a constant term (not reported). Standard errors are clustered at the country level and robust t-statistics are reported in parentheses. *, **, and *** indicate significance at 10%, 5%, and 1%, respectively. We use log-log specification. WAP is the share of working age population (15-64 years) in total population.



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The interaction term between oil rents and working age population is negative and significant in all models: the higher dependence on oil rents, the lower is the positive income effects of demographic transition. This finding is robust even after controlling for institutions, their interactions with working age population and triple interaction term. In order to reap the dividend of demographic transition, countries should cut their dependence on oil rents.

## 3.1. What is the Stability Consequence of Demographic Transition?

Lower fertility rates and larger working age population happens when the country enjoys a political stable system and low risk of conflict. Equation 6 implies that final stability effect of working age population depends on macroeconomics conditions. Mismanagement of economy reflects itself in high inflation rates among other indicators. If wages do not adjust properly, higher inflation has a direct effect on real disposable income of people, reducing the economic cost of engaging in political movements to change the ruling system.

*Table 7. Income, demographic transition, oil and institutions (1984-2012)*

| **Model** | **(7.1)** | **(7.2)** | **(7.3)** | **(7.4)** | **(7.5)** |
|---|---|---|---|---|---|
| **Method** | **Country & Time Fixed Effects** | | | | |
| **Variables** | *GDPPC* | *GDPPC* | *GDPPC* | *GDPPC* | *GDPPC* |
| *WAP* | 1.919*** | 1.554 | 1.248 | 0.929 | 0.923 |
| | (3.14) | (1.32) | (1.53) | (0.78) | (0.77) |
| *OIL* | 2.190** | 2.612*** | 1.804* | 2.123** | 2.102* |
| | (2.61) | (2.76) | (1.93) | (2.01) | (1.86) |
| ***WAP*OIL*** | **-0.538**** | **-0.661***** | **-0.440*** | **-0.538**** | **-0.532*** |
| | **(-2.60)** | **(-2.82)** | **(-1.88)** | **(-2.05)** | **(-1.84)** |
| *ECON_INST* | | -2.104 | | -1.618 | -1.616 |
| | | (-0.65) | | (-0.48) | (-0.48) |
| *WAP*ECON_INST* | | 0.526 | | 0.411 | 0.409 |
| | | (0.66) | | (0.49) | (0.49) |
| *DEMOC* | | | -8.313* | -8.566 | -8.462 |
| | | | (-1.74) | (-1.58) | (-1.55) |
| *WAP*DEMOC* | | | **1.960*** | 2.019 | 2.000 |
| | | | **(1.69)** | (1.52) | (1.50) |
| *WAP*OIL* ECON_INST* | | | | | 0.000458 |
| | | | | | (0.04) |
| *WAP*OIL* DEMOC* | | | | | -0.00449 |
| | | | | | (-0.22) |
| Observation | 2345 | 2074 | 2249 | 2039 | 2039 |
| adj. R-sq | 0.41 | 0.50 | 0.46 | 0.55 | 0.55 |

Note: All models include a constant term (not reported). Standard errors are clustered at the country level and robust t-statistics are reported in parentheses. *, **, and *** indicate significance at 10%, 5%, and 1%, respectively. We use log-log specification.



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This is more evident in countries which lack good democratic institutions. Thus, we expect that larger working age population be correlated with lower internal conflict *per se*. However, higher inflation rates moderate this nexus. Increasing working age population in an economy with high inflation rates can lead to higher risks of internal conflict and instability. We expect also to see these effects from inflation and demographic transition on internal conflict with a time lag. In addition to the channel of inflation, following resource curse literature, demographic transition in *oil rich economies* may lead to political instability and conflict.

Bjorvatn and Farzanegan show that demographic can turn into a demographic curse in oil rich economies in respect with national income growth. Based on their theoretical explanations which support the Dutch disease hypothesis, we show that oil also matters for stability effects of demographic transition. Increasing demographic rent when an economy depends on oil rents is a curse for political stability.

*Table 8. Conflict, demographic transition, inflation (1984-2012)*

| **Model** | **(8.11)** | **(8.2)** | **(8.3)** | **(8.4)** |
|---|---|---|---|---|
| **Method** | **Country & Time Fixed Effects** | | | |
| **Variables** | *CONF* | *CONF* | *CONF* | *CONF* |
| *L.WAP* | -0.319** | -0.398*** | -0.390** | -0.276 |
| | (-2.47) | (-2.62) | (-2.38) | (-1.44) |
| *L.INF* | | -0.00916 | -0.00730 | -0.0147* |
| | | (-1.34) | (-1.03) | (-1.67) |
| ***L.WAP *L.INF*** | | **0.00327**** | **0.00311**** | **0.00311*** |
| | | **(2.38)** | **(2.19)** | **(1.76)** |
| *L.GDPPC* | | | 0.0418 | 0.00187 |
| | | | (1.37) | (0.04) |
| *L.DEMOC* | | | -0.121** | -0.116* |
| | | | (-2.60) | (-1.96) |
| *L.ECON_INST* | | | -0.0870*** | -0.119*** |
| | | | (-2.81) | (-3.16) |
| *L.SECONDARY* | | | | -0.00137** |
| | | | | (-2.23) |
| *L.CONF* | 0.973*** | 0.925*** | 0.896*** | 0.862*** |
| | (42.40) | (38.43) | (34.50) | (26.40) |
| *L2.CONF* | -0.190*** | -0.148*** | -0.137*** | -0.125*** |
| | (-8.60) | (-6.72) | (-5.86) | (-4.44) |
| Observation | 3505 | 2872 | 2620 | 1959 |
| adj. R-sq | 0.77 | 0.77 | 0.75 | 0.75 |

Note: L stands for one lag. We use log-log specification (except for SECONDAYR). All models include a constant term (not reported). Standard errors are clustered at the country level and robust t-statistics are reported in parentheses. *, **, and *** indicate significance at 10%, 5%, and 1%, respectively.



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Due to economic volatility in oil rich countries, the investment, production and inflation is also uncertain. Dutch Disease also can lead to higher unemployment in productive part of economy. Rent-seeking and corruption are other side effects of oil based economies. Under such condition, increasing working age population can foster the army of unemployed young people and challenging the stability of political system. Table 8 shows the estimation results.

As we expected potential demographic dividend turns into a curse for political stability under macroeconomic mismanagement. Also it is less likely to see a demographic bonus for stability in oil rich economies (see Table 9).

The results remain robust after controlling for the role of economic and political institutions, persistency of conflict (2 years lag of conflict)[2], income per capita and secondary education, country and time fixed effects.

*Table 9. Conflict, demographic transition and oil (1984-2012)*

| **Model** | **(9.1)** | **(9.2)** | **(9.3)** |
|---|---|---|---|
| **Method** | **Country & Time Fixed Effects** | | |
| **Variables** | *CONF* | *CONF* | *CONF* |
| *L.WAP* | -0.795*** | -1.064*** | -1.064*** |
| | (-2.88) | (-2.85) | (-2.85) |
| *L.OIL* | -0.750* | -1.145** | -1.145** |
| | (-1.99) | (-2.20) | (-2.20) |
| ***L.WAP * L.OIL*** | **0.187*** | **0.298**** | **0.298**** |
| | **(1.90)** | **(2.21)** | **(2.21)** |
| *L.ECON_INST* | -0.0351 | -0.0291 | -0.0291 |
| | (-0.93) | (-0.61) | (-0.61) |
| ***L.WAP * L.OIL* L.ECON_INST*** | **-0.0108** | **-0.0174*** | **-0.0174*** |
| | **(-1.55)** | **(-1.81)** | **(-1.81)** |
| *L.GDPPC* | | 0.0632 | 0.0632 |
| | | (1.41) | (1.41) |
| *L.SECONDARY* | | -0.00104 | -0.00104 |
| | | (-1.64) | (-1.64) |
| *L.CONF* | 0.917*** | 0.881*** | 0.881*** |
| | (26.39) | (22.13) | (22.13) |
| *L2.CONF* | -0.175*** | -0.161*** | -0.161*** |
| | (-5.97) | (-4.88) | (-4.88) |
| Observation | 2048 | 1546 | 1546 |
| adj. R-sq | 0.77 | 0.75 | 0.75 |

Note: L stands for one lag. We use log-log specification (except for SECONDAYR). All models include a constant term (not reported). Standard errors are clustered at the country level and robust t-statistics are reported in parentheses. *, **, and *** indicate significance at 10%, 5%, and 1%, respectively.



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Triple interaction term between working age population, oil and economic institutions is negative and statistically significant. It shows there is a solution for oil rich economies for their demographic puzzle. Still they might reap the demographic dividend as far as stability matter by investing in their economic institutions such as control of corruption, improving rule of law and investment profile.

## 4. WHAT ARE THE LESSONS FOR IRAN?

Our previous global findings imply that demographic transition can lead to demographic dividend for national income and political stability if

1. The quality of political and economic institutions are reasonably high,
2. Dependence on oil rents are reasonably low; i.e., the economy is adequately diversified

We examine the condition of institutions and degree of oil dependency in Iran in order to understand the future of Iran under significant demographic transition.

### 4.1. Quality of Political Institutions

The most common indicator for quality of political institutions is the Polity index which is from -10 (full autocracy) to 10 (full democracy). Figure 3 shows the trend of this index in Iran from 1960 to 2012.

The quality of democratic institutions was at its minimum under the Pahlavi monarchy. Islamic Revolution of 1970 increased the political openness and freedom of press and political participation of masses immediately. The index shows a significant increase from -10 to 0. This politically open situation was however temporarily and power struggles among different political factions began to capture the executive power. The war with Iraq which began in 1980 and lasted till 1988 was also another amplifying factor in consolidation of power and reduction of political openness. This repressed political atmosphere continued until the election of Mohammad Khatami in 1997 as the reformist president. For the first time in modern history of Iran the Polity index enter the positive zone, indicating Iran as a factionalized democracy. Again this positive development was not sustainable and mis-coordination in different layers of government especially in economic issues led to election of the neo-conservative Mahmoud Ahmadinejad as the president of Iran who replaced by a moderator candidate, Hassan Rouhani, in 2013. The Polity began to fall during presidency of Ahmadinejad.

Another indicator of political institutions in Iran is the Vanhanen index of democracy. Figure 4 shows development of Vanhanen index in Iran from 1960 to 2010. The van_index is the principal index of power distribution (Vanhanen, 2000). This index combines two basic dimensions of power balance – competition and participation – measured as the percentage of votes cast for parties other than the largest (competition) times the percentage of the population who actually voted in the election (participation). This product is divided by 100 to form an index that in principle could vary from 0 (full dominance of one political faction) to 100 (lack of any dominant political faction). Higher levels of this index reflect more competition of factions within political power and the participation of their supporters. Vanhanen argues that both dimensions of power balance (competition and participation) are critical to build a principal index of power distribution.



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*Figure 3. Polity Index (democracy) in Iran. Higher scores show better quality of democratic institutions. Source: Marshall et al. (2013)*

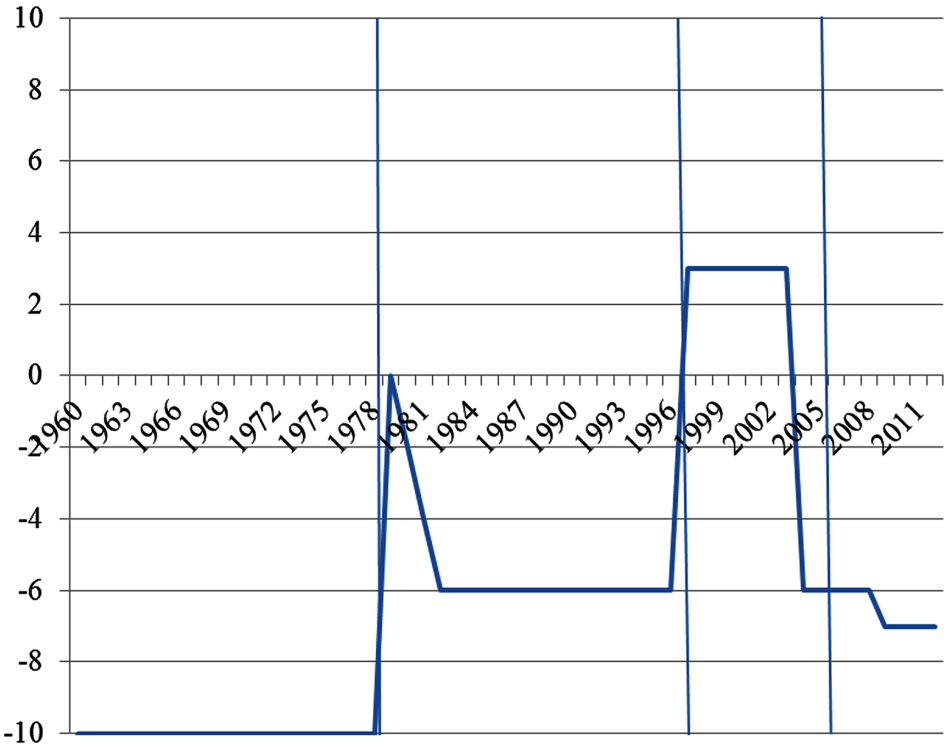
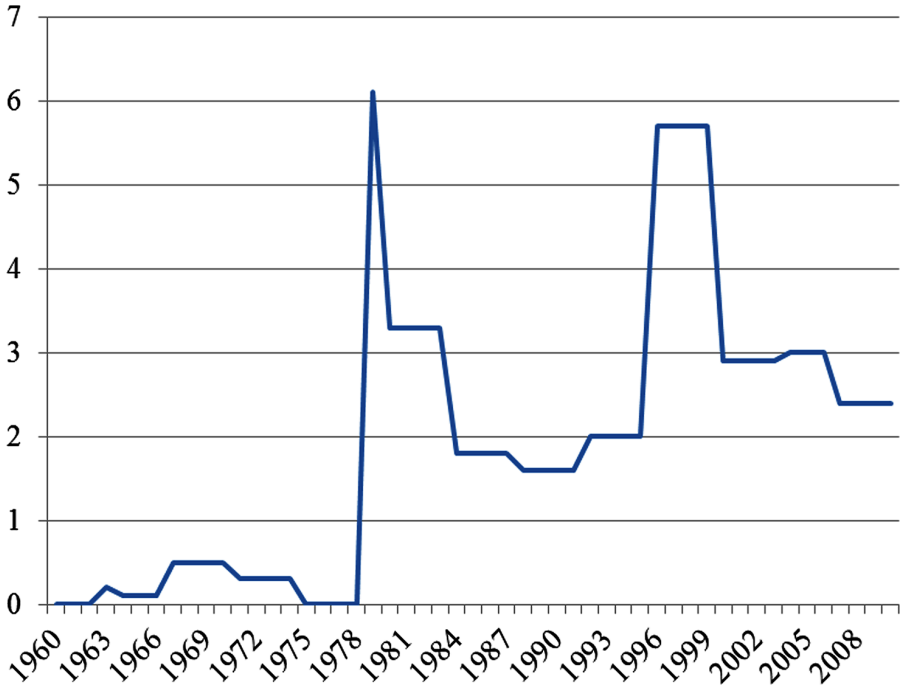



*Figure 4. The Vanhanen Index in Iran. Higher scores show higher political competition and participation of electorates in elections. Source: http://www.fsd.uta.fi/en/data/catalogue/FSD1289/meF1289e.html*






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The lowest values of this index recorded during the full power of the Shah and dominance of his party (National Resurgence) from 1975-1978. The highest value of this index realized in the first year of Islamic Revolution (1979) which accompanied the largest balance of power among different revolutionary factions. During the years after revolution the balance of power diminished and the index reached to 2 in the end of Rafsanjani government (1995). Reformist movement during the 5th parliament and election of Khatami boosted the role of smaller factions in the politics of Iran. The power distribution index of Vanhanen increased during this period to 5.7, indicating reduction of dominance of ruling group. In summary, the post-revolution governments in Iran never experienced a full dominance in their political life. Both presidential and parliamentary elections have been competitive within the pre-defined limits of ruling clergy (Vanhanen, 1997, p. 121). Bayart (1994, pp. 295-298) agreed. He explains that "Iranian political society is now too diversified and complex for anyone to be able to impose as clear a hegemony as that of the Shah in the 1970s, although it is not yet 'democratic'.[3]

## 4.2. Democratic Accountability Index of ICRG

ICRG (2013) also publishes a group of indicators which we used in previous section to build economic institutions. One index which belongs to political institutions is Democratic Accountability index: it is from 0 to 6. The higher scores mean higher levels of democratic accountability of state. The ICRG defines this index as following:

*This is a measure of how responsive government is to its people, on the basis that the less responsive it is, the more likely it is that the government will fall, peacefully in a democratic society, but possibly violently in a non-democratic one.*[4]

The highest score (6) is given to a political system in which following conditions are present:

- A government/executive that has not served more than two successive terms,
- Free and fair elections for the legislature and executive as determined by constitution or statute,
- The active presence of more than one political party and a viable opposition,
- Evidence of checks and balances among the three elements of government: executive, legislative and judicial,
- Evidence of an independent judiciary,
- Evidence of the protection of personal liberties through constitutional or other legal guarantees.

The lowest number is given when a country is in the Autarchy category:

- Leadership of the state by a group or single person, without being subject to any franchise, either through military might or inherited right.

Figure 5 shows the trend of ICRG democratic accountability index in Iran from 1984 to 2012.

The political risk of lack of democratic accountability in Iran has increased since the second office of Ahmadinejad in 2009 until 2012. The drop of 2 scores from 4.5 to 2.5 from 2006 to 2012 is a significant degradation of political institutions.



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Finally the Voice and Accountability index of the World Bank also shows a worrying situation for political institutions in Iran. Voice and Accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.[5] The trend, as is shown in Figure 6, presents a continues decline in the quality of political institutions in Iran since 1996. It has reached to its minimum scores in 2011.

In short, the quality of political institutions on the basis of most indicators does not show a positive trend. Increasing working age population in such an environment may not lead to a bonus for Iranian economy.

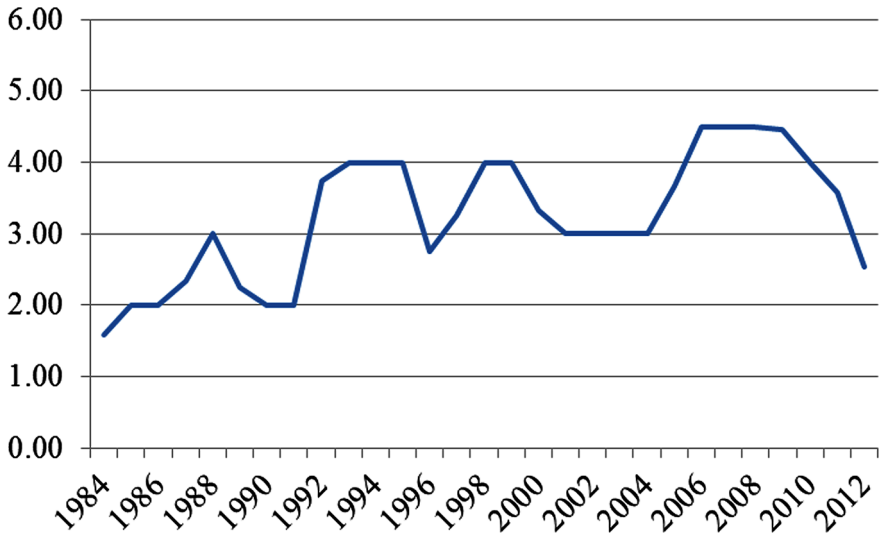
## 4.3. Quality of Economic Institutions

There are countries which are not showing a sound democratic institution but have increased the quality of economic institutions stimulating the flow of local and foreign investment. Examples for GCC countries such as the UAE, Bahrain, Oman, Qatar and Kuwait show that to control corruption, protecting property rights are not necessarily correlated with democracy. For production and creating employment opportunities for increasing working age population governments need to install a rule of law, improving property rights, controlling corruption, and improving bureaucracy quality. How is the quality of economic institutions in Iran?

## 4.4. Socioeconomic Conditions

This is an evaluation of the socioeconomic burden in society that could undermine government action or fuel social dissatisfaction especially in countries which are dealing with demographic transition as in Iran. The index is the sum of three subcomponents: unemployment, consumer confidence and poverty.

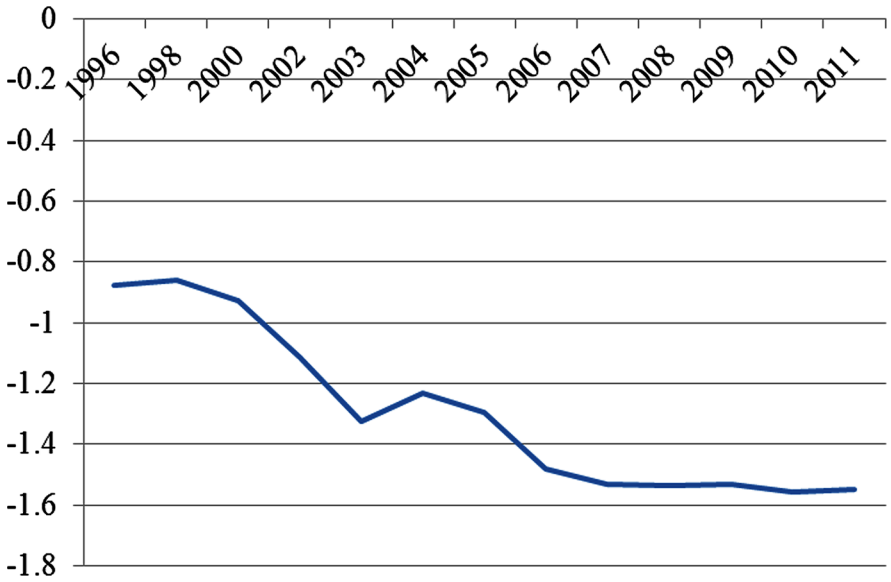
*Figure 5. Democratic accountability in Iran (higher scores mean higher democratic accountability of state), Source: ICRG (2013)*






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*Figure 6. Voice and accountability in Iran (higher scores mean higher democratic accountability of state), Source: WGI (2013)*




Higher scores (maximum 12) is given to countries with the lowest socioeconomic pressure and 0 to those with the highest pressure. Figure 7 shows the trend of socioeconomic condition in Iran from 1984-2012, with average score of 5.21 from 12 over this period. This average score for Iran is lower than the UAE (8.19), Kuwait (8.23), Oman (7.90), Qatar (7.43), Saudi Arabia (6.77) and Bahrain (6.51).

Socioeconomic conditions show a one-time significant improvement immediately after end of war with Iraq and presidency of Hashemi Rafsanjani. It was however began to deteriorate due to increasing inflation. It improved marginally under reformist government of Khatami by controlling inflation and increasing consumer confidence. It declined during Ahmadinejad government and remained constant till 2012. It is expected that due to ongoing sanctions the index declines further in coming years.

## 4.5. Investment Profile

This indicator evaluates the factors which influence the risk of investment in countries. It covers three subcomponents each of them has given a maximum score of 4. A total score of 12 for this index shows the lowest risk for investment in a country which is of high importance for realizing the demographic dividend in a country. The three elements in this index are: Contract Viability/Expropriation, Profits Repatriation, and Payment Delays. Figure 8 shows the trend of investment profile index. It is far from ideal score of 12 and it is decreasing continuously since 2008. Again due to financial and insurance sanctions the situation is critical in coming years, making the way to demographic bonus more challenging.

## 4.6. Corruption

A major hindering factor in realizing demographic dividend is the extensive corruption in the political system. Administrative and political corruption distorts markets and lead to misallocation of scarce



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*Figure 7. Socioeconomic condition index in Iran. Higher scores mean better condition. Source: ICRG (2013)*

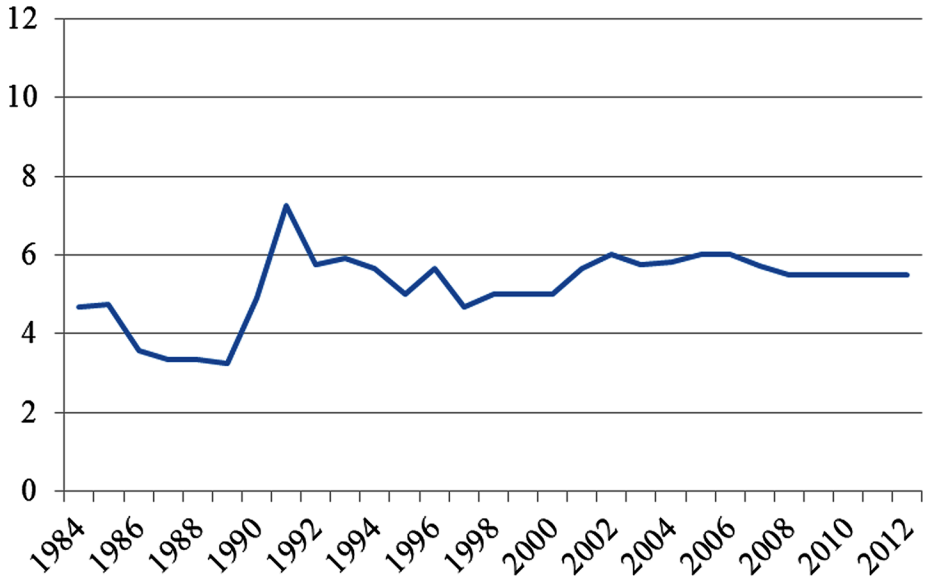
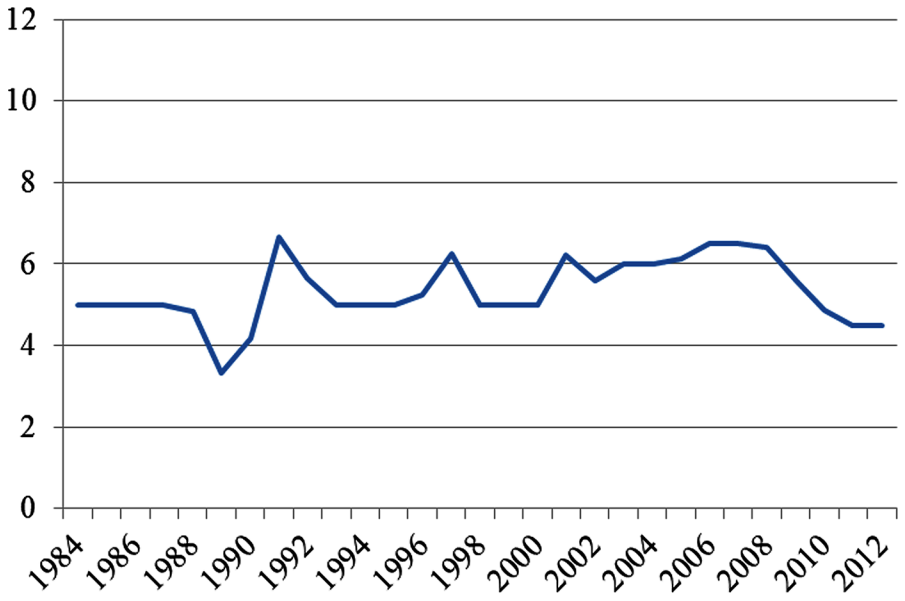



*Figure 8. Investment profile index in Iran. Higher scores mean better condition*
*Source: ICRG (2013)*




economic resources. Corruption has a significant negative effect on economic growth (see Mauro, 1995, Knack and Keefer, 1995; Tanzi and Davoodi, 2001; and Mo, 2001, among others). This means that there will be also reduction in employment opportunities, mitigating positive income effects of demographic transition.



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In addition, such corruption can hinder the economy in benefiting from its demographic rents by affecting investment: Corruption is a threat to foreign (and local) investment for several reasons:

- It distorts the economic and financial environment;
- It reduces the efficiency of government and business by enabling people to assume positions of power through patronage rather than ability; and,
- Introduces an inherent instability into the political process.

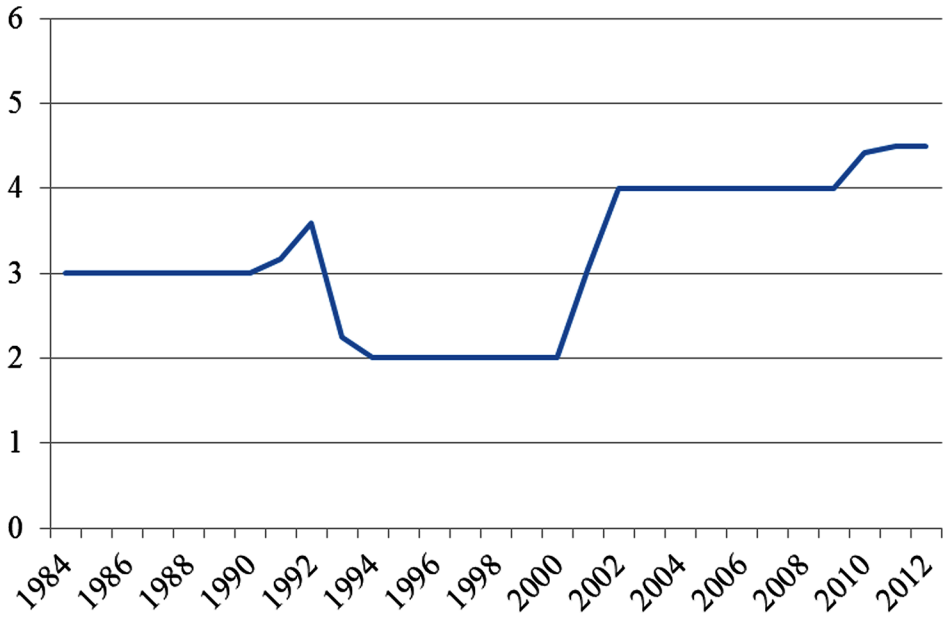
Corruption index of ICRG is more concerned with actual or potential corruption in the form of excessive patronage, nepotism, job reservations, 'favor-for-favors', secret party funding, and suspiciously close ties between politics and business.

The index is measured from 0 to 6; higher values show lower levels of corruption. To facilitate the interpretation, we rescale the index; higher scores now show more corruption. Figure 9 shows the trend of corruption in Iran. The risk of corruption for investors is increasing in Iran.

## 4.7. Law and Order

Rule of law is a key element in economic development. There is hardly any investment in an economy with fragile judiciary system and lack of transparency of rules and regulation and their effective enforcement. In order to attract international investors governments need to guarantee and protect property rights. High crime rates and widely illegal strikes can discourage investors for any significant and long term investment, adding to unemployment problems and hindering realizing demographic bonus. Figure 9 shows the development of this index in Iran. The index was in an alarming level in 1980s which was mostly due to revolutionary and ideological approaches to rules and regulation and special situation of

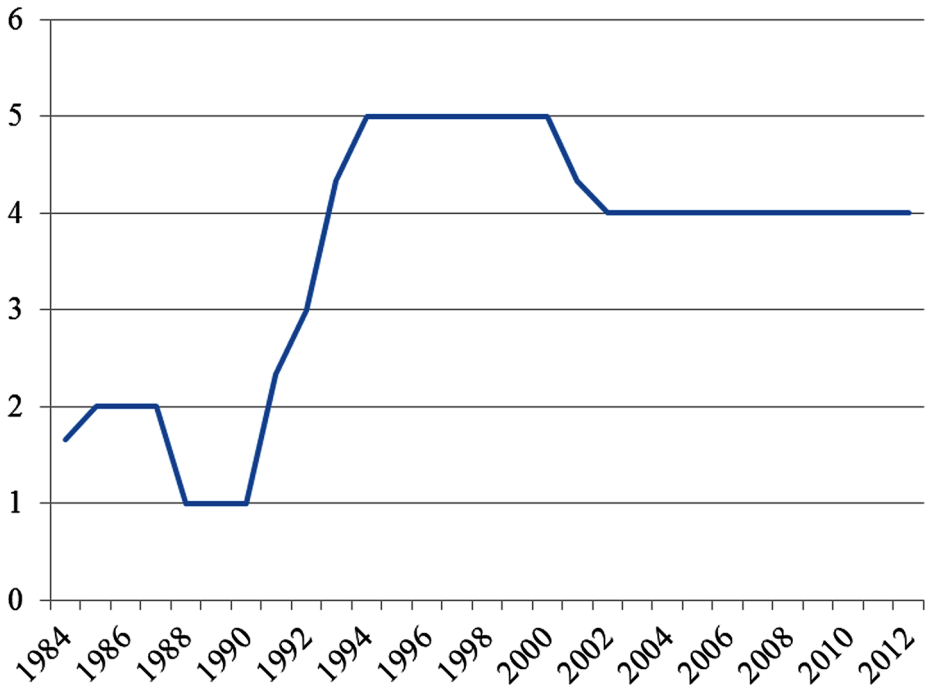
*Figure 9. Risk of corruption in Iran. Higher scores mean higher risk. Source: ICRG (2013)*






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*Figure 10. Rule and order index in Iran. Source: ICRG (2013)*




country which was with war with Iraq. The index shows a significant improvement under Hashemi and Khatami governments which was necessarily to attract investors to rebuild the destroyed infrastructures and creating employment for the large size of ready to work population. Figure 10 illustrates the trend of law and order in Iran.

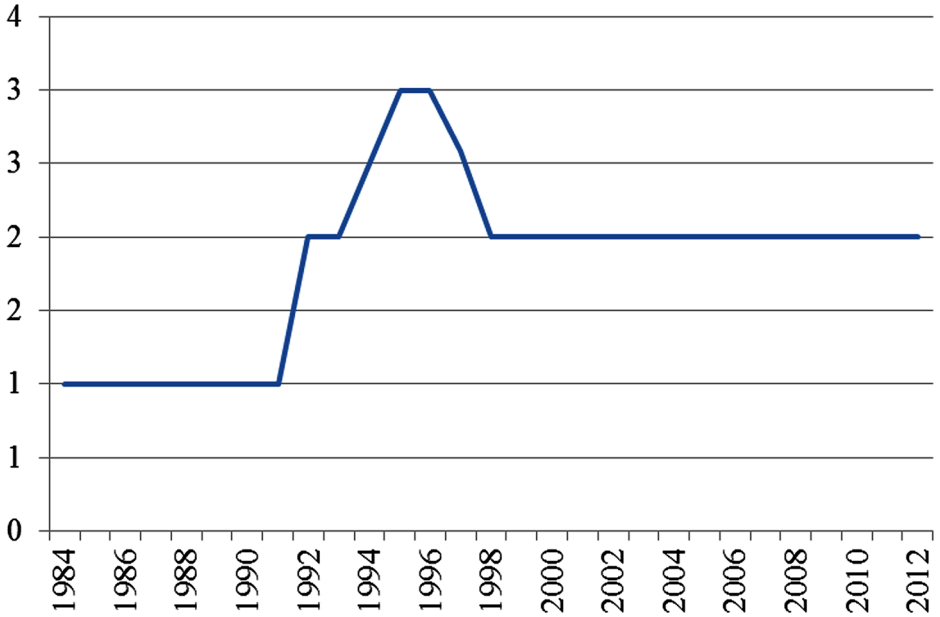
## 4.8. Bureaucracy Quality

Stability of regulations and general policies toward macroeconomic policies across different governments are important factors for investors who want to invest for long term in a country. The institutional strength and quality of the bureaucracy is a shock absorber that tends to minimize revisions of policy when governments change. ICRG gives higher scores to countries in which "*bureaucracy tends to be somewhat autonomous from political pressure and to have an established mechanism for recruitment and training. Countries that lack the cushioning effect of a strong bureaucracy receive low points because a change in government tends to be traumatic in terms of policy formulation and day-to-day administrative functions*". The maximum score is 4.Average of this index for Iran from 1984-2012 is 1.83 which is lower than UAE (2.53), Bahrain (2.41), Saudi Arabia (2.27), Oman (2.20), and Kuwait (1.94). Since 1998 the score of Bureaucracy Quality in Iran has remained constant at 2. Figure 11 shows the trend of this index in Iran.



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*Figure 11. Bureaucracy quality in Iran. Higher scores mean better performance*
*Source: ICRG (2013).*




## 4.9. Degree of Dependency to Resource Rents in Iran

Another important moderating factor in final income effects of demographic transition is the degree of dependency on natural resource rents. Resource wealth has been found to affect the structure of the economy, a phenomenon known as the Dutch disease. It leads to the expansion of the non-traded sector at the expense of the traded sector. As argued by van Wijnbergen (1984), if the traded sector is more "dynamic" than the non-traded sector, this change in sectoral composition of the economy may have detrimental growth effects. Bjorvatn and Farzanegan (2013) provide theoretical and empirical evidence on the key role of resource rents in demographic and growth relationship. We also re-examined this hypothesis using a larger and updated dataset as well as considering it in conflict-demography nexus.

Due to its high dependence on oil rents, Iranian economy is at the danger zone. Demographic blessing can become a demographic curse in countries which are unable to provide adequate job opportunities in growth inducing sectors such as manufacturing and industry.

We can summarize indicators of resource wealth in two groups: resource dependency and resource abundance.

## 4.10. Resource Dependency Indicators

- **Share of Natural Resource Rents in GDP:** This measure shows the relative importance of resource sector value added (rent) for the whole economy. We use, for example, oil rents, coal rents, gas rents, mineral rents, and forest rents as share of GDP.
- **Share of Natural Resource Exports in Total Exports:** This ratio shows how much of export of a country depends on the raw material or natural resources.



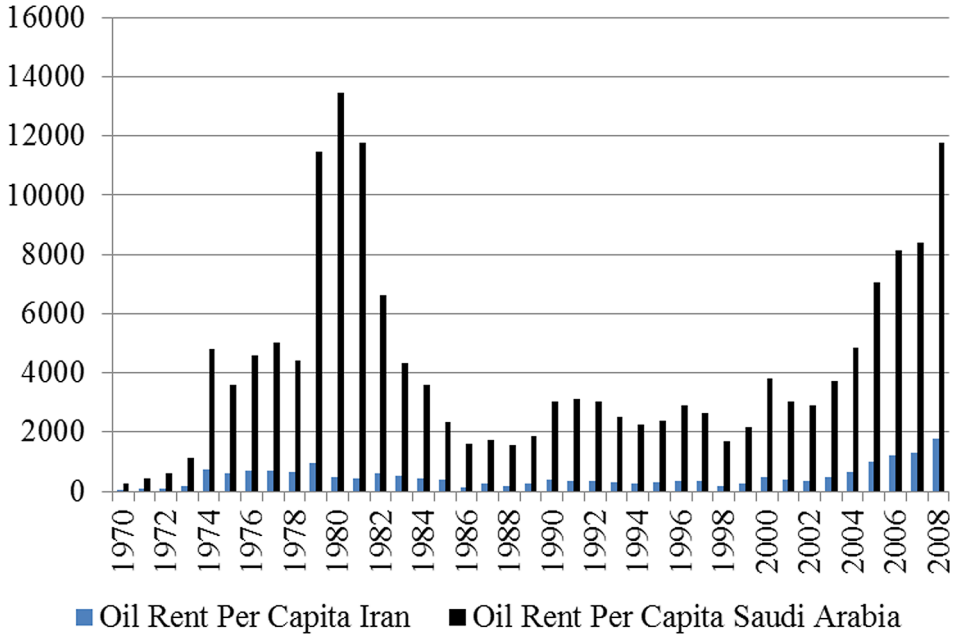
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- **Share of Natural Resource Export Revenues in Total Government Revenues:** This variable shows the degree of dependency of government's budget to the resource rents.

For natural resource abundance we usually use the natural resource reserves per capita. This shows the potential of a country for future resource production and export. It needs however investment, technology and skilled labor force for realizing this potential. Thus a country may be resource abundance but still the flow of resource money is missing or insignificant in the economy. Which indicator can be used to measure: What rulers can spend to keep themselves in office, either by co-opting, rewarding or coercing their citizens? How many oil dollars a regime can direct at each citizen, for public goods, patronage and so on? The most proper indicator for measuring the questioned issues is the per capita resource revenues. It shows the availability of resource revenues per each citizen, on average. Rulers in two countries *with identical oil export* revenues and *similar GDPs*, but with *very different population* sizes, would have equally different rent capacities to be employed for *patronage* or *coercion* (or modernization). Iran with 75 million population with Kuwait with about 3 millions! The difference in what each regime can pay into affecting citizens' political behavior, by whatever means, is massive. See for example Figure 12 in which per capita oil rents in Iran is compared with per capita oil rents in Saudi Arabia.

The government budget and social welfare system is also highly sensitive against the positive and negative shocks in the global oil markets. More than 90% of foreign exchange revenues of Iran come from oil exports and about 60% of government revenues in annual budgets depend on oil revenues (Farzanegan, 2011). The share of total tax revenues in GDP in Iran is lower than any other developed and non-oil developing country. This causes the financial independency of the state from contributions

*Figure 12. Affecting citizens' political behavior: Oil rent per capita (US $)*
*Source: data.worldbank.org/sites/default/files/subsoil_and_forest_rents.xls*





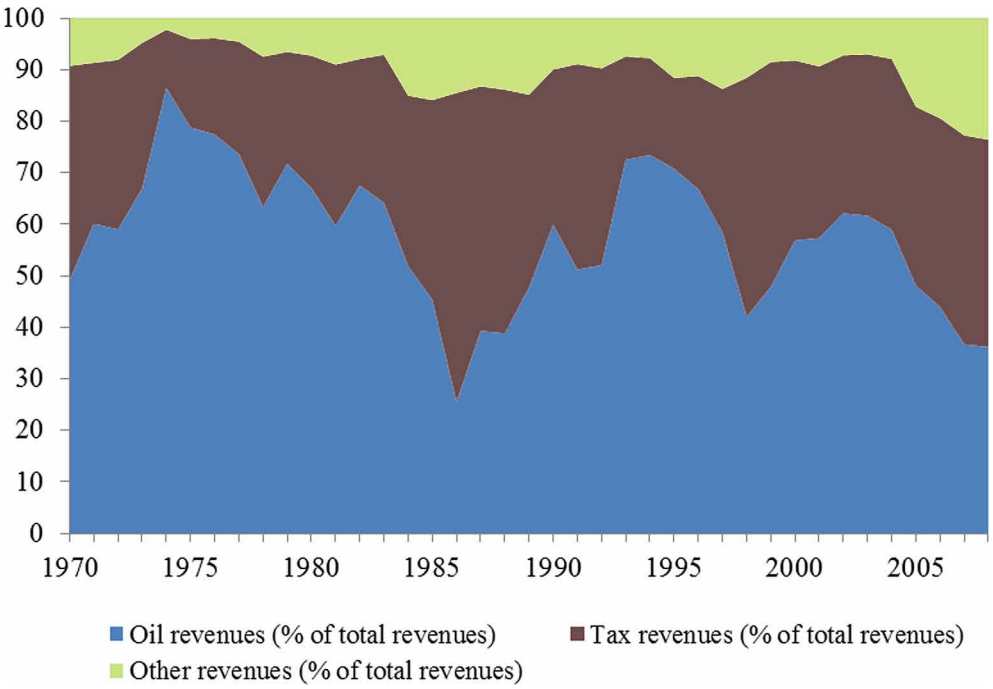

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through taxes. It also creates a lack of accountability of state to people. The average share of tax revenues in GDP of Iran from 2001 to 2009 is 6.8% while the average world for the same period is 14.8%. (World Bank, 2013).

Figure 13 shows the relative share of oil, tax and other revenues in the annual budget of the Iranian government from 1970-2008. Interestingly, the correlation between the relative share of oil revenues and tax revenues in the government budgets is strongly negative (-95%). In general, oil revenues have substituted the tax revenues, leading to less degree of dependency of government to citizens. Figure 13. shows that whenever the government faces a negative oil shocks such reduction of oil prices in 1986 (introduction of netback-pricing arrangements to maintain market share by the OPEC and increase of oil production) and 1997 (financial crisis in South East Asia), the government expand his tax sources and diversifying the economy with more emphasize on non-oil exports and production.

In the Iranian National Accounts, however, oil value added accounted for just about 20% of total GDP in the past years, comparable to figures of Norway and Venezuela. This is in contrast with the higher share of oil GDP in the other oil exporter of the Middle East region. This is partly because of the more diversified economy of Iran, especially in agriculture, compared to the Arab oil rich economies. The low share of oil value added in the Iranian GDP can also be attributed to heavy price distortions of energy products in Iran. The massive subsidies on domestic sale of crude oil and oil products underestimate the real share of oil GDP in the economy.[6] Nevertheless, the major share of state foreign revenues still comes from oil exports and a significant share of current and capital expenditures of state finance through the petrodollars.

*Figure 13. Share of oil and tax revenues in the budgets (1970-2008). Source (CBI, 2013)*



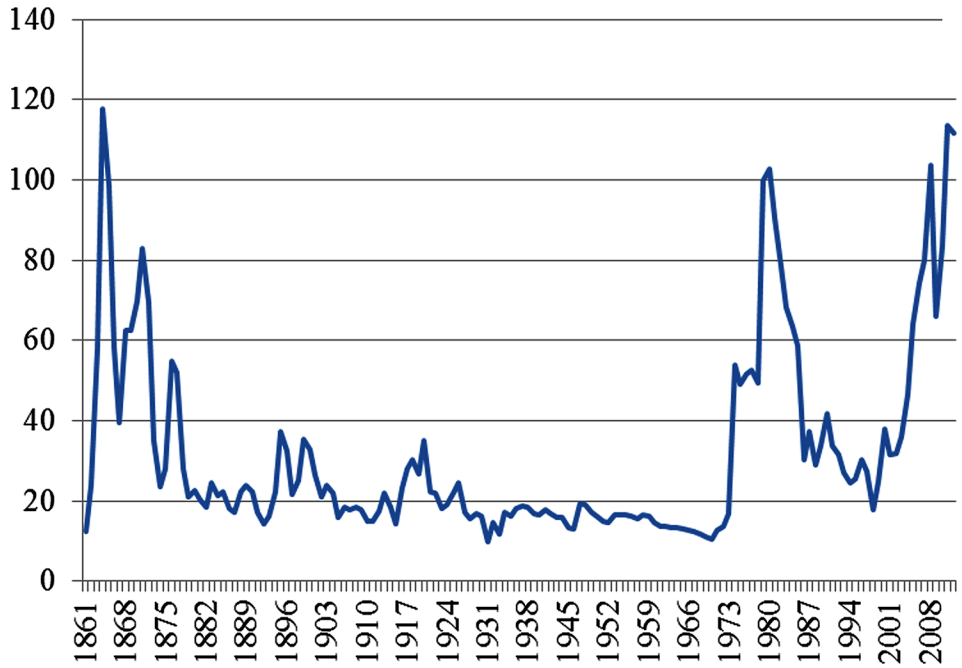



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Dependence on oil and mineral resources can cause a problem for the economic development, the so-called "resource curse." On average, resource rich economies have a slower income growth in long term compared with resource poor economies. The curse of resources are transferred to the national economy through different channels such as Dutch disease, conflicts, rent-seeking and corruption, neglecting investment in human capital and weak quality of institutions. A country dependent on oil and mineral resources is highly vulnerable to asymmetric resource price shocks, especially for the case of petroleum. The volatile oil market is depicted in Figure 14. Farzanegan and Markwardt (2009) and Farzanegan (2011) examine the different effects of oil price shocks on the Iranian economy.

Besides the high dependency of Iranian economy and government budget to oil revenues, corruption and lack of transparency in oil industry add to the problem. Counties can still benefit from their natural resources if right policies exist and if transparency and free flow of information are working. This is shown in previous estimation results in this study. According to the 2013 Resource Governance Index (RGI) which measures the quality of governance in the oil, gas and mining sector of 58 countries, Iran's ranking is 53. This composite index covers performance of countries regarding their natural resources in 4 dimensions: *Institutional & Legal Setting, Reporting Practices, Safeguards & Quality Controls, and Enabling Environment*.[7] Iran received a "failing" score on all four components, leading to a composite score of 28 and a ranking of 53rd out of 58 countries.

*Figure 14. Oil prices ($ of 2011). Source: BP (2013)*






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## 5. SOLUTIONS AND RECOMMENDATION, FUTURE TREND AND CONCLUSION

This paper examines the economic and political drivers of demographic transition and role of natural resource dependency, economic and political institutions and macroeconomic instability in the final effect of demographic transition on economic development and internal conflict.

We use worldwide data for more than 100 countries from 1984-2012 and find robust evidence for our main hypotheses: *demographic transition does not lead to demographic bonus automatically*. This process needs good quality institutions, macroeconomic stability and diversified economy (less dependence on oil rents). We also look at blessing or curse of increasing working age population from conflict perspective which is also our contribution. Increasing working age population as a proxy for demographic transition can increase national income if the right policies and institutions are working, inflation is under control, and economy is protected from asymmetric shocks of resource rents. All these factors stimulate the process of investment and production, increasing productive employment opportunities for the increasing number of young and educated population.

Using empirical findings from global sample with various robustness tests, we examine the situation of institutional and resource dependency in Iran in addition to its demographic changes. *We conclude that given the history of weak economic and political institutions, chronic inflation, and less diversified economy; the Iranian economy may not reap its demographic dividend*. The possibility of facing demographic curse in which economic growth reduces and internal instability increases will be high.

*What are the urgent solutions and recommendation for the case of Iran?* Increasing working age population in Iran needs productive job and long run prosperity. This requires investment and investment requires good policies. An ongoing challenge is international economic sanctions imposed on Iran due to its nuclear programs. These sanctions have reduced foreign exchange reserves by restricting oil exports and increasing transaction costs in general. Sanctions have affected the currency market in Iran, increasing exchange rate and thus making imports more expensive. Given the dependence of domestic industrial production to imported goods this means higher production costs while prices of final goods are often controlled by the state. As a result, profit margin of manufacturing units is decreasing, reducing also employment opportunities and increasing unemployment rate. Increasing inflation rate following sanctions has been significant. All these direct and indirect effects of sanctions lead to decreasing disposable income of Iranians and more engagements in the shadow economy (Farzanegan, 2013 has investigated the shadow economy effects of sanctions in Iran). Jobs in the shadow economy suffer from long term prosperity and security.

Sanctions are also affecting the housing prices and rents by increasing the costs of production in the housing branch. Increasing housing costs have been shown to be one of the main reasons behind increasing divorce and reducing of marriage rates in Iran, amplifying the social crisis in the young population of Iran (see Farzanegan and Gholipour 2015 a &b). Fragile family structure also reduces the possibility of benefiting from demographic transition in Iran. In addition to necessity of improving international diplomacy, Iranian state needs to address the curse of oil by reducing the vulnerability of economic system to oil revenues shocks. One of the main reasons behind the youth unemployment in Iran is dependence of economy to oil rents which crowds out the productive manufacturing sector in long run. By increasing rent-seeking behavior, it also dampens to entrepreneurship activities and private business formation. Increasing working age population in an oil based economy has less chance of working in productive fields, reducing the manifestation of demographic bonus (see Farzanegan, 2014 for entrepreneurship effects of oil rents). Corruption among other dimensions of quality of governance plays a key role in



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political stability effects of demographic transition. Farzanegan and Witthuhn (2014) use panel data from 2002–2012 for more than 150 countries and show a negative interaction effect between the relative size of the youth population within the total working age population and corruption on political stability. In other words, demographic transition can lead to instability in corrupt countries. Thus, the Iranian state and civil society need to care about control of corruption in order to reduce the risk of demographic curse for political stability of country.

Future research should take into account the role of increasing informal economy in final effects of demographic transition on conflict and economic growth. The informal economy which is evading formal regulations and monitoring is feeding a large number of population in developing countries, providing employment opportunities for a large army of unemployed in the formal economy. This may have crucial implications for the internal stability, income distribution and economic development (Badreldin and Farzanegan, 2014).

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## ENDNOTES

1 For application of Polity index as an indicator for quality of political institutions in different contexts see for example, Buehn and Farzanegan (2013), Biswas, Farzanegan and Thum (2012), Bjorvatn and Farzanegan (2013), Bjorvatn, Farzanegan and Schneider (2012).

2 For a sufficiently large time horizon, the bias from fixed effects dynamic panel data model is supposed to be small (Nickell, 1981).

3 The discussion on Vanhanen Index is based on Bjorvatn, Farzanegan and Schneider (2013)

4 http://www.prsgroup.com/ICRG_Methodology.aspx

5 More information: http://info.worldbank.org/governance/wgi/index.asp

6 Kramarenko et al. (2008) estimated the size of implicit subsidies in the energy sector of Iran. According to their estimation, forgone revenue due to domestic sales (in billions USD) which is highly subsidized amounted to 11.9, 10.9 and 11.2% from 2005-2007. This corresponds to a loss of 22,



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24, and 32 billion USD in government revenues through selling energy products with subsidized prices. These massive implicit subsidies on energy products distort the real size of dependency of the Iranian economy and government budget to oil revenues.

[7] See http://www.revenuewatch.org/rgi

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# Chapter 69
# Green Convergence in Emerging Nations:
## The Determinants and the Possibilities

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**Chitrakalpa Sen**
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## ABSTRACT

*Convergence in growth for emerging nations has always been an important topic of economic discourse. This study looks into the growth convergence of selected basket of emerging nations towards selected basket of developed nations using Autoregressive Distributed Lag (ARDL) framework. The findings of the study show that not only the economic indicators of the respective emerging nations are responsible towards narrowing the per capita GDP differential between developed and emerging nations, but also the differentials of economic indicators between developed and emerging nations are important. This helps towards answering the paradoxical question why in spite of taking the best measures the developing countries are unable to match up with their developed counterparts' per capita GDP. Finally, the study shows significant positive relationship between GDP growth rate and carbon dioxide emission.*

## INTRODUCTION

The theory of economic convergence suggests that economies with similar population growth and technological knowhow will exhibit similar levels of productivity and per capita GDP in the long run. Therefore, countries with lower capital stock will grow more rapidly than countries with higher capital stock, closing the income gap eventually (Mankiw, 2012).In recent years, convergence of markets in the emerging nations has garnered significant attention. However, empirical studies have repeatedly shown less than desired results of convergence. The explanations for this phenomenon are a much debated topic.

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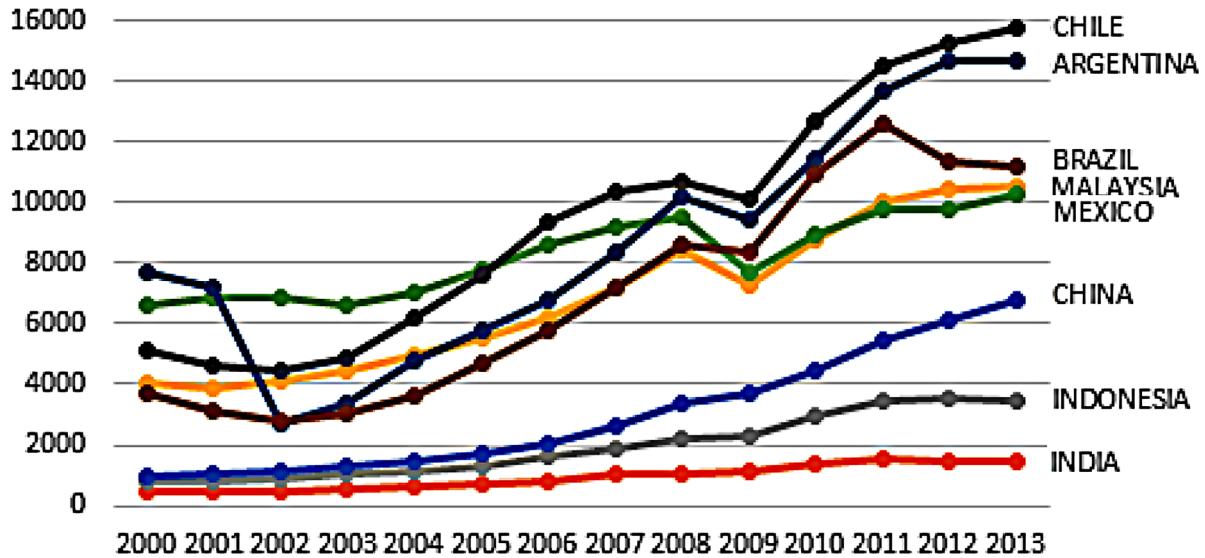
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Jeffrey Sachs (1997) blamed the trade policies of developing countries for the slowdown off convergence, while the Lucas Paradox (1990) tried to explain the non-convergence with the fact that capital doesn't move from developed countries to developing countries. According to a 2011 study by investment firm BlackRock, "by 2020 the investment world is expected to be spending even more time on the emerging markets … developments in Beijing, Mumbai and Sao Paolo will … require as much study as those in New York, London and Frankfurt" (Blackrock Investment Institute, 2011). However, more recent studies have found evidences of slowdown of the emerging markets in the catching-up game (Amaya & Iwanicki, 2014) in the short run. However, the possibility of long run convergence could not be refuted. Therefore, it would be interesting to examine from both an academic as well as investment perspective to identify the reasons behind the convergence performance of emerging markets.

In Figure 1, the per capita GDP of eight emerging nations (four Asian economies: India, Indonesia, Malaysia and China and for Latin American economies: Mexico, Argentina, Brazil and Chile) for 2000-2013 are plotted. The plot shows a clear trend. Starting from 2000, the Latin American economies have experienced a higher per capita GDP than the Asian economies except Malaysia. Of the four Asian economies, India, Indonesia and China started from less than a thousand dollars of per capita GDP in 2000. Of these three, the per capita GDP of India has grown the slowest over the next 13 years while China has grown faster than these two, especially after 2006. However, a clear outlier in the Asian economies is Malaysia. Even in 2000, the per capita GDP of Malaysia was significantly higher than that of India, Indonesia and China. While in 2000, all the three nations had a per capita GDP of less than $ 1000; Malaysia was enjoying a per capita GDP of slightly more than $ 4000. Malaysia is clearly in the league of the Latin American economies of Mexico, Argentina, Brazil and Chile. In fact, after 2009, Malaysia's GDP has grown similar to Mexico. Among the Asian economies, only China has been successful in significantly closing the per capita GDP Gap with the Latin American economies.

In figure 2, the per capita GDP for eight developed countries, UK, USA, Belgium, Japan, Canada, Germany, France and Switzerland has been plotted. The figure shows that the per capita GDP of the developed countries have moved more or less similarly over the years.

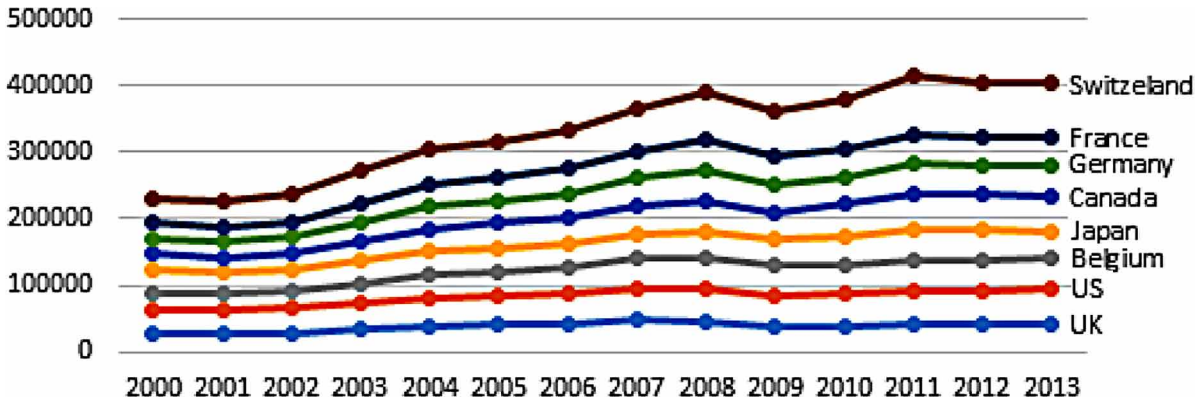
*Figure 1. Per capita GDP across emerging nations: 2000-2013*






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*Figure 2. Per capita GDP of developed nations: 2000-2013*




A quick look at the two figures makes two things clear. First, among the selected emerging nations, some countries perform significantly better in terms of achieving a higher per capita income than the others. Second, there is a drastic gap between the per capita income of the emerging nations and the developed nations. Among our selected emerging nations, in 2013 the country with the highest per capita GDP is Chile with $15732.5 while among the developed nations, the country with the lowest per capita GDP in 2013 is Japan with $38633.7, more than twice of Chile's per capita GDP. Switzerland has the highest per capita GDP in 2013, $847 48.4, almost seven and a half time higher than that of Chile's.

The obvious question that comes at this point of time is whether these huge gap between the per capita GDP of emerging and developed nations decreasing, pointing towards a possible convergence. To understand the trend, the average per capita GDP for eight emerging countries and the average per capita GDP for the developed countries have been calculated for all 14 years in question. These two are then plotted in figure 3. It is quite evident from figure 3that, on an average, the gap between the per capita GDP of developed and emerging nations not only did not decrease, it actually increased significantly. This points towards the idea against convergence which says that capital accumulation leads to increasing returns to scale and therefore, economies that start with greater capital stock will eventually diverge from the poorer nations, typically with smaller capital stock.

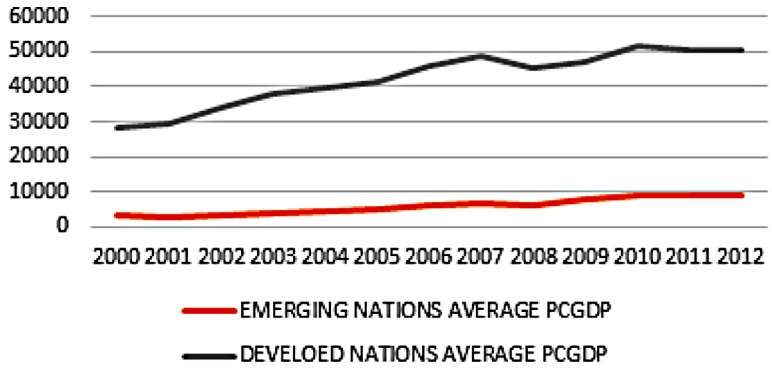
## EARLIER WORKS

There has been a vast body of literature trying to identify the impact of performance variables on the growth rate. Empirically, some of the major positive determinants of economic growth have been found out to be in human capital (Lucas, 1993; Barro, 1998), technology (Kuznets, 1966), trade openness (Lockwood, 1954; Rodrik, 1999), institutions (North, 1990;Olson, Sarna & Swamy 1998; Acemouglu, Johnsonn & Robinson, 2001). However, the relationship of FDI and financial system with growth has been largely mixed (Borensztein, Gregorio & Lee, 1998; Campos & Kinoshita, 2002; Aziz & Duenwald, 2002; Mehl, Vespro & Winkler, 2006).While Barro and Sala-i-Martin (1999) have shown evidence of a negative impact of political instability on the growth rate, Kaufmann, Kray and Mastruzzi (1999) provided evidence for a significant influence of quality of governance on the per capita GDP. Barro's (2003) paper



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*Figure 3. Comparison of average per capita GDP of emerging and developed nations*




considered 113 countries and showed that "growth rate rises when the initial level of real per capita GDP is low relative to the starting amount of human capital in the forms of educational attainment and health and for given values of other variables that reflect policies, institutions, and national characteristic".

Borys, Polgár and Zlate (2008) conducted a panel data analysis on EU candidate and potential candidate countries to see the impact on growth. They considered variables such as impact of initial GDP per capita, investment, initial FDI stock, inflation, government balance as a percentage of GDP, economic freedom, exchange rate regime, trade openness, terms of trade, EBRD transition indicator, claims on the private sector as a percentage of GDP and a crisis dummy and found a significant impact of most of the variables on the growth rate.

However, one must also keep in mind the negative externalities of growth on the environment. Therefore, assessing growth merely in terms of per capita income may very well be misleading. The environmental Kuznets curve shows a negative relationship between environmental degradation and income growth. The seminal study by Grossman and Krueger (1995) has shown that the level of pollution and contamination of the environment is inversely proportional with the growth level, at least in the short run. According to Grossman and Krueger (1995), the improvement in the growth level doesn't take place till the per capita income hits $8000, which is a far cry from the current Indian per capita income. For a country like India, which is poised to touch double digit growth rate in near future (Business Standard, February 27, 2015), emphasis on the green convergence is of utmost importance.

However, the empirical evidences of the relationship between emissions and economic growth are mostly mixed. Zhang and Cheng (2009) found no significant relationship between emissions and growth in the long run in context of China over the period 1960 – 2007. Soytas, Sari and Ewing (2007) also found no discernible relationship between income and carbon emissions. Halicioglu (2009) provided evidence for a bidirectional causal relationship between carbon emissions and income growth in Turkey. Song, Zheng & Tong (2008) found strong relationship between environmental degradation and economic growth in context of China.



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## OBJECTIVE OF THE STUDY

The objective of this study is to:

- Identify the long run equilibrium relationship between the growth rate and selected economic and institutional indicators for emerging countries and developed countries
- To identify any discernible pattern in the long run relationship for emerging countries and developed countries
- To identify whether on an average, the indicators play a significant role in changing the per capita GDP differential between emerging and developed nations in the desired direction
- To identify whether on for each individual emerging nation, the indicators play a significant role in changing the per capita GDP differential between emerging and developed nations in the desired direction
- Having identified the determinants of growth convergence, to identify whether the growth in emerging nations also cause a reduction in carbon dioxide emission.

## VARIABLES AND SAMPLE PERIODS

For the purpose of this study, the following variables have been selected:

1. Per capita GDP (PCGDP). According to the convergence theory, countries with lower per capita income will grow faster. Therefore, having it as the dependent variable help identify the determinants of per capita GDP. This data is collected from the Central Banks websites of the respective countries.
2. GDP growth rate (GDPGR): A higher and sustained GDP growth rate would help speed up the convergence. Calculated as the percentage change of GDP from previous year.This data is collected from the Central Banks websites of the respective countries.
3. Gross fixed capital formation as a percentage of GDP (GFCF) is included in the model as an independent variable to measure the overall level of investment in the country. This data is collected from World Bank's website.
4. Foreign direct investment, net inflows in current US dollars (FDI) is another independent variable that captures the investment in the country. Foreign direct investment has played a significant role in the growth dynamics of emerging nations. In countries like India, the growth in the last decade has been largely fueled by massive foreign direct investments. Foreign direct investment and directly influence growth and real convergence in two ways, first by allowing technological spillover accelerate growth and second by providing much-needed capital which is instrumental for growth. This data is collected from the Central Banks websites of the respective countries.
5. Rate of inflation (INFL) is included as an independent variable to control for the macroeconomic stabilization policies. Calculated as the percentage change of consumer price index from the previous year. This data is collected from the Central Banks websites of the respective countries.
6. International trade as a percentage of GDP (TRADE) is included as an independent variable to account for the trade openness of the country. This data is collected from the Central Banks websites of the respective countries.



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7. Net barter terms of trade index (TOT) have been included as an independent variable to capture the income position of the country's residents. The terms of trade index is calculated as the price of exports in terms of the price of imports. Therefore if the terms of trade index increases, the imports will become relatively cheaper and the income position of the country would improve, which in turn would translate into higher growth. This data is collected from World Bank's website.
8. Index of economic Freedom (FREE): The role of institutions has always been debated in growth theory. To measure the quality of institutions, the index of economic Freedom published by the Heritage Foundation is included as one of the independent variables.
9. All the variables are collected from 2000-2012, subjected to data availability.

## AUTOREGRESSIVE DISTRIBUTED LAG MODEL AND BOUNDS TEST

To estimate a long run relationship among the selected variables, an autoregressive distributed lag (ARDL) model is used. In this particular dataset, an ARDL model would be more appropriate than another dynamic panel data model such as an error correction model as the number of time series observations are relatively small, which may lead to complexities in modeling long run relationships using a ECM (Oxera, 2010). In an ARDL model, the dependent variable is expressed as a function of its own lagged terms as well as the current and past valued of a set of other regressors. A basic ARDL(p,q,q,…q) model with t = 1, 2, ….., T time periods and i = 1, 2, …., N groups, can be expressed as –

$$y_t = \beta_0 + \beta_1 y_{t-1} + ..... + \beta_k y_{t-p} + \alpha_0 x_t + \alpha_1 x_{t-1} + \alpha_2 x_{t-2} + ..... + \alpha_q x_{t-q} + \varepsilon_t,$$

or,

$$y_t = \sum_{j=1}^{p} \beta_j y_{t-j} + \sum_{j=0}^{q} \alpha_j x_{t-j} + \beta_0 + \varepsilon_t$$

where $x_t(k\times1)$ $\left(k\times1\right)$ is a vector of regressors for group i,

$\beta_0$ represents the fixed effect
$\beta_j$ are scalars, and coefficients of lagged $y_t$
$\alpha_j$ are coefficient vectors (k x 1)
$\varepsilon_t$ is the random error term

The ARDL/Bounds test methodology as suggested by Pesaran and Shin (1999) and Pesaran, Shin and Smith (2001) has additional advantages over other tests of cointegration as the long run estimated coefficients are efficient, even if the regressors are I(0) or I(1) or a mix (Pesaran and Shin, 1995). However, in presence of I(2) regressors the model will not work (Giles, web).

For any I(d) variable, (where d = 0 or 1), the bounds test provides a lower value of F-statistic assuming a I(0) process and a upper value of F-statistic assuming a I(1) process. It tests the null hypothesis of $\beta_j=\alpha_j=0$ or no significant long run relationship against the alternate hypothesis $\beta_j\neq\alpha_j\neq0$ or significant



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long run relationship. If the calculated F-statistic is greater than the upper bound, the null hypothesis of no long run equilibrium relationship can be rejected and if the calculated F-statistic is less than the lower bound, the null hypothesis of no long run equilibrium relationshipcannot be rejected.For any F-value that fall within the bound, the result is inconclusive.

To understand the long run dynamics between the growth and economic indicators, the study estimates three ARDL models.

**Model 1:** Convergence indicator: Growth rate.

This model estimates two independent ARDL models. The first model tries to examine the long run equilibrium relationship between growth rate of emerging nations (dependent variable) and the selected indicators from the emerging nations (independent variable). The second model examines the same long run relationship, but in context of developed countries.

The models can be expressed as –

**Model 1.1:**

$$GDPGR_{it-1}^{EMER} = \beta_0 + \sum_{j=1}^{p}\beta_1 GDPGR_{it-1}^{EMER} + \sum_{j=0}^{q}\alpha_1 GFCF_{it-1}^{EMER} + \sum_{j=0}^{q}\alpha_2 FDI_{it-1}^{EMER} + \sum_{j=0}^{q}\alpha_3 INFL_{it-1}^{EMER} + \sum_{j=0}^{q}\alpha_4 TRADE_{it-1}^{EMER} + \sum_{j=0}^{q}\alpha_5 TOT_{it-1}^{EMER} + \sum_{j=0}^{q}\alpha_6 FREE_{it-1}^{EMER} + \varepsilon_t$$

**Model 1.2:**

$$GDPGR_{it-1}^{DEV} = \beta_0 + \sum_{j=1}^{p}\beta_1 GDPGR_{it-1}^{DEV} + \sum_{j=0}^{q}\alpha_1 GFCF_{it-1}^{DEV} + \sum_{j=0}^{q}\alpha_2 FDI_{it-1}^{DEV} + \sum_{j=0}^{q}\alpha_3 INFL_{it-1}^{DEV} + \sum_{j=0}^{q}\alpha_4 TRADE_{it-1}^{DEV} + \sum_{j=0}^{q}\alpha_5 TOT_{it-1}^{DEV} + \sum_{j=0}^{q}\alpha_6 FREE_{it-1}^{DEV} + \varepsilon_t$$

**Model 2:** Rather than looking only at the emerging or developed countries growth pattern, it is often useful to take a look at the per capita GDP gap between developed and developing nations to understand whether the developing nations are indeed marching towards the developed ones. The second model attempts to examine the long run relationship between the per capitaGDP differential between developed and emerging nations (*PCGDP_D:*dependent variable) and individual emerging country indicators (independent variables). For that purpose, the study estimates an ARDL model.

$$PCGDP_{Dit} = \beta_0 + \sum_{j=1}^{p}\beta_1 PCGDP_{Dt-j} + \sum_{j=0}^{q}\alpha_1 GFCF_{it-1}^{EMER} + \sum_{j=0}^{q}\alpha_2 FDI_{it-1}^{EMER} + \sum_{j=0}^{q}\alpha_3 INFL_{it-1}^{EMER} + \sum_{j=0}^{q}\alpha_4 TRADE_{it-1}^{EMER} + \sum_{j=0}^{q}\alpha_5 TOT_{it-1}^{EMER} + \sum_{j=0}^{q}\alpha_6 FREE_{it-1}^{EMER} + \varepsilon_t$$



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If the coefficients are found to be significant, it implies that by controlling the country's own economic policies it is possible to control the GDP gap between developed and emerging nations.

**Model 3:** The third model attempts to examine the long run relationship between the per capita GDP differential between developed and emerging nations (dependent variable) and differences in indicators for individual emerging country and developed country (independent variables). For that purpose, the study estimates an ARDL model.

$$PCGDP_D_{it} = \beta_0 + \sum_{j=1}^{p}\beta_1 PCGDP_D_{t-j} + \sum_{j=0}^{q}\alpha_1 GFCF_D_{t-j} + \sum_{j=0}^{q}\alpha_2 FDI_D_{t-j} + \sum_{j=0}^{q}\alpha_3 INFL_D_{t-j} + \sum_{j=0}^{q}\alpha_4 TRADE_D_{t-j} + \sum_{j=0}^{q}\alpha_5 TOT_D_{t-j} + \sum_{j=0}^{q}\alpha_6 FREE_D_{t-j} + \varepsilon_t$$

where,

PCGDP_D (dependent variable): average per capita GDP of developed countries less the average per capita GDP of emerging countries.

INFL_D (independent variable): average rate of inflation in developed countries less the average rate of inflation in emerging countries.

GFCF_D (independent variable): average gross fixed capital formation as a percentage of GDP in developed countries less the average gross fixed capital formation as a percentage of GDP emerging countries.

FDI_D (independent variable): average foreign direct investment in developed countries less the foreign direct investment in emerging countries.

TRADE_D (independent variable): average international trade as a percentage of GDP in developed countries less the average international trade as a percentage of GDP in emerging countries.

TOT_D (independent variable): average terms of trade developed countries less the average terms of trade in emerging countries.

FREE_D (independent variable): average index of economic freedom in developed countries less the average index of economic freedom in emerging countries.

**Model 4:** The growth pattern in the emerging nations has largely been inefficient and unsustainable. Green growth has always been an important objective for the emerging countries to achieve. Although the emissions by emerging nations remain smaller than that of the developed nations, in the last few decades, the emission done by the emerging nations have increased significantly. In recent past, in the wake of significant global warming, it is of utmost importance for all the nations to reduce their carbon footprints. The onus is more so on the emerging nations because their emissions are usually higher than the developed countries. However, straddled with low per capita income and a target keep up with a satisfactory GDP growth rate year by year, it gives the poorer emerging nations little headspace to adopt greener technologies, which are more expensive and not immediately profitable. Therefore, the invariable question remains, whether maintain a satisfactory GDP growth rate, the emerging nations compromise with their emissions.



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Continuous environmental degradation, eventually leading to scarcity of food, clean water and energy will have significant socio-economic impact. Therefore, to achieve green growth, efficient planning is of paramount importance. A study by Gramkow (2012), in the context of Brazil, has in fact provided evidence towards the fact that by taking correct fiscal policy, green growth can be achieved. However, given constrained resources and often failed governance, achieving green growth has remained quite elusive for the emerging nations (Worldbank, 2012). Hynes and Wang (2012) have exhaustively outlined the outcomes of green growth, especially in context of emerging nations. Their paper has divided the benefits into three categories, economic, environmental and social. The economic benefits are - higher and more equitable distribution of GDP, boost in the production of ecosystem services and therefore revenues brought by them, economic diversification of risk, greater innovation towards development of green technologies. The environmental benefits are - increased productivity and more efficient use of natural resources, usage of natural capital win within the limit, greater usage of nonrenewable capital and reduction of adverse environmental impact on the economy. The social benefits are - better standard of living especially for the poor through new job creation and higher income, enhanced social, human and knowledge capital and reduction in inequality of income.

The question remains, are the fast growth in emerging nations necessarily green growths? Or do they promote a higher level of emissions?To answer this question, this study investigates the relationship between growth rate and environment friendliness of emerging nations, a ARDL model with carbon dioxide emission from energy usage as the dependent variable and GDP growth rate as an independent variable is estimated.

$$GDPGR_{it-1}^{EMER} = \beta_0 + \sum_{j=1}^{p} \beta_1 GDPGR_{it-1}^{EMER} + \sum_{j=0}^{q} \alpha_1 EMISSION_{it-1}^{EMER} + \varepsilon_t$$

For the ARDL models, the bounds test will test for the joint significance of the lagged variables using an F test and the following hypothesis,

**$H_0$:** $\beta_1 = \alpha_1 = \alpha_2 = \alpha_3 = \alpha_4 = \alpha_5 = \alpha_6 = 0$
**$H_0$:** $\beta_1 \neq \alpha_1 \neq \alpha_2 \neq \alpha_3 \neq \alpha_4 \neq \alpha_5 \neq \alpha_6 \neq 0$

## RESULTS

### Stationarity

First, stationarity of the variables are checked using the Augmented Dickey Fuller test. Table 1 and table 2 below shows the results for the emerging country variables and the developed country variables respectively. From table 1, it can be seen that except GDP growth rate, all other variables are I(1), while GDP growth rate is I(0). For the developed country variables as presented in table 2, except inflation all the variables are I (1) while inflation is I(0). All that is statistics are significant at a strong 1% level. As there is no I (2) variable, the data are for use in an ARDL model.



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*Table 1. Results of augmented Dickey Fuller Tests for emerging country variables*

| | GDPGR | INFL | GFCF | FDI | TRADE | TOT | FREE |
|---|---|---|---|---|---|---|---|
| ADF | -6.07*** | -13.29*** | -9.81*** | -8.96*** | -10.31*** | -7.95*** | -10.05*** |
| Stationarity | I(0) | I(1) | I(1) | I(1) | I(1) | I(1) | I(1) |

***, **and * implies significance at 1%, 5% and 10% level respectively

*Table 2. Results of Augmented Dickey Fuller Tests for developed country variables*

| | GDPGR | INFL | GFCF | FDI | TRADE | TOT | FREE |
|---|---|---|---|---|---|---|---|
| ADF | -10.05*** | -6.35*** | -10.71*** | -7.72*** | -10.22*** | -10.15*** | -10.39*** |
| Stationarity | I(1) | I(0) | I(1) | I(1) | I(1) | I(1) | I(1) |

***, **and * implies significance at 1%, 5% and 10% level respectively

## Model 1.1: ARDL and Bounds test for Emerging Countries

The ARDL model is estimated for the emerging country variables. The appropriate order of the model is selected using the Akaike information criteria. The model with the lowest AIC is chosen (Figure 4). In this case, the selected model is ARDL (1, 0, 1, 3, 0, 1, 2). The result from the estimated ARDL model is summarized in Table 3. as it can be seen, one period lagged gdp growth rate, foreign direct investment (current, first lag and third lagged), terms of trade (current and one period lagged) and one period lagged economic freedom have significant impact on current gdp growth rate in the emerging countries. to be noted here, although the impact of fdi looks very small, this is due to the unit selected (fdi is considered as us $, so the impact of an increase of $1 million us$ would have an impact 1,000,000 times larger.

an important condition for the estimated parameters to be consistent is that there should not be any serial correlation among the error terms of the model. to check it, the autocorrelation and partial autocorrelation till 15 lags have been checked. based on the q statistics and the corresponding probability values, no significant evidence of autocorrelation is found. the result is summarized in Table 4.

In the final step, the bounds test is performed. The result is summarized in Table 5. The F statistic is clearly higher than the 5% significance level per pound and therefore the null hypothesis of no long run relationship can be rejected.

To summarize, it can be concluded that for emerging economies, there exists a long run equilibrium relationship between the growth rates and the selected variables with appropriate lags. However, the impacts of all the variables at all the lags are not statistically significant.

## Model 1.2: ARDL and Bounds Test for Developed Countries

As a natural progression of the study, the long run relationship between growth rate and the selected variables for developed countries are also examined. The purpose is to identify any discernible difference in the relationship among the variables than in the emerging countries. In the next steps, the ARDL process is repeated for developed countries. The optimum estimated model is ARDL(1, 3, 2, 1, 0, 0, 0), the lag length is selected based on the minimum Akaike information criteria (Figure 2).



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*Table 3. Result of ARDL model for relationship between growth rate of emerging nations and the selected indicators from the emerging nations (model 1.1)*

| **Selected Model: ARDL(1, 0, 1, 3, 0, 1, 2)** | |
|---|---|
| **Variable** | **Coefficient** |
| gdpgr(-1) | 0.2334** |
| infl | -0.0359 |
| gfcf | 0.0211 |
| gfcf(-1) | 0.1809 |
| fdi | 2.46e-11** |
| fdi(-1) | -2.96e-11** |
| fdi(-2) | 8.90e-12 |
| fdi(-3) | -1.63e-11** |
| trade | 0.0019 |
| tot | 0.0681*** |
| tot(-1) | -0.0721*** |
| free | 0.1805* |
| free(-1) | -0.3781*** |
| free(-2) | 0.1351 |
| c | 3.6753 |
| akaike info criterion | 4.732526 |
| adjusted r-squared | 0.4779 |
| f-statistic | 7.538168 |
| prob(f-statistic) | 0 |

***, **and * implies significance at 1%, 5% and 10% level respectively

Table 6 below shows the results from the ARDL estimation. Inflation (current and one period lagged), current GFCF and the current terms of trade have significant impact (at 5% level) on the current growth rate. Although FDI (current and 1 period lagged) also have some impact, it is significant only at 10% level. For the variables which are indeed significant, the magnitude of the impact is significantly higher than in the emerging countries. The correlogram in table 7 suggests that there is no significant autocorrelation till 15 past lags. Therefore, the estimated coefficients presented in table 6 are indeed efficient.

The F statistic found from the bounds test is higher than the upper bound at 5% level (table 8) and as a result, the now hypothesis of no long-run relationship is rejected.

To summarize, there exists a long-run equilibrium relationship between the growth rate and the selected variables in context of developed countries. However, very few variables are in fact significant in their impact on the current growth rate.

Before model 2 and model 3 are run, which involve the difference variables, their stationarity is tested to ensure usability for the ARDL model. The result of ADF test for the difference variables are summarized below in Table 9.



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*Figure 4. Akaike information criteria for top 20 models (model 1.1)*

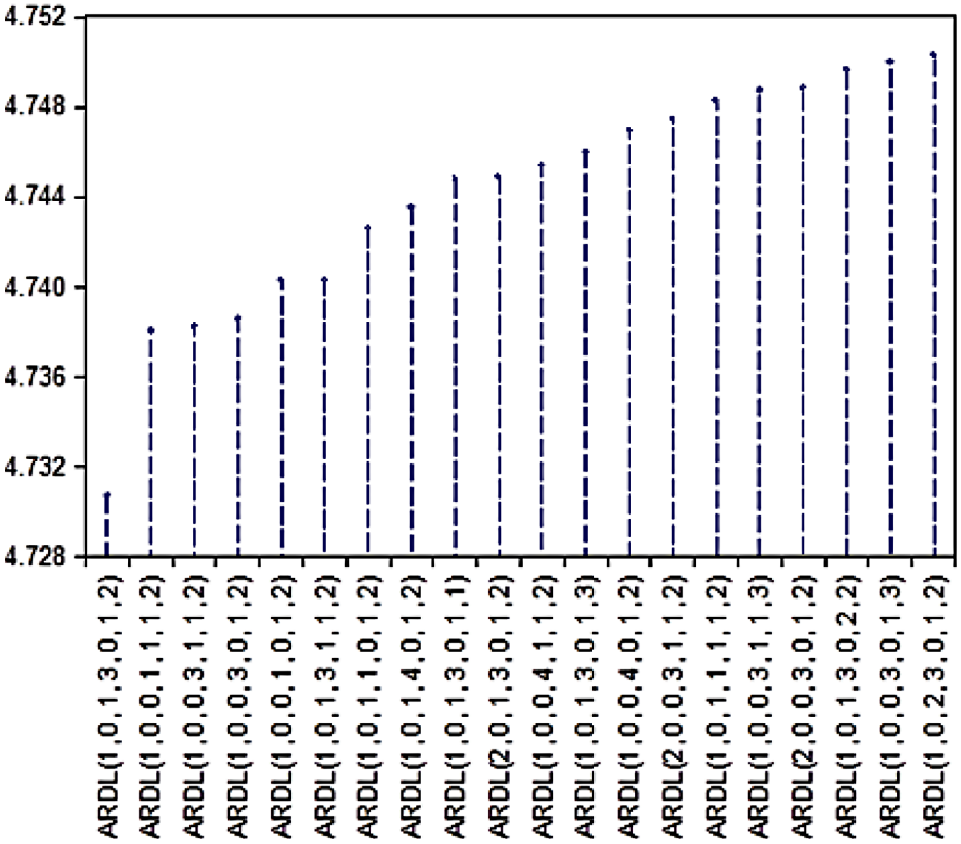



*Table 4. Correlogram for model 1.1*

| Lags | AC | PAC | Q-Stat | Prob |
|---|---|---|---|---|
| 1 | -0.024 | -0.024 | 0.0584 | 0.809 |
| 2 | 0.019 | 0.019 | 0.0977 | 0.952 |
| 3 | 0.158 | 0.159 | 2.7494 | 0.432 |
| 4 | 0.07 | 0.079 | 3.2739 | 0.513 |
| 5 | -0.112 | -0.118 | 4.6431 | 0.461 |
| 6 | 0.17 | 0.14 | 7.7983 | 0.253 |
| 7 | 0.104 | 0.101 | 9.0049 | 0.252 |
| 8 | -0.002 | 0.025 | 9.0055 | 0.342 |
| 9 | -0.103 | -0.151 | 10.216 | 0.333 |
| 10 | 0.099 | 0.032 | 11.337 | 0.332 |
| 11 | -0.029 | 0.006 | 11.435 | 0.408 |
| 12 | -0.085 | -0.064 | 12.287 | 0.423 |
| 13 | 0.271 | 0.256 | 20.974 | 0.073 |
| 14 | -0.095 | -0.147 | 22.044 | 0.078 |
| 15 | -0.084 | -0.036 | 22.89 | 0.087 |



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*Table 5. Result of Bounds Test for model 1.1*

| **Null Hypothesis: No Long-Run Relationships Exist** | | |
|---|---|---|
| Test Statistic | Value | k |
| F-statistic | 9.411138 | 6 |
| Critical Value Bounds | | |
| Significance | I0 Bound | I1 Bound |
| 10% | 2.12 | 3.23 |
| 5% | 2.45 | 3.61 |
| 2.50% | 2.75 | 3.99 |
| 1% | 3.15 | 4.43 |
| Variable | Coefficient | |
| D(GFCF) | 0.028131 | |
| D(FDI) | 2.38E-11** | |
| D(FDI(-1)) | 7.49E-12 | |
| D(FDI(-2)) | 1.65E-11** | |
| D(TOT) | 0.065082** | |
| D(FREE) | 0.185315** | |
| D(FREE(-1)) | -0.13617 | |
| C | 3.361865 | |
| INFL(-1) | -0.03226 | |
| GFCF(-1) | 0.212381*** | |
| FDI(-1) | -1.39E-11 | |
| TRADE(-1) | -0.00047 | |
| TOT(-1) | -0.00534 | |
| FREE(-1) | -0.05599 | |
| GDPGR(-1) | -0.76253*** | |
| R-squared | 0.512096 | |
| Adjusted R-squared | 0.43267 | |

***, **and * implies significance at 1%, 5% and 10% level respectively

## Model 2: ARDL and Bounds Test for Estimating the Long Run Relationship Between the Per Capital GDP Differential Between Developed and Emerging Nations and Individual Emerging Country Indicators

Next, the study estimates model 2 in order to estimate long run relationship between the per capital GDP differential between developed and emerging nations and individual emerging country indicators. The selected model is ARDL(2, 0, 1, 1, 0, 1, 2) as per the Akaike information criteria (Figure 3). The results from the ARDL model (table 10) suggest that per capita GDP (1 and 2 period lagged), previous year's inflation, FDI (current and 1 period lagged), GFCF (current and 1 period lagged), terms of trade (current



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*Table 6. Result of ARDL model for relationship between the GDP growth rate between developed and emerging nations and individual emerging country indicators (model 1.2)*

| Variable | Coefficient |
|---|---|
| GDPGR(-1) | 0.05695 |
| INFL | 0.695688*** |
| INFL(-1) | -0.98259*** |
| INFL(-2) | 0.254179 |
| INFL(-3) | -0.34707** |
| GFCF | 0.426982** |
| GFCF(-1) | -0.17968 |
| GFCF(-2) | -0.21531 |
| FDI | 5.18E-12* |
| FDI(-1) | -4.64E-12* |
| TRADE | 0.001051 |
| TOT | 0.031159** |
| FREE | 0.010281 |
| C | -2.46075 |
| R-squared | 0.498114 |
| Adjusted R-squared | 0.42312 |
| F-statistic | 6.642012 |
| Prob(F-statistic) | 0 |

***, **and * implies significance at 1%, 5% and 10% level respectively

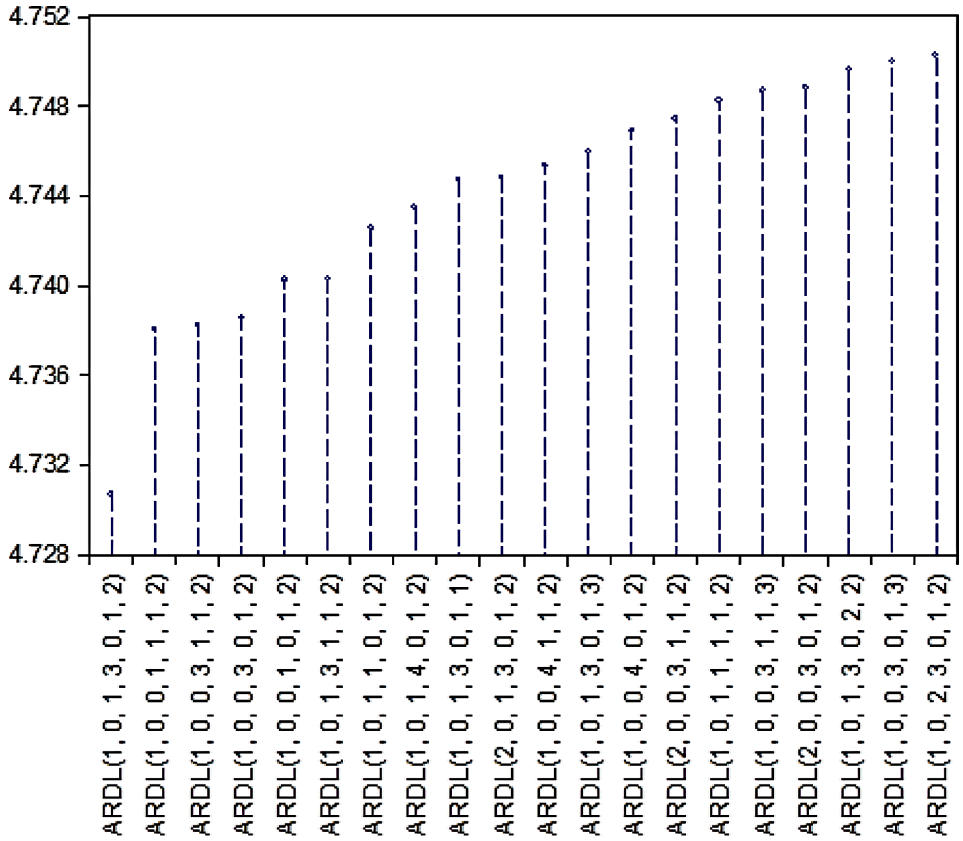
*Table 7. Correlogram for model 1.2*

| Lags | AC | PAC | Q-Stat | Prob* |
|---|---|---|---|---|
| 1 | -0.024 | -0.024 | 0.0584 | 0.809 |
| 2 | 0.019 | 0.019 | 0.0977 | 0.952 |
| 3 | 0.158 | 0.159 | 2.7494 | 0.432 |
| 4 | 0.07 | 0.079 | 3.2739 | 0.513 |
| 5 | -0.112 | -0.118 | 4.6431 | 0.461 |
| 6 | 0.17 | 0.14 | 7.7983 | 0.253 |
| 7 | 0.104 | 0.101 | 9.0049 | 0.252 |
| 8 | -0.002 | 0.025 | 9.0055 | 0.342 |
| 9 | -0.103 | -0.151 | 10.216 | 0.333 |
| 10 | 0.099 | 0.032 | 11.337 | 0.332 |
| 11 | -0.029 | 0.006 | 11.435 | 0.408 |
| 12 | -0.085 | -0.064 | 12.287 | 0.423 |
| 13 | 0.271 | 0.256 | 20.974 | 0.073 |
| 14 | -0.095 | -0.147 | 22.044 | 0.078 |
| 15 | -0.084 | -0.036 | 22.89 | 0.087 |



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*Figure 5. Akaike criteria to estimate ARDL model using developed country variables (Model 1.2)*




and 1 period lagged) and economic freedom (2 period lagged) play a significant role in determining the per capita GDP differential.

The correlogram suggests no autocorrelation till 15 lags (Table 11), so bounds test is employed (Table 12).

The results from bounds test show that the F-statistic is clearly higher than the 1% upper bound, therefore it can be concluded that there exists a significant long run equilibrium relationship in the long run.

## Model 3: ARDL and Bounds Test for Estimating the Long Run Relationship Between the Per Capita GDP Differential Between Developed and Emerging Nations and Differences in Indicators for Individual Emerging Country and Developed Country

Results from the ARDL model for long run relationship between per capita GDP differential between developed and emerging nations and differences in indicators for individual emerging country and developed country are summarized in table 13. The result shows that per capita GDP gap in current period is dependent on past periods GDP differentials (up to 4 lags, all significant at 1%), gross fixed capital formation differential (first lag), foreign direct investment differentials (up to 3 lags, all significant at 1%) and terms of trade differentials (current, first and third lag).



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*Table 8. Result of Bounds Test for model 1.2*

| **Null Hypothesis: No long-run relationships exist** | | |
|---|---|---|
| **Test Statistic** | **Value** | **k** |
| F-statistic | 9.411138 | 6 |
| Critical Value Bounds | | |
| Significance | I0 Bound | I1 Bound |
| 10% | 2.12 | 3.23 |
| 5% | 2.45 | 3.61 |
| 2.50% | 2.75 | 3.99 |
| 1% | 3.15 | 4.43 |
| Variable | Coefficient | |
| D(INFL) | 0.736801*** | |
| D(INFL(-1)) | 0.047945 | |
| D(INFL(-2)) | 0.325847** | |
| D(GFCF) | 0.426806*** | |
| D(GFCF(-1)) | 0.219307 | |
| D(FDI) | 4.57E-12* | |
| C | -2.1828 | |
| INFL(-1) | -0.25007 | |
| GFCF(-1) | 0.023514 | |
| FDI(-1) | -4.68E-13 | |
| TRADE(-1) | 0.001227 | |
| TOT(-1) | 0.01913 | |
| FREE(-1) | 0.022854 | |
| GDPGR(-1) | -0.94421*** | |
| | | |
| R-squared | 0.732774 | |
| Adjusted R-squared | 0.692844 | |

***, **and * implies significance at 1%, 5% and 10% level respectively

*Table 9. Result of ADF test for the difference variables*

| | **PCGDP_D** | **INFL_D** | **GFCF_D** | **FDI_D** | **TRADE_D** | **TOT_D** | **FREE_D** |
|---|---|---|---|---|---|---|---|
| ADF | -2.80* | -13.44*** | -9.87*** | -10.96*** | -10.26*** | -8.64*** | -10.20*** |

***, **and * implies significance at 1%, 5% and 10% level respectively



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*Table 10. Result of ARDL model for long run relationship between the per capital GDPdifferential between developed and emerging nations and individual emerging country indicators (Model 2)*

| Selected Model: ARDL(2, 0, 1, 1, 0, 1, 2) | |
|---|---|
| **Variable** | **Coefficient** |
| PCGDP_D(-1) | 0.89778*** |
| PCGDP_D(-2) | -0.299801*** |
| INFL | 234.6101** |
| FDI | 5.58E-08*** |
| FDI(-1) | -4.16E-08*** |
| GFCF | 468.2776*** |
| GFCF(-1) | -452.6792*** |
| TRADE | 14.2368* |
| TOT | 176.4265*** |
| TOT(-1) | -148.3815*** |
| FREE | -185.0375 |
| FREE(-1) | 297.9214* |
| FREE(-2) | -248.4954** |
| C | 16048.54 |
| R-squared | 0.816652 |
| Adjusted R-squared | 0.789567 |

***, **and * implies significance at 1%, 5% and 10% level respectively

The estimated model is ARDL(4, 2, 1, 3, 0, 3, 0), selected on the basis of Akaike Information Criteria (Figure 4). Also, the correlogram suggest no serial autocorrelation till 12 lags (Table 14).

The bounds test result (Table 15) shows that the F statistic is greater than the 1% upper bound, therefore rejecting the null of no long run equilibrium relationship.

## Model 4. ARDL Model With Emission Differential and Per Capita GDP Gap Between Developed and Emerging Nations

Having clearly established the possible determinants of the growth rate and the GDP differential, the study now shift towards estimating the impact of growth on the emerging countries carbon footprints. For this purpose, a ARDL model is estimated with per capita GDP for emerging nations and the annual carbon dioxide emission from energy usage in emerging nations, with the emission differential as the dependent variable. The emission data turns out to be I(1), as suggested by the result of the unit root test (Table 16) and therefore is fit to be estimated using ARDL model.

Table 17 summarizes the result of the ARDL model. The result shows that current year's differential in emission in emerging countries is significantly (at a strong 1% level) influenced by previous year's emission and current year's GDP growth rate. The suitable model is ARDL(1, 2), according to Akaike information criteria (Figure 5).



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*Figure 6. Akaike Information Criteria for Model 2*

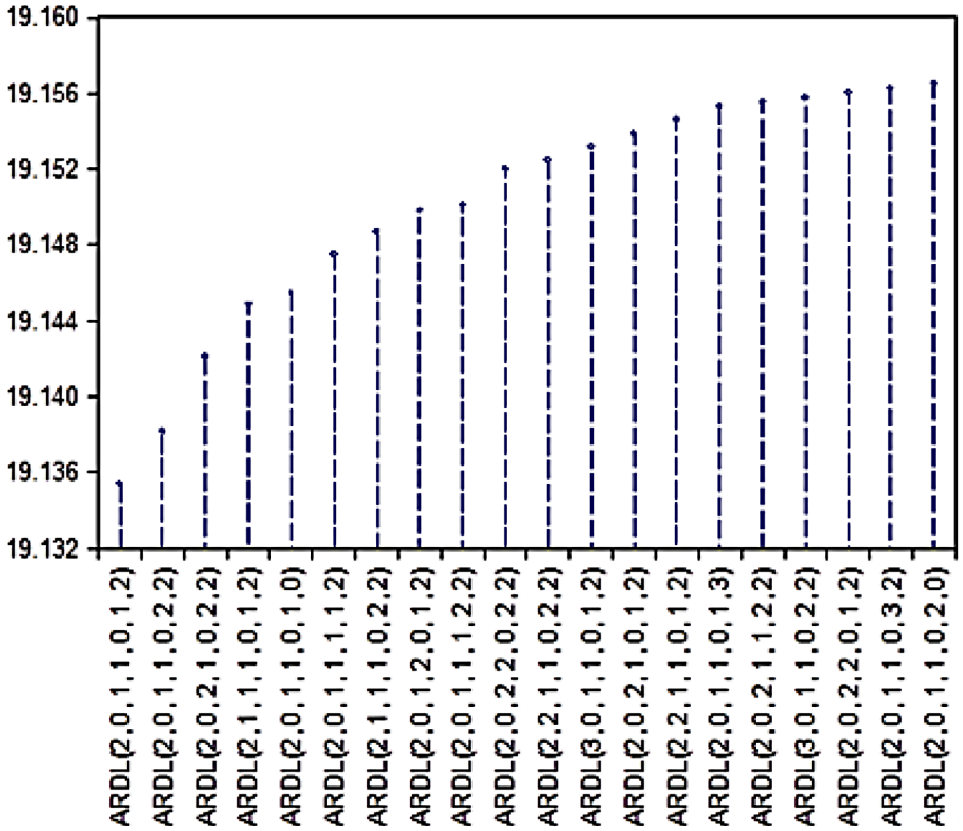



*Table 11. Correlogram for model 2*

| Lags | AC | PAC | Q-Stat | Prob* |
|---|---|---|---|---|
| 1 | 0.011 | 0.011 | 0.0138 | 0.906 |
| 2 | -0.159 | -0.16 | 2.7082 | 0.258 |
| 3 | 0.041 | 0.046 | 2.8865 | 0.409 |
| 4 | 0.08 | 0.055 | 3.5803 | 0.466 |
| 5 | -0.012 | -0.001 | 3.5963 | 0.609 |
| 6 | -0.125 | -0.109 | 5.31 | 0.505 |
| 7 | -0.128 | -0.138 | 7.1536 | 0.413 |
| 8 | -0.019 | -0.058 | 7.1951 | 0.516 |
| 9 | 0.059 | 0.034 | 7.5958 | 0.575 |
| 10 | 0.006 | 0.024 | 7.6003 | 0.668 |
| 11 | -0.124 | -0.099 | 9.3898 | 0.586 |
| 12 | 0.006 | -0.009 | 9.394 | 0.669 |
| 13 | 0.258 | 0.202 | 17.338 | 0.184 |
| 14 | -0.024 | -0.043 | 17.41 | 0.235 |
| 15 | -0.168 | -0.106 | 20.831 | 0.142 |



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*Table 12. Result of Bounds Test for model 2*

| ARDL Bounds Test | | |
|---|---|---|
| **Null Hypothesis: No long-run relationships exist** | | |
| **Test Statistic** | **Value** | **k** |
| F-statistic | 6.388615 | 6 |
| Critical Value Bounds | | |
| Significance | I0 Bound | I1 Bound |
| 10% | 2.12 | 3.23 |
| 5% | 2.45 | 3.61 |
| 2.50% | 2.75 | 3.99 |
| 1% | 3.15 | 4.43 |

*Table 13. Result of ARDL model for long run relationship between per capita GDP differential between developed and emerging nations and differences in indicators for individual emerging country and developed country (Model 3)*

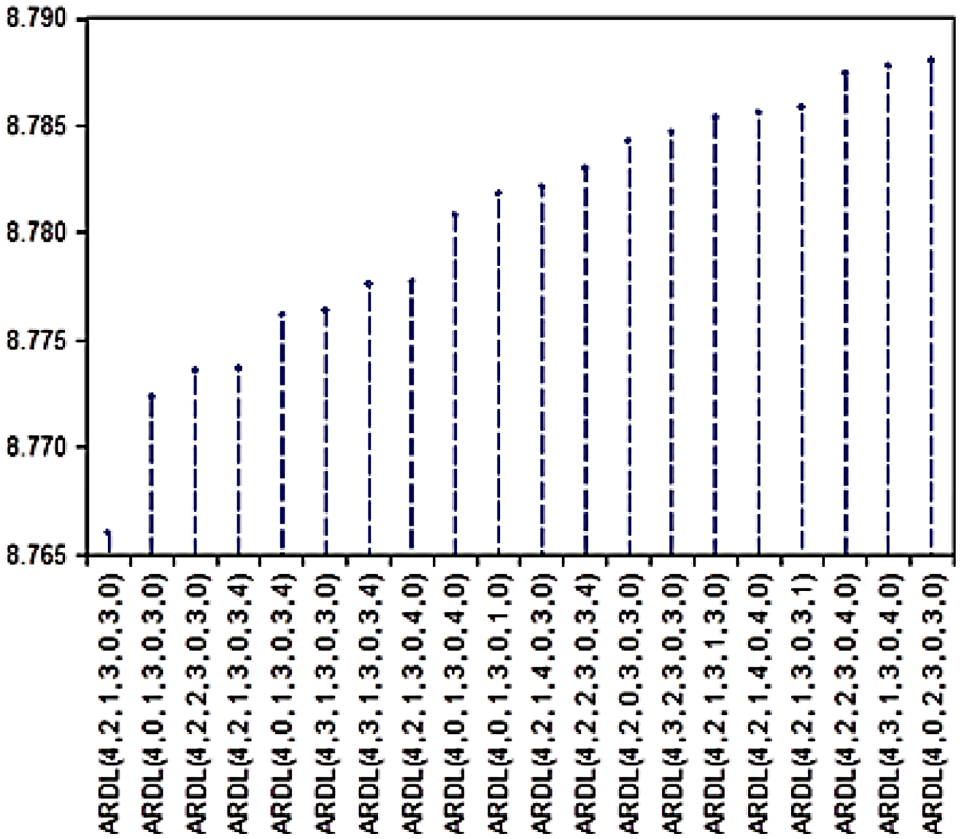
| Variable | Coefficient |
|---|---|
| PCGDP_D(-1) | 1.102517*** |
| PCGDP_D(-2) | -0.80289*** |
| PCGDP_D(-3) | 0.485026*** |
| PCGDP_D(-4) | -0.19681*** |
| INFL_D | -134.624 |
| INFL_D(-1) | 26.86585 |
| INFL_D(-2) | -163.059* |
| GFCF_D | -346.935*** |
| GFCF_D(-1) | 236.9388* |
| FDI_D | -3.91E-08*** |
| FDI_D(-1) | 6.55E-08*** |
| FDI_D(-2) | -5.31E-08*** |
| FDI_D(-3) | 3.61E-08*** |
| TRADE_D | -8.8263 |
| TOT_D | -140.802*** |
| TOT_D(-1) | 129.2535*** |
| TOT_D(-2) | -40.8625 |
| TOT_D(-3) | 72.87377** |
| FREE_D | 77.86426 |
| C | 11989.54*** |

***, **and * implies significance at 1%, 5% and 10% level respectively



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*Figure 7. Akaike Information Criteria for Model 3*




As a part of post estimation testing, the correlogram in table 18 shows that even till 15 lags, there is no sign of any significant autocorrelation.

The result from the bounds test shows that the F statistic is greater than the I(1) bound therefore confirming a stable long run equilibrium relationship between the growth rate and carbon dioxide emission in the emerging nations.

## CONCLUSION AND FURTHER ISSUES TO EXPLORE

Widening per capita GDP gap with developed nations has long been one of the most talked about problems for the emerging nations. Paradoxically enough, often it has been seen that in spite of the right policy mix adopted by the governments, the gap does not narrow down. This study wanted to look at that problem in the light of dynamic ARDL model. To look at the problem, the study fits four ARDL models.

The first model looked at the problem from an absolute perspective. It investigated, from both emerging as well as developed nations' perspective, the contributors to economic growth. The results showed that for emerging nations, current GDP growth rate is significantly dependent on the GDP growth rate from the immediately previous year, FDI (current year, one lagged year and third lagged year), terms of trade (current and previous year) and economic freedom (immediately previous year). The bounds test



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*Table 14. Correlogram for Model 3*

| Lags | AC | PAC | Q-Stat | Prob* |
|---|---|---|---|---|
| 1 | -0.003 | -0.003 | 0.0012 | 0.972 |
| 2 | 0.059 | 0.059 | 0.361 | 0.835 |
| 3 | -0.088 | -0.088 | 1.1696 | 0.76 |
| 4 | 0.189 | 0.187 | 4.9496 | 0.293 |
| 5 | -0.028 | -0.023 | 5.0348 | 0.412 |
| 6 | -0.107 | -0.14 | 6.2714 | 0.393 |
| | | | | |
| 7 | -0.154 | -0.122 | 8.8748 | 0.262 |
| 8 | 0.035 | 0.014 | 9.0123 | 0.341 |
| 9 | 0.164 | 0.183 | 12.009 | 0.213 |
| 10 | -0.108 | -0.1 | 13.326 | 0.206 |
| 11 | -0.143 | -0.135 | 15.662 | 0.154 |
| 12 | -0.009 | 0.005 | 15.672 | 0.207 |
| 13 | 0.25 | 0.197 | 22.979 | 0.042 |
| 14 | -0.04 | -0.03 | 23.169 | 0.058 |
| 15 | -0.148 | -0.144 | 25.805 | 0.04 |

*Table 15. Result of Bounds Test for model 2*

| ARDL Bounds Test | | |
|---|---|---|
| Null Hypothesis: No long-run relationships exist | | |
| Test Statistic | Value | k |
| F-statistic | 6.486608 | 6 |
| Critical Value Bounds | | |
| Significance | I0 Bound | I1 Bound |
| 10% | 2.12 | 3.23 |
| 5% | 2.45 | 3.61 |
| 2.50% | 2.75 | 3.99 |
| 1% | 3.15 | 4.43 |

*Table 16. Result of unit tests for carbon dioxide emission*

| | t-Statistic |
|---|---|
| Augmented Dickey-Fuller test statistic I(1) | -9.66677*** |

***, **and * implies significance at 1%, 5% and 10% level respectively



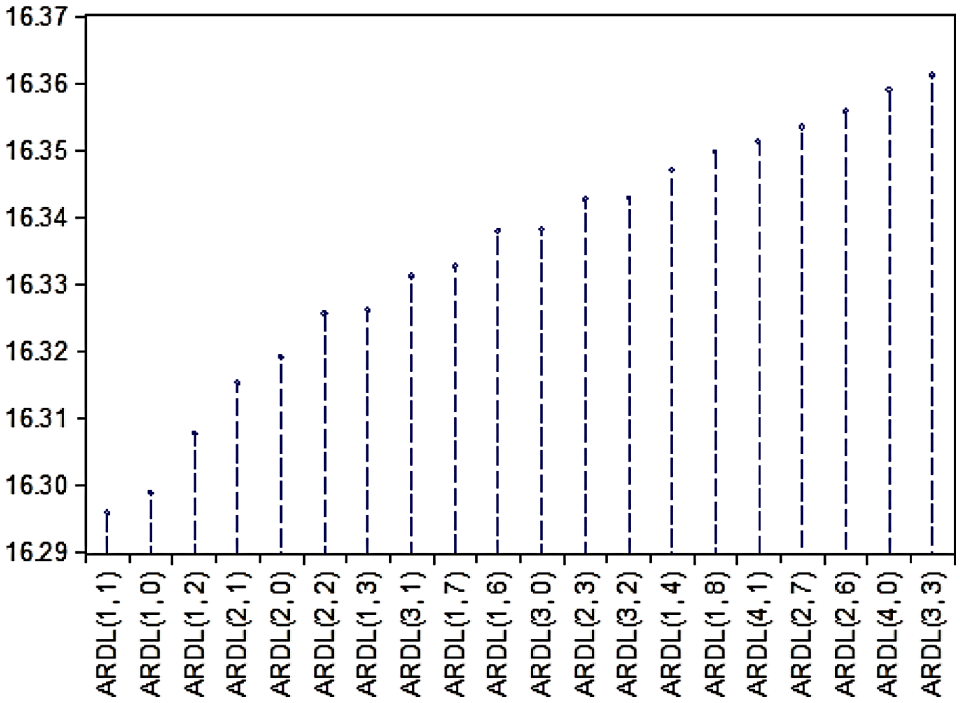
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*Table 17. ARDL model for long run relationship between the GDP growth rate and CO2 emission in emerging countries*

| Selected Model: ARDL(1, 1) | |
|---|---|
| **Variable** | **Coefficient** |
| EMISSION_EMER(-1) | 0.771425 |
| GDPGR_EMER | 78.52584 |
| GDPGR_EMER(-1) | 43.64608 |
| C | -377.034 |
| R-squared | 0.820871 |
| Adjusted R-squared | 0.815442 |

***, **and * implies significance at 1%, 5% and 10% level respectively

*Figure 8. Akaike Information criteria for the ARDL model with emission differential and per capita GDP gap between developed and emerging nations*




suggests that there exists a significant long term equilibrium relationship. For the developed nations, GDP growth rate is significantly dependent on the GDP growth rate from the immediately previous year, FDI (current and two period lagged), current terms of trade, current economic freedom and gross fixed capital formation (one period lagged).

The second model emphasized on per capita GDP differential rather than the country's own per capita GDP. In the process, it estimates long run relationship between the per capital GDP differential between developed and emerging nations and individual emerging country indicators. The results show that per



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*Table 18. Correlogram for the ARDL model with emission differential and per capita GDP gap between developed and emerging nation*

| Lags | AC | PAC | Q-Stat | Prob* |
|---|---|---|---|---|
| 1 | 0.021 | 0.021 | 0.0471 | 0.828 |
| 2 | -0.09 | -0.09 | 0.9134 | 0.633 |
| 3 | -0.033 | -0.029 | 1.0299 | 0.794 |
| 4 | 0 | -0.007 | 1.0299 | 0.905 |
| 5 | 0.053 | 0.048 | 1.3349 | 0.931 |
| 6 | 0.107 | 0.105 | 2.6206 | 0.855 |
| 7 | 0.065 | 0.071 | 3.0908 | 0.876 |
| 8 | 0.006 | 0.027 | 3.0948 | 0.928 |
| 9 | -0.073 | -0.057 | 3.7025 | 0.93 |
| 10 | 0 | 0.005 | 3.7025 | 0.96 |
| 11 | 0.085 | 0.065 | 4.5469 | 0.951 |
| 12 | 0.073 | 0.053 | 5.1881 | 0.951 |
| 13 | -0.179 | -0.189 | 9.0488 | 0.769 |
| 14 | 0.01 | 0.028 | 9.06 | 0.827 |
| 15 | -0.01 | -0.029 | 9.0711 | 0.874 |

*Table 19. Bounds test for the ARDL model with emission differential and per capita GDP gap between developed and emerging nation*

| ARDL Bounds Test | | |
|---|---|---|
| Null Hypothesis: No long-run relationships exist | | |
| Test Statistic | Value | k |
| F-statistic | 8.704828 | 1 |
| Critical Value Bounds | | |
| Significance | I0 Bound | I1 Bound |
| 10% | 4.04 | 4.78 |
| 5% | 4.94 | 5.73 |
| 2.50% | 5.77 | 6.68 |
| 1% | 6.84 | 7.84 |

***, **and * implies significance at 1%, 5% and 10% level respectively

capita GDP (1 and 2 period lagged), previous year's inflation, FDI (current and 1 period lagged), GFCF (current and 1 period lagged), terms of trade (current and 1 period lagged) and economic freedom (2 period lagged) play a significant role in determining the per capita GDP differential and also, the relationship is stable in the long run. Both emerging and developed nations' growth rate are significantly guided by a number of economic variables' current and lagged values. Also, the per capita GDP differentials for emerging countries are significantly influenced by the economic indicators of the emerging nations



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themselves. This finding has a significant policy implication as it points towards the fact that by changing the policy variables in the desired direction, it is possible to control the widening per capita GDP. The onus in this case, remains entirely with the emerging nations' governments to take the steps in the right direction towards minimizing the worrying per capita GDP gap.

The thirdmodel narrowed down the focus even more and tries to see if the per capita GDP differentials are influenced significantly by the differentials in the indicators themselves. The results show that per capita GDP gap in current period is dependent on past periods GDP differentials (upto 4 lags, all significant at 1%), gross fixed capital formation differential (first lag), foreign direct investment differentials (up to 3 lags, all significant at 1%) and terms of trade differentials (current, first and third lag). This result gives an important insight regarding possible policy measures. According to this result, the difference in indicators is most important. Therefore, it gives the emerging countries governments a little head space, as if the developed nation's policies change in the desired direction, it is possible for the per capita GDP gap to narrow down, even if the developed countries do not take any action themselves. However, this also has a flip side. Even if the emerging nations to everything right by taking policies in the right direction, the per capita GDP gap may widen due to undesirable movement in the policy variables in the developed nations. In a nutshell, rather than absolute values of the variables themselves the gap or the differential plays a more significant role.

Having identified the determinants of growth and per capita GDP differentials, the study focused on the possibility of green growth among emerging nations. Even if an emerging country's per capita GDP increases, does it come at the cost of its environment friendliness? To answer this question the long-term relationship between carbon dioxide emissions and GDP growth rate for emerging nations, with the emissions being the dependent variable. The result shows that there is a significant positive relationship between growth rate and emissions. Therefore, the study highlights the dilemma of choice for policymakers. On one hand, the importance of a higher growth rate to ensure higher per capita GDP and a better standard of living is well understood, but also the high growth rate brings in higher emissions. How to control the correct policy variables which will have a negative impact on the emissions but a positive impact on the growth rate, remains to be investigated in future research.

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## KEY TERMS AND DEFINITIONS

**ARDL Model:** Autoregressive distributed lag model, where the dependent variable is a function of its own past lagged values as well as current and past values of other explanatory variables.

**Convergence:** The phenomenon of poorer economy's' per capita GDP growing faster than developed countries' per capita GDP before eventually catching up.

**Emerging Nation Growth:** In this study, the emerging nations' (the eight emerging nations selected) growth is calculated by the percentage change in GDP from previous year.

**Green Growth:** Is the GDP growth that is consistent with low GHG gas emissions.

**Gross Fixed Capital Formation:** It is a measurement of the net increase in the capital stock in a particular period. The calculation excludes depreciation or land purchases.

**Index of Economic Freedom:** The Index of economic Freedom is an annual index used to measure the degree of economic freedom in 186 countries calculated using 10 factors of economic freedom such as business freedom, fiscal freedom, property rights etc.

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**Net Barter Terms of Trade Index:** Defined as the ratio of a country's exports price index to its imports price index.

**Per Capita GDP Differential:** The per capita GDP differential is calculated by subtracting per capita GDP of emerging nations from per capita GDP of developed nations.

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# Chapter 70
# M&A Deals and Corporate Governance Framework:
## A Study in Indian Telecom Sector

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## ABSTRACT

*The escalating importance of mergers and acquisitions (M&A) has coincided with concerns about corporate governance issues. This article investigates how corporate governance mechanisms along with firm-specific control variables impact performance during M&A deals occurring between 2000-2012 in acquiring Indian telecom companies. In this research, firm performance has been measured via accounting based, market based and qualitative performance dimensions, represented by Return on Capital Employed (ROCE), Tobin's Q and Human Capital Return on Investment (HCROI) respectively. Panel data regression techniques was employed for the analysis. The learning from this study reveals that board size and firm size have significant positive relationships with ROCE and HCROI. Chairperson-CEO duality also has positive significant association with ROCE. Shareholding percentage of institutional investors was found to have a significant negative relationship with HCROI. Board independence, firm size and market share significantly affect Tobin's Q.*

## INTRODUCTION

Corporate governance broadly refers to a set of exercises that is designed to govern the behavior of corporate enterprises. It aims to promote healthier corporate practices and check the felonious firms. Board of directors of a firm have the fiduciary duty to play an important role in all vital firm decisions. Board characteristics that affect the effectiveness of the directors can potentially influence firm performance.

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Keeping in view the emerging importance of corporate governance mechanisms in determining firm performance, several corporate governance guidelines have been framed worldwide since the 1990s. Some of the noteworthy reports are Cadbury Committee Report (1992), Market Specific Principles- Japan and Germany (1997), Core Principles and Guidelines- USA (April 1998), Hampel Report on Corporate Governance- UK (January 1998), The Sarbanes-Oxley Act – USA (August 2002) and The Higgs Report- UK (January 2003).

The first formal and exhaustive endeavour to evolve a code of corporate governance for Indian companies was undertaken by Securities and Exchange Board of India (SEBI). Thereafter the Ministry of Corporate Affairs recommended changes in diverse areas of corporate audit and governance and highlighted the role of independent directors. SEBI also made recommendations with respect to financial and non-financial disclosures, independent auditing and board oversight of management. Clause 49 of the Listing Agreement issued by SEBI makes it mandatory for the listed firms to disclose their ownership data of promoters and non-promoters separately. The improvement in corporate governance standards in India during the recent years as a result of numerous initiatives undertaken by the government, has been disclosed in the World Bank's Doing Business Report. Over the past decade, India significantly bettered its rank amongst other nations, with respect to protection of investor and minority rights. According to the report, India ranked seventh among all economies surveyed in 2015 and is ahead of several developed economies. Stringent audit and reporting standards as required by the amended Companies Act, 2013 have increased disclosures in India. Moreover, the market regulator SEBI's tightening of the rules relating to protection of minority shareholders' interests along with an escalation of investor activism have resulted in an improved corporate governance environment in India. It is thus needless to say that this constantly evolving governance framework in a developing nation like India draws academic attention towards examining the role of corporate governance mechanism in Indian corporations and its implications thereof.

The other focus area of this paper are mergers and acquisitions (M&As) which have increasingly become an effective tool for corporate restructuring. M&A decisions are critical to the success of corporations as they are instrumental in achieving greater efficiency by exploiting synergies and growth opportunities. These events are noteworthy not only because of the high levels of financial investment involved but also may be due to their failure rates. No more than 50% of M&As attain the level of success initially predicted (Cartwright & Cooper, 1996). The authors feel that it is important to examine if corporate governance mechanism which entails an effective and suitable board structure along with the role of institutional investors can enhance corporate performance and maximise shareholder value consequent to mergers.

The reason for focusing specially on mergers in the Indian telecom sector requires deliberation. Firstly it needs to be pointed out that India is on a growth trajectory resulting in a rapidly emerging and diversified business environment. In 2017, American Foreign Policy Magazine has ranked India sixth amongst eight great powers in the world. According to The World Bank, Indian economy is expected to grow at 7.9% in 2017-18. The germination of this growth can be traced back to the Liberalisation, Privatisation, Globalisation (LPG) model embarked upon by the Indian government in 1991. This has led to a radical transformation in the business scenario of the nation, enabling the Indian firms to grow extensively as well as drawn the attention of the multinational corporations in India as an investment avenue. The United Nations Conference on Trade and Development (UNCTAD) World Investment Report 2016 announced that India has secured the sixth position as the most preferred investment destination nations, attracting largest FDI inflows across the world in 2015. In fact, the Indian service sector received the highest FDI



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(US$ 7553 million) among the other sectors in 2016-2017 with telecommunication accounting for US$ 5539 million. It is also noteworthy that the fiscal year 2016-2017 has struck a record number of M&A deals worth $61.26 billion in India. The significant rise was owing to intense buying interest of foreign buyers and consolidation proceedings across different sectors including telecom. Experts are of the opinion that the M&A activities in 2017 is expected to grow due to unrelenting attention of financial and strategic investors in the Indian economy.

The motive behind considering the Indian telecom sector as the domain of study in this paper, can be attributed to its phenomenal growth, making India the world's second-largest telecommunications market during 2016-2017. It is also predicted to grow at 10.3% annually to reach US$ 103.9 billion by 2020. Moreover, the International Data Corporation (IDC) predicts India to overtake US as the second-largest smartphone market globally by 2017. The business milieu in the Indian telecom sector has shown fundamental expansion due to the reforms implemented by Telecom Regulatory Authority of India (TRAI) and Department of Telecommunications (DoT) post 1991. This study has chosen to examine M&As in this sector because many Indian telecom companies have opted for the inorganic growth strategy of M&As to enhance their performance. The telecom sector has witnessed some of the biggest M&A deals in India namely Vodafone–Hutchison Essar merger in 2007, Idea Cellular merger with Spice Communications in 2008 and Reliance Industries–Infotel merger in 2010. Some of the forthcoming deals that have drawn attention recently are the Reliance Communications and Aircel merger and Vodafone – Idea merger.

This paper has concentrated on 16 M&A deals in the BSE-listed Indian telecom companies during a timeframe spanning from 2000-2012 to determine how the events of M&As have brought about changes, if any, in the business performance of the acquirers. This study probes the relationship between corporate governance profiles of firms and performance changes concomitant with M&A. Focusing solely on the accounting measures like ROCE (Return on Capital Employed) does not give a comprehensive and holistic view of a firm's performance. Thus this study has found it prudent to also include measures which reflect market based as well as qualitative performance in the form of Tobin's Q and HCROI (Human Capital Return on Investment) respectively. The data was analysed using panel data regression technique. By combining time series of cross-section observations, panel data give "more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency." By studying the repeated cross section of observations, panel data are better suited to study the dynamics of change.

## LITERATURE REVIEW

Corporate governance practices during an M&A have attracted considerable academic interest. Several theories have been proposed in this regard. The theories that are relevant to this study are Stewardship Theory and Resource Dependency Theory. Stewardship theory presents a model of management where managers are considered as good stewards who will act in the preeminent concern of the owners. According to the resource dependency role, the directors bring resources and legitimacy that will reduce uncertainty, thus justifying the appointment of directors to multiple boards because of their opportunities to gather information and network.

Corporate governance practices prevalent in an organisation are regarded to have a noteworthy influence on the performance and growth of the firm. The variables which are of relevance in this study are: board size, chairperson-CEO duality, institutional investors and board independence. Empirical studies on how these variables affect firm performance have been discussed hereafter.



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The impact of board size on firm performance is one of the most debatable issues in corporate governance. A constructive board structure is essential for augmenting firm performance as well as enhancing its stability. Research findings reveal mixed results regarding board size affecting firm performance. While researchers like Cheng et. al. (2008), Coles et. al. (2008), Guest (2009), Gill and Mathur (2011), Afzal and Nazir (2012), Gill and Obradovich (2012), Liu and Wang (2013) and Chu et. al. (2016) reported negative influence of board size on firm performance, Wintoki (2007) and Bennedsen et. al. (2008) divulged no relationship between these variables. Howeve,r Adams and Mehran (2005), Beiner et. al. (2006) and Dixit (2015) found a positive relationship.

Abdelkarim and Alawneh (2009) suggested that ownership concentration is negatively related to firm value. Pant and Pattanayak (2007) also pointed out this negative relationship when promoters' ownership is in the range of 0-49% while a positive relationship exists beyond that. On the contrary, Pattanayak (2008) and Ryu and Yoo (2011) identified a positive relationship between firm value and increment of insiders in ownership. With respect to ownership of institutional investors, Liu and Wang (2013) and Dixit (2015) observed that institutional investors had a positive influence on M&A performance. Ferreira et. al. (2010) and Andriosopoulos and Yang (2014) found that larger presence of institutional investors increases the probability of cross-border M&As because of reduction in information asymmetries and agency costs. Njah and Jarboui (2013) however, suggested that increased monitoring by institutional investors reduced the prospects of earnings during M&As.

The studies undertaken by Ramdani and Witteloostuijn (2010), Gill and Mathur (2011) and Rouf (2011), Gill and Obradovich (2012) and Liu and Wang (2013) stressed on a positive relationship between CEO duality and firm value. However, Mausulis et al. (2007), Afzal and Nazir (2012) and Dixit (2015) contented for separate positions for CEO and chairperson. Kim et al. (2008) inferred that CEO duality in firms leads to greater levels of unrelated diversification.

Finance theory predicts that board independence is not always in the shareholders' interest. Schmidt (2014) found that more friendly boards which are deemed as less independent enhance shareholder returns of firms engaging in acquisitions. However, when monitoring the CEO is of greater concern, social ties have a negative effect on the acquirer's performance. A positive influence on independent boards on firm value were reported by Afzal and Nazir (2012), Black and Kim (2012) and Claessens and Yurtoglu (2013). Gieben (2013) also declared that a board independence level of 61% to 70% will positively relate to M&A performance.

## Research Methodology

The research work is empirical and database oriented. Secondary data have been collected from the database Prowess, version 4.15 maintained by Centre for Monitoring Indian Economy Pvt. Ltd. (CMIE). These facts have been supplemented by information from different business magazines and government and respective company websites.

The data collected pertained to that of acquiring companies, as all relevant information of target firms was unavailable. 11 BSE-listed telecom companies have undergone 27 M&As in this timeframe. Many firms were engaged in a series of M&A activities over the observed time period. Thus, it is difficult to isolate the influence of a single M&A event. As a result, those overlapping M&As are not considered. Moreover, complete data for all the required parameters were unavailable for all the deals. Complete



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data was obtained for 16 M&A deals. Thus 16 M&A contracts, representing 59.26% of the population, constitute the sample for this study. We collected data for four years, i.e. the year of M&A (t) and 3 consecutive years post-M&A (t+1, t+2, t+3).

The motive of this study is to evaluate the impact of corporate governance mechanisms on firm performance post-M&As for all the BSE-listed Indian telecom companies which underwent mergers during 2000-2012. We intend to capture firm performance from three dimensions, namely financial measures, HR measures and market performance measures. On the foundation of literature survey, we have selected three dependent variables for three models, viz- ROCE-Return on Capital Employed, HCROI-Human Capital Return on Investment and Tobin's Q. The formulae of each are shown below-

ROCE= Earnings Before Interest And Tax / Capital Employed
HCROI= [Revenue-(Operating Expenses –Compensation)]/Compensation
Tobin's Q= Market Value/Book Value

The independent variables, considered in our study, can be divided into corporate governance variables and control variables. The corporate governance variables comprise board size, CEO-chairperson duality status, institutional investors and board independence. Now we define the different corporate governance variables contemplated in this study. Board size represents the total number of directors on the board. Chairperson-CEO duality status is indicated by checking whether the chairperson and CEO is the same person, where one denotes duality and zero otherwise. Institutional investors are organisations that invest on behalf of its members which include endowment funds, commercial banks, mutual funds and hedge funds. Board independence specifies the number of independent directors divided by the total number of directors in the company. The control variables consist of firm age, firm size, leverage, current ratio, growth in turnover and market share. Firm age is calculated by the day the firm got listed in BSE till the day of M&A. Firm size is denoted by log of total assets. Leverage is measured by debt divided by equity. Current ratio is ascertained by current assets divided by current liabilities. Growth in turnover is represented by the formula- [{(Income in year t –(t-1)}/Income in t]X100 and market share is captured by the formula- [Firm's total income/Industry's total income) X 100].

This study aims to answer the following research questions via three regression models:

1. Effect of corporate governance parameters on ROCE during the merger event.
2. Effect of corporate governance parameters on HCROI during the merger event
3. Effect of corporate governance parameters on Tobin's Q during the merger event

We have employed panel data regression for analysis. The regression equations of the above mentioned three models are outlined as follows:

$$ROCE = \alpha + \beta_1 Board\ Size_{it} + \beta_2 Chairperson\text{-}CEO\ Duality_{it} + \beta_3 Institutional\ Investors_{it} + \beta_4 Board\ Independence_{it} + \beta_5 Firm\ Age_{it} + \beta_6 Firm\ Size_{it} + \beta_7 Leverage_{it} + \beta_8 Current\ Ratio_{it} + \beta_9 Growth\ in\ Turnover_{it} + \varepsilon_{it}$$

$$HCROI = \alpha + \beta_1 Board\ Size_{it} + \beta_2 Chairperson\text{-}CEO\ Duality_{it} + \beta_3 Institutional\ Investors_{it} + \beta_4 Board\ Independence_{it} + \beta_5 Firm\ Age_{it} + \beta_6 Firm\ Size_{it} + \beta_7 Leverage_{it} + \beta_8 Current\ Ratio_{it} + \beta_9 Growth\ in\ Turnover_{it} + \varepsilon_{it}$$



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$$\text{Tobin's Q} = \alpha + \beta_1 \text{Board Size}_{it} + \beta_2 \text{Chairperson-CEO Duality}_{it} + \beta_3 \text{Institutional Investors}_{it} + \beta_4 \text{Board Independence}_{it} + \beta_5 \text{Firm Age}_{it} + \beta_6 \text{Firm Size}_{it} + \beta_7 \text{Market Share}_{it} + \beta_8 \text{Leverage}_{it} + \beta_9 \text{Current Ratio}_{it} + \beta_{10} \text{Growth in Turnover}_{it} + \varepsilon_{it}$$

The data was analyzed with the help of MS-Excel and statistical software STATA.

## ANALYSIS AND DISCUSSION

The result of panel data analysis is displayed in the tables.

Table 1 titled, "Impact of Corporate Governance Variables on ROCE", reports an R square of 0.6221 and Wald Chi Square of 53.00 and denoted a significant impact of corporate governance variables on ROCE. The result points out that two independent corporate governance variables i.e. board size and chairperson-CEO duality are significant at 5% and 1% levels respectively. Both these variables are found to have a positive association with ROCE. This denotes that firms with larger boards enjoy a greater ROCE. Moreover, if the same person holds the dual positions of chairperson and CEO, ROCE of those firms are better. Among the control variables, firm size is significant at 5% level.

Table 2 titled "Impact of Corporate Governance Variables on HCROI" reports an R square of 0.4696 and Wald Chi Square of 30.10 depicted a significant impact of corporate governance variables on HCROI. Both board size and percentage of equity ownership held by institutional investors were the two corporate governance parameters found to be significant at 1% level. In this case too, we posit that firms having bigger board size impact HCROI more during the event of a merger. However, firms which have institutional investors holding substantial equity ownership report lower HCROI during the merger event. Firm size is the only control variable found to be significant at 1% level.

*Table 1. Impact of corporate governance variables on ROCE*

| ROCE | Coefficient | Standard Error | z | P> \|z\| |
|---|---|---|---|---|
| Board Size | 0.8094356 | 0.3238155 | 2.50 | 0.012** |
| Chairperson-CEO Duality | 10.14564 | 3.014309 | 3.37 | 0.001* |
| Institutional Investors | -0.1958635 | 0.1327372 | -1.48 | 0.140 |
| Board Independence | -0.3282603 | 6.032181 | -0.05 | 0.957 |
| Firm Age | -0.028486 | 0.2519413 | -0.11 | 0.910 |
| Leverage | -0.633966 | 0.0548882 | -1.16 | 0.248 |
| Current Ratio | 1.595308 | 1.122264 | 1.42 | 0.155 |
| Growth in Turnover | 0.0003831 | 0.0005516 | 0.69 | 0.487 |
| Firm size | 1.615237 | 0.7301352 | 2.21 | 0.027** |
| Constant | -24.20043 | 9.917782 | -2.44 | 0.015 |

* 1% level ** 5% level *** 10% level

R square: 0.6221 Wald Chi Square: 53.00 Probability> Chi Square: 0.0000



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*Table 2. Impact of corporate governance variables on HCROI*

| HCROI | Coefficient | Standard Error | z | P> \|z\| |
|---|---|---|---|---|
| Board Size | 0.3158941 | 0.1212681 | 2.60 | 0.009* |
| Chairperson-CEO Duality | 1.106088 | 1.128248 | 0.98 | 0.327 |
| Institutional Investors | -0.1473407 | 0.0506524 | -2.91 | 0.004* |
| Board Independence | 3.103967 | 2.284059 | 1.36 | 0.174 |
| Firm Age | -0.09857 | 0.0934612 | -1.05 | 0.292 |
| Leverage | 0.0021929 | 0.0209363 | 0.10 | 0.917 |
| Current Ratio | 0.3345754 | 0.4245117 | 0.79 | 0.431 |
| Growth in Turnover | 0.0001934 | 0.0002109 | 0.92 | 0.359 |
| Firm size | 0.74108 | 0.273283 | 2.71 | 0.007* |
| Constant | -7.158079 | 3.731698 | -1.92 | 0.055 |

* 1% level ** 5% level *** 10% level

R square: 0.4696 Wald Chi Square: 30.10 Probability> Chi Square: 0.0004

*Table 3. Impact of corporate governance variables on Tobin's Q*

| Tobin's Q | Coefficient | Standard Error | z | P> \|z\| |
|---|---|---|---|---|
| Board Size | -0.0435025 | 0.0415046 | -1.05 | 0.295 |
| Chairperson-CEO Duality | 0.396499 | 0.3776969 | 1.05 | 0.294 |
| Institutional Investors | 0.001809 | 0.0172047 | 0.11 | 0.916 |
| Board Independence | 1.90092 | 0.9632358 | 1.97 | 0.048** |
| Firm Age | 0.0074843 | 0.0257807 | 0.29 | 0.772 |
| Market Share | -0.0306836 | 0.0158071 | -1.94 | 0.052*** |
| Leverage | -0.1210172 | 0.1277438 | -0.95 | 0.343 |
| Current Ratio | -0.1108016 | 0.1115327 | -0.99 | 0.320 |
| Growth in Turnover | -0.0000157 | 0.0000519 | -0.30 | 0.762 |
| Firm size | 0.1914283 | 0.0982767 | 1.95 | 0.051*** |
| Constant | -1.147375 | 1.259101 | -0.91 | 0.362 |

* 1% level ** 5% level *** 10% level

R square: 0.3021 Wald Chi Square: 9.09 Probability> Chi Square: 0.5237

Table 3 titled "Impact of Corporate Governance Variables on Tobin's Q" reported an R square of 0.3021 and Wald Chi Square of 9.09 In this regression, board independence is the sole corporate governance variable found to have a significant impact on Tobin's Q at 5% level. Among the control variables, both firm size and market share are significant at 10% levels as the dependent variable.

From this study, it was observed that companies comprising larger board size enjoyed better performance post-M&A. The possible cause for the success of larger board is that greater number of members enhances diversity in terms of skill sets as well as perspectives and may be considerably better equipped to handle organizational complexity. This helps to induce better brainstorming during decision making process and culminates in ratifying decisions which yield higher probability of success.



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Stewardship theory of corporate governance reinforces that when the dual positions of CEO and chairperson are held by a single person, it enhances the firm performance. It can be concluded from this study that existence of CEO duality positively impacts the return parameters. The possible cause of this might be that if the same person holds dual positions, it facilitates prompt decision making and undertaking of calculative risks without unnecessary interventions.

Available literature suggests that presence of institutional investors facilitates M&As by connecting firms and thereby lowering the allied bargaining and transaction costs. These investors have bigger role to play in a developing country like India which is characterized by weaker legal frameworks, less developed capital markets and information asymmetry. However, results of this study do not conform to the existing literature. With larger presence of institutional investors, corporate governance mechanisms tend to be restrictive in nature and decisions which are risk averse in nature have higher probability of being undertaken, especially during a transition phase post-M&As. So this may be the reason why equity ownership of institutional investors has a negative association with return parameters such as HCROI.

This study reports that larger number of independent directors on board better the Tobin's Q measure of performance. This may be because the presence of independent directors on the board is found to enhance the decision-making process. These directors provide an imperative internal governance instrument for protecting shareholders' interests, especially in transactions such as mergers. While it is possible for insider directors to uphold specific interests/groups which they represent, it may be claimed that independent directors would most probably inject an element of objectivity in the decision-making processes in the board. This would help to endorse the general interests of the firm by enhancing performance parameters and thus benefit the interests of the smaller shareholders.

Among the control variables, firm size has been found to be significant in all of the three regression analyses discussed above. Positive relationship of firm size with the performance parameters reveal that M&As in larger firms tend to yield better returns in the post-merger phase. Firms with substantial asset base have the ability to enjoy economies of scale which become more enhanced after acquiring companies, thus resulting in increase in the market share of the firm. The large size of the acquirer firm helps it to realize benefits of synergies from M&As.

## CONCLUSION

Numerous researches pointed out that most M&A deals fail to be a success. This study tried to gain more insight into the problem so as to suggest a potential solution. In existing literature, there is evidence of studies focusing on the performance of companies, post the M&A event. The impact of corporate governance on firm performance has also been researched upon separately. However, research endeavour emphasizing the effect of corporate governance practices on firm performance during an event of M&A is scarce. This study attempts to address this research gap. Over here, an effort has been made to capture the consequence of corporate governance variables on firm performance during the phenomenon of M&A. Moreover, studies have mostly focused on financial outcomes of M&As. A research reflecting a holistic view of the performance of firms from three dimensions, namely-accounting, market based and qualitative based is a novel attempt. In India research on the impact of M&As in the service sectors is sparse. Those available, have focused on the banking and financial sectors. Thus, this research attempt exclusively dealing with the Indian telecom sector is a neoteric proposal. This study has consequently contributed new knowledge in the fields of corporate governance and M&A. Based on these results,



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telecom companies will get an opportunity to amend their corporate governance mechanisms in order to improve their M&A deal performance.

From this study, it can be safely pointed out that, firms having larger board size yield better results in the post-merger phase. Where the dual positions of CEO and chairperson are enjoyed by a single person, a positive significant association is found with the return parameters. It was concluded that the presence of independent directors in the board is found to enhance the decision-making process. Contrary to existing literature, the results reveal that greater presence of institutional investors has a significant negative impact on firm performance. Amongst the control variables included in the model, only firm size reported a positive and significant relationship with the dependent variables.

A constraint encountered in this research is the time span of the study. This study was restricted to a twelve-year time limit spanning from 2000-2012. No control group was used in the study. The target firms which had undergone M&A were not considered in the study due to apparent paucity of data.

The results of this study not only clarified concepts but also generated certain interesting queries. It might be thought-provoking to execute an analogous study on M&A deals in other sectors. A comparative analysis among different other sectors along the lines of this study could be carried out in future. Profile of CEOs influencing firm performance has been researched upon. However, as a way forward, future researchers could effectuate a study to see how individual differences between CEOs, in terms of age or education impact performance during M&A deals. This study paves a path towards further research on M&A performances using longer timeframe and also encourages inclusion of several other aspects of corporate governance that may affect the events of M&As.

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# Chapter 71
# Strategic-Spatial Analysis of the Implementation of Business Opening Politics of Mexico

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## ABSTRACT

*The aim of this present chapter is to analyze the Mexican implementation strategy of trade policy openness due to the globalization trend, urging the country to create a series of trade agreements and treaties on free movement of goods and regional integration, becoming the country with the network of the world's largest trade agreements, increasing its presence and Mexican companies in international markets. Similarly, a spatial analysis of the last five governmental periods, comprising 26 years of foreign trade policies and its impact on foreign investments, foreign trade and main multinationals in Mexico, are done forcing them to centering in competitive productive processes and improving their internal organization, innovation and development.*

## INTRODUCTION

Deriving from globalization of foreign trade has created a series of trade agreements and treaties on free movement of goods, regional integration and economic integration processes between countries. This phenomenon has increased in most countries and Mexico is no exception. Mexico has experienced a steady increase in the internationalization of Mexican companies. This increase is largely due to the openness of trade policy adopted by the country. Following the entry of Mexico to the General Agreement on Tariffs Trade (GATT) in 1986, the country adopted business trends on multilateralism and regionalism, which has led to an increase in the internationalization of Mexican companies.

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In light of the foregoing, from the late 1990's, Mexico has experienced an increase in investment abroad from large Mexican companies which have managed to cope with changes in international markets and structural adjustment policies (Vargas-Hernandez, 2011), so it follows that the support of the Mexican government to Mexican companies, as well as the impact of trade globalization, results in a sustained internationalization of Mexican companies increase.

## ADOPTION OF OPENNESS TRADE POLICIES

In the eighties, it was created the economic and political framework for the US and international organizations like the World Bank actively promote implementation of neoliberal policies in developing countries, among them, Mexico (Ruiz-Nápoles, 2004). Undoubtedly one of the most important neoliberal policies of that time was the adoption by Mexico to the GATT in 1986, -today World Trade Organization (WTO) - which resulted in the adoption of trade openness policy. Among the main commitments assumed by Mexico, was the gradual reduction of tariffs on trade as well as the adoption of trade policies of non-discrimination, within which include national treatment and most- favored-nation generating with this, greater trade openness in Mexico.

Derived from the developments described above, the Mexican government, in compliance with the economic policy of former president Carlos Salinas de Gortari (1988-1994), conducted a series of privatizations of state enterprises and subsequently opened a new concept of national economic growth that oriented production outward to export. In the context of trade liberalization and large-scale tariff dismantling, Mexico opted for the free trade area with Canada and the United States, leading to the signing of the Free Trade Agreement with North America (NAFTA, or NAFTA for its acronym in English) by Salinas de Gortari, the December 17, 1992,

### A. Agreements and Treaties Signed by Mexico

The Mexican government has a number of international positions and legal figures to give special treatment to foreign direct investment in the country. These provide security to investors and promote investment flows. The legal framework that helps the country to promote foreign investment is mainly based on free trade agreements, mechanisms of protection of foreign investment, bilateral investment promotion and finally the federal law and the laws and regulations of each state.Mexico has a network of 10 free trade agreements (FTAs) with 45 countries (FTAs), 30 Agreements for the Promotion and Reciprocal Protection of Investments (BITs) and 9 limited arrangements (Economic Complementation Agreement and partial scope agreements) under the Latin American Integration Association (LAIA).

In addition, Mexico actively participates in multilateral and regional organizations and forums such as the World Trade Organization (WTO), the Asia-Pacific Economic Cooperation (APEC) Mechanism, the Organization for Economic Cooperation and Development (OECD), the Latin American Association integration (ALADI), Alliance Pacific, Latin American Pacific Arch (Arco Forum), Project Mesoamerica integration and Development (Mesoamerica Project), the Trans-Pacific Strategic Partnership (TTP), among others.



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*Figure 1. Map of Mexico commercial*
*Source: Based on information from the Ministry of Economy (Secretaría de Economía2015)*




## Free Trade Agreements

As seen in Table 1, Mexico has a network of 10 FTAs with 45 countries (FTAs), according to the Ministry of Economy (Secretaría de Economía, 2015). In these trade agreements, already including the new TLC Mexico – Central America, which entered into enforce on 31 August, 2012. In FTA México- Central America are included Mexico, Costa Rica, Nicaragua, El Salvador, Guatemala and Honduras. This treaty, replaced the three existing trade agreements with Central American countries that had Mexico (NAFTA Mexico - Costa Rica 1995 Mexico-Nicaragua in 1998 and TLC North Triangle - Mexico in 2001). The result is a total of 10 FTAs with 45 countries.Were eliminated from the list, FTAs Mexico, Venezuela and Colombia (1995) and NAFTA Mexico-Bolivia (1995), as both trade agreements were repealed and left without effect by presidential decree last year 2006 for the first and in 2010 the second.

The first FTA after having signed membership to the General Agreement on Tariffs Trade (GATT), now the World Trade Organization (WTO) was the NAFTA (1994), from there, Mexico, began a race to sign trade agreements and treaties with over 45 countries, being until today, the country with the larger network of the world trade agreements (Secretaría de Economía, 2015). Mexico began to hold practically a trade treaty by year: Costa Rica (1995), the Group of Three (1995), Bolivia (1995), European Union (1997), Nicaragua (1998), Chile (1999), Israel (2000), Northern Triangle (2001), EFTA (2001), Uruguay (2004) and Japan (2005). During the second half of the last decade there was a small decrease in the commercial policy of Mexico, to resume the conclusion of treaties and retaking with the signing of the FTAs with Colombia (2011), Central America (2012), Peru (2015) and Panama already in force.



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*Table 1. FTAs concluded by Mexico*

| Country | Title | Short name | Date of enactment | Type |
|---|---|---|---|---|
| United States and | North America Free Trade agreement | NAFTA | 1/January/1994 | Treaty |
| Canada | | | | |
| Costa Rica | Free Trade Agreement between the United Mexican States and the Republic of Costa Rica | FTAMéxico-Costa Rica | 15/April/1995 | Treaty |
| European Union | Economic partnership agreement, political consultation and cooperation between the Mexican United States and the European Union and its state members | FTA México-European Union | 8/ December/1997 | Treaty |
| Nicaragua | Free Trade Agreement between the Government of the United Mexican States and the Government of the Republic of Nicaragua Mexico-Nicaragua 1 / July / 1998 | FTA México-Nicaragua | 1/July/1998 | Treaty |
| Chile | Free Trade Agreement between the Republic of Chile and the United States of Mexico Mexico-Chile FTA 28 / July / 1999 | FTA México-Chile | 28/July/1999 | Treaty |
| Israel | Free Trade Agreement between the United Mexican States and the State of Israel | FTA México Israel | 1/July/2000 | Treaty |
| El Salvador | Free Trade Agreement between Mexico and the Republics of El Salvador, Guatemala and Honduras | FTA México-North Triangle | 1/June/2001 | Treaty |
| Guatemala | | | | |
| Honduras | | | | |
| Iceland | Free Trade Agreement between Mexico and the United States of the European Free Trade Association | FTA México-EFTA | 10/April/2001 | Treaty |
| Liechtenstein | | | | |
| Norway | | | | |
| Switzerland | | | | |
| Uruguay | Free Trade Agreement between the United States of Mexico and the Oriental Republic of Uruguay | FTA México-Uruguay | 14/July/2004 | Treaty |
| Japan | Agreement for the Strengthening of the Economic Partnership between the United States of Mexico and Japan | Japan-Mexico EPA | 12/January/2005 | Treaty |
| Colombia | Free Trade Agreement between the United Mexican States and the Republic of Colombia. | FTA México-Colombia | 27/July/2011 | Treaty |
| Costa Rica | Free Trade Agreement between the United Mexican States and the Republics of Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua | FTA México-Central America | 31/august/2012 | Treaty |
| El Salvador | | | | |
| Guatemala | | | | |
| Honduras | | | | |
| Nicaragua | | | | |
| Peru | Trade Integration Agreement México - Peru | AIC México-Peru | 1/February/2015 | Treaty |

Source: Based on information from the Ministry of Economy (Secretaría de Economía, 2015)



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The FTAs with Central American countries were homologated and approved last August 2012 by a new FTA Mexico-Central America. However, have not been derogated by the signatory countries therefore remain in status of enforcement. On the other hand, on June 29, 2012 it was published a decree abrogating the various establishing the Applicable Rate of General Import Tax for goods originating in certain countries with which Mexico has concluded FTAs, endorsing them in the new Treaty of Free Trade Mexico-Central America.This point does not omit to note that the Agreement for the Strengthening of the Economic Partnership between the United States of Mexico and Japan (EPA) enforced since January 2005 and the Trade Integration Agreement (AIC) signed between Mexico and Peru in force since 1 February 2015.

These FTA are listed under the heading of FTAs because they are much more complex than a simple agreement, presenting the same characteristics of a treaty, such as: full trade liberalization in goods and services, unification of tariffs, rules of origin, customs procedures, safeguards, sanitary and phytosanitary measures, means of dispute settlement, among others.The same applies to the Economic Partnership, Political Coordination and Cooperation Agreement between Mexico and the European Union and its members, effective since December 8, 1997. This instrument it is also known as "Global Agreement" for full coverage on its three areas: political, economic partnership and cooperation.

The Global Agreement is comprised of two main instruments, called "Joint Decisions". One relates to the liberalization of trade in goods, in effect from July 1, 2000 and, secondly, the liberalization of trade in services and disciplines on capital movements, investment and intellectual property issues enforced from of 1 March 2001. These Joint Decisions, also known as the Free Trade Agreement between Mexico and the European Union (FTA), that have been modified in response to increases in the number of Member States of the EU, changes in production processes updates and tariff classifications (Secretaría de Economía, 2015).It will be pending to annex to this list of trade agreements the recent Free Trade Agreement Mexico-Panama, as in April 2014 was signed by the presidents of both countries, pending its ratification and entry into force by the signatory countries.

## Partial Scope Agreements (AAP) and Economic Complementation Agreement (ACE)

The partial scope agreements are those agreements in which two or more member countries participate. These agreements may be commercial, economic complementarity, trade promotion, among others. Because of its flexibility, these agreements have become the most widely used in regional integration, hence the negotiated trade agreements such as this has been that showed greater dynamism within the set of intraregional trade (ALADI, 20).

The Latin American Integration Association (LAIA), of which Mexico is a party, since December 1980, when it was approved by Mexico on the Treaty of Montevideo (1980), is an association of Latin American states formed by Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay, Venezuela, Cuba and Nicaragua Panama in order to pursue the process of Latin American integration and establish a long-term common market (ALADI, 2015). Based on Article 25 of the 1980 Montevideo Treaty, the government of Mexico began to sign partial scope agreements and economic complementarity agreements with several Latin American countries, with the aim of creating areas of economic integration in Latin America and achieve the following objectives:

1. Strengthen and streamline trade flows between countries;



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2. Promote to the greatest extent the participation of commodities and manufactured goods in such trade;
3. Consider the special situation of some products of interest of signer´s countries; take action and develop appropriate actions to streamline the process of integration in Latin America;
4. To promote and diversify trade between countries, through the reduction or elimination of tariffs and other import restrictions.

Mexico currently has 10 Economic Complementation Agreements and 3 Partial Scope Agreements, most of them within the framework of the Latin American Integration Association. Out of these, the ECA's with Spain (1978), Denmark (1981) and France (1982) are no longer viable because it was held in 1997 the Agreement on Economic Partnership, Political Coordination and Cooperation Agreement with the European Union and its 28 member states, although, these ECA´s have not been derogated.

*Table 2. Economic Complementation Agreement and partial scope agreements*

| Signatory countries and bodies | Title | Enactment date | Short name |
|---|---|---|---|
| Spain | Agreement on Economic and Trade Cooperation between the United Mexican States and the Kingdom of Spain | 21/April/ 1978 | ECA México-Spain |
| Denmark | Economic Cooperation Agreement between the United Mexican States and the Kingdom of Denmark | 2/march/ 1981 | ECA México-Denmark |
| France | Economic Cooperation Agreement between Mexico and France | 4/march/ 1982 | ECA México-France |
| Panama | Partial Scope Agreement between Mexico and Panama | 23/ November/1998 | AAP 14 |
| Paraguay | Partial Agreement between Mexico and Paraguay | 17/April/ 2000 | AAP 38 |
| Argentina | Economic Cooperation Agreement between Mexico and the Republic of Argentina | 1/June/ 2001 | ECA 6 |
| Cuba | Economic Cooperation Agreement between Mexico and Cuba | 20/ September/2001 | ECA 51 |
| MERCOSUR | Economic Cooperation Agreement between Mexico and MERCOSUR. ECA 54 (Framework Agreement) and ECA 55 (Automotive) | 5/July/ 2002 13/may/ 2003 | ECA 54 ECA 55 |
| Brazil | Economic Cooperation Agreement between Mexico and Brazil | 31/ December/2002 | ECA 53 |
| Ecuador | Partial Agreement between Mexico and Ecuador | 27/ December/2007 | AAP 29 |
| Hungary | Hungary Economic Cooperation Agreement between the Government of the United Mexican States and the Government of the Republic of Hungary | 7/February/2009 | RCA México - Hungary |
| Bolivia | Hungary Economic Cooperation Agreement between the Government of the United Mexican States and the Government of the Republic of Hungary | 7/June/ 2010 | ECA 66 |
| LAIA | Regional Agreement with Bolivia, Argentina, Brazil, Colombia, Chile, Ecuador, Paraguay, Peru, Uruguay, Venezuela, Cuba and Panama | 29/June/2012 | regional No. 4 y No. 7 |

Source: Based on information from the Ministry of Economy (2015)



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### International Investment Agreements (IIA)

According to the Ministry of Economy (Secretaría de Economía, 2015), International Investment Agreements (IIA) are agreements on foreign investment, designed to promote and protect foreign investment in Mexico and Mexicans abroad, which contribute to creating a favorable business climate. These agreements provide for recourse to dispute settlement mechanisms between states or between an investor and the state. Within these agreements include 30 Agreements for the Reciprocal Promotion and Protection of Investments (BIT's) signed by Mexico with various countries regularly with those that have not signed an FTA or a trade agreement described above.

Agreements for the Promotion and Reciprocal Protection of Investments (IPRPAs) are international treaties on foreign investment concluded between Mexico and any other country in order to protect capital flows and provide legal certainty to investments of both nations. Both IPRPAs as FTAs in which Mexico is a part, are an efficient means to achieve a variety or diversity of foreign direct investment into the country, thus giving greater effectiveness to the policy of economic openness and non-discrimination in the area of investment.

## B. Regional Integration Initiatives

The main benefits of regional integration are promoting interregional trade, modernization of infrastructure and the promotion of integrated production systems. Overall, regional integration contributes to the stabilization of the foreign policies allowing countries to improve their ability to adapt to the requirements of a globalized market economy. The integration and regional cooperation are taking an accelerated growth in Latin America, in recent years. They have advanced more in real integration of Latin American economies during the past three decades. As stated by Klaveren (1997), a series of regional, sub regional and bilateral agreements are achieving political and economic cooperation and increasing mutual liberalization of trade between nations, as it can be seen in Figure 2.

Mexico's participation in global markets has relied on strategic ties with other countries and regions of high economic growth. In addition to its extensive network of trade agreements, Mexico participates actively in multilateral trade negotiations under the World Trade Organization (WTO), the Organization for Economic Cooperation and Development (OECD), the Asia-Pacific Economic Cooperation (APEC), the Latin American Integration Association (LAIA), Alliance Pacific, Latin American Pacific Arch (Arco Forum) Mesoamerica Integration and Development Project (Mesoamerica Project), Trans-Pacific Strategic Partnership (TTP).Similarly, as discussed in previous lines, Mexico maintains business through trade agreements and treaties with members of the Southern Common Market (MERCOSUR), Central American Block, NAFTA, European Free Trade Association (EFTA) and European Union (EU), among others.

Even though, Mexico belongs to several multilateral organizations in various fields, such as the World Bank (WB), International Monetary Fund (IMF), the Group of 20 (G20), Organization of American States (OEI), Organization of American States (OAS), the Free Trade Area of the Americas (FTAA), Inter-American Development Bank (IDB), among many others, it has been decided to enlist in Table 4 only to agencies where the Mexican government actively participates derived from current foreign policy of President Peña Nieto (2012-2018) and his drive for regional initiatives such as Alliance Pacific Economic Cooperation Forum Asia - Pacific and NAFTA Mexico - Central America.



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*Table 3. Agreements for the reciprocal promotion and protection of investments (BIT)*

| Continent | Entry in force |
|---|---|
| **Switzerland** | 14-mar-96 |
| **Argentina** | 22-jul-98 |
| **Netherlands** | 01-oct-99 |
| **Finland** | 20-ago-00 |
| **Portugal** | 04-sep-00 |
| **Denmark** | 24-sep-00 |
| **France** | 11-oct-00 |
| **Germany** | 23-feb-01 |
| **Austria** | 26-mar-01 |
| **Sweden** | 01-jul-01 |
| **Cuba** | 29-mar-02 |
| **Uruguay** | 01-jul-02 |
| **South Korea** | 06-jul-02 |
| **Greece** | 27-sep-02 |
| **Italy** | 04-dic-02 |
| **Economic Union Belgo-Luxembourg** | 18-mar-03 |
| **Czech Republic** | 13-mar-04 |
| **Iceland** | 27-abr-06 |
| **Panama** | 14-dic-06 |
| **Australia** | 21-jul-07 |
| **United Kingdom** | 25-jul-07 |
| **Trinidad y Tobago** | 16-sep-07 |
| **India** | 23-feb-08 |
| **Spain** | 03-abr-08 |
| **Slovaquia** | 08-abr-09 |
| **China** | 06-jun-09 |
| **Byelorussia** | 27-ago-09 |
| **Singapore** | 03-abr-11 |
| **Bahrain** | 30-jul-14 |
| **Turkey pending** | Pending |
| **Kuwait pending** | Pending |

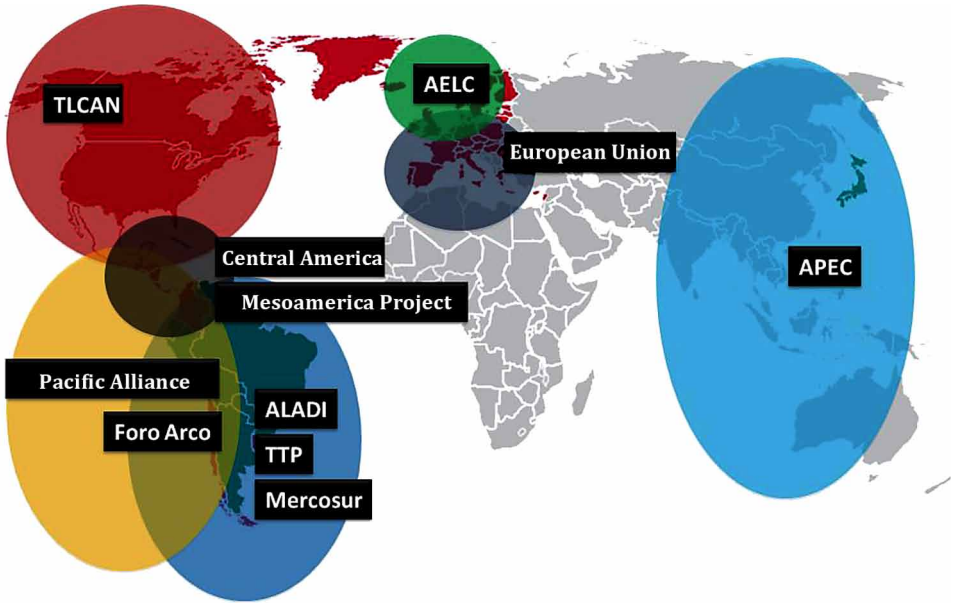
Source: Based on information from the Ministry of Economy (Secretaría de Economía, 2015).

President Enrique Peña Nieto expressed in his book "Mexico, the great hope" (2011); there has been a significant deterioration in the Mexican foreign policy. The country must regain its global leadership and emphasizes to use foreign policy as a tool for economic development. In the section about "Mexico, global actor" lists seven areas of strategic action: promoting better integration with the region of North America; strengthen cooperation with Central America and the Caribbean; restore effective



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*Figure 2. Map of regional initiatives on which participates Mexico*
*Source: Based on information from the Ministry of Economy*




dialogue with South America; consolidation as Latin American cultural power; consolidate the alliance with Asia-Pacific; promote effective multilateralism and energize and deepen the relationship with the European Union (EU).

The foreign policy of the current administration aims to have a closer relationship with the United States, with the aim of promoting and expanding a better regional integration to compete with Asia, specifically China.It also intends to lead efforts in investment, trade, migration international waters, environment, border and energy development and infrastructure (National Development Plan 2013-2018). Another priority of the federal government will strengthen cooperation with Central America, especially to address effectively transnational organized crime which has reduced the nascent institutions of Central American countries and causing instability in the area.

## FOREIGN POLICY OF MEXICO

In today's globalized scenario, international events have a greater impact nationally. This is why foreign policy is a vital tool to promote social, political and economic development in Mexico. In Mexico, the Ministry of Foreign Affairs (SRE) is responsible for conducting foreign policy, and must fulfill two essential functions: to represent and coordinate the interests of all actors in the international arena. The normative principles to be observed by the Federal Executive to conduct foreign policy are incorporated in Article 89; section X, of the Political Constitution of the Mexican United States.



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*Table 4. Regional integration initiatives*

| Name | Countries members | Acronymic | Member since | Type |
|---|---|---|---|---|
| Latin American integration Association | Bolivia, Argentina, Brazil, Colombia, Chile, Ecuador, Paraguay, Peru, Uruguay, Venezuela, Cuba y Panamá | LAIA | August of 1980 | Multilateral Agency |
| Economic Cooperation Forum Asia - Pacific | Australia, Brunei Darussalam, Canada, Chile, China (People's Republic), South Korea, USA, Philippines, Hong Kong, Indonesia, Japan, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, Russia, Singapore, Thailand, Taiwan, Vietnam. | APEC | 1993 | Multilateral Agency |
| Agency for Economic Cooperation and Development | Member countries 34 | OECD | May 1994 | Multilateral Agency |
| World Trade Organization | 106 member countries | WTO | January 1995 | Multilateral Agency |
| Latin American Pacific Arc | Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama and Peru. | Arco Forum | 2007 | Regional Initiatives |
| Integration and Development Project Mesoamerica | Belize, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama and Dominican Republic. | Mesoamerica Project | 2008 | Regional Initiatives |
| Agreement Trans-Pacific Strategic Economic Partnership | Australia, Brunei Darussalam, Canada, Chile, the US, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam | TTP | June 2012 | Regional Initiatives |
| Pacific Alliance North American | Chile, Colombia, Peru | Alliance Pacific | June 2012 | Regional Initiatives |
| Free Trade Agreement | United States and Canada. | NAFTA | January 1994 | Regional Treaty |
| Free Trade Agreement with the European Union. | Member countries of the European Union 28 | TLCUEM | December 1997 | regional Treaty |
| FTA with the European Free Trade Association in FTA | Iceland, Liechtenstein, Norway, Switzerland. | Mexico-EFTA | April 2001 | Regional treaty |
| Economic Complementation Agreement with Mercosur | Argentina, Brazil, Paraguay, Uruguay, Venezuela and Bolivia. | ECA 55 and 56 | July 2002, May 2003 | Regional Treaty |
| Free Trade Agreement with Central America | Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua | Mexico-Central America FTA | August 2012 | Regional Treaty |

Source: Based on information from the Ministry of Economy (Secretaría de Economía, 2015).

## A. Comparative Foreign Policy in the Last Five Presidential Terms

Mexico's foreign policy, from the point of view of foreign trade, has always been of vital importance in the political agenda of the Mexican government. However, there have been periods within the Mexican politics much more prolific than others. Following the last five governmental periods, comprising 26 years of foreign trade policy are discussed: 1988-1994 President Carlos Salinas de Gortari, 1994-2000 President Ernesto Zedillo Ponce de León, 2000-2006 President Vicente Fox Quesada, 2006-2012 President Felipe Calderon Hinojosa and the current period 2012-2018 President Enrique Peña Nieto.



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## 1. 1988-1994: President Carlos Salinas de Gortari

In the area of trade liberalization and export promotion achieved greater macroeconomic stability and greater openness, promoting agreements to open foreign markets and deregulation of the domestic market, thus raising the country's export capacity. In his last State of the Union (Informe de Gobierno, 1994), provided:"... Exports increased from just over 30,000 million in 1988 to almost 52 000 million in 1993 and in the first eight months of 1994 reached 39,000 million. Imports have also presented a significant growth since 28 000 million US dollars in 1988 reached 65,000 million in 1993, and now total almost 51,000 million to August 1994, and intermediate goods and capital account almost 90% of the import bill "(Sexto Informe de Gobierno, 1994).

This period was crucial to the process of trade liberalization and internationalization of the country since the first commercial treaty signed by Mexico was the North American Free Trade Agreement between the US, Canada and Mexico (NAFTA) in January 1994. The integration between the United States and Canada began to materialize in 1965 with the signing of the Automotive Pact between the two countries. Meanwhile, between Mexico and the United States began to develop this integration also more clearly in the same year when is established the maquiladora program in northern Mexico started, which achieves to promote a major integration between the two countries. On June 11, 1990 start the trilateral work with the aim of creating a free trade zone in North America. In 1991 the presidents of the three countries announced their decision to negotiate the North American Free Trade Agreement.

After several years of debate and creating an appropriate legislative framework to be consistent with the other two countries, the Law of Treaties on January 2, 1992 was enacted in order to regulate the conclusion of treaties and interagency agreements in the international arena. Similarly were performed structural reforms to the Ministry of Finance and Public Credit, adding and abrogating provisions and functions of the Secretariat, creating the Directorate General of Customs in 1993 and establishing the jurisdiction of the 45 customs in the country. Subsequently, it was published in 1995 the reform of the Customs Act, changes included the introduction of mechanisms to assess the goods in accordance with the provisions of the GATT, as well as changing the random system for more efficient automated system (Aduanas de México, 2015).

Finally, the trade agreement was signed by the three countries in December 1992 and in 1993 was approved by the legislatures of Canada, Mexico and the United States and entered into force on January 1, 1994. Although during this period, while many treaties and trade agreements have not materialized, it was laid the foundations of openness trade policy Mexico. New business partnerships in the country as the North American Free Trade Agreement (NAFTA) were created.

The formation of the Group of Three, comprising Mexico, Colombia and Venezuela; free trade agreements with Chile, Costa Rica and Bolivia; admission to the Organization for Economic Cooperation and Development (OECD), which includes the largest economies in the world, and the Forum of Asia Pacific Economic Cooperation (APEC), and the participation in the European Bank for Reconstruction and Development show the new importance of the country (National Development Plan, Plan Nacional de Desarrollo, 1989-1994).

## 2. 1994-2000: President Ernesto Zedillo Ponce de León.

Within its National Development Plan (1995-2000) in foreign policy sought to promote sub regional forums in Latin America, Mexico and Spain as they are in dialogue bridges between continents and



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economic regions. The foreign policy sought to establish a new comprehensive agreement with the European Union giving priority to reach a treaty of free and fair trade.

In his message on the occasion of its Sixth Report, President Ernesto Zedillo government asserted that economic growth achieved by the country since 1996 has made Mexico a real exporter worldwide. In his speech stated:"... We have deployed a strategy of diplomatic and economic negotiations with other countries, unprecedented in its intensity and diversity. This strategy has two equally important pillars: the defense of our foreign policy principles, which fortunately coincide substantially with international law, and promoting the interests of the country. Mexicans can rest assured that Mexico is now a stronger nation; more respected and recognized around the world ... "(Zedillo, 2000).

During his tenure were created conditions for free trade with 27 countries managing to be the only country in the world with a network of agreements on that scale, being able to position Mexican products more competitive in international markets and making products accessible to advantage created by so many national markets. In line with changes in international trade and in order to give greater modernization to the Mexican government structure, on foreign trade, structural reform to the Secretary of Finance in July 1997 was performed, creating the Tax Administration Service (SAT), to which was attached the General Administration of Customs. In 1998 the Customs Act was amended again in order to strengthen the control mechanisms and thus combat evasion of payment of contributions, increased regulatory compliance and non-tariff restrictions and customs fraud in general (Adana de México, 2015)

Free trade agreements with North America (1994), Costa Rica (1995), the Group of Three (1995), Bolivia (1995), European Union (1997), Nicaragua (1998), Chile (1999) were enacted and Israel (2000), the Economic Complementation Agreement with Panama (1998) and the Partial Agreement with Paraguay (2000) was enacted; further negotiations and signature of trade agreements with Northern Triangle (2001) and the European Free Trade Association (EFTA) in 2001. In the area of investments were made Agreements for the Promotion and Reciprocal Protection signed investment Treaties (BIT) with Switzerland in 1996, Argentina in 1998 and the Netherlands in 1999.

## 3. 2000-2006: President Vicente Fox Quesada.

The main objective during his administration was to update the foreign policy of Mexico to the new political realities. Foreign policy sought to strengthen trade relations with the United States. However, a series of diplomatic setbacks as the lack of support and lack of solidarity from Mexico in the events of September 11 in the US or the severance of diplomatic relations with Cuba by the American position on human rights issues and the internal situation of the island, prevented the country achieve greater trade openness. Nevertheless, it was signed with Cuba an Economic Cooperation Agreement between Mexico-Cuba (ACE 51) in September 2001.

As it can be seen in the National Development Plan (2001-2006), foreign trade was never a priority for government. This plan established three broad areas of action: social and human development, order, and respect and quality growth in the latter. The objectives were: driving responsibly economic progress of the country, raise and extend the country's competitiveness, ensure development inclusive and create conditions for sustainable development (National Development Plan 2001-2006).However, the FTA with Uruguay (2004) and the Agreement to Strengthen Economic Partnership with Japan (2005) were enacted. In addition, the Economic Complementation Agreement with Argentina (2001) was held and the Economic Complementation Agreement with the Southern Common Market (MERCOSUR): ECA Framework Agreement 54 (2002) and ECA Automotive Sector Agreement 55 (2003).



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The last year in office, foreign policy left without effect by presidential decree on TLC Mexico, Venezuela and Colombia (1995). Even though, it was highlighted the continuing diplomatic setbacks, foreign policy focused on supporting foreign investment through signing agreements for the Reciprocal Promotion and Protection of Investments (BIT's) with different nations, agreements whose only function is to protect capital flows and provide legal certainty to investments of both nations. BIT's were signed with Finland, Portugal, Denmark and France in 2000; Germany, Austria, Sweden in 2001; Cuba, Uruguay, South Korea, Greece and Italy in 2002; Belgium-Luxembourg Economic Union in 2003, Czech Republic in 2004, Iceland and Panama in 2006. Not fails to mention, the low viability of such agreements, as with most of them already had broader trade agreements.

## 4. 2006-2012: Presidency of Felipe Calderon Hinojosa.

The National Development Plan (2007-2012) sought to reap the benefits of globalization in order to promote national development and project Mexico's interests abroad. Mexico's foreign policy was not a priority in public policy for the government of President Calderon. In order to resolve the diplomatic crisis and disputes inherited from the administration of President Fox, a foreign policy of relatively low profile was raised, his government was mainly focused on combating drug trafficking and organized crime. Foreign policy, instead of creating business relationships with strategic partners, made her way to creating bilateral, regional and multilateral cooperation agreements on security, as the case of the Merida Initiative.

Of the periods analyzed, this was the least effective in issues of agreements and trade agreements. The FTA with Colombia (2011) was enacted as a treaty that was clear of the Free Trade Agreement with the Group of Three, signed in 1995 and left without effect by presidential decree in 2006. Just as the free trade agreement with Central America (2012) was enacted, a treaty that unifies previously concluded trade agreements with Central American countries. It welcomed the Partial Agreement with Ecuador (2007), the Economic Complementation Agreement with Hungary (2009), unnecessary agreement because its sole purpose is to strengthen and increase economic relations and business cooperation of the two countries, coupled with that Hungary is part of the European Union, a region that already has a trade agreement. Also, the Economic Complementation Agreement with Bolivia (2010) was held after annul by presidential decree of the Free Trade Mexico-Bolivia (1995).

In terms of investment, Agreements for the Promotion and Reciprocal Protection of Investments (BIT) with Australia, UK and Trinidad and Tobago in 2007 were held, as well as India and Spain in 2008; Slovakia, China and Belarus in 2009 and Singapore in 2011. Mexico joined multilateral organizations like the Latin American Pacific Agreement (Arco Forum) in 2007 and the Mesoamerican Integration and Development in 2008.Mexico hosted in June 2012 the Seventh Summit of the Group of 20 (G-20) serving as president of the group during the year.

## 5. 2012-2018: President Enrique Peña Nieto

The objectives of the National Development Plan (2013-2018) are about five strategic areas: Mexico in peace, inclusive Mexico, Mexico with education of quality, prosperous Mexico and Mexico with global responsibility. In the latter, it provides as follows: "... The fifth goal of the National Development Plan 2013-2018 includes the policies of the Government of the Republic aimed at defending and promoting the national interest abroad, and contributes to meeting the development objectives of Mexico, through



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close relationships, mutually beneficial and productive with other countries, underpinned by a strong, substantive and active foreign policy. Mexico in a Global Responsibility seeks to expand and strengthen the country's presence in the world. Mexico reaffirms its commitment to free trade, capital mobility and productive integration; to promote the value of the nation in the world through economic, tourist and cultural dissemination, and ensure the interests of Mexicans abroad (National Development Plan 2013-2018).

As it can be seen, within the current National Development Plan, foreign policy is essential for the government as part of one of the five areas in which his entire administration versa. In the current administration, mainly include 11 structural reforms promoted by government, approved in the first 20 months of the current administration. For Mexico, it was essential to create a suitable environment to remain globally competitive, even though our economy opened to the world generating competitive industries, such as automotive and aerospace. Over the past 20 years, economic growth of Mexico was only 2.4 percent per year (Secretaría de Economía, 2015).The 11 structural reforms of the country pursue three main objectives: raising productivity in Mexico, triggering growth and economic development; strengthen and expand the rights of Mexicans; and strengthen democratic freedoms and regime.

In the present matter, the foreign trade, it is highlighted the energy reform. It introduces a profound transformation in the Mexican oil industry and activities of the National Electric System, opening the sector to competition to attract both domestic and foreign investment. Therefore on economic competition updated legislation and extensive catalog of anticompetitive practices tightening sanctions on them. The reform in telecommunications and broadcasting strengthens and promotes the development of these sectors. Similarly, it highlights the financial reform and tax reform, thus enhancing competitiveness of the financial sector, with the first, as well as increased revenue for the federal government with the second.

To date, Mexico has celebrated the FTA with Peru (2015) and the FTA with Panama, enact pending. Further regional agreements with LAIA members signed: Bolivia, Argentina, Brazil, Colombia, Chile, Ecuador, Paraguay, Peru, Uruguay, Venezuela, Cuba and Panama (Agreement No. 4 and No. 7).In terms of investment, Agreements for the Reciprocal Promotion and Protection of Investments (BIT) with Bahrain in 2014 and Turkey and not yet in force with Kuwait were held. Similarly, it was encouraged Pacific Alliance, composed of Peru, Chile, Colombia and Mexico regional bloc.

## Internationalization of Mexican Companies

### A. Mexican Exports

The current process of trade liberalization in Mexico, launched in 1986 to join the GATT and deepened in 1994 with the celebration of NAFTA has been reflected in the flow of Mexican exports. Today, these exports are seven times those of 1994. Regarding foreign investment, are four times higher. However, despite these achievements and current openness of the country, Mexico remains dependent on its main trading partner, the United States, where over 70 percent of exports go to them. Mexico's trade still has enormous potential, the emergence of new trading blocs represent an opportunity for Mexican companies who want to position their products in those markets.

Currently, 60 products of the manufacturing, mining, food processing, petrochemical, are representing over 60% of total Mexican exports. The manufacturing sectors with higher exports and positioning in international markets are aerospace electrical and electronics industry, the automotive and medical equipment industries. Top ten products exported by Mexico are cars, trucks and tractors, cell phones,



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computers, electrical transformers, medical devices, televisions, refrigerators, auto parts, among others. The energy and mining sectors remain the main sources of exports. Natural gas, oil, fuel, oils, lubricants are currently exports, among others, as well as gold, silver, copper, lead, sulfur, aluminum and iron.

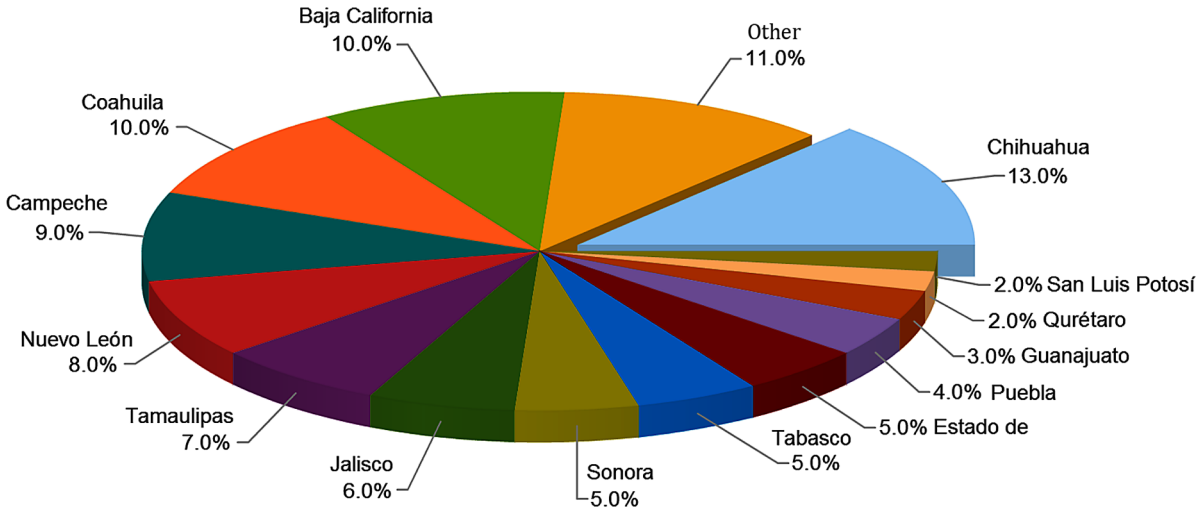
As shown in the following chart (Figure 3), in 2012, the federal state with the highest percentage of exports was Chihuahua with 13%, followed by Baja California and Coahuila with 10% each, Campeche with 9% and closely followed by Nuevo León 8%, 7% Tamaulipas and Sonora with 6%. These data show that the country's exporting entitiesare precisely the Border States. With the exception of Campeche, the six surrounding states with the United Statesare representing 54% of total exports in 2012, while the rest of exports distributed in other important institutions such as Jalisco, Tabasco, Guanajuato, Queretaro and San Luis Potosi.

As discussed in previous lines, manufacturing accounts for nearly 90% of exports of the country, becoming the main export sector and followed by exports of crude oil, representing a distant 5.9 percent and the agricultural sector by 3.2 percent of products exported by Mexico (Figure 4, 2014). According to data from the Ministry of Economy (Secretaría de Economía, 2015), the strategic sectors for Mexico are aerospace, automotive, medical devices, electronics, automotive parts, organic coffee and silver. This, as currently, aerospace exports have increased 140% over the past 5 years.

Moreover, is the 6th largest exporter of tools and appliances used in medical, surgical, dental and veterinary medicine, the 2nd largest exporter of world TV, 1 worldwide producer of organic coffee and the 3rd largest producer of silver -16% of world production of gold. Conducting a more detailed analysis the main exports of manufacturing, it has 29.8% of Mexican manufacturing exports are automotive products, equipment and appliances that account for 23%, machinery and special equipment for various industries 15.3% professional and scientific equipment 4.4% and that of other manufacturing industries 3.8 percent of total imports in 2014 (INEGI, 2015).

The Mexican Association of the Automotive Industry (2014) established that the Mexican automotive sector accounted for 3 percent of GDP and 14 percent of Mexican manufacturing. Mexico is among the 10 largest world producers of cars, trucks, parts and components for cars, the 6th producer of commercial

*Figure 3. Percentage distribution of total exports of the states (2012)*
*Source: INEGI (2013)*






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*Figure 4. Percentage share of oil exports and non-oil (2014)*
*Source: INEGI (2015)*

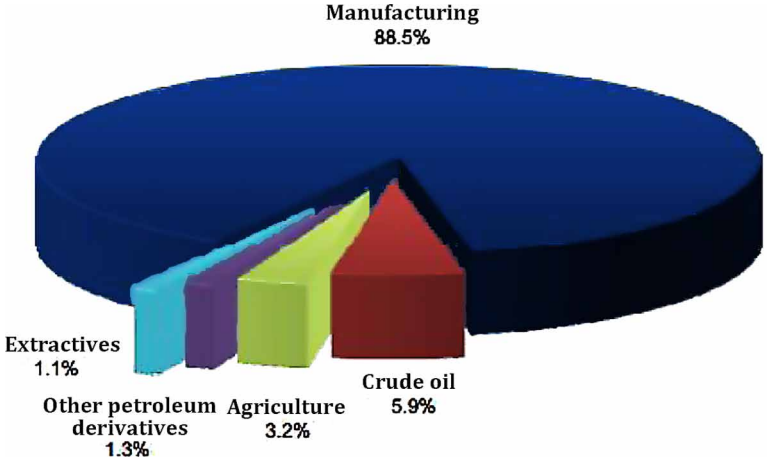
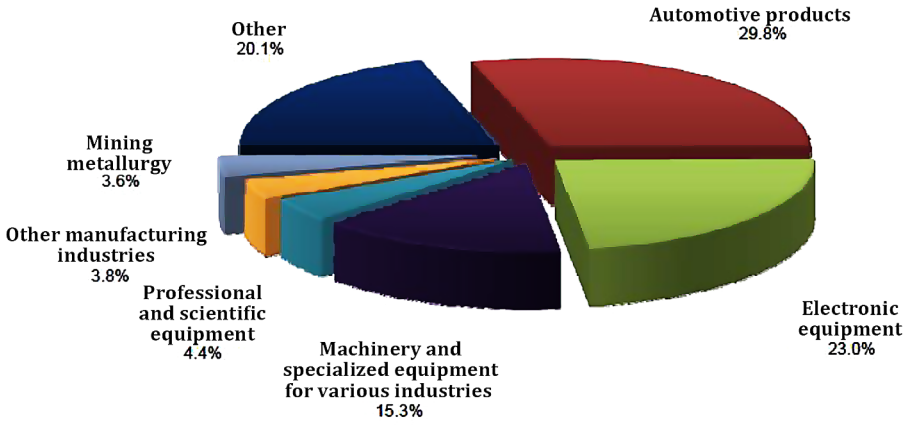



*Figure 5. Percentage share of exports by major manufactures (2014)*
*Source: INEGI (2014)*




cars and 2nd car producer in Latin America.As for the food industry, the main economic activity in the state of Sinaloa is decreasing the percentage of export share as it is being displaced by manufactured products.Even so, a large percentage of products exported as vegetables with 49% beef with 11.1%, fish and shellfish with 6.6% of total exports in 2014, as well as products such as coffee, cocoa, dairy products, among others (INEGI, 2015).

However, as shown in the following chart (Figure 7), the main products exported under the Harmonized Commodity Description and Coding (SADCM) are Chapter 85: machinery and electrical equipment with 22.5% of total exports, followed by chapter 87: land vehicles and parts with 20.6% and third is Chapter 84: mechanical appliances, boilers and parts with 16.3%.

In the following Figure 8, a detailed analysis is performed by tariff and the breakdown of the first ten non-oil products exported in Mexico, where the following products are included: motor vehicles for the transport of persons, raw gold, automatic processing data machines, its units and machinery and electrical



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*Figure 6. Percentage of exports by major food products (2014)*
*Source: INEGI (2015)*

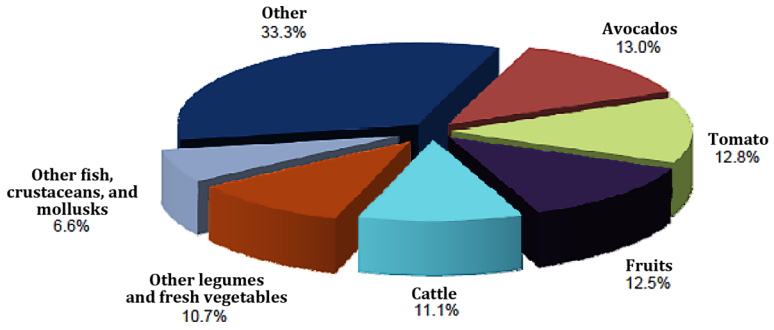
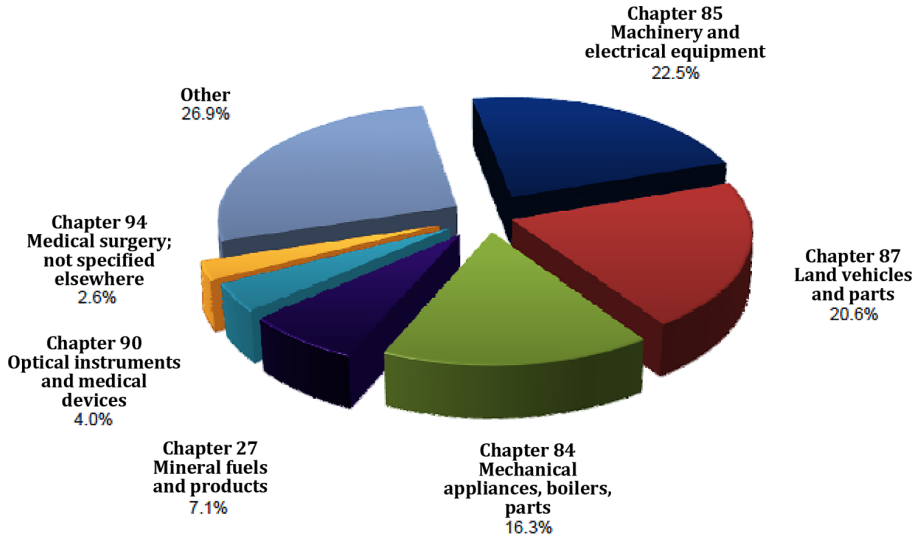



*Figure 7. Percentage share of exports of goods by main chapters of the Harmonized System (2014)*
*Source: INEGI (2015)*




equipment. In 2012 the exported non-oil products totaled 78,700,881 million, while in 2013, reached the sum total of 81,749,713 million and, for the period from January to November 2014, products exported reached amount of 79,370,716 million. The main importers of these products are USA, Canada, Brazil, Colombia, Spain, Germany and China.

With ten existing trade agreements, most exports from Mexico in 2014 were segmented into four regions. The US is the largest recipient of Mexican exports, oil and non-oil, with 80.2 percent of total exports, as may be seen in Figure 9. Secondly, Canada receives 2.7 percent, China with 1.5%, Spain with 1 percent and the rest of the world 15.6 percent (INEGI, 2015).

As discussed in previous lines, Mexico is going through various processes of economic integration, creating trading partners with trade blocs, within which include the American continent: the NAFTA bloc, Alliance Pacific, Central block and LAIA region destination 89.3% of Mexican exports, followed by the European continent, composed of the EU and EFTA, with 5.7% of total exports and Asia which highlights the APEC with 4.5% of Mexican exports in 2014 (INEGI, 2015) (See figure 10).

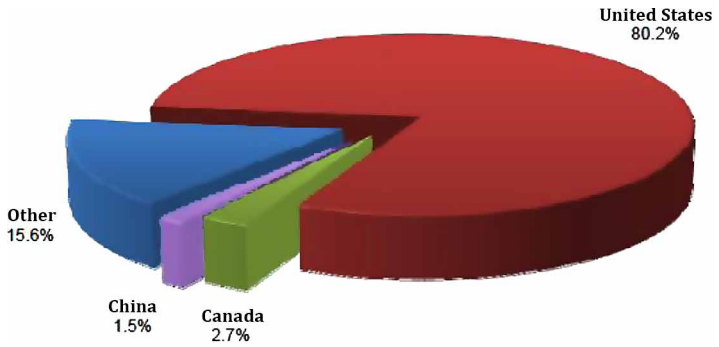


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*Figure 8. Main products exported from Mexico to the world*
*Source: INEGI (2015). Prepared with data from the Ministry of Economy and the Bank of Mexico (2015).*

| | Fraction | Department | Description | 2012 | 2013 | Jan.-Nov. 2014 |
|---|---|---|---|---|---|---|
| 1 | 8703.23.01 | Transport equipment | Passenger cars of a cylinder capacity exceeding 1750, but less than or equal to 2000 | 19,000,391 | 22,750,947 | 20,133,473 |
| 2 | 8528.72.06 | Electronic equipment | Machinery, equipment producing TV audio. Flat screen, even those designed for motor vehicles | 14,611,607 | 13,719,923 | 12,601,350 |
| 3 | 8704.31.03 | Transport equipment | Tourist cars and other motor vehicles principally designed for the transport of people | 6,618,531 | 9,211,938 | 9,518,326 |
| 4 | 8471.49.01 | Electronic equipment | Automatic machines for data processing and units thereof; magnetic or optical readers | 8,959,125 | 6,700,084 | 7,555,310 |
| 5 | 8544.30.02 | Auto parts | harnesses recognizable as designed exclusively for automotive use | 4,981,148 | 5,970,343 | 6,054,186 |
| 6 | 8701.20.01 | Transport equipment | Tractor trailers and semi-large tractor trailers | 5,637,758 | 5,087,045 | 6,755,547 |
| 7 | 7108.12.01 | Minerals | Unwrought gold (including gold plated with platinum) | 6,986,596 | 4,887,377 | 3,453,649 |
| 8 | 8471.50.01 | Electronic equipment | Machinery for the treatment and processing of data and their units | 4,327,869 | 4,749,544 | 6,439,637 |
| 9 | 9401.90.01 | Medical equipment | Furniture, stuffed furniture, bedding articles, etc. | 3,941,974 | 4,435,122 | 4,911,252 |
| 10 | 8517.12.01 | Electronic equipment/cell phones | Emitting devices with embedded mobile receiving device with operating frequencies of 824 to 849 MHz paired with 869 to 894. Cell phones | 3,635,882 | 4,237,390 | 1,947,986 |
| **Total** | | | | **78,700,881** | **81,749,713** | **79,370,716** |

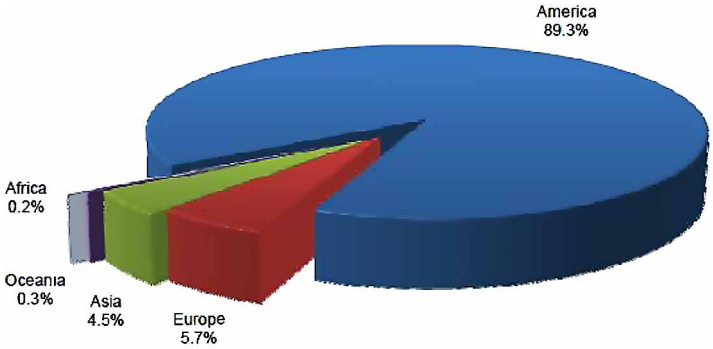
*Figure 9. Percentage share of exports by continent (2014)*
*Source: INEGI (2015)*






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*Figure 10. Percentage share of exports by continent (2014)*
*Source: INEGI (2015)*

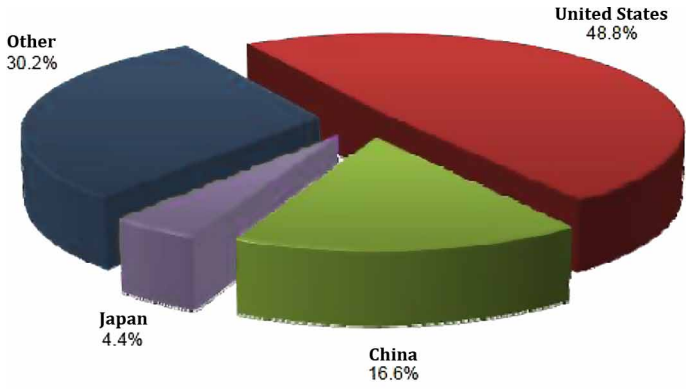



## B. Mexican Imports

In the area of imports, Mexico, unlike its export sector has diversified as to the destination of the same, reflecting a productive integration with global markets, specifically in the Asian market. According to the sixth report of President Calderón (2012), United States gradually ceases to be the leading provider of Mexico, from 76 percent of total imports in the nineties to less than 50 percent products in 2014. The main suppliers of Mexico remains first US with 48.8 percent of total imports, followed by China with 16.6%, in third place is Japan with 4.4% and the rest of the world are distributed with the remaining 30.2% of total Mexican imports in 2014.

Analyzed by regions of Mexico, imported products come mainly from NAFTA - United States and Canada with 48.8% and if the LAIA members are added, the Americas region represents 55.2% of total Mexican imports, followed by the Asia - Pacific (China, Japan, Malaysia, South Korea and Taiwan) with 31.9%. Third the European Union, mainly from Germany, Spain and Italy finds 12.3% of total Mexican imports (INEGI, 2014).

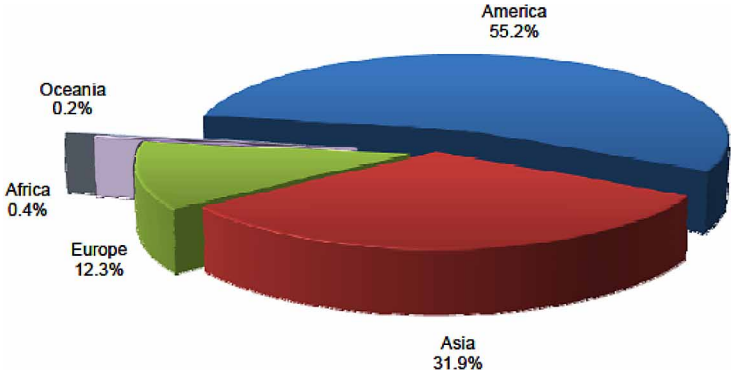
*Figure 11. Percentage share of imports by main countries (2014)*
*Source: INEGI (2015)*






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*Figure 12. Percentage share by imports by continents (2014)*
*Source: INEGI (2015)*

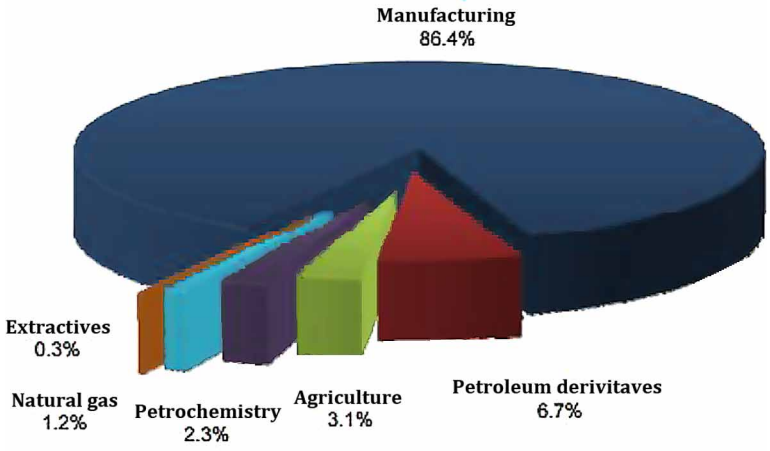



Mexico has become a producer of manufactured goods, which requires inputs for the production of this sector. As shown in the following chart (figure 13), more than three-quarters of Mexican imports were inputs for the manufacturing sector, accounting for 86.4 percent of total imports, while 10.2% are for oil products - natural gas, petrochemicals and derivative of oil, and 3.1 percent for agricultural sector products. The main imported products are gasoline, automobiles, monolithic integrated circuits, diesel, electronic integrated circuits and parts for monitors and projectors (INEGI, 2014).

As seen in the chart (Figure 13), manufactures account for 86.4 percent of total imports into Mexico. The main products purchased by the country are equipment and electrical and electronic equipment with 24 percent, followed by machinery and special equipment for various industries with 17.8% and third place are the automotive partswith12.9% of the total imported in 2014.

The agricultural sector accounts for only 3.1% of total imports. This is due to the high productive capacity in this sector, mainly products such as vegetables, beef, coffee, and cocoa, among others. However, owing to the large population and increasing demand for agricultural products, Mexico, does

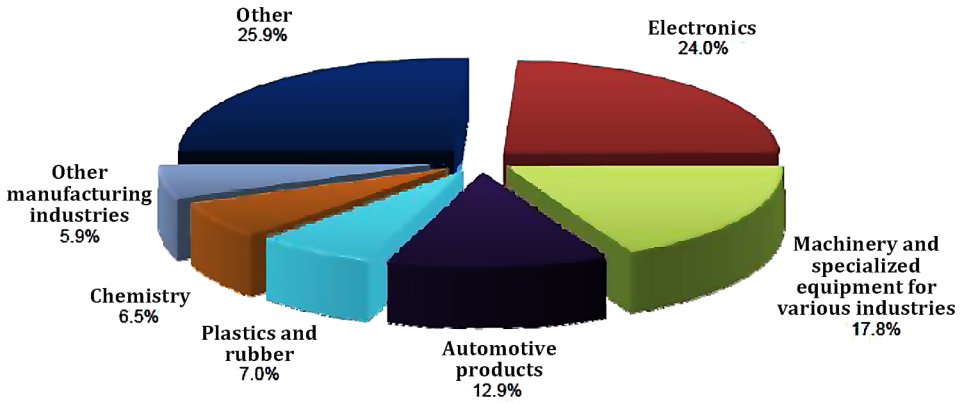
*Figure 13. Percentage share of oil and non-oil imports by sector (2014)*
*Source: INEGI (2015).*






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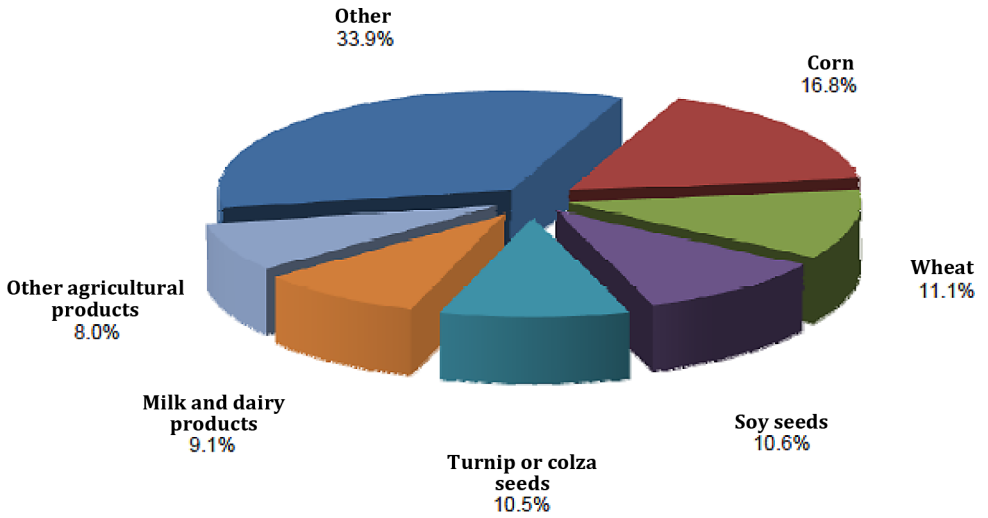
*Figure 14. Percentage share of imports by major manufactures (2014)*
*Source: INEGI (2015)*




not have the capacity to meet demand required in the sector, so it has to import products such as corn, product representing16.8% of total imports by Mexico in the agricultural sector; wheat with 11.1%, rape seed or canola with 10.5 percent, among others.

As shown in Figure 15, the main products imported under the Harmonized Commodity Description and Coding (SADCM) is Chapter 85: machinery and electrical equipment with 21.1% of total imports, followed by chapter 84: mechanical appliances, boilers and parts with 17.2% and thirdly Chapter 87: land vehicles and parts with 8.3%.

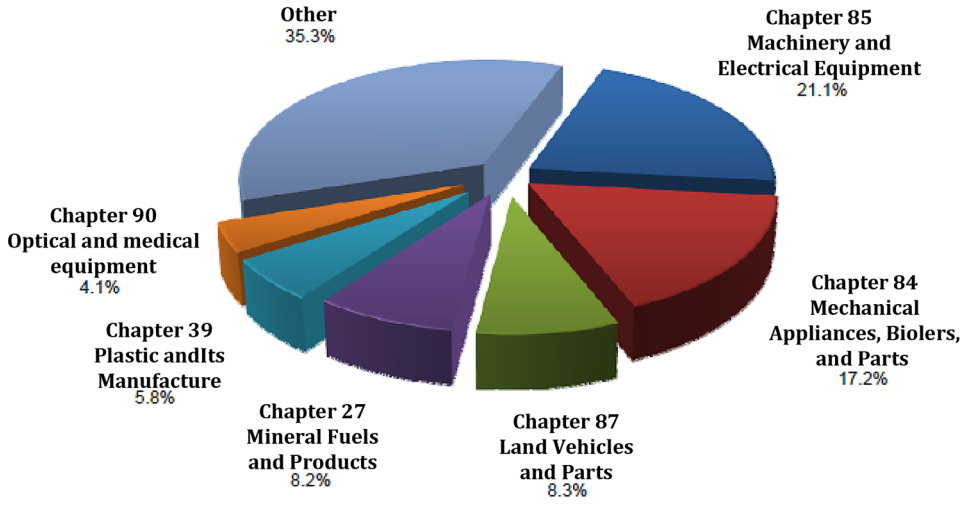
*Figure 15. Percentage share of imports by main agricultural products (2014)*
*Source: INEGI (2015)*






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*Figure 16. Percentage share of imports of goods by main chapters of the Harmonized System (2014)*
*Source: INEGI (2015)*




However, reviewing exports in 2014 according to the Harmonized Commodity Description and Coding (SADCM) and imports the same period, it can be seen that the chapter 85: machinery and electrical equipment, Chapter 87: Land vehicles and parts and Chapter 84: Mechanical appliances and boilers; match between the main products imported and exported from the country. This is because Mexico is a country producer of manufacturing, which imports products from certain sector, gives manufacturing the value added and exports abroad.

## C. Trade Balance

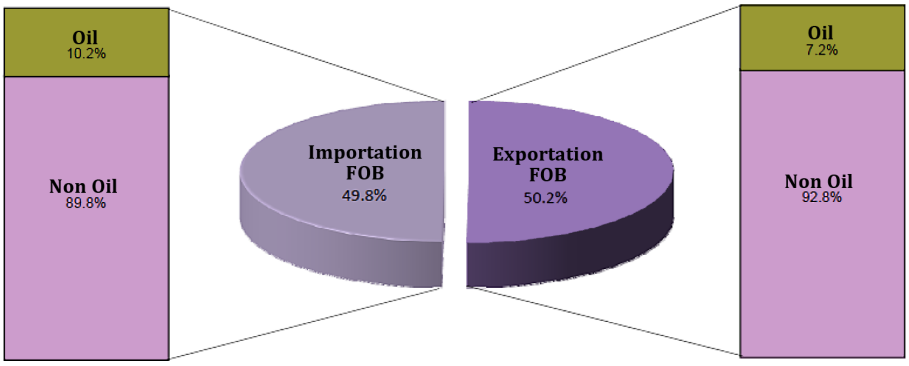
Mexico plays a key role on the international stage. In 2012, the country ranked fourteenth in the amount of gross domestic product, the sixteenth to the value of its trade and fourteenth for investment by nationals abroad also lies in eleventh place by size population (NDP 2013-2018). The balance of payments is the systematic search conducted by the Bank of Mexico (Banxico) of all economic transactions between residents of the country and the world. Its main components are the current account, the capital account and the account of official reserves. The trade balance is the part of the balance of payments that includes imports and exports of goods. For this investigation, data provided by the Bank of Mexico, in quarterly reports called "Information Revised Foreign Trade" are used.

In 2014 Mexico's trade balance showed a deficit of 2.442 billion, which compares with 1,184 million recorded in 2013. This variation resulted from the decline in the surplus of oil products, which increased from 8,625 million in 2013 to 1,489,000 dollars in 2014, and a reduction of non-oil deficit, which decreased from 9.809 million dollars in 2013 to 3,931,000 dollars in 2014 as seen in graph 14 (Banxico, 2015).In the period under review, 2014, exports of goods reached 397.535 million dollars, among which 42.979 million dollars correspond to oil exports while 354.556 million dollars correspond to non-oil. In this period, total exports had an annual growth of 4.6%, which was a result of increased 7.3 percent in non-oil exports and a decrease of 13.2 percent in oil (Banxico, 2015).



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*Figure 17. Percentage share of exports and imports oil and non-oil (2014)*
*Source: Banxico (2015)*




In the same period, total imports amounted to 399.977 million dollars, an amount which suffered a 4.9% increase compared to 2013. The increase in total imports originated from the 5.3% increase in non-oil imports and 1.5% of oil (Banxico, 2015).

The revised information on foreign trade in 2014, reveals that the accumulated value of oil exports reached US $ 42.979 million, lower than 49.493 million dollars observed in 2013. The average price of Mexican crude mix of export level in 2014 was $ 86.94, lower dollar figure in 11.52 dollars at the average presented in the previous year. In relation to the volume of oil exported in 2014, it reached a level of 1.142 million barrels a day, down from 1.189 million daily barrels in 2013 (Banxico, 2015) level (figure 19).

Oil imports in 2014 totaled 41.490 million, while in 2013 were of 40.868 million dollars. Thus, in 2014 the foreign trade surplus of oil products stood at 1.489 million dollars, while in 2013 was 8.625 million as shown in Graph 16 (Banxico, 2015).

In the Figure 20, the trade balance of Mexico is analyzed by the structure of the value of exports, i.e., capital goods, understood as the set of goods that serve as a means to produce other goods such as machinery and equipment transport; consumer goods, which are goods used for immediate consumption either perishable or non-perishable. Finally, the intermediate goods, defined as those incorporated into the production process by which experience changes in their status, composition, shape or simply integrate other assets in order to create a new product, for example, raw materials used in transformation industry.

*Figure 18. Trade balance of goods of Mexico for oil and non-oil products*
*Source: Banxico (2015). Totals in $ million.*

| | 2013 | 2014 | | | | |
|---|---|---|---|---|---|---|
| | | September | October | November | December | Yearly |
| **Total Exports** | **380,026** | **34,256** | **37,086** | **32,329** | **34,114** | **397,535** |
| **Oil** | 49,493 | 3,731 | 3,430 | 3,162 | 2,467 | 42,979 |
| **Non Oil** | 330,533 | 30,525 | 33,656 | 29,167 | 31,647 | 354,556 |
| **Total Imports** | **381,210** | **33,666** | **36,943** | **33,405** | **33,861** | **399,977** |
| **Oil** | 40,868 | 3,600 | 3,387 | 3,625 | 3,439 | 41,490 |
| **Non Oil** | 340,342 | 30,066 | 33,556 | 29,780 | 30,422 | 358,487 |
| **Total Trade Balance** | **-1,184** | **590** | **143** | **-1,076** | **254** | **-2,442** |
| **Oil** | 8,625 | 131 | 43 | -463 | -971 | 1,489 |
| **Non Oil** | -9,809 | 459 | 100 | -613 | 1,225 | -3,931 |



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*Figure 19. Percentage share of exports of petroleum products (2014)*
*Source: INEGI (2015)*

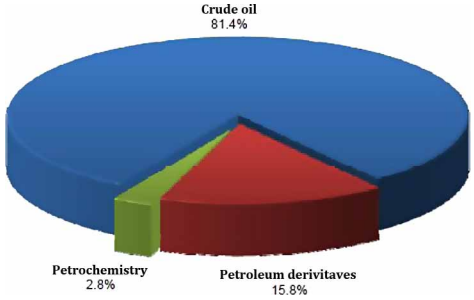
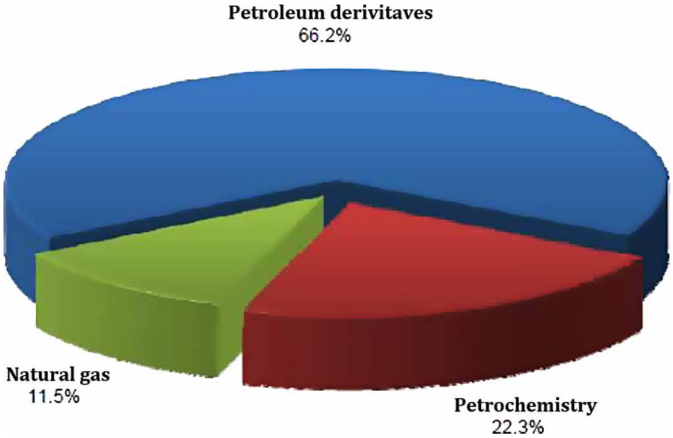



*Figure 20. Percentage share of imports of petroleum products (2014)*
*Source: INEGI (2015)*




The structure of the value of merchandise exports in 2014 was as follows: manufactured goods, 84.8%; petroleum products, 10.8%; agricultural goods, 3.1%; extractive and non-oil products, 1.3% (Banxico, 2015). The structure of the value of imports of goods in2014was as follows: intermediate goods, 75.5%; consumer goods, 14.6%; and capital goods9.9% of total Mexican imports (Banxico, 2015). The cumulative value of total merchandise imports in2014wasUS $399.977 million, i.e.4.9% increase compared to that observed in 2013. In the reference period, imports of consumer goodsrose1.7%, intermediate goods rose 6% and capital goods increased1.5% of Mexican imports (Banxico, 2015).

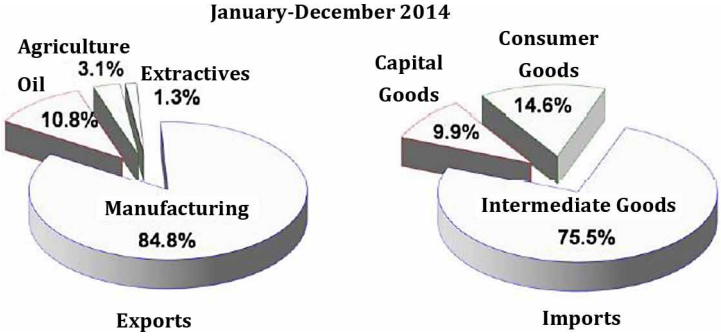
## D. Foreign Direct Investment in Mexico

According to the Ministry of Economy (Secretaría de Economía, 2015), the main function of Foreign Direct Investment (FDI) is to create a lasting interest and business or economic long term ends by the foreign investor in the host country being the case Mexico. Foreign investments stimulate competition, encourage the transfer of new technologies, boosting exports, and generate foreign exchange earnings, employment generated; positively affecting the country.



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*Figure 21. Structure of exports and imports of goods (2014)*
*Source: Banxico (2015)*




The bodies responsible for managing and operating the National Register of Foreign Investment (NREN) in Mexico are the Directorate General of Foreign Investment (DGIE) belonging to the Ministry of Economy. Likewise, it represents Mexico in international investment forums, support Pro Mexico in promoting and attracting investments, disseminate information and studies on FDI in the country. Quarterly Secretary of Economy (SE) through the National Foreign Investment Commission (FIC), produced Statistical Report on the Performance of Foreign Direct Investment in Mexico (January-December 2014); with support from the Bank of Mexico (Banxico) and following the recommendations of international organizations: Organization for Economic Co-operation and Development (OECD): *Benchmark Definition of Foreign Direct Investment* (2008); and the International Monetary Fund (IMF) Balance of Payments Manual (1993).

According to the statistical report, in 2014, the amount of FDI recorded in Mexico amounted to 22,568.4 million dollars, lower than in 2013 amount to 35,188.4 million dollars. The reported amount of FDI in 2014 was reported by 4,310 Mexican companies with FDI in its capital, in addition to trusts and foreign legal persons conducting business as usual in Mexico. Now, of 22,568.4 million dollars registered, 12768.6 million dollars originated from reinvested earnings, 5565.2 million dollars of intercompany accounts and 4234.6 million dollars of new investment (Table 8).

Foreign investment flows are mainly divided into manufacturing with 12,869.9 million dollars, followed by financial services with 5556.6 million dollars, third the mining sector with 2215.2 million dollars, trade with 1954.3 and finally the construction sector with 872.6 million dollars; the field of mass media information suffered a cumulative divestment in 2014 of 4152.5 billion (Figure 23).

*Figure 22. Comparison of FDI 2013-2014*
*Source: Ministry of Economy (2015)*

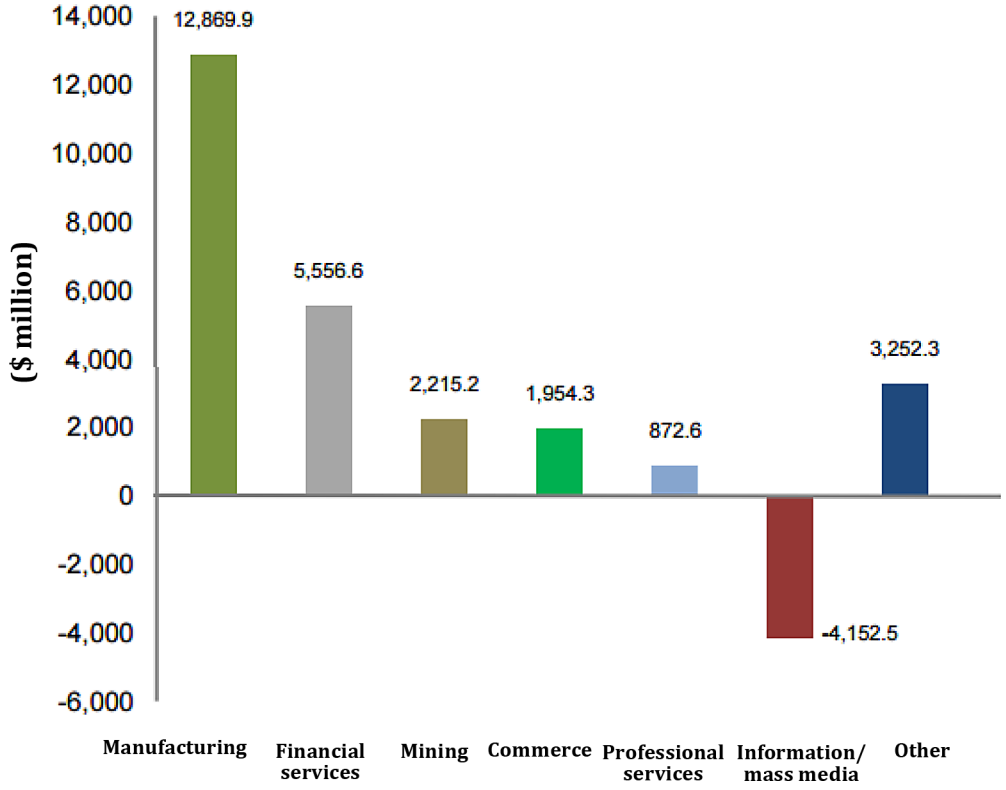
| | 2013 | 2014 | Variation Absolute | Variation Relative |
|---|---|---|---|---|
| TOTAL | 35,188.4 | 22,568.4 | -12,620.0 | -35.9% |
| New investments | 17,587.9 | 4,234.6 | -13,353.4 | -75.9% |
| Reinvesting profits | 10,335.1 | 12,768.6 | 2,433.5 | 23.5% |
| Intercompany accounts | 7,265.4 | 5,565.2 | -1,700.1 | -23.4% |

*/ IED made and notified on 12/31 of each year.
(in $ million)



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*Figure 23. Sectorial distribution of FDI 2014*
*Source: Ministry of Economy (2015)*




Performing a division of investment flows are analyzed by the agricultural, industrial and service sectors. The first, the FDI inflows reached 57.1 million dollars for agriculture and 41.5 million dollars for services related to farming and forest, while breeding and export of animals suffered a decrease of 14.3 million dollars. For the industrial sector, it was recorded that 77.7 percent of FDI flows were for the subsector of manufacturing, 13.4% for the mining and 5.3% for construction. Finally, the services sector had a record of 5556.6 million dollars for financial services, while trading record 1954.3 million dollars and as commented in previous lines, the subsector of information in mass media suffered a decrease of 4152.5 million dollars. This subsector was affected by an atypical transaction: FDI decreased by 5,496 million dollars due to withdrawal from AT& T as a shareholder of América Móvil (see figure 24).

Flows of foreign direct investment are diversified, because as shown in the following chart (Figure 25), FDI comes from several countries, First, from the main trading partner, the United States, with an investment in 2014 to 6516.4 million dollars. Secondly, Spain with 4092.9 million dollars, and thirdly, Canada 2421.4 million dollars, followed by Germany with 1546.2 million dollars, Netherlands with 1489.6 million dollars and Japan with 1433.7 million dollars, it should be noted that FDI comes mainly from countries with which Mexico has an existing trade agreement.

The Ministry of Economy performs an analysis of the historical evolution of the foreign direct investment into the country from 2000 to 2014. Results show that US is the largest investor in Mexico with a cumulative total of 171.543 million dollars, followed by the Netherlands with 49.514 million dollars, third is Spain with 48.121 million dollars, and Canada fourth with 22.781 and fifth Belgium with



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*Figure 24. Internal structure of FDI by groups of economic activities 2014*
*Source: Ministry of Economy (Secretaría de Economía, 2015)*

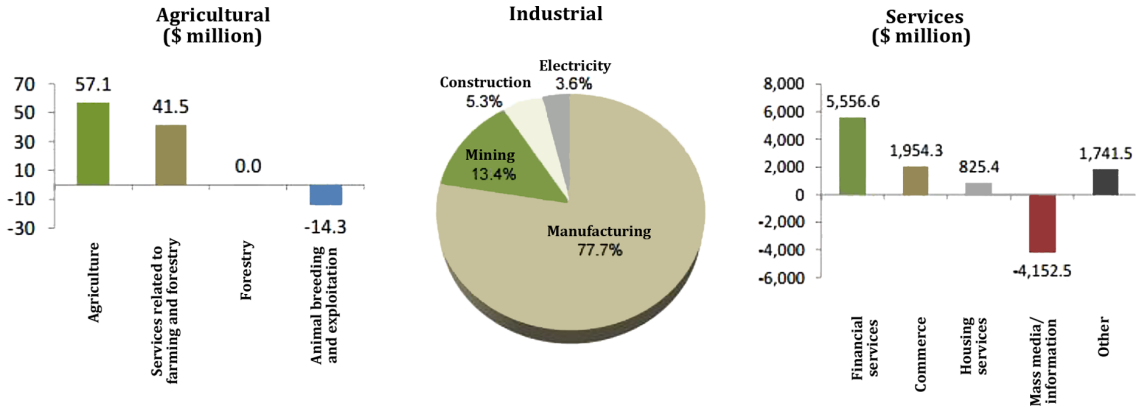
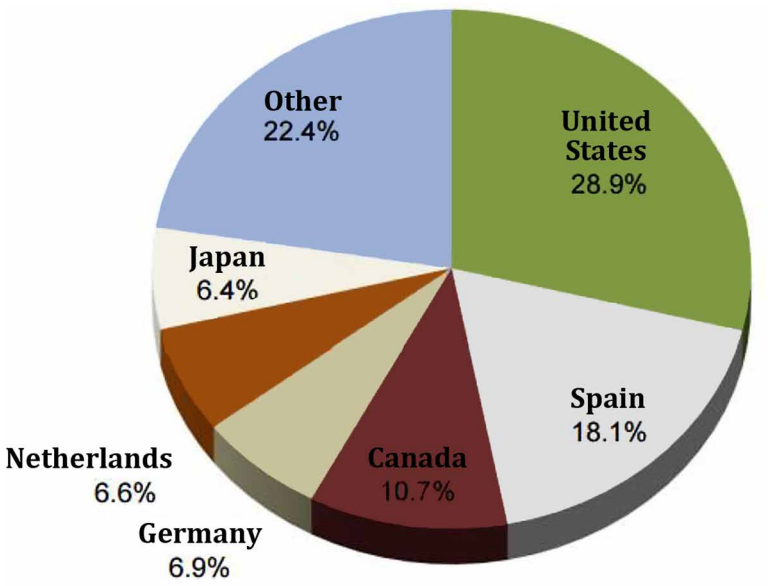



*Figure 25. Origin of FDI 2014*
*Source: Ministry of Economy (Secretaría de Economía, 2015)*




15,999 billion (figure 26). Such flows of foreign direct investment rebounded towards mainly manufacturingwith46.1% of the cumulative total from 2000 to 2014, followed by financial serviceswith17.6 percent, third trading with an8.3%, and fourthminingwith5.9and fifth, and sector of the mass media with a4.1cumulative total (Figure 27).

At the international level, according to the United Nations Conference on Trade and Development (UNCTAD for its acronym in English) in 2013, Mexico won the tenth place as the recipient of foreign direct investment country, with a share of 2.6 percent from total world FDI flows. The annual report of UNCTAD publishes the World Investment Prospects Survey which positions Mexico as the 13th most attractive economy to invest in the next three years economy.



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*Figure 26. FDI stock by country of origin2000-2014.Millionsof dollars and percentages*
*Source: Ministry of Economy (Secretaría de Economía, 2015)*

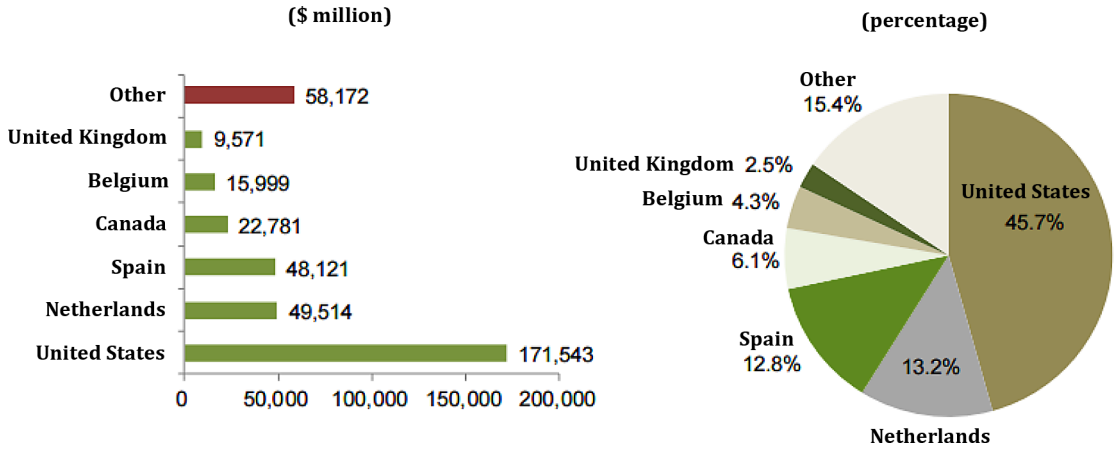
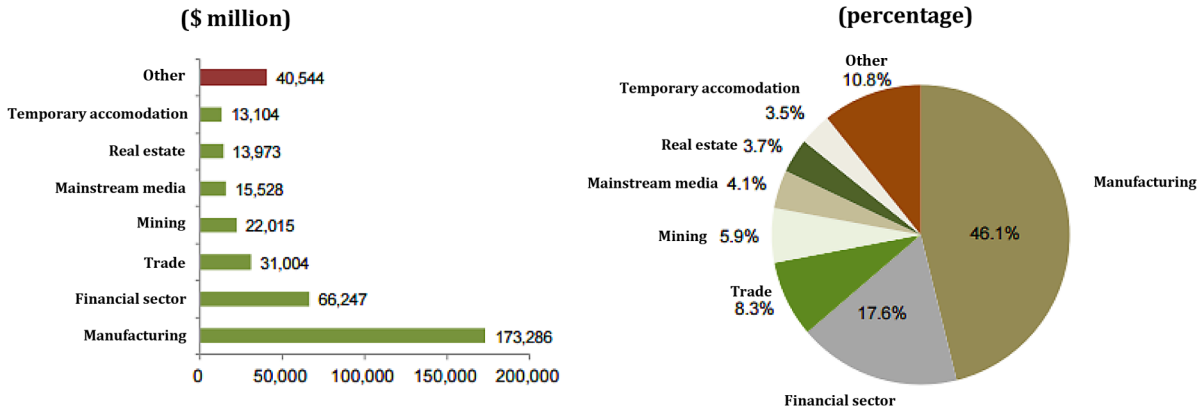



*Figure 27. Cumulative FDI 2000-2014 by destination sector, MDD and percentages*
*Source: Ministry of Economy (Secretaría de Economía, 2015)*




As shown in the graph above, of the countries surveyed by the United Nations Conference on Trade and Development (UNCTAD), in 2013, China won first place as a recipient of foreign direct investment, followed closely by US. Third is Indonesia, India fourth and fifth Brazil; Mexico happened to be in the 7th place last year, now to 13th place in the survey.

## E. Business in Mexico

According to the National Statistics Directory of Economic Units (DENUE), the National Institute of Statistics and Geography (INEGI) in 2014 recognized 4 925 012 business in Mexico.

As shown in the above table, the thickness of economic units lies with the total of accounted 4,349,900 that have 0-5 employees. However, for this research, it was decided to consult only the companies with more than 6 workers since they are considered susceptible of being internationalized, 575, 112 total economic units were recorded in Mexico.



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*Figure 28. FDI recipient economies more attractive World Investment Prospect Survey 2014-2016; percentage of companies that selected the country as a priority destination*
*Source: Ministry of Economy (Secretaría de Economía, 2015). Note: based on the response of 164 transnational corporations. Values in parentheses indicate the position occupied in the previous poll.*

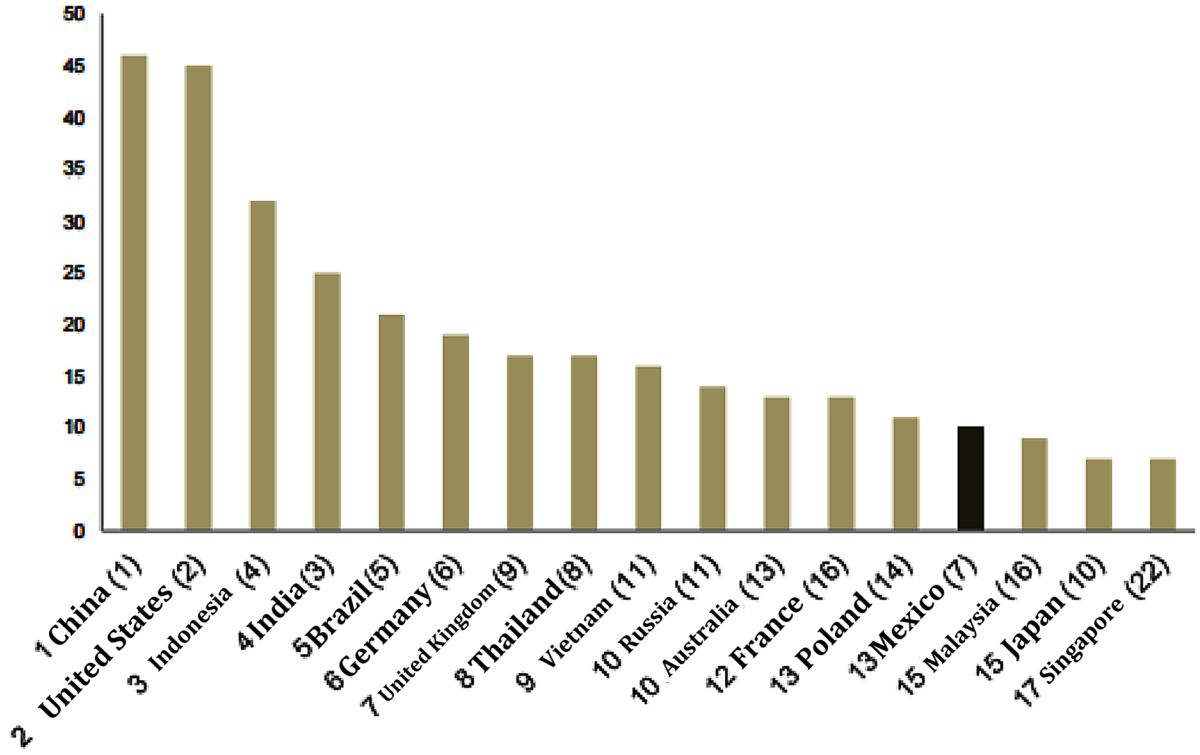



*Table 5. Economic units INEGI*

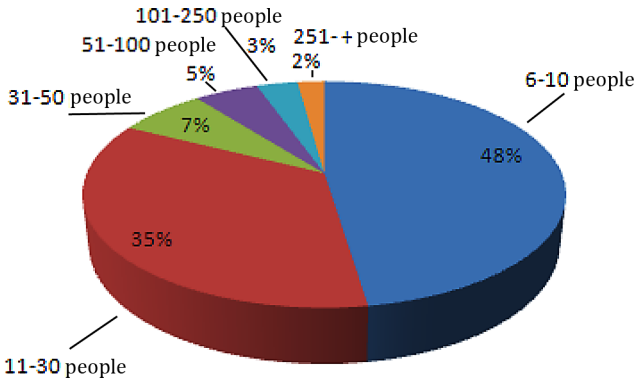
| NO. of Employees | MÉXICO | SINALOA |
|---|---|---|
| 0-5 | 4,349,900 Economic units | 90,435 economic units |
| 6-10 | 273,719 | 7,995 |
| 11-30 | 200,438 | 6,046 |
| 31-50 | 40,153 | 1,244 |
| 51-100 | 29,541 | 938 |
| 101-250 | 18,920 | 534 |
| 251- + | 12,341 | 266 |
| TOTAL | **4,925,012** | **107,455** |

Source: Based on data from the National Statistics Directory of Economic Units (2014).



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*Figure 29. Economic units in Mexico by size*
*Source: Based on data from DENUE (2015)*




There have been selected small and medium enterprises with export activities, belonging to the most representative productive sectors, with reference to the information recorded in the National Bank for Foreign Trade of Mexico, at the time to validate the information obtained in the course of the investigation.

## Companies Exporting

According to the Mexican Business Information System (SIEM) belonging to the Ministry of Economy, in 2015, a total of 612.061 exporting and importing companies in Mexico were registered. Following, companies are broken down by state. Note that the information pertains only to the registered companies SIEM and not all existing in the country.

From the above table shows that of the total registered companies, only 5,294 are exporters, which represent 13.50% of the total number of companies. Similarly, 13,297 companies have imported goods representing 21.70%.

States with the most companies exporting are Jalisco with21%, Coahuila with 20%, 15% Baja California, and Chihuahua with 14%, and the states of Guanajuato, Mexico City and the State of Mexico with 10% each exporting companies registered in the country. In the case of the State of Sinaloa, there are only 55 exporting companies and 14,452 who do not. However, according to the Directory of Exporters (DIEX) of ProMéxico, belonging to the Ministry of Economy in 2014, exporting firms belong to the following sectors:

The sector that is more engaged in exporting is the food innovation with 734registered companies, followed by the food industry with 578 companies. A third sector is the chemical-plastic with 560, followed by the metalworking with 529and fifth sector of construction materials and hardwarewith503 companies. Of the total registered Promexico enterprises, the predominant sector in exports is the food - Food Innovation and agri-foodstuffs, with 41 percent, followed by plastic chemist with 17 percent and third sector and construction materials hardware with 15 percent of all businesses.



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*Table 6. Export-import companies SIEM*

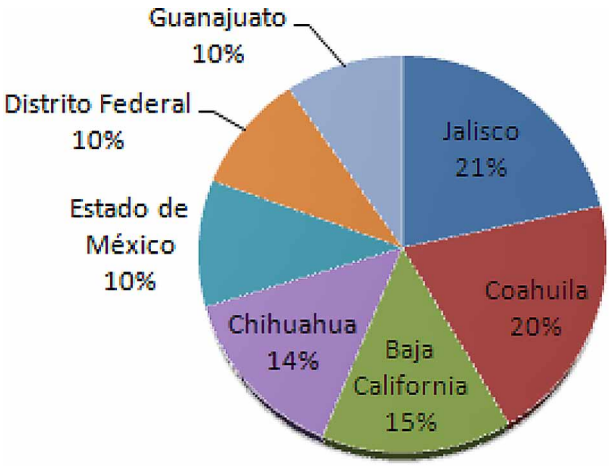
| State | Export companies | | Import companies | |
|---|---|---|---|---|
| | Exports | NO | YES | NO |
| Jalisco | 788 | 47,685 | 1,943 | 46,530 |
| Coahuila | 728 | 16,674 | 1,237 | 16,165 |
| Baja California | 534 | 6,458 | 1,756 | 5,236 |
| Chihuahua | 511 | 29,248 | 1,128 | 28,631 |
| Estado de México | 377 | 49,544 | 818 | 49,103 |
| Distrito Federal | 357 | 68,486 | 832 | 68,011 |
| Guanajuato | 353 | 28,470 | 446 | 28,377 |
| Tamaulipas | 245 | 22,499 | 569 | 22,175 |
| Nuevo León | 193 | 16,078 | 549 | 15,722 |
| Querétaro | 135 | 44,271 | 256 | 44,150 |
| Veracruz | 134 | 47,933 | 461 | 47,606 |
| Quintana Roo | 116 | 19,780 | 212 | 19,684 |
| Aguascalientes | 105 | 4,672 | 196 | 4,581 |
| Michoacán | 104 | 49,217 | 177 | 49,144 |
| Puebla | 76 | 19,756 | 244 | 19,588 |
| Sonora | 65 | 5,418 | 242 | 5,241 |
| Tlaxcala | 63 | 7,795 | 106 | 7,752 |
| Sinaloa | 55 | 14,452 | 276 | 14,231 |
| Yucatán | 55 | 25,637 | 300 | 25,392 |
| San Luis Potosí | 49 | 9,462 | 110 | 9,401 |
| Durango | 40 | 7,884 | 202 | 7,722 |
| Chiapas | 37 | 3,353 | 140 | 3,250 |
| Hidalgo | 28 | 8,548 | 75 | 8,501 |
| Baja California Sur | 26 | 9,160 | 539 | 8,647 |
| Zacatecas | 25 | 11,987 | 41 | 11,971 |
| Morelos | 22 | 2,208 | 75 | 2,155 |
| Colima | 19 | 1,520 | 44 | 1,495 |
| Tabasco | 15 | 6,434 | 60 | 6,389 |
| Guerrero | 14 | 2,017 | 42 | 1,989 |
| Oaxaca | 11 | 3,981 | 84 | 3,908 |
| Nayarit | 8 | 7,877 | 23 | 7,862 |
| Campeche | 6 | 8,263 | 114 | 8,155 |
| TOTAL PARCIAL | 5,294 | 606,767 | 13,297 | 598,764 |
| TOTAL | 612,061 | | 612,061 | |

Source: Mexican Business Information System (SIEM) Ministry of Economy (2015)



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*Figure 30. Export companies in Mexico by state*
*Source: Based on data from SIEM (2015)*




## Companies Maquilador as in Mexico

One of the main reasons why NAFTA was signed between México, United States and Canada was precisely by the manufacturing sector and is currently the export maquiladora that represents a major source of foreign exchange for the country, as well as creating jobs, mainly in the border states of Mexico. The maquiladora industry in Mexico has shown an exponential growth and increasing demand for foreign markets. This industry has allowed the country to have a constant technological development and constant training to workers who are employed in industries. During 2013, 80 percent of the recorded investment in this period was for the manufacturing sector, mainly par subsectors in the metalworking industries, machinery and equipment and automotive sector.

In 1994 the number of maquiladoras in Mexico was 2,085 establishments with occupancy of 583.044 employees. 20 years later, in August 2013, the number of maquiladoras grew to 5,049 companies and 2,095,799 employees in the manufacturing sector in Mexico. That is, in Mexico the number of maquiladoras and employment multiplied by factors of 2.5 and 3.6 respectively (INEGI, 2015).However, according to the Integral Statistics Program of the Manufacturing, Maquiladora and Export Services INEGI, in 2015, were registered 5,006 manufacturing establishments in Mexico.

As seen in the table, during the years 2008 and 2009 there was an increase in the number of manufacturing establishments in the country, experiencing a gradual decline from the year 2010, caused mainly by the decline in foreign investment to the country, derived from the global economic crisis of 2009 and the emergence of new competitive emerging markets, the main event, China.

Also in 2014, there are counted 1,121 manufacturing establishments enrolled in Manufacturing, Maquiladora and Export Services Program (IMMEX), so that in total, the maquiladora industry is represented by 6,127 manufacturing and non-manufacturing firms.



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*Table 7. Sectorial break down of exporting companies*

| Name | Total of companies |
|---|---|
| Food innovation | 734 |
| Agrium | 578 |
| Chemical - Plastic | 560 |
| Metal mechanics | 529 |
| Construction materials and hardware store | 503 |
| Electrical - electronic | 347 |
| Clothing apparel | 263 |
| Habitat, fashion and design | 219 |
| Furniture and related products | 216 |
| Automotive | 214 |
| Gift items, jewelry and decoration | 179 |
| Textile | 176 |
| Leather, footwear and leather goods | 158 |
| Print, paper and office supply | 149 |
| Aerospace | 80 |
| Mining | 78 |
| pharmacist | 47 |
| Health | 29 |
| Medical equipment | 23 |
| Oil and gas extraction | 23 |
| Professional services, software and digital content | 20 |
| Transport | 20 |
| Touristic residences | 3 |
| Information technology | 2 |
| Biofuel | 1 |
| Total | **5151** |

Source: Own elaboration with data from Directorio de Exportadores de ProMéxico (DIEX), 2014

## Economic Report 2014 Maquiladoras

The document "Economic Report maquiladoras" by Banco Base and disseminated by the National Council of the Maquiladora and Export Manufacturing in February 2015; notes that in November 2014, the manufacturing sector showed an annual increase of 5.31 percent. The subsectors with greater dynamism over the same period of 2013 were the manufacture of machinery and equipment, clothing apparel, electronics, among others. In the case of chemical and paper industry, showed deterioration in performance compared to the same period last year.



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*Figure 31. Mexican exporting companies by industry data Promexico*
*Source: Based on data from the Directory of Exporters (DIEX)*

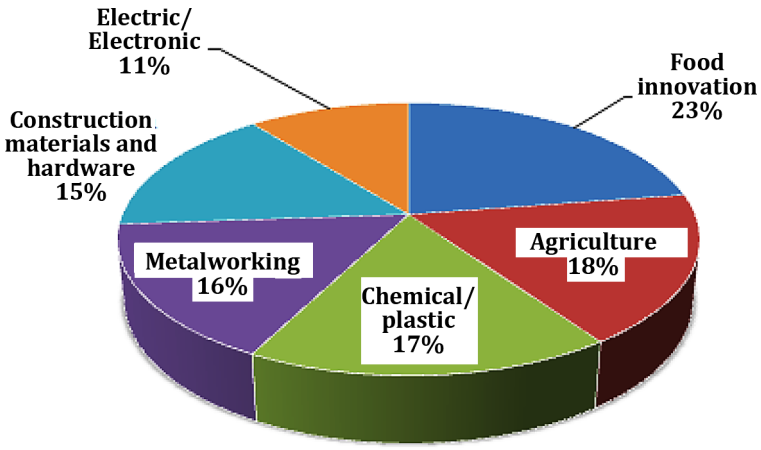
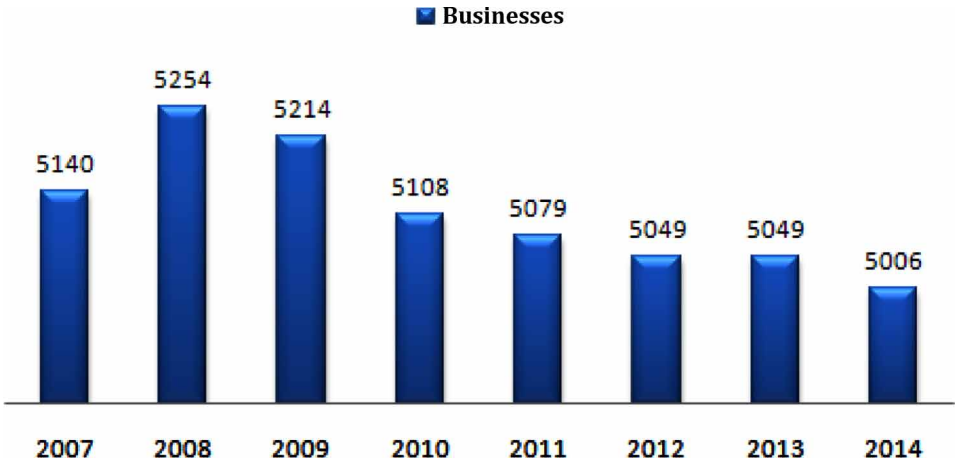



*Table 8. Number of manufacturing establishments IMMEX, Annual*

| Period | Companies |
|---|---|
| 2007 | 5140 |
| 2008 | 5254 |
| 2009 | 5214 |
| 2010 | 5108 |
| 2011 | 5079 |
| 2012 | 5049 |
| 2013 | 5049 |
| 2014 | 5006 |

Source: Based on data from INEGI (2015)

*Figure 32. Manufacturing establishments of IMMEX program, annual*
*Source: Based on data from INEGI (2015)*






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During 2014, gross fixed investment, comprising investment in machinery and equipment, as well as in construction, had an annual increase of 7.14 percent compared with the same period last year. In relation to the investment of imported origin, it experienced an increase of 17.11 percent. The construction sector had an increase of 5.03 percent over the same period last year, while the mining sector had a diminution in performance ending the year with an annual decrease of 5.71 percent. The analysis makes manifest that in relation to 2014 manufacturing exports metal, machinery and equipment, are the same products contributing the largest share of manufacturing exports showed an annual growth of 5.9% on its most important component, automotive parts, had an annual increase of 9.75 percent.

## RESULTS

In order to make a comparison between the last five presidential administrations, exclusively in relation to foreign policy and trade policy, in order to ascertain that period had a positive impact on trade liberalization in Mexico and increased foreign investment, is showed in the following table of results:

As seen from Tables 9-13, after making a comparison of the last five presidential administrations in Mexico, it can be seen that the busiest period in foreign policy and foreign trade was the period 1994-2000 under the President Ernesto Zedillo. It was the period with more free trade agreements and treaties signed, likewise, it was one that was focused more in this sector, enacting and amending laws of matter and structural reform to the government organization in order to be more competitive with foreign markets. These achievements definitely could not have been carried out but for the former president, i.e. the period1988-1994 under the President Salinas deGortari, since its administration laid the foundations of trade policy openness of Mexico creating and negotiating new trade alliances with foreign partners.

*Table 9. Comparison of foreign policy in presidential periods Period 1988-1884. President Carlos Salinas*

| | |
|---|---|
| National Development Plan: Foreign Policy | The NDP (1989-1994) proposes that other countries apply to our trade regulations similar to those reported here that have been implemented, increasing the potential for economic complementarity with the countries of Latin America and promoting bilateral and multilateral agreements with new poles of global growth, the European Economic Community and the Pacific Rim. The foreign trade policy will be aimed at promoting the modernization of the productive apparatus and foreign investment is promoted through financing economic activity, access to markets and technology. |
| Agreements and treaties enacted | The North American Free Trade Agreement (NAFTA) was enacted. Negotiations for the formation of the Group of Three, comprising Mexico, Colombia and Venezuela and free trade agreements with Chile, Costa Rica and Bolivia were performed. |
| Objectives achieved to the end of the period | 1. Creation of the regulatory framework of foreign trade: structural Customs Law of Treaties reforms, among others.<br>2. Greater macroeconomic stability and greater trade liberalization was achieved by promoting agreements to open foreign markets and deregulation of the domestic market, thus raising the country's export capacity.<br>3. The basis of trade policy openness sat Mexico and new business partnerships were created.<br>4. Admission to the Organization for Economic Cooperation and Development (OECD) and the Forum of Asia Pacific Economic Cooperation (APEC), and its participation in the European Bank for Reconstruction and Development. |



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*Table 10. 1994-2000 Ernesto Zedillo Ponce de León*

| | |
|---|---|
| National development plan: Foreign policy | The NDP (1995-2000) sought to promote sub regional forums in Latin America, Mexico and Spain as they are bridges in dialogue between continents and economic regions.<br>Sought to establish a new comprehensive agreement with the European Union giving priority to reach a treaty of free and fair trade with the EU. |
| Agreements and treaties enacted | Free trade agreements with North America (1994), Costa Rica (1995), the Group of Three (1995), Bolivia (1995), European Union (1997), Nicaragua (1998), Chile (1999) and Israel (2000) were enacted.<br>Economic Complementation Agreement with Panama (1998) and the Partial Agreement with Paraguay (2000) were enacted.<br>Negotiations and signature of trade agreements with the Northern Triangle (2001) and the European Free Trade Association (EFTA) in 2001 were performed.<br>Investment agreements for the Promotion and Reciprocal Protection of Investments (BIT) with Switzerland (1996), Argentina (1998) and the Netherlands were signed (1999). |
| Objectives achieved to the end of the period | Mexico joined the Organization for Economic Cooperation and Development (OECD) in 1994 and the World Trade Organization (WTO) in 1995.<br>1. During this period were created conditions under free trade with 27 nations managing to be the only country in the world with a network of agreements on that scale, being able to position Mexican products more competitive in international markets and making its products more accessible to many national markets.<br>2. In order to give greater modernity to the Mexican government structure, a structural reform of the Ministry of Finance in July 1997 was performed, creating the Tax Administration Service (SAT), to which was attached the Administration General of Customs.<br>3. In 1998 it was amended again the Customs Act, with the aim of strengthening the control mechanisms and thus combat evasion of payment of contributions, increased regulatory compliance and non-tariff restrictions and customs fraud in general (Customs Mexico, Aduanas de México, 2015). |

*Table 11. 2000-2006 Vicente Fox Quezada*

| | |
|---|---|
| National development plan: Foreign policy | The NDP (2001-2006) established three broad areas of action: social and human development, order and respect and growth with quality. In the latter, the objectives were: responsibly conduct the economic progress of the country, elevate and extend competitiveness, ensuring inclusive development and create conditions for sustainable development. |
| Agreements and treaties enacted | It was proposed to update the foreign policy of Mexico to the new political realities.<br>The FTA with Uruguay (2004) and the Agreement to Strengthen Economic Partnership with Japan (2005) were enacted.<br>The Economic Complementation Agreement with Argentina (2001) and ECA's with MERCOSUR was held: ECA Framework Agreement 54 (2002) and ACE Automotive Sector Agreement 55 (2003):<br>BIT's were signed with Finland, Portugal, Denmark and France in 2000; Germany, Austria, Sweden in 2001; Cuba, Uruguay, South Korea, Greece and Italy in 2002; Belgium-Luxembourg Economic Union in 2003, Czech Republic in 2004, Iceland and Panama in 2006. |
| Objectives achieved to the end of the period | 1. As it can be seen in the National Development Plan (2001-2006), foreign trade was never a priority for the government during this period.<br>2. Suffered a series of setbacks with US diplomats and the severance of diplomatic relations with Cuba, preventing the country to achieve greater trade openness; nevertheless, the Economic Cooperation Agreement between Mexico and Cuba (ECA 51) in September 2001 was signed.<br>3. In 2006, it was left without effect by presidential decree on the TLC Mexico, Venezuela and Colombia (1995). |



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*Table 12. Felipe Calderon Hinojosa 2006-2012*

| | |
|---|---|
| National development plan: Foreign policy | The NDP (2007-2012), sought to reap the benefits of globalization in order to promote national development and project Mexico's interests abroad.<br>Mexico's foreign policy was not a priority in public policy for the government of President Calderón.<br>In order to resolve the diplomatic crisis and disputes inherited from the administration of President Fox, a foreign policy of relatively low profile was raised. Government was mainly focused on combating drug trafficking and organized crime. |
| Agreements and treaties enacted | The FTA with Colombia (2011) was enacted following the FTA with the Group of Three (1995) left without effect by presidential decree in 2006. Also, a FTA was enacted with Central America (2012), a treaty that unifies previously concluded trade agreements with Central American countries.<br>They were enacted the Partial Agreement with Ecuador (2007), the Economic Complementation Agreement with Hungary (2009) and Bolivia (2010), the latter, after annul by presidential decree on TLC with Bolivia (1995).<br>In terms of investment, BIT's were enacted with Australia, UK and Trinidad and Tobago in 2007; India and Spain in 2008; Slovakia, China and Belarus in 2009 and Singapore in 2011. |
| Objectives achieved to the end of the period | 1. Foreign policy, instead of creating business relationships with strategic partners, it made her way to creating bilateral, regional and multilateral cooperation agreements on security, as the case Mérida Initiative.<br>2. Joined multilateral organizations like the Latin American Pacific Agreement (Arco Forum) in 2007 and the Project Mesoamerica Integration and Development in 2008. Also Mexico was thehost country in June 2012 of the seventh summit of the Group of 20 (G -20) serving as president of the group during the year.<br>3. In the periods analyzed, President Calderón was the least effective in matters of holding trade agreements and treaties. |

*Table 13. Enrique Peña Nieto 2012-2018*

| | |
|---|---|
| National development plan: Foreign policy | The objectives of the NDP (2013-2018) are about five strategic areas: Mexico in peace, inclusive Mexico, Mexico with quality education, prosperous and Mexico with global responsibility.<br>The aim is to defend and promote the national interest abroad, seeks to expand and strengthen the country's presence in the world; Mexico reaffirm commitment to free trade, capital mobility and production integration (Plan Nacional de Desarrollo, 2013-2018). |
| Agreements and treaties enacted | To date, Mexico has celebrated the FTA with Peru (2015) and the FTA with Panama is pending of enactment.<br>There were signed the Regional Agreement on Cooperation and Trade in Goods in the Cultural, Educational and Scientific areas with members of LAIA (Agreement 7) and the Regional Agreement with Bolivia, Argentina, Brazil, Colombia, Chile, Ecuador, Paraguay, Peru, Uruguay, Venezuela, Cuba and Panama (Agreement 4).<br>In terms of investment, BIT's were held with Bahrain (2014), Turkey and Kuwait (pending). |
| Objectives achieved to the end of the period | 1. Highlights 11 structural reforms promoted by President Peña Nieto, approved in the first 20 months of the current administration. For Mexico, it was essential to create a suitable environment to remain competitive globally.<br>2. The energy reform: transforms the Mexican oil industry and the national electrical system, opening the sector to competition to attract investment. The reform on economic competition updates legislation and expands the catalog of anticompetitive practices tightening sanctions on them. The reform in telecommunications and broadcasting strengthens and encourages the development of these sectors. Similarly, highlights the financial reform and tax reform. |

Source: Prepared by the author



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The least productive period in foreign policy was that of President Calderón (2006-2012), as its public policy focused on the war on drugs, in addition to inheriting the previous period (2000-2006) various conflicts and diplomatic friction with partners. It will be pending to analyze the period of the current president, once he finishes office (2012-2018). However, as seen in its National Development Plan for Mexico's foreign policy is, and will be a priority. During the first three years of his government has already held two FTAs: Peru (2015) and Panama (pending) and integrated regional initiatives: Alliance Pacific (2012) and Transpacific Strategic Economic Partnership Agreement (2012).

## CONCLUSION

It is imperative that foreign policy is an essential and central component in the national project, through innovation and creating strategic alliances with foreign partners is possible to turn foreign policy into a linchpin of the development of Mexico, affecting well in the economic, commercial, political and social development.

Unfortunately Mexican trade policy, despite having ten existing trade treaties, has focused on a single trading partner, the United States, as it is the main recipient of Mexican exports - oil and non-oil companies- with 77.5% of the total exported in 2013. Second and far away as Canada with 2.9% of exports, followed by Spain with 1.9% and the rest of the world with 17.7%. That is, there is little point having 45 partners, with tariff and non-tariff preferences if, 80.4 percent of Mexican exports depend on a single trade agreement, NAFTA (Secretaría de Economía, 2015).

The task of the Mexican state should be to achieve a deeper approach to markets with greater dynamism and growth opportunity, as in the case of the group, BRICS, Brazil, Russia, India, China and South Africa, or the Asian Tigers-South Korea, Taiwan, Hong Kong and Singapore, regions where there has no signed trade agreement. In the Asian market, not just the only trade agreement with which Mexico has in the-Agreement area for Strengthening Economic Partnership with Japan, it is necessary to develop a trade agenda with China, who is currently the second largest trading partner Mexico, as well as members of the Association of Southeast Asian Nations (ASEAN) or the Forum of Asia Pacific Economic Cooperation (APEC).

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## KEY TERMS AND DEFINITIONS

**Business Politics:** It is the pursuit of individual agendas and self-interest in an organization without regard to their effect on the organization's efforts to achieve its goals.

**Globalization:** It refers to the opening up of the domestic economy into the face of the global world. It enhances in the cross country flow of goods and services.

**Internationalization:** It is the process of increasing involvement of enterprizes in international markets. There are several internationalization theories which try to explain why there are international activities.

**Multilateralism:** It is a trading system that facilitates the exchange of financial instruments between multiple parties.

**Multinationals:** It is an enterprise operating in several countries but managed from one country which is called the home country.

**Regionalism:** It is the expression of a common sense of identity and purpose combined with the creation and implementation of institutions that express a particular identity and shape collective action within a geographical region.

**Trade Policy:** It is the policy that includes the use of tariffs and other trade barriers, such as restrictions on what goods can be imported or exported, and which countries are allowed to import or export goods to the home country.

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# Section 6
# Managerial Impact

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# Chapter 72
# Transcontinental Strategies and Strategic Choices

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## ABSTRACT

*This paper searches for a possible Asian way for internationalization and the theoretical bases behind these transcontinental strategies and strategic choices. In particular, this paper explores the dominant modes of outward foreign direct investment (OFDI) employed by Indian enterprises in the UK. It also assesses their competitive advantages in various industries, and the link between strategic aspirations and post-entry performance. This study employs a mixed methodology using a combination of questionnaires and semi-structured interviews for data collection from 124 companies. Mergers and acquisitions are revealed to be the preferred mode of entry into the UK. However, the study found that not all theoretical predictions are supported. Although from a financial point of view India's OFDI in the UK is not fully justifiable, from a strategic development aspect, it has satisfied the investors.*

## INTRODUCTION

While transcontinental trade can be traced back more than a millennium, advanced transcontinental strategies or strategic choices are a relatively new phenomena. The theories behind these strategies may be in need of revisiting (Aboutalebi, 2016b) to adjust them to the recent surge in the cross-continental internationalization of Asian multinational enterprises. Late industrialized countries in general and Asian countries in particular tend to follow different paths towards economic development, compare with those

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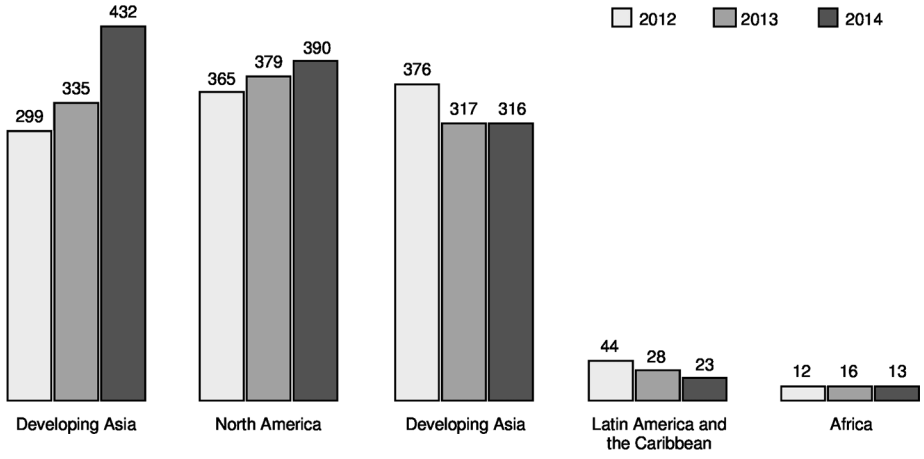
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of the early developed ones. This research is an attempt to shed light on the preferred modes, strategies and strategic choices of Indian companies for internationalization and to assess the suitability of current theories to explain these preferences.

Foreign Direct Investment (FDI) as one of the common mode of internationalization refers to "an investment made to acquire lasting interest in enterprises operating outside of the economy of the investor" (International Monetary Fund, 2015). Recently, Outward FDI (OFDI) from Asian countries into the developed countries has fast been gaining momentum. A report by the Organisation for Economic Cooperation and Development (OECD) shows that Asia's developing countries are the first major source of OFDI (see Figure 1). The recent World Investment Report (2015) by the United Nations Conference on Trade and Development (UNCTAD) indicates that not only is there a growing trend of OFDI from Asian economies, more interestingly, there has been a dramatic increase in the number of enterprises originated from developing economies investing in *developed* host countries. This 'reverse' globalization has been termed 'unconventional' (Kedia, Gaffney & Clampit, 2012), as it does not follow the conventional internationalization path previously predicted based on the experiences of firms out of developed (primarily Western) economies.

Several Asian economy proponents have argued that the traditional theories fall short in explaining the FDI patterns from Asian economies. The emergence of these new multinational enterprises (MNEs) raises the need for further study and the development of new theories. A few renowned management advisory organizations have published informative reports (BCG, 2015; Price WaterhouseCoopers, 2010) and attempted to predict the possible long-term consequences. The structure of the paper is as follows: after the theoretical frameworks that highlight internationalization theories regarding multinationals from Asian economies, Indian multinationals in the United Kingdom (UK), research methodology and finally discussions and findings are presented.

*Figure 1. Sources and trend of OFDI (billions of dollars)*
*Source: UNCTAD's World Investment Report (2015).*






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## BACKGROUND

India is currently one of the fastest growing economies, with the second highest growth rate in the world, at roughly 8% (World Bank Data, 2016), just behind China. The Asian enterprises from India are ambitious, seeking to increase visibility and brand recognition on the global business scene (BCG, 2015; PWC, 2010). The recent spate of cross-border acquisitions of global brands by Indian companies – such as Tata's acquisition of Jaguar/Land-Rover and Ranbaxy's acquisition of generic pharmaceutical brands in Germany, Italy and the USA – has prompted business professionals to predict that by 2018, the number of Indian multinationals would far exceed the rest of the Asian countries (PWC, 2010). Needless to say, it is not only very interesting but also important to study the activities and the underlying patterns of OFDI by Indian companies.

The UK, a developed economy, has become the third most favored destination for Indian FDI, after the Netherlands and the USA, according to leading financial and economic newspapers in the recent past (World Investment Report, 2015). Moreover, there has been constant and active collaboration between India and UK with respect to business connections between the two countries; the most recent evidence being a diplomatic visit by the India Prime Minister with the largest delegation of business leaders to the UK.

This study is important for several reasons: despite close collaboration between India and the UK, there is limited academic research conducted on the factors that have influenced this exponential increase in trade between the two countries. Existing literature has mainly looked at either the country-specific or industry-specific push factors for Asian MNEs, and very little research has been dedicated to the pull factors. Furthermore, research on the subsequent success or failure of the intrepid Asian MNEs in *developed* economies has been painfully limited (Ramamurti, 2009). There is also scarce literature on comparative studies of various industries from a single Asian economy investing in a single developed recipient economy (Aboutalebi, 2016c; Aboutalebi, Tan & Dyerson, 2016).

Following recent trends in extant literature that there is a marked increase in OFDI by Indian (a developing country) enterprises into the UK (a developed economy) over the last decade, this chapter will address the weaknesses by examining the strategic behaviors of Indian firms in the UK. It focuses in particular on the preferred entry strategies for Indian enterprises in the UK and how this reflects on subsequent strategic success.

## THEORETICAL FRAMEWORKS

### Modes of Internationalization

The issue of the modes of internationalization has been discussed since the 1960s (e.g., Hymer, 1976) so it is a familiar field of study. As Nummela and Saarenketo (2012) state, the choice of the internationalization mode has been examined from varied dimensions, including the steps of internationalization (Johanson & Vahlne, 1977; Johanson & Vahlne, 1990), the drives of internationalization (Dunning, 1981; Mathews, 2006), internationalization and transaction costs (Kogut & Singh, 1998), supply chain (Aboutalebi, 2016a) and knowledge-seeking (Kedia et al., 2012). However, almost all of them have been developed based on studies regarding companies in Western and developed countries.



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Although there is a considerable degree of agreement among scholars regarding the existing modes of internationalizations such as direct export, FDI, or franchising (Nummela & Saarenketo, 2012), a noticeable discrepancy is evident in terms of classifying these foreign entry modes. While Daniels and Radebaugh (2004) classify entry mode choices into three groups including export (direct and indirect), licensing (franchising, management contract, and turnkey), and investment (portfolio and FDI), Kotler et al. (2008) group direct and indirect exports as *exporting*, licensing, contract manufacturing, management contracting, joint ownership as *joint venturing*, and assembly facilities as well as manufacturing facilities as *direct investment*. The focus of this research has been mainly on direct investment by Indian MNEs in the UK.

According to Hattari and Rajan (2010, p. 504), while the first wave of outward FDI from India was organic development via a greenfield mode, "the focus of the second wave of Indian OFDI appears to have shifted to overseas acquisitions globally as a mode of foreign market entry and inorganic growth".

## MNE 'Evolution'

Built on Mathews' (2006) "linkage, leverage, and learning" framework, Ramamurti (2009) cautions that the very context of globalization for present-day Asian multinational enterprises (AMNEs) is different, which, therefore, necessitates new reasoning to understand the current stage of individual firms. Contradicting all previous theories (as demonstrated in the evolution chart below), he points out that MNEs from Asian economies are largely 'infant MNEs' or 'adolescent MNEs' (in some cases), and therefore, it is inappropriate to measure them on the same platform (competencies, advantages, strategies) as 'mature MNEs' from the West. Stal and Cuervo-Cazurra (2011) stated a similar opinion in their research papers that studied diverse organizations from South East Asia and Latin America.

On a different note, although extant international business models are more pertinent to early mover MNEs (i.e., developed economies), these traditional theories could be juxtaposed with the new international business theories to complement each other (Li, 2010). This is especially the case since neither the new nor the old models appear capable of explaining all phases of internationalization, as each model caters to just one aspect of the MNE and internationalization evolution process. Li goes on to propose that 'learning' is the single most unifying concept, with the vital contrast that the early MNEs engaged in '*exploitative* learning', while the latecomer AMNEs engage in '*exploratory* learning'.

Many traditional internationalization theories exist on why and how firms internationalize. However, these are contradicted by newer theories that focus on internationalization by Asian economy firms. Diverse scholarly opinions abound on why firms from Asian economies 'frog-leap' (Mathews, 2006; Ramamurti, 2009) into the international domain, some even before establishing themselves in their home market.

## Motivations of AMNEs

UNCTAD (2006, p. 54) defines Asian markets as "low income, high growth economies that are using market liberalization as their main means of growth" (such as Japan, South Korea, India, and China). Some motives for internationalization of AMNEs are internal, such as "institutional reform within the home country, increased competition, and increased opportunity" (Peng et al., 2008, p. 12). Others can be the offered advantages in host countries, such as the availability of the required knowledge or technology (Kedia et al., 2012).



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A desire for rapid expansion and going global are two other strong drivers of AMNEs. Two push factors that speed up the internationalization of companies from Asian economies are 'pro-market reforms', which boost companies' capabilities, and the other factor is 'institutional void' that frees the firms from the avoidable misguided regulations of their home countries (Stal & Cuervo-Cazurra, 2011, p. 209).

Rugman (2009, p. 53) claims these foreign investments by AMNEs "reveal a search for the technology, management and strategy skills missing in these firms". The objection to this claim is that if these companies really lack management capabilities, how can they so successfully beat their Western MNEs counterparts? In contrast to Rugman's claim, research by Stal and Cuervo-Cazurra (2011, p. 209) shows that "as countries develop, their firms will develop sophisticated capabilities and eventually become multinational firms". So if companies do not have the required capabilities in the first place, they cannot become international enterprises.

Kedia et al. (2012), who have more realistic perspectives, state that AMNEs rely on home-country location advantages (e.g., access to low-interest loans, low-cost labor, or supportive national governments) that are different from the advantages available to MNEs in developed countries. These competitive advantages help AMNEs to "seek and build knowledge-based firm-specific advantages through FDI" (Kedia et al., 2012, p. 156). Although these MNEs initially exploit their own home-country location advantages, the big ambitions of these companies cannot be fulfilled fully so they need much more than what is available in their home counties.

According to Kumar (2008), seven main drivers for the internationalization of Indian companies are expanding their brand recognition, product mix development, resource, technology and research and development (R&D), market, risk diversification and efficiency-seeking. A lesser known factor in attracting Indian OFDI into the Western countries is the possible role of Indian immigrants who settled in developed countries. Amar and Mazhar (2013, p. 944) believe that Indian diasporas "facilitate acquisition and exchange of technical knowhow, market information and physical capital".

## Industry Factors in Attracting OFDI by AMNEs

It is not strange to see that a considerable number of AMNEs invest in similar industries abroad, such as the investment by Lenovo, a Chinese computer company, in IBM. However, some AMNEs built on their diversification strategy, and have invested in varied industries, some of which are related industries and others unrelated, such as Tata, an Indian conglomerate (Kumar, 2008).

In the context of India, which is the focus of this research, when compared with previous decades, manufacturing declined severely while services increasingly showed an upward trend. However, after the turn of the century, manufacturing made a comeback, albeit in different sectors from before (Athukorala, 2009) as illustrated in Table 1.

To begin, the extractive sector comprised of oil and gas firms and their affiliates, have gained a greater share in outbound FDI (Kumar, 2008), which is not surprising considering the heavy domestic demand of India's burgeoning economy. While the traditional role of leather goods and textiles has diminished in the manufacturing sector, chemicals and fertilizers have once again risen in prominence. The manufacturing segment itself is rising in the ranks compared to the previous wave and has been part of a lot of OFDI, notably in the automobile and industrial ancillaries' manufacturing market (Ray & Gubbi, 2009). The acquisition of Jaguar and Range Rover by Tata Motors in 2008 has become an iconic transaction between an Asian enterprise and a global brand in a developed market. Other notable



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*Table 1. Indian FDI by industry sector, 2010/11 – 2014/15 (US $ million)*

| Industry | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 |
|---|---|---|---|---|---|
| Manufacture | 4,793 | 9,337 | 6,528 | 6,381 | 9,613 |
| Construction | 1,599 | 2,634 | 1,319 | 1,276 | 1,640 |
| Financial Services | 1,353 | 2,603 | 2,760 | 1,026 | 3,075 |
| Real Estate Activities | 444 | 340 | 197 | 201 | 202 |
| Electricity and other energy generation | 1,338 | 1,395 | 1,653 | 1,284 | 1,284 |
| Communication Services | 1,228 | 1,458 | 92 | 1,256 | 1,075 |
| Business Services | 569 | 1590 | 643 | 521 | 680 |
| Miscellaneous Services | 509 | 801 | 552 | 941 | 586 |
| Computer Services | 843 | 736 | 247 | 934 | 2,154 |
| Restaurants & Hotels | 218 | 870 | 3,129 | 361 | 686 |
| Retail & Wholesale Trade | 391 | 567 | 551 | 1,139 | 2,551 |
| Mining | 592 | 204 | 69 | 24 | 129 |
| Transport | 344 | 410 | 213 | 311 | 482 |
| Trading | 156 | 6 | 140 | 0 | 288 |
| Education, Research & Development | 56 | 103 | 150 | 107 | 131 |
| Others | 506 | 419 | 43 | 293 | 232 |
| **Total FDI** | **14,939** | **23,473** | **18,286** | **16,054** | **24,748** |

Source: Reserve Bank of India, Annual Report (2015, p.187).

activities have been in aluminum, steel, electrical equipment and similar industries by Tata Steel, Punj Lloyd, Essar Group, Hindustan Dorr and others.

It is also clear a 'knowledge-based' global economy and the pace at which the Indian economy is merging with the global knowledge economy have resulted in yet another shift in the dominance of industries (Athukorala, 2009). In conjunction with chemicals, in the last decade healthcare manufacturing comprising of pharmaceuticals, drugs and related biotechnology has been one of the foremost industries to expand across borders, especially in the USA and Europe (Chittoor & Ray, 2007; Chittoor et al., 2008). This is evidenced by the increasing surplus in yearly exports as well as several cross-border ventures of Indian pharmaceutical companies such as Wockhardt, Ranbaxy, Dabur and Dr. Reddy's Labs, largely in the USA, Germany, and the UK (Ray & Gubbi, 2009).

The services segment has been represented progressively by new sectors in software and media, publishing and broadcasting services (Kumar, 2008). This is reasonable considering the boom in IT outsourcing and software, as well as the globally recognized Indian specialty firms in cinema and broadcasting – where arguably, Indian firms may have some competitive advantage. Notably, firms in the information technology (IT) sector and its related services of consulting, outsourcing and media (IT enabled services – ITES) have internationalized far in excess of other industries. This is clearly evidenced by the foray of IT giants such as Infosys, Wipro, NIIT and several smaller firms into the Western hemisphere through mergers, acquisitions and joint ventures.



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According to the report by BCG (2015), currently the top three globalizing industries from India in order are automotive equipments and parts, IT services/ITES and pharmaceuticals, based on their internationalization activity in developed countries, primarily the USA.

## Challenges and Barriers for AMNEs

It is evident there is a large diversity in the MNEs rising from Asian economies, not only in terms of region, but also in terms of firm size, sector/industry, motivations, preferred strategies and entry modes and destinations. It is a painstaking process and yet, apart from the economic costs of internationalizing that were pointed out by Athukorala (2009) and subsequently explored by some scholars, very few studies have been conducted in recent times in the area of the *challenges* that Asian economies face (more so while investing in economies far more developed than they are). There are also the operational *barriers* that they are subjected to due to bias, discriminatory policies, market response or other social constructs (Eden & Miller, 2004).

While authors such as Ramamurti (2009) propose that AMNEs have unconventional advantages, others such as Rugman and Collinson (2012) insist that the primary challenge that Asian economy enterprises face is due to their lack of many advantages in the global market. Furthermore, not only do these Asian multinationals have difficulties competing globally, but when their home markets liberalize, they are further set back in their domestic markets by the entry of stronger foreign multinationals. Other challenges that have been emphasized include the challenges of accessing capital for expansion or R&D compared to Western multinationals and the lack of a supportive and institutional infrastructure and managerial talent pool (Rugman & Collinson, 2012).

Li (2010) propose that internationalizing companies are subjected to the "liability of foreignness" which goes beyond the obvious costs to companies and encompasses the "unfamiliarity, relational and discriminatory hazards" (Eden & Miller, 2004, p. 2) that enterprises face in the host markets. Differentiating this from the operational and economic challenges which arise due to geographical distance, Eden and Miller (2004) propose that the liability of foreignness arises due to the psychic and cultural/institutional distance of the host and home markets.

Although all cross-border business results in some liabilities, it is more pronounced in the case of the challenges faced by Asian economy enterprises, possibly fed by Western prejudices towards so-called "Third-World" countries (Li, 2010), the assumed lack of genuineness of foreign enterprises, and geocentricism (Rugman & Collinson, 2012). The case of the introduction of the first Japanese automobiles into the US markets and their reception (or rather the lack thereof in the host market) could be quoted as a classic example of this social liability of foreignness.

Shareholder confidence is affected due to the poor reputation that some AMNEs hold. Issues such as accountability and corporate governance systems may be differently managed compared to their Western counterparts, resulting in trust issues by the host country policymakers and authorities (Ramamurti, 2009). Therefore, in order to compensate for these liabilities or to effectively manage them, not only do the strategies and entry modes employed by AMNEs become critical in determining their acceptance and their success in foreign economies (Eden & Miller, 2004) but they also differ from and for different host regions (Peng et al., 2008).



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Although in recent decades pro-market policies in India have led to an unprecedented level of investment by Indian enterprises abroad (Hattari & Rajan, 2010), the government of India exercises some controls over the overall amount of investment annually to maintain a balance between the inflow and outflow of different types of investment (Rugman & Collinson, 2012).

## Post-Entry Performance of AMNEs

Unfortunately, there is a very limited number of studies on the post-entry performance of Indian firms in any host country. This is not unexpected considering that such heavyweight international expansion from an economically poor country is a relatively new occurrence. Moreover, the few studies on post-entry performance that do exist are all over a decade old, restricted to the activities of OECD countries only (see Geringer & Herbert, 1991; Wagner, 1994); or specifically on international joint ventures (IJV) (Amar & Mazhar, 2013) or exports (Chittoor et al., 2008). Of those, fewer still agree on the resultant outcomes.

Geringer and Herbert (1991) highlight there are many practical difficulties in measuring the performance of IJVs. Finances pertaining to contracts, management fees and technology licensing fees, for example, are almost never included in performance calculations, which, in turn, distort data obtained through studies. Moreover, although an event study of the stock market may provide some evidence, the fluctuations associated with the stock market often lead to unreliable indicators.

Despite the drawbacks, a few researchers have studied the performance of AMNEs in the context of mergers or acquisitions, and find that a large percentage of these ventures are abandoned or fail to achieve their goals (Chittoor et al., 2008). The failure rate is attributed to either a lack of synergy between the target and the acquirer or to a failure on the part of the management team to effectively manage the subsidiary (Kale, 2009). In addition, out of the acquisitions that are completed, the average shareholder value was found to be only slightly over 2% during the first five years. However, from the aforementioned studies, it can be safely assumed that immediately after entry, the financial performance of the firm may decline before a reasonable upturn can be demonstrated (Kumar, 2008).

## Foreign Direct Investment in the UK

The UK Office for National Statistics (UKONS) (2015) reports that during the last decade, FDI in Britain has risen twice compared to the decade before. That is to say the post-recession IFDI into the UK is still well below pre-recession levels, especially during 2005-2007. "The continued fall to the balance of earnings on direct investment since late 2011 actually resulted in a direct investment deficit for the third quarter and the fourth quarter of 2014, the first such deficit since the fourth quarter of 2008. This deterioration is attributed to both subdued earnings for UK residents' from direct investment abroad and an increase in foreign earnings on direct investment in the UK. The balance of earnings on foreign direct investment has since rebounded slightly, returning to a surplus in the first quarter of 2015 and has continued to improve throughout 2015" (UKONS, 2016, p. 4).

## Net IFDI Positions in the UK by Parts and Sectors

FDI has three main types or parts including portfolios or having shares of foreign companies, inter-firm transactions between companies in different countries, and intra-firm transfers of money between a foreign parent and its subsidiaries (Kedia et al., 2012; UKONS, 2015). That is to say, many scholars do



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not consider portfolio investment as a form of FDI (Kumar, 2008; Rugman, 2009). In many reports and studies, just the overall FDI is being reported without breaking FDI down into its components; however, UKONS makes separations among these three parts of FDI. Considering portfolio investment as a type of FDI has created a huge gap between the reported figures by UKONS and other reporters (e.g. World Bank, IMF) that do not recognize portfolio investment as part of FDI.

According to the Office for National Statistics (2015) "in 2014, the international investment position in the UK increased from £910.3 billion in 2013 to £1,034.4 billion in 2014. Despite a decline seen in the international investment position in 2013, the international investment position has been increasing on an annual basis for over a decade. Foreign companies' share of the UK company's share capital and reserves was the component driving the increase in 2014, rising from £804.5 billion in 2013 to £908.9 billion in 2014" (UKONS, 2015, p. 16).

Regarding the position of IFDI in the UK in terms of sectors, it can be said the two main industry sectors (services and manufacturing) receive very different amounts of investment. The services sector has always been the main recipient of OFDI from around the world into the UK (UKONS, 2015). The gap between the amount of foreign investment in the UK's services sector and production sector has increased sharply and steadily. The manufacturing (production) sector with a relatively slow but continuous growth has received less IFDI compared with the IFDI for the production sector (UKONS, 2015). As stated by the Office for National Statistics (2015) "the inward investment position within the services industries improved in 2014, increasing from £568.0 billion to £671.3 billion.

The increase was mainly due to Europe and the Americas where positions increased by £47.6 billion and £40.4 billion, respectively. Within the production industries, the investment position in the UK increased from £339.4 billion in 2013 to £359.9 billion in 2014. The increase was mainly due to the Americas and Europe, which increased by £18.7 billion and £7.1 billion respectively" (UKONS, 2015, p. 17). The UK's manufacturing sector is capable of absorbing a much bigger portion of foreign investment if the UK government promotes this sector properly. The next section's discussion would be regarding the role of OFDI from Indian MNEs that are equally interested in the services and manufacturing sectors of the UK.

## Outward FDI of Indian Multinationals

The Reserve Bank of India (2014) classifies capital outflow from India into four groups: FDI, portfolio (trading shares), debt flow (paying loans to foreign firms), and others (e.g., donations). As a country with the second highest population and GDP growth in the world (World Bank, 2015), India has attracted the attention of the business world for over a decade. Although Indian enterprises have been investing internationally for several years at a very low volume (Rajan, 2009), the last decade has witnessed a tremendous increase.

Due to its rapid industrialization and economic growth, India has made a significant impact on the world economy, prompting several speculative studies on its Asian firms. An industry analysis model by PWC (2010) that extrapolates the growth patterns for Asian countries based on their GDP growth rate, predicts that China and India will give rise to the highest number of multinationals between 2010 and 2024; and that India may overtake China in the next decade.

According to the Office for National Statistics (2015) "the value of the stock of UK Foreign Direct Investment in India (outward FDI) more than doubled between 2004 and 2013, from £1.7 billion to £3.6 billion. However, there has been a notable decline since 2011, when the stock of FDI was £13.6 billion.



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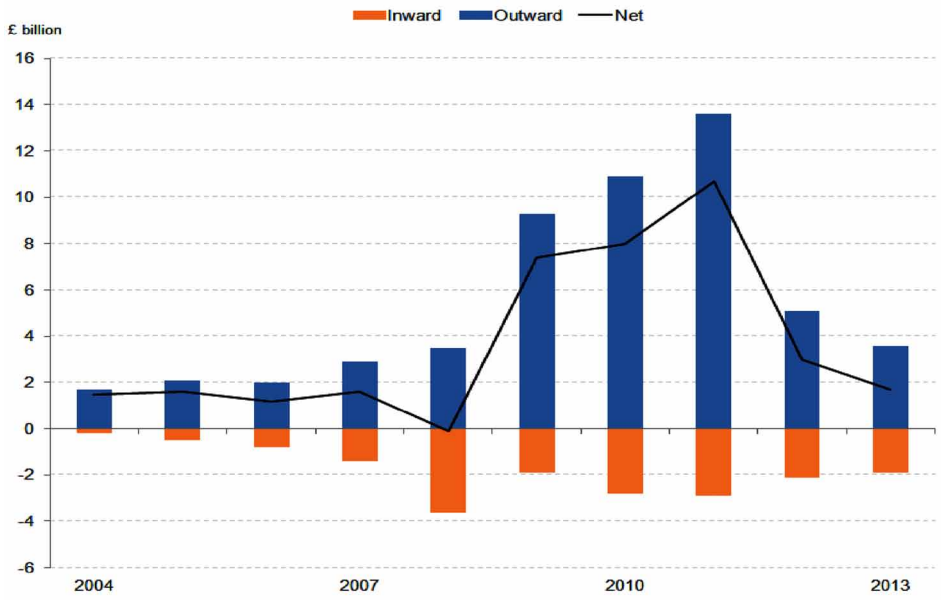
The largest industry grouping in India receiving UK FDI was financial services (18% of total UK FDI into India in 2013). The value of Indian FDI into the UK (inward FDI) has experienced a notable increase between 2004 and 2013, from £164 million to £1.9 billion. However, the level of FDI in 2013 is lower than the £3.6 billion recorded in 2008. The largest industry grouping in the UK receiving Indian FDI was information and communication (30% of total UK FDI into India in 2013). Since the value of the value the UK's FDI in India was larger than India's FDI in the UK, the UK's net FDI position with India recorded a £1.7 billion surplus in 2013, as shown in Figure 2.

Whereas formerly Indian enterprises focused on developing economies that were similar to themselves for expansion, they are increasingly investing in economically developed countries like the USA, Canada, the UK, and the Netherlands (Gopalan & Rajan, 2010). The aggressive growth of Indian firms and their propensity to expand beyond their borders, combined with their remarkable impact on globalization deserves an extensive study considering various respects, and are bound to throw light on the internationalization of developing-world MNCs in general (Goldstein, 2007; Kumar, 2008; Ramamurti, 2009; UNCTAD, 2004).

## The United Kingdom as a Trading Partner of India

The UK is the sixth largest exporter of goods to India at 2.3% of the total exports and the fifth largest importer of goods from India, at nearly 4.0% of its total imports. In services too, India makes a significant contribution towards the UK's economy. Bilateral relationships between India and the UK have increased steadily for several years, not only in terms of trade and commerce but also in the fields of education, technology, tourism and cultural exchange (Indian Ministry of External Affairs, 2010). According to recent news from the UKTI (2011), India is the third biggest investor in the UK, and the UK

*Figure 2. UK FDI positions with India (£ billions) 2004 to 2013*
*Source: UK Office for National Statistics (2015).*






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receives over 50% of India's investment in Europe. According to the Commonwealth Business Council (CBC), the UK is the fifth largest economy in terms of market exchange rates with favorable investment policies and an open market. It is also one of the strongest economies within the European Union, with considerable trade connections with the EU.

Therefore, for the purposes of this paper on Indian Outward FDI, research was restricted to the investment in the UK. This is mainly due to the increasing political and economic emphasis on bilateral trade and investment between the two countries (British High Commission, 2010), the elevated status of the strategic partnership of the two countries since 2004 (UKTI, 2010) and the current lack of literature on the UK-India relationship.

## RESEARCH METHODOLOGY

Although both quantitative and qualitative approaches have their merits, in keeping with the aforementioned pragmatist philosophy, a stance of mixed approaches could have greater benefits (Tashakkori & Teddlie 2010) for this particular research. An integrated research philosophy of critical realism, incorporating qualitative as well as quantitative aspects into the data collection and analysis (i.e. mixed method design) could provide the best insight for the research on the FDI activities of Asian enterprises within the larger internationalization sphere (Nummela & Saarenketo, 2012).

Reflecting on the nature of the research and the research philosophy, the research strategy is a survey. Although surveys are used for large amount of data sampling through questionnaires, it also caters for smaller sampling in terms of in-depth interviews (Saunders et al., 2012). This research was conducted in two phases and through a combination of primary as well as secondary data. The first phase involved gaining access to relevant databases pertaining to firms of Indian origin in the UK. Sampling was conducted to estimate sample sizes and acceptable response rates in preparation for the second phase. The second phase involved a survey of executives through online questionnaires and semi-structured interviews.

Semi-structured questionnaire surveys as well as semi-structured interviews were employed for the primary data collection to benefit from the combination of these two complementary research instruments. According to Saunders and his co-authors (2012, p. 142) "the use of interviews can help to gather valid and reliable data that are relevant to your research question (s) and objectives". Nine managers (three from each of the top three industries) were interviewed. Seven questions were asked in the interviews. These questions covered three main issues including the motives behind FDI in the UK, the utilized strategies for investment, and finally, the post-FDI financial and strategic performance in the UK.

The survey questionnaires were deployed through an online webhost to randomly sampled respondents from software and IT services, industrial goods and cyclic consumer services (CCS). A total of 400 survey invitations (a proportionate number to the FDI intensity in each sector) were sent by emails to upper or senior executives in all three sectors. One hundred twenty-four (124) responses were obtained, calculated as a response rate of 31%, which is higher than what Cooper and Schindler (2008) state as reasonably sufficient for such social research. Hence, the responses that were obtained can be assumed to be representative of the sample and can be used to make some generalizations within the industries.

Although several international business studies on Asian economy enterprises have been conducted through the cluster sampling technique (for example, Chittoor & Ray, 2007), some argued this could result in decreased accuracy (Cooper & Schindler, 2008), besides being time consuming and complex to apply. Since this research seeks to compare and analyze the individual industry sectors, a sampling



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technique that provides the equal representation of these sectors is essential to ensure validity. Consequently, in the interests of simplicity as well as the greater precision of the groups, the Stratified-Random sampling method would be most appropriate (Saunders et al., 2012, p. 233). This choice is supported by Cooper and Schindler, who state that stratified sampling is the most suitable method of sampling in order to gain efficiency and "to provide adequate data for analyzing the various subpopulations or strata" (Cooper & Schindler, 2008, p. 169). This study investigates FDI-related issues in three different industries and each industry is a separate stratum, so stratified sampling was deemed the best sampling method for this research.

The data collected from the questionnaires was categorically analyzed. The central tendencies of response were calculated in order to demonstrate the most common responses and attitudes of the respondents (Tashakkori & Teddlie, 2010). The transcribed notes of the interviews were analyzed and coded. These codes were subjected to a comparative analysis, developed into themes, followed by a descriptive and explanatory approach.

## FINDINGS AND DISCUSSIONS

### Recipients of FDIs

The challenges in collecting and analyzing FDI data concerning Asian economies has been well documented by Hoskisson, Eden, Lau, and Wright (2000), and more recently by Aykut and Goldstein (2006). Of particular concern are the issues of the currency of recorded data, due to constantly changing market dynamics, thereby affecting accuracy. Keeping these in mind, secondary data on Indian enterprises in the UK was procured from the Capital-IQ database and then cross-referenced with the one available from the UK Office of National Statistics.

As shown in the pie chart (see Figure 3), the major industry categories were industrials (36 deals), consumer discretionary (35 deals) and IT (32 deals). However, this categorization method is internal to Capital-IQ and not globally utilized as an exhaustive classification. Therefore, the individual firms were re-classified manually, based on the standardized and more widely-used Thomson Reuters Business Classification (TRBC) codes index (Thomson Reuters, 2009).

At 31 deals, software and IT services (also called IT enabled services or ITES), had the highest FDI intensity in terms of volume and value between 2001 and 2010 from Indian firms in the UK. Industrial goods (henceforth 'industrials' or IG), at 20 deals was second highest, and cyclic consumer services (henceforth coded as 'Cons Serv' or CCS) at 11 deals had the third highest FDI intensity.

### Motivation for FDI in Specific Industries

According to the UK Office for National Statistics (2015), the decision of foreign companies to invest in the UK is heavily influenced by the potential financial outcomes of a specific industry. "This has meant that rising FDI in the UK has not been evenly distributed across industries". While IFDI has shrunk in the retail and transportation industries, financial services have been the biggest beneficiary of inward FDI from abroad (see Figure 4). Our findings do not support UKONS's assumption that the financial output of an industry is the major motivation for investment by Indian MNEs (see Figure 5).



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*Figure 3. Indian firms in the UK between 2001 -2010*
*Source: Capital IQ (2011).*

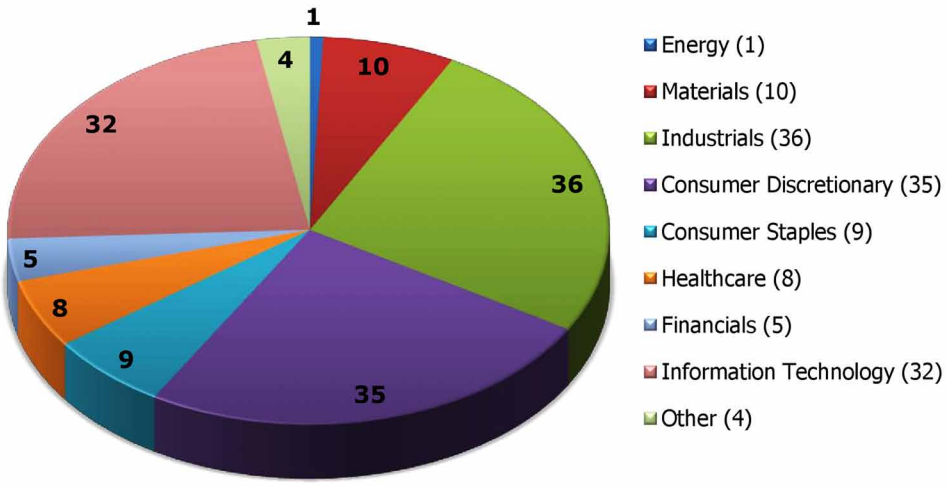
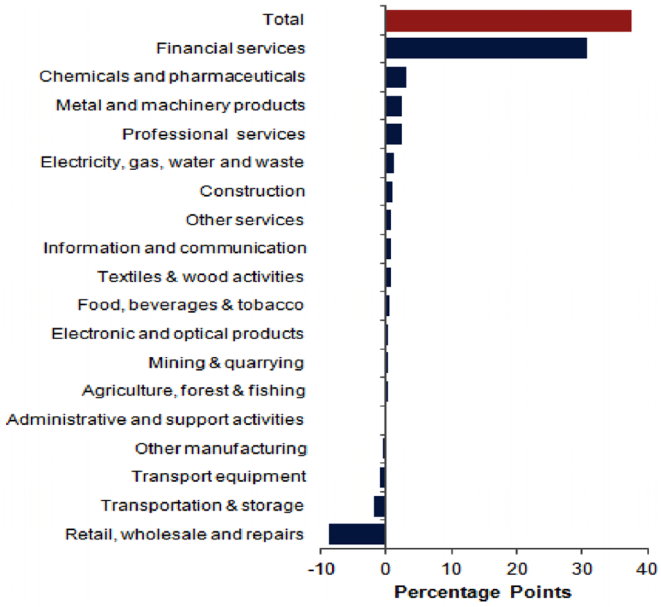



*Figure 4. FDI contributions to growth of different industries in the UK, 2012-2015*
*Source: UK Office for National Statistics (2015).*

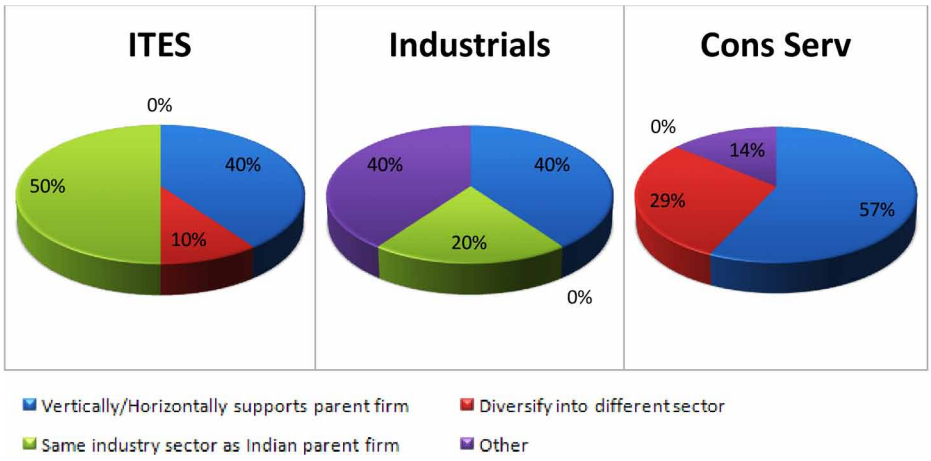



A comparison of the three industries in Figure 5 showed that firms in the ITES business sector tended to invest in acquisitions of firms that function in the same industry (50%) or acquisitions that would assist the vertical or horizontal integration of the Indian parent firm. Contrastingly, while nearly a third (29%) of CCS responses indicate diversification into a different industry as a driver, none of the industrials responses indicated that it mattered.



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*Figure 5. Reasons to invest in a particular industry sector in the UK*




Delving further into this theme through interviews, respondents elaborated there were multiple aspects to the FDI strategy. While at a macro level the aforementioned reasons were the drivers to internationalization, at the industry and firm levels there were several other influencing factors. For instance, while nearly a third of the researched CCS firms had diversified their portfolio during internationalization, the majority of ITES remained in the same specialty within the sector. The overriding factor for all three sectors was the fact that the acquired firm vertically/horizontally supported the functions and capabilities of the parent firm. In other words, the acquired firm had *complementary capabilities* and was capable of adding to the *value chain* of the parent rather than simply compensating for the capabilities that the parent did not possess.

## Competitive Advantages

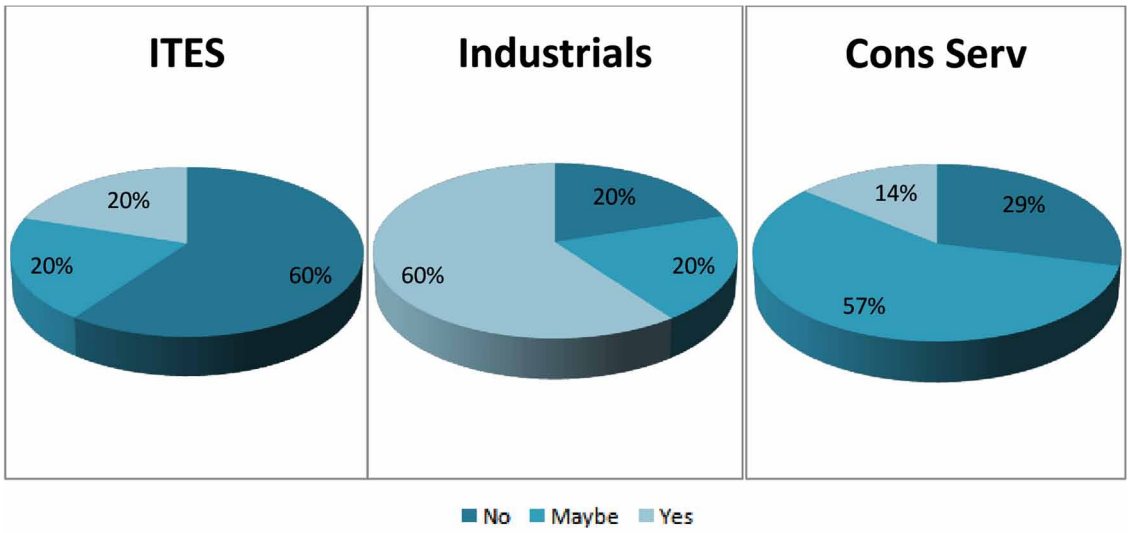
Dunning's OLI framework (1979) in particular vehemently stresses the influence of ownership advantages in determining the internationalization paths and strategies of firms. Although Dunning's later works (2008) have been modified to encompass the changing nature of global business dynamics, he asserts that without ownership advantages, it is impossible for expanding firms to achieve any form of success in foreign soil. He further posits that Asian economy firms do not have any of the competitive advantages that would ensure sustained success across borders.

However, when surveyed and interviewed, a majority of the participants in this research in all the three sectors quoted that they strongly believed that their organization possessed some form of competitive advantage. These findings are demonstrated in Figure 6. When asked to elaborate briefly, the keywords such as 'niche industry specialists', 'reputable business/conglomerate' 'global brand name', emerged with the CCS. 'Strong engineering reputation', 'high quality accreditations', 'global presence', 'domain expertise' were the main themes from the IG sector; while 'leading diversified IT company', 'global delivery model' and 'CMMi Level 5 accreditation' emerged as themes from the ITES responses. Our findings support the study by Stal and Cuervo-Cazurra (2011, p. 209) that found "as countries develop, their firms will develop sophisticated capabilities".



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*Figure 6. Did your competitive advantages play an important role in selecting UK for investment?*




These responses may be moderated by the subjective nature of the question and whether all the respondents in question were actually privy to the level of the strategic decision-making process within the organization. Nevertheless, the prominent observation was the conspicuous contradiction to what most theorists in the literature review (e.g., Rugman, 2009; Rugman & Collinson, 2012) claimed on the supposed lack of competitive advantages that Asian MNCs possess.

Conversely, however, upon questioning whether their competitive advantage played an important role in their decision to undertake FDI in the UK, a significant number of respondents (with the exception of industrials) believed that their choice to invest in the UK was not influenced by the firm's competitive advantages. However, in the industrials sector more than half the respondents felt that their competitive advantage was important for their FDI strategy in the UK. Thus, this finding contradicts one of the three pillars of Dunning's OLI theory that claims ownership of a competitive advantage is one of the main motives of internationalization in general and FDI in particular.

## Dominant Modes of FDI

### Choice of Entry Strategy

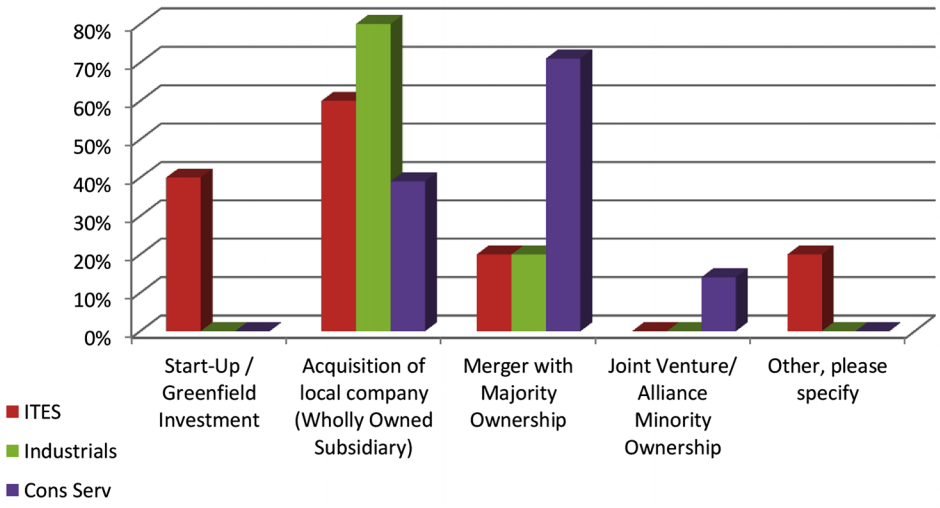
A total of 80% of the industrial goods sector responded that the acquisition of a local company (wholly-owned subsidiary) was the only mode that was considered. In ITES, 60% indicated acquisition while 40% indicated a Greenfield investment, although a small percentage of this sector also indicated that acquisitions in the UK as well as in the USA were being considered (see Figure 7).

During the data sample procurement, it became evident that not only did mergers and acquisitions greatly outnumber the other modes of FDI but they also had the most accurate record-keeping. Eliminating the minority modes of FDI, mergers and acquisitions (M&A) was determined to be the preferred mode of investment. The data available was in the form of completed M&A deals involving Indian buyers and UK sellers between the years 2001 and 2010.



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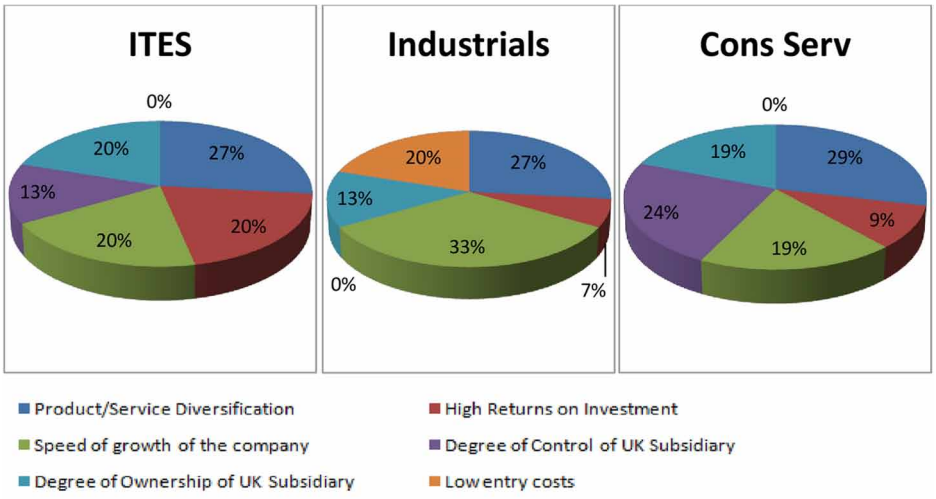
*Figure 7. Choice of entry strategy in the UK*




This study shows that acquisitions or whole ownership followed by mergers are the primary and secondary common modes of OFDI by Indian MNEs in the UK, respectively. Our findings are in contrast with the claim by Hattari and Rajan (2010) that predicted acquisitions are a less desirable option due to their high costs and high risks. The drivers influenced their choice of entry strategy for the UK. The respondents were asked to choose the three points they felt had the most impact on strategic decisions. The responses are shown in Figure 8.

It was found that opinion was divided between the three sectors as well as within the sectors. 'Speed of growth of the company' was the largest majority in the IG sector at 33%, while 'product/service diversification' had the majority (29%) in CCS and ITES (27%). Based on a review of extant literature, it was predicted that access to technology, capabilities, and strategic assets were primary motivations for

*Figure 8. The top motivations for choosing particular mode of entry*






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the internationalization strategies of Indian enterprises. The fact that the majority of respondents cited 'access to UK markets/strategic access to EU' and 'access to capability' as reasons for FDI in the UK, more or less strengthens the extant literature on this topic.

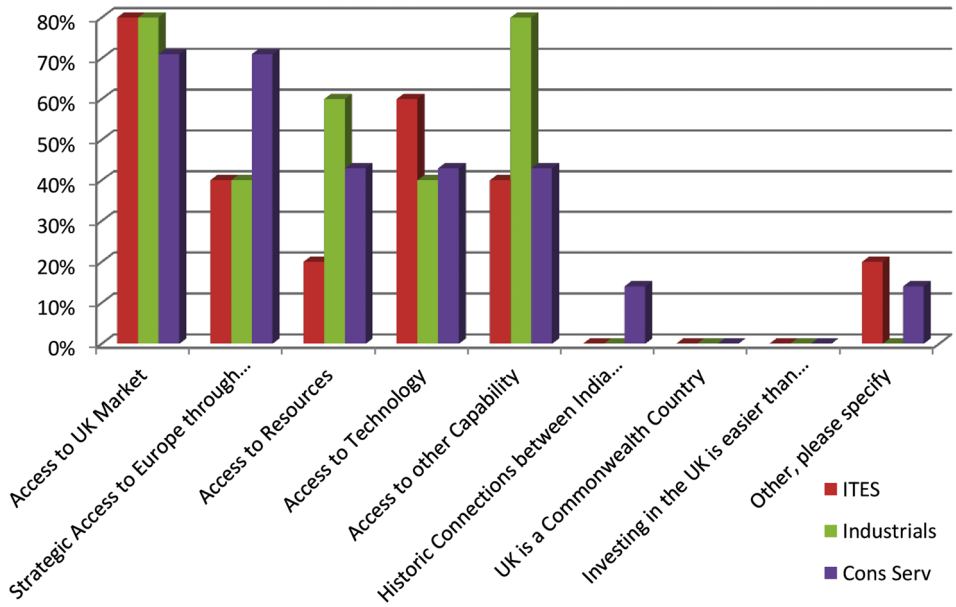
Furthermore, while 'access to resources' was an important consideration for industrials, 'technology' was at the corresponding level of importance for the ITES segment. This is understandable as technology is a vital element of India's burgeoning IT services industry, as are manufacturing facilities and networks for the industrial goods segment. Therefore, although asset augmentation (WIR, 2006) is known as a critical factor in driving OFDI, the influence of 'industry effects' (Gupta & Wang, 2009; Zahra, 2005) appears to be equally crucial in the decision to internationalize.

## Drivers for FDI in the UK

Regarding the reasons for investment in the UK, respondents were asked to choose the three most important reasons for their FDI in the UK from a list of eight options. A text box as 'other' was provided in order to encourage respondents to elaborate on their answers.

Figure 9 charts out the percentage responses of the three sectors. As evident from the chart, 'access to the UK market' at nearly 80% was the most important motivation for the ITES industry, followed by 'access to technology' at just under 60%. In the industrial goods sector, access to the UK market and access to certain 'capabilities' were equally important, followed by 'access to resources'. The CCS was the only sector to cite access to the UK as well as strategic access to the European markets as top motivations. 'Access to resources, technology and capability' were equally important drivers, though secondary when compared to the former. Overall, 'access to the UK market' was the top-cited motivation in all sectors.

*Figure 9. Main reasons for Indian OFDI in the UK*






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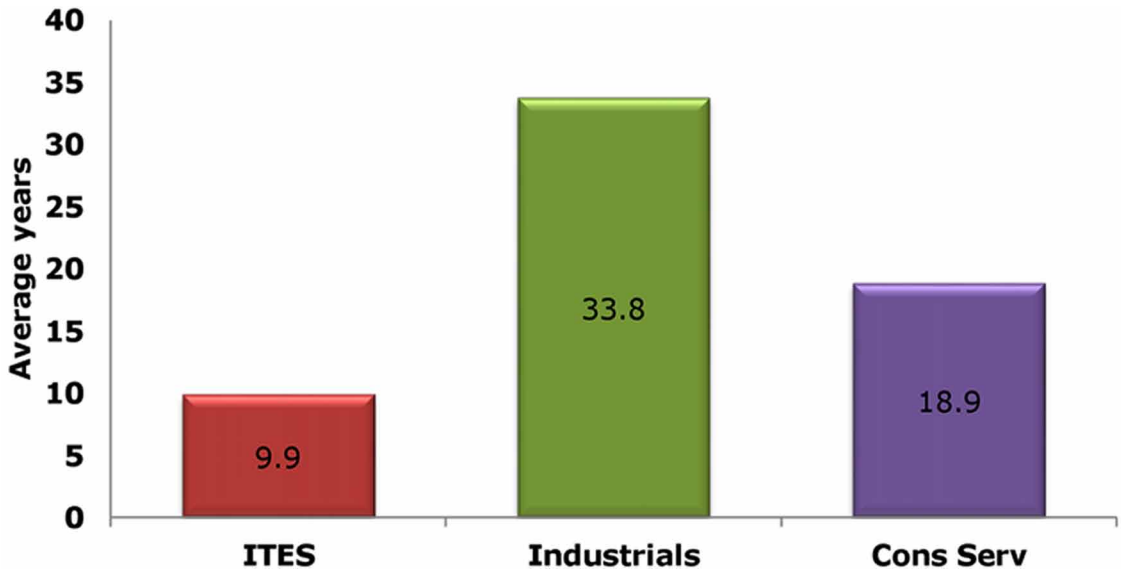
Our findings are partly different from that of Hattari and Rajan (2010, p. 497) that showed OFDI from India is not entirely different from that of other countries in that they are motivated by many common factors. There is evidence, however, that Indian OFDI is more market- and resource-seeking than OFDI from most other countries. Unlike Hattari and Rajan's findings, our study has demonstrated the importance of access to technology and other capabilities as drivers for FDI. According to Kumar (2008) the seven main drivers of internationalization of Indian companies are expanding their brand recognition, product mixes development, resource, technology and R&D, market, risk diversification, and efficiency-seeking. Kumar's claim is not based on empirical research. In practice, our research highlighted the importance of just four motives. Furthermore, our study does not support the findings of Amar and Mazhar (2013, p. 944) that "the presence of Indian diaspora has a substantial positive effect on the volume of Indian overseas investments in the developed countries".

## Firm Age and Internationalization

One of the questions asked the respondents to input the number of years the Indian enterprise had been in existence before internationalizing in the UK, with a view to test the claim of some authors that Indian enterprises that have internationalized into a developed economy were predominantly young enterprises. It is important to note that this question focuses on age while first entering the UK, and not age while first investing abroad. Therefore, it is possible that these companies have subsidiaries elsewhere in the developing or even developed countries *before* entering the UK. Related findings are illustrated in Figure 10.

Based on several traditional as well as modern FDI theories, it is believed that Indian enterprises that had undertaken FDI in the UK were probably 'young' MNEs (Singh, 2008). However, at an average age of 33.8 years (industrial goods) and 18.9 years (CCS) and 9.9 years (ITES), the age of the firm appears to refute theories of 'international new ventures' and 'born-global' (Oviatt & McDougall, 1994) that assert the surmise that Asian MNE firms are always young while undertaking cross-border investment.

*Figure 10. Average firm age in the three sectors when first investing in the UK*






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Evidently, at 33.8 years, the industrials sector is nearly two and a half times older than the average of ITES firms – a technology- and time-intensive sector that is comparatively speaking, 'the new kid on the block'. Yet, the ITES sector has ventured abroad much earlier and with greater intensity than the other two sectors.

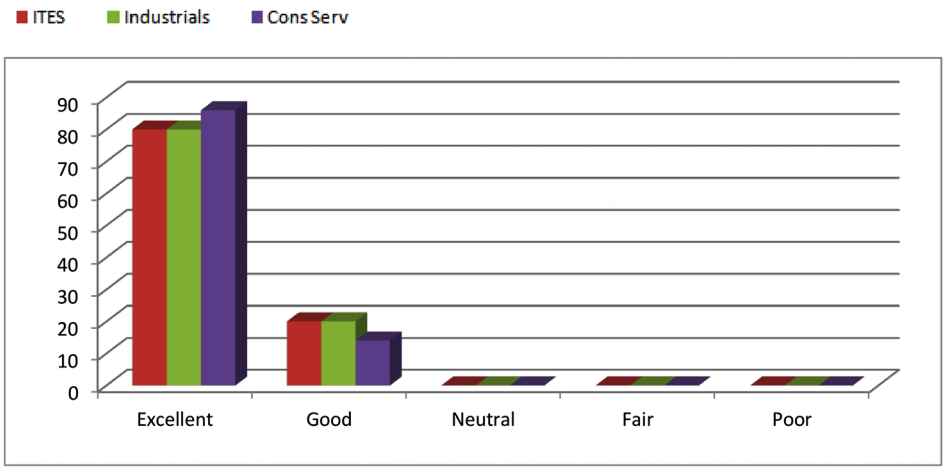
The maturity of the industries is not just based on age. Although the average age of 9.9 years for the ITES industry seemingly represents a very young sector, industry-based theories explain something different. An examination of the theory of industry life cycles (Klepper, 1997) or firm life cycles (Miller & Friesen, 1984) brings a contrasting perspective. The theory posits that industries undergo various stages from birth to maturity to decline, similar to that of the life cycle of products. If this concept is applied in juxtaposition with Ramamurti's theory of MNE evolution (Ramamurti, 2009; Ramamurti & Singh, 2008), the ITES firms are actually mature MNEs in light of the nature of the industry, their "entrepreneurial and strategic postures" (Melen & Nordman, 2009) and the normally shorter industrial life cycle they undergo.

## Post-Entry Performance

The post-entry performance of the parent firms was measured from two aspects: the extent to which the *strategic* aspirations of the firm were met, and the extent to which the *financial* aspirations were met. These questions were specifically to obtain subjective responses (Elango & Chinmay, 2007; Geringer & Hebert, 1991). The fact that nearly 80% of the participants considers the realization of their strategic objectives to be 'excellent' is striking (see Figure 11). This response is even more significant given that there was not a single participant in any of the three sectors that indicated dissatisfaction. Most of the respondents believed that they had either achieved (the older firms) or were in the process of achieving (the newer firms) the foothold that they needed in the European markets.

As reflected in Figure 12, in terms of post-investment financial performance, achievements are satisfactory but not great.

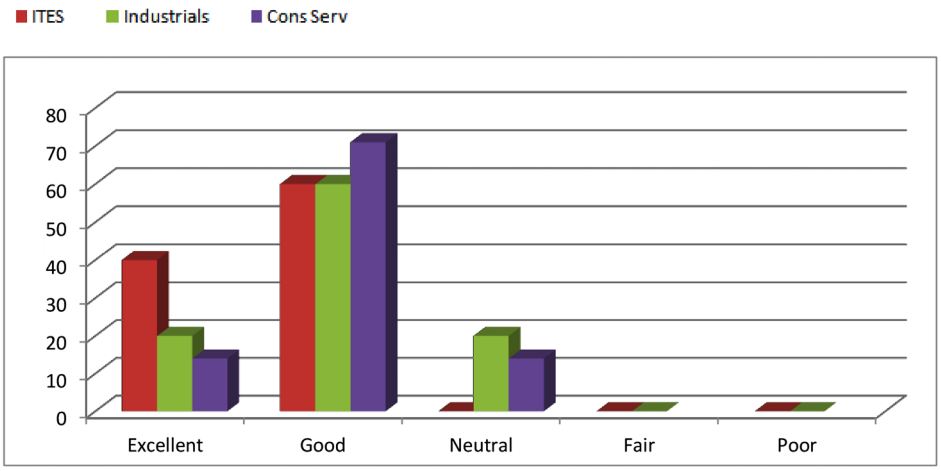
*Figure 11. Executives' perspectives on post-entry realisation of strategic objectives*






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*Figure 12. Executives' perspectives on post-entry realisation of financial objectives*




The fact that a majority of the participants are satisfied with the post-entry performance (mainly strategic objectives) despite a very slow recovery after the global recession causing an overall poorer financial performance of most large, medium or small enterprises worldwide, is noteworthy. Assuming that to some extent this situation was aided by the financial crisis affecting the survival of developed country firms, it can only be speculated whether this would not have continued to be the case, had there been no financial recession. Although the financial post-entry performance of some Indian MNEs in the UK is not so satisfactory, the investors are happy with the fulfillment of other strategic objectives.

The reason is "many Indian enterprises view OFDI as an important dimension of their corporate strategies" (Hattari & Rajan, 2010, p. 497). Therefore, it is possible that certain cultural aspects may have enhanced the chances of successful ventures across borders for Indian enterprises. Some of the cultural dimensions that are especially extreme in Indian culture (including business culture) are uncertainty avoidance and long-term orientation (Hofstede, 1984).

## LIMITATIONS, RECOMMENDATIONS, AND CONCLUSION

### Limitations

The primary data of this research is limited to Indian MNEs, so the findings cannot be generalized to all Asian MNEs. The results of this investigation may not be representative of the transcontinental strategies and strategic choices of all Indian MNEs around the world, due to the fact that the findings are about Indian MNEs in the UK. This study focused on major issues regarding the internationalization of Indian companies; thus, it is possible that some minor factors with influence in internationalization decisions were left out. In terms of research methodology, the subjective nature of interviews can limit the possibility of generalizing the findings. This research employed a mixed method research design to minimize shortcomings of conducting interviews. Although this research could not cover all existing shortcomings regarding the Asian way of internationalization, it hopefully clarified some aspects of this phenomenon.



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## Recommendations

It is evident the internationalization trends of Indian enterprises shall remain; therefore, certain theories and generalization can be built around the themes that emerged through this chapter. Based on the findings of this research the following recommendations are provided. Host countries that wish to continue attracting FDI are urged to keep these dynamics in mind while formulating trade policies. International organizations such as the UNCTAD can act as an essential platform in this context by providing relevant analyses and assistance in order to exploit these Asian and developed economy synergies.

It is also common knowledge that the activities of cross-border FDI for Asian enterprises are especially challenging due to their liability of foreignness. Decision-makers in industry as well as trade authorities are urged to formulate favorable trade policies that encourage increasing commerce from AMNEs. The OECD countries in particular are encouraged to harness the opportunities that Asian enterprises could create within developed economies. This study has found that despite sub-par economic conditions, Indian enterprises have continued to flourish and have reported a satisfactory post-entry strategic and financial performance. This clearly demonstrates that there is definitely a place for more firms within the knowledge-based industries, such as software and IT and service-based industries, such as hospitality and media.

AMNEs are advised to consider current negative issues in the UK including the growing anti-immigration atmosphere, the possibility of leaving the European Union in the near future and very slow post-recession recovery that may jeopardize AMNEs' investment. Thus, it is recommended that AMNEs in general and Indian firms in particular that are eager to expand in the UK markets exercise caution, especially in any non-dominant business sectors. Further, it is suggested that companies from Asian economies undertake expansion into developed countries *only* if they possess the essential core competencies to compete with rivals in the new markets.

Due to the fact that the financial performance during the first few years of post-entry into the developed countries may pose an imminent threat and burden (no profits or marginal profitability), companies from Asian economies should be in a sustainable situation financially with considerable capital before expanding into the developed countries' markets. Researchers are urged to undertake further research focusing on the pull factors of country-specific and industry-specific origin that contribute towards the globalization of Asian MNEs. While some generalizations have been made, greater study is required into the internationalization dynamics of other Asian economies such as Japan, China, and South Korea.

## CONCLUSION

This research has gone beyond the traditional perspectives of the globalization of Western economies or MNCs into Asian markets, rather viewing the developed economies as receptors of OFDI from the very economies that, until recently, were considered weak. Furthermore, this study has taken the stance of evaluating the pull factors rather than the push factors that the Asian economy proponents have thus far focused on. In these two aspects, this study is unique and contributes towards new insights in globalization trends.

A majority of the extant literature claimed that Indian enterprises in the UK were only aggressive young MNCs that invested in the UK because they mostly lacked competitive advantages. However, through this research it has been established that this is not necessarily so, and that the majority of



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surveyed enterprises strongly believe that they had significant advantages in comparison to their rivals. Regarding the preferred mode of Indian FDI in the UK, through archival study and the record-keeping of trade firms cross-referenced with the data from the Office of the National Statistics (UKONS), it was found that acquisitions (and mergers as second to the acquisitions) were the favored form of FDI for many reasons. Furthermore, it was found that software and IT, industrial goods and CCS were the fastest growing sectors that receive the highest FDI volume and intensity. Speed of growth of the company and increasing product/service diversification are two strategic motivations for choosing to invest in the UK.

The subsequent post-entry performance of the Indian MNEs in the UK has been satisfactory and promising. Unlike Western investors, financial outcomes are a secondary issue for Indian MNEs. Other strategic objectives such as being present in the UK market, and access to technology are more important motivations for Indian investors into the UK. There is in existence noticeable differences between investors from Asian economies in general and Indian MNEs in particular with their Western counterparts in terms of motivation for internationalization, the preferred modes of internationalization, the target countries and industries for investment, the portfolios of investment and even the characteristics of MNEs such as their age and size. Therefore, it would be reasonable to develop exclusive internationalization theories for MNEs or would-be MNEs from Asian economies.

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## KEY TERMS AND DEFINITIONS

**Foreign Direct Investment:** A long-lasting investment in foreign enterprises that influences the management of the established or acquired entities.

**Internationalization:** A process in which a domestic company becomes international by expanding its activities beyond its home country.

**Inward Foreign Direct Investment:** Receiving long-lasting investments from foreign investors.

**Multinational Enterprise:** A company that is active in at least two different countries.

**Outward Foreign Direct Investment:** Establishing or acquiring entities in foreign countries by investors from the home country.

**Transcontinental Strategy:** A strategy for cross-continental internationalization.

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# Chapter 73
# Securitization and the Economy of Risks:
## Decision-Making in the Eurasian Union

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## ABSTRACT

*In the beginning of the 21st century the society of the Second Modernity with incalculable risks marks human conditions in orientation and self-categorization on the basis of historical memory. The dichotomy "We-Other" influences strategic risk decisions. Security is becoming the umbrella topic referring to public goods, transnational markets, "the specific way of life". In the context of different agreements and regulations co-existence (such as European Economic Area, Eurasian Economic Union, BRIC etc.) claims for personal and collective safety together with the rhetoric of memorization influences decision-making process and becomes a burden of securitization. The "Eurasian" project of integration is observed in its transformation from being based on the post-Soviet memory toward economically beneficial cooperation. Still the Eurasian Economic Union is seen as vague in its goals and instruments, relying on the approach to economic integration with the reference to the common past, memories and identity.*

## INTRODUCTION

Since the second half of the 1980s, the approach to the institutional history of developing industrial society is observed as stretching, which sounds as a conflict-burdened process of establishing a system of rules, defined in the fight against dangerous and risky situations. Such situations are created by modern industries. Later, the rhetoric of security and risks sends our thoughts toward the conception of the risk society and culture of symbolic exchange (Beck, 1992; Baudrillard, 1993). The economy of risks relies on future contracts with long-duree effects, influencing economic perspectives at the micro- and macro-levels. However, these perspectives are defined and clarified by the cosmopolitan culture of symbolic exchange. Risk is positioned as the residual inevitability, the backside of incredible prosperity, and existence of welfare states.

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The nature of contemporary risks lies in its global catastrophic effects, irreversible damage and, simultaneously, invisibility. Such risks are becoming visible only through the system of knowledge and, more detailed, through social definition and articulation. In comparison with pre-industrial and industrial stages the post-industrial risk is the result of decision-making process in which corporations and state governments bear responsibilities. Such responsibility goes hand-at-hand with the need to launch a set of controlling measures over elements involved in the economy of risk and security.

The most important for the industrial and postindustrial society is its capacity to apply to an uncertain future. Dealing with the basic ideas of globalised economic policy, Rothstein and Downer (2008, p. 6) assume that 'at its simplest, risk-based policy-making is the practice of targeting policy in proportion to potential threats to society, considering both their likelihood and consequences'. Risk calculation transforms future events and processes into present activities. An issue moves from untouchable danger into profitable security "for sale". This is how the society of risk is becoming the society without guaranties. As Beck (1992) stated, contemporary times with the constituting principle of uncertainty gains its counter-principle in a social pact against dangers and damage. Therefore, this pact is the internal logic of the common agreement on economic progress.

Two opposite lines were crossed in Europe at the end of the 20th century; namely, the line of development and security based on the performance of technological and bureaucratic norms and controlling tools, and the line of dangers and historically new damages stretching which extend through the borders of legitimacy and politics (Giddens, 2007; Beck, 2010). This contradiction is of social and political character which is hidden in a mixture of epochs. Such a situation will last as long as industrial stereotypes and symbols of control exist. Among these symbols are emblems of historical and cultural memory.

The comparative studies of the European Union (EU) and neighbouring countries in the beginning of the 21st century are grounded in the so-called "new regionalism approach" (Makarychev, 2008), according to which intra-regional relations could be defined along security as well as economic, political and communication lines. Regions with strong "security" direction are mostly based on We-Other emotional patterns. This leads us to the follow hypothesis. By case participants of security regions could securitize external relations as threatening and at the same time a necessary element of their regional identity.

Among such regions are different geographical and suprageographical configurations with active and emblematic engagement of Russia – the Black Sea region, the Eurasian Union (EAU), and so forth. For some obvious reasons, the situation around the EAU could be described as "symmetric securitization" (Makarychev, 2008). The mechanism of the process can be assumed as follows: Russia faces alienation and securitization from the EU and the North Atlantic Treaty Organization (NATO) and launches similar mechanisms against them. At the same time, the EU itself follows the logic of symmetrical securitization.

## THEORETICAL FRAMEWORK

According to classical economic theory, human decision-making process is based on the rational choice made by an individual. This choice is calculated as the estimation of outcomes and their value. Therefore, economists suggest that behavior is pressed by willingness to maximize potential benefits from a scope of possible decisions and practical steps. However, in reality human behavior deviates regularly from a rational choice. Behavioral economics attempts to overcome the contradiction between classical theory and biases, originated from the psychological nature of human behavior, via emphasis on emotional and even irrational character of decision-making process.



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One of the first critics of economic theories based on the exclusively rational choice of decision-drivers was Simon (1957), who in his work "Model of Man" has questioned the view that organizations are driven by intention to maximize profit. Instead, he assumed that because of members' bounded rationality they have different goals, and organizations reach decisions as a consensus but not always as the best option. At the same time, the economist Becker (1957) has doubted the standard utility function in the traditional economics by also covering non-economic motivation to explain human economic behavior.

Later, considering the contextuality of economic behavior, Tversky and Kahneman (1979) highlighted effect as one of the pillars in the decision-making process. They have witnessed violations of expected utility and suggested a theory, grounded in psychological principles of cognition, in order to explain the violations. Since the 1980s, many non-economic motivations have been considered as influencial for economic analysis and understanding of decision-making processes at the macro-level. In this chapter, the ideas of identity economics are used as a corner-stone of the explanatory model. Identity economics brings social context into analysis. Akerlof and Kranton (2000, 2010) have presented the general framework for identity economics by expanding Becker's concepts. They base the concept of identity on self-categorization of people and social norms of behavior through which they define their belonging to a certain group. The concept of social identity explains a lot about economic behavior at the inter-group level of communication and decision-making process.

Agreeing with Akerlof and Kranton on the influence of social identity on behavioral patterns, we add to this theory the category of cultural identity which could be used as a part of an explanatory model for economic behavior. One of the most valuable ideas derived from social and cultural identity is that of categorization and normative patterns existing implicitly. Risk-security could be mentioned among such patterns. Following this idea the role of affect in risky situations is discussed as a background for the risk-feeling model (Loewenstein, Weber, Hsee, & Welch, 2001). Focusing at the risk-feeling level explains behavior in emotionally complicated situations. It means that decision is made on the basis of culturally - psychological perceptions of uncertainty and possible threats.

As Samson (2014) stressed, behavioral economics provides a set of ideas which could assist in understanding government decisions and global economic shapes; namely:

- Small changes can lead to large effects.
- Psychology is important.
- Decisions and steps made by people do not always have a rational explanation.
- Decisions are made in a social and cultural context.
- Trust does not help, but commitment is is important.

Finally, behavioral economics assumes that a human individual makes decisions not in isolation but rather in a specific context where norms play a crucial role in the definition of acceptable and unacceptable behavior. This context also includes historical memory which is extremely important at the macro-level of decision-making processes. In discussion of risk perception, we pay attention to the second part of the binary opposition – security. But the notion of security is used as "a contextualized soft security"; namely, securitization. Considering the theoretical foundation of the economic securitization hypothesis and mutual alienation of the EU and the EAU, the chapter follows ideas of the Paris School of Security Studies.



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Since the second half of the 1990s, a number of European scholars applied the conception of speech act as the core driver of security (Buzan 1989; Buzan, Wæver, & de Wilde 1998; Wæver, 1995). According to them, an issue demonstrates itself as a security problem through the discursive politics of security. Security is not of interest as a sign that refers to something more real; the utterance itself is the act (Wæver, 1995, p. 55). Securitization mostly concerns the question how security issues emerge, clash, and dissolve. Securitization theory argues that language constitutes the very social reality. According to the Copenhagen School, an issue demonstrates itself as a security problem through the discursive politics of security, constructed by actors coalition. The interest of such coalition is to form distinctive practices and effects (Bigo, 2008).

Usually the Copenhagen School operates with political acts and political discourses as objects of feasible securitization. It is not easy to place economy as an object of securitization. While economic security is seen as state of anxiety/feeling, to see securitization as social/political acts is more complex. On the individual level, the economic security refers to a relative freedom from poverty, while at the state level it refers to economic independence and productivity; and as such, it is reproduced in a National Security Strategy. The controversy lies in the idea that economic security is provided by routine political activity of governance, whereas securitization applies to extraordinary steps and a specific national security strategy. That is why the definition of securitization as of dependent on audience acceptance of a speech-act is not satisfying.

Concurrently, the theory of securitization as a speech act is criticized from the position of the so-called "Paris School of Security" (Balzacq, 2010; Bigo, 2004), which emphasizes securitization as a pragmatic act that is a sustained argumentative practice aimed at convincing a target audience to accept, based on what it knows about the world, the claim that a specific development is threatening enough to deserve an immediate policy to curb it (Balzacq, 2010). In other words, a speech act itself does not make an issue securitized, but it should have a specific context and power to do so.

Securitization could be seen as a process of argumentation. If securitization needs reasoning, it means intersubjective communication and agreement on a set of principles – what to consider as a threat, risk, security, and so forth. Consequently, while an issue is to be securitized, it should be located within a specific context and articulated by specific powerful actors, prompting an issue as threatening to a society.

Balzacq (2005) highlights that securitization is characterized by:

- Cognitive patterns (e.g., metaphors, visualization repertoires, analogies, stereotypes, emotions).
- Mobilization within the definite context, approved by a recognized agent.
- Prompting a target audience to build a coherent network of implications (e.g., feelings, thoughts, and intuitions) that give reasons for actions.
- Investing an issue and a referent subject with an aura of unprecedented threat.
- Demanding immediate political act to block its threatening development.

As a new agenda demands a certain level of prioritizing, constructed through discursive practices of commemoration, communication and representation and justifies a high level of resources and immediate response (albeit mostly a political one). This situation concerns non-traditional areas of security – economy, climate, poverty, diversity, and so forth.

Pragmatism posits that cognitive structure – a coherent but flexible set of modes of thought, motivations, and reasons for action – have a real impact on discourse (Balzacq, 2010). One of the contextual drivers of securitization is collective memories which could be used within the decision-making process.



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In some sense, structural characteristics of collective memory are rooted in specific cultural forms which influence communication, cognitive construction, representation and perception of risks and threats. At the same time, intersectionality of securitization and memorization flows into economy of risks, where security is not just an emotion on what is thought as a risk or potential danger, but rather a contract. And as such, it can be traded and obtain a market value.

Economic securitization is produced through discursive practices of those groups which have an access to social, cultural, and political power. At the highest level of the political decision-making process, the issue of economic securitization is coined as a line of global political decisions in which all other groups are distributed over or behind.

## METHODOLOGY

The analysis of the EAU documents comes from ideas of the Historical Discourse Approach (HDA) which came into being in the end of 1990s among other Critical Discourse Studies (Wodak, 1999; Wodak, 2001). Besides critical orientation toward the problem-based approach, it deals with the so-called historical dimension of the discourse. Specificity concerns wide use of diverse information resources in order to follow the development of specific relationships or repertoire. The attractiveness of this comprehensive approach lies in its fluidity and flexibility. The analytical procedure goes through a set of levels; namely, linguistic analysis of text, discourse theory with its attention to intertextuality and relationships between texts and articulations, and a meta-theory with application in socio-political, historical, and cultural contexts.

In examining the topic of memory and discourse through the conception of securitization over the period 1992-2014, the study has different genres and theories from different disciplines and uses a set of categories. Data for the analysis were gathered among written texts of different genres – official documents initiating and legitimizing the Eurasian Economic Union; texts coming from different expert communities – Europe, Russia, and beyond; finally, media texts published in different sorts of resources.

Among founding texts for analysis are the National Security Strategy of Russia, the Treaty of the Eurasian Economic Union, and annual expert reports (ERBD). Beyond this it entails speeches of officials concerning issues of economic integration and major political decisions. Finally, media and academic comments and reports on benefits and expenses of unions' existence and literature from international organizations, such as the Organization for Economic and Cooperative Development (OECD), concludes the corpus. Close attention is paid to texts coming from the Russian side, as Russia plays the dominating role in promotion of the Eurasian integration project.

Following the collection of data from different sources and critical reading of it, semantic-discursive categories were established. These categories compose the lexicon and could be analyzed and used to fetch an essence of texts. Examples of such semantic-discursive categories are community, unity, commonality, the Past, post-Soviet, and so forth. Consequently, these categories are used in the discursive strategies, implemented in the written form; the focus is on the strategies of legitimation which are hidden in the corpus of official documents (the National Security Strategy, Treaty of the Eurasian Economic Union, etc.). The pragmatic act of securitization and legitimation is the core activity of a powerful actor to inject a "threatening" characteristic of an object into the public discourse. That is why we see legitimation as a framework for analysis of how discourse of securitization builds legitimation/delegitimation for public communication on issues of economy of risks.



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The framework (Van Leeuwen, 2007) distinguishes between four categories of (de)ligitimation: authorization, moral evaluation, rationalization, and mythopoesis. Authorization is delegitimation by reference to the authority of tradition, custom, and common law; (de)legitimation by moral evaluation occurs in case of reference to value system; rationalization is (de)legitimation by reference to use of institutionalized social action and through a system of knowledge and cognitive patterns; deligitimation by mythopoesis goes through narratives of awarded and punishable actions.

Obviously, categories mentioned ealier do not exist separately. In spite of this, they include some characteristics borrowed from another type. Actions and their representations with interpretations are correlated within a specific discourse. As we suggest, analysis of legitimation strategies enables identification of the plot through which the demand for positive attribute of Union governance and negative attributes of insecurity, requiring immediate response from decision-making structures and actors, are justified. While examining the corpus of documents, we defined indicators through which legitimation strategies and plots are manifested and realization of them in other spheres – media, expert communities. Among indicators metaphors could be included.

The importance of metaphore in the political and social constructions has been acknowledged since 1980s. There a set of analytical reports on consistent use of metaphoric constructions for particular articulations of the world events and processes and responses to them through the official media channels. Interestingly, there are some recounts of metaphors in politics, announced by the leaders of world states, such as Thatcher, who remarked:

*… anyone dealing with the European Community should pay careful attention to metaphors. We in Britain were inclined to minimize their significance […]. We had to learn the hard way that by agreement to what were apparently empty generalizations or vague aspirations we were held to have committed ourselves to political structures which were contrary to our interests. (Thatcher, 1993: 319)*

The reason for metaphor use is the idea that political metaphors combine an integral argumentation and reasoning which aim to approve a contested issue and legitimize a direction of action. Therefore, metaphors in the political discourse play the role warrants, emblematizing an issue as an object for securitzation. That is to say, the metaphor has an ideological core and is linked with the process of legitimation. Therefore, analysis of metaphors aims to demonstrate specific securitization policy.

## SECURITIZATION AND THE ECONOMICS OF RISKS IN 1994-2014

The recently signed Declaration on Eurasian Economic Integration provides new life to discussions around the problems of European integration and security of cooperation between inner and outer members of the global welfare system (Eurasian Economic Commission, 2014). Following the global quest for a new pattern of strategic development, a number of states, united by the common soviet memory, seek consolidation and reconstituation of the regional union. This impetus results from the global financial crisis in 2008 that demanded to recall rhetoric of security and rescue the ideology of welfare and economic prosperity. Concurrently, critical voices are being heard which equally suspicious toward European integration success and Eurasian. “The gulf between EU institutions and the European public appears to



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be as wide as it has ever been. Surprisingly (or perhaps not), a similar scenario is rapidly consolidating in 'post-Soviet' Eurasia" (Anceschi, 2014). In these circumstances we have to deepen our knowledge on the workload of Eurasian integration and their rhetoric.

Dealing with the basic idea of the globalised economic policy, Rothstein and Downer (2008, p. 6) assume that 'at its simplest, risk-based policy-making is the practice of targeting policy in proportion to potential threats to society, considering both their likelihood and consequences'. The rhetoric of security lies in the creation of different networks (such as the European and Eurasian Economic Unions), proclaiming common ground for communities, and living together. Community-building requires the dissolution of institutionalized orders based on fixed notions of 'We' and 'Other', mostly because 'Other' can easily be represented as 'Alien'. In addition, such type of communities means the replacement of notions of 'security from others' with 'security with others'. 'Other' in this case has something in common with 'Us' (Couldry, 2000). At the same time, security-building process requires that 'We' have something of 'Others', that is some of identity.

We could observe the symbolic competition between "European" and "Eurasian" projects of economic integration, where the Eurasian Economic Union is seen as vague in its goals and instruments as its European counterpart. We will follow the post-Soviet approach to the economic integration with the reference to the common past, memories, and identity. Securitization is the procedure defined by those who obtain power. Therefore, the discourse of securitization is the power discourse. In this case, the creation and development of the Eurasian Economic Union is inscribed in the discourse of risks and securitization. The question is about the ability of Russia to consider its own identity beyond the discourse of risks and securitization in relation with the former Soviet republics.

The foundation of the Eurasian integration dates back to the 1990s and links with the clash inside the Soviet Union and post-Soviet political and economic development. The first stage relates to arrival of the Commonwealth Independent States (CIS) in 1991. It was aimed at political and economic reintegration in this region. In 1994, the term Eurasian Economic Community was pronounced by Nursultan Nazarbayev, the President of Kazakhstan. Therefore, after 1994 the idea to build a separate (to the European Union) block of states became more obvious. Although a Free Trade Agreement (FTA) was signed in the framework of the CIS, it did not enter into force until 2003. To the contrary, the reunion process began with bilateral agreements between almost all member states.

The new impetus was made in 1996 when Russia, Belarus, and Kazakhstan signed the agreement on integration in economic and humanitarian areas. But only in 1999 did Russia, Belarus, Kazakhstan, Kyrgyzstan, and Tajikistan agreed to sign a document on formation and implementation of the Custom Union and the Single Economic Space. Subsequently, in 2000 these five states established the Eurasian Economic Community (EurAsEC). Interestingly, in the Treaty the dominant role in percentage of participation (a total of 40% of voters), budget, and so forth was meant for Russia. However, the most significant was determining the Russian language as the official legislative language of the Union (Treaty of the EURASEC, 2000).

Since 2001, the idea of the regional integration has escaped post-Soviet states such as Russia, Belorussia, and Kazakhstan. The urgency of this step was encouraged by internal and external circumstances in 2004 such as the enlargement of NATO and the EU over time in Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, and Slovenia.

In 2003, Armenia joined the EurAsEC as an observer; Uzbekistan joined this community in 2006. In 2010, as a result of the efforts made during the period of formation, the Eurasian Customs Union (EACU) was finally established with membership of Belarus, Kazakhstan, and Russia. In November,



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2011, these three countries signed the Declaration on Eurasian Economic Integration. In 2012, the Eurasian Economic Commission (EEC) was established. It was based on the experience and under the influence of the European Commission. In September, 2013, Armenia announced its willingness to join the EACU, and very quickly the Supreme Eurasian Economic Council confirmed the "roadmap" for Armenia's accession to the union.

Consequently, on May 29, 2014, the presidents of Russia, Belarus, and Kazakhstan signed the Treaty on Establishment of the Eurasian Economic Union (EEU). It is expected the EEU after ratification in compliance with national regulations of the states will come to force from January 1, 2015. In October, 2014, Armenia hjoined this union, as well as Kyrgyzstan on May 21, 2015. The EAEU now has five member states. Tajikistan and Vietnam are on the enlargement list of the potential member states.

The question of economic security immediately appeared. The anxiety about economic benefits of the Eurasian integration derives from official sources, provided by the EBRD, OECD, and so forth, and the idea that the Eurasian reunion is beneficial only for relatively small, former Soviet republics. For instance, according to the Armenia Economic Report (2014), the inflow of non-trade private remittances in 2013 totalled to US$1.87 billion, a total of 86% of US$1.6 billion originated in Russia. Total inflows of remittances in 2013 grew by 10.8% over the previous year, while they grew by 14.4% compared to 2008.

As the EBRD Report (2012) concludes, import tariff revenues accrue to national budgets in predetermined proportions (with Russia entitled to 88%, Kazakhstan to 7% and Belarus to 5%). The Russian and Belarusian markets were fairly integrated even before the launching of the EAU by direct investments from Russia into the Belarus economy in which Russia accounts for 75% of foreign direct investments (FDI) into Belarus.

The asymmetry in the economic situation within the member-states of the Eurasian Union is obvious. The disparity in the economic size of the largest state, Russia, and that of the other members is perhaps greater than in any other regional economic grouping; namely, Kazakhstan's population and gross domestic product (GDP) are around one-tenth of those of Russia, and those of Belarus are lower still (EBRD, 2012). The forcast for 2014 growth among members of the EAU is following: growth in Russia will remain low (1.3%), while it will accelerate by 0.7 percentage points in Belarus and is projected to slow down by 0.3 percentage points in Kazakhstan. Although some experts conclude the economic nature of the Eurasian Union (Carbone, 2013), the data demonstrates unclear benefits and definite risks for states of the Eurasian Union, particular for Russia. Simultaneously, the initiator and energetic promoter of further intergration Russian Federation is underlined. Therefore, while economic benefits of the EAU are limited, they could be considered in the context of extraeconomic indicators.

In order to understand roots and logic of economic security articulation, as well as memorization practices, the process of securitization should be analized from the National Security Strategy as a corner-stone document. In 1997, the Russian Federation presented the new National Security Strategy (NSS) with the conception of the "multipolar world", whereas NATO expansion and the EU enlargement to the East were perceived as core threats to the potential re-integration of the Commonwealth of Independent States and national security of Russia (NSS, 1997).

In order to ensure regional economic integration in favourable direction, Russia is supposed to need reconstruction of its political influence in the region. Therefore, the 2000 National Security Concept (NSC, 2000) identified the reinvigoration and adaptation of the CIS mechanisms as the preferred way to achieve 'integration processes ... that meet the interest of Russia' (National Security Concept of the Russian Federation, 2000).



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Analysis of two editions of the Russian national security strategies revealed key semantic-discursive categories in both documents: security, stability, and sovereignty. Security-related terms (e.g., insecurity, security threat, security challenges, and instability) were salient as it was expected in the given genre of the official government discourse. In comparative terms, the 2006 NSC demonstrated a 'negative connotations' to security by discussing in terms of threats and absence of security (insecurity), whereas the 1997 NSS often mentioned security challenges. Stability was maintained in relatively similar salience in both documents. At the same time, sovereignty suggests lifted topical prominence in the 2006 document. Moreover, stability as well as sovereignty concerned to the binary opposition of security – insecurity.

In the expert reports effects of introduction and promotion of the Eurasian Union are often declared in categories benefits – risks with negative connotations of inevitability. As cited in the Armenia Report (2014):

*Armenia's membership of the EAEU is a most crucial event. Its short term economic benefits are not clear whereas negative consumption impact is inevitable. The long term developments, opportunities for realisation of economic benefits and risks are not defined. There is great need for follow-up research and evaluations.*

The second type of document is Foreign Policy Concepts (FPC) which answer the changing situation. For instance, the FPC of the Russian Federation (2000) renewed symbolic presentation of integration by pointing attention toward security aspects of the Eurasian integration and CIS in particular. In the FPC of 2013, it is mentioned that one of the core priorities is border security through cooperation with former Soviet states. Another concept is to keep mutuality and sovereignty of all states which join the Eurasian zone of integration, but with added value of shared cultural heritage of the CIS members. Finally, the Russian-Belorussian union is highlighted as an example of good practice of integrity. Simultaneously, Russia strengthened its position by bilateral agreements, deepening integration with individual countries.

In 2008, the revised FPC again awakened the issue of regional integration. The more important became the question of security in Middle Asia by which the topic of economic and political cooperation was raised to the top of the list. The Collective Security Treaty Organization (CSTO, 1992) was also mentioned as a consistent part of the strategy. On the eve of the NATO–Russia Summit in Rome, Italy, the creation of the CSTO was meant to mark a new line for Russia's vital interests and to reduce effects of the second round of NATO enlargement.

Finally, in the FPC of 2013, the idea of responsibility of Russia for activities and security on the territory of states is used, tightly connected by agreements. Moreover, this version excluded the goal of creating bilateral and multilateral agreements to make the position of the Russian Federation more resistant to world challenges. Despite this fact, the new goal to strengthen the position of Russia in trade and world economy, to avoid possible discrimination in economic relations, was added (FPC, 2013). As the Concept stresses, the role of Russia is to work on anticipation and leading the events.

Looking from another angle, economic integration is seen as a step toward security in the unstable world and under pressure of Europe and the NATO. Economic benefits are considered as desirable, but less important aims, of the Eurasian Union. Seeking a distant position from the USA or the EU, member-states of the EAU use a political and economic model well-known from the recent past: the buffer-zone. At this line political decision-making is much more important. At the symbolic level, the semantic-discursive category of sovereignty is crucial. Interestingly, in a set of expert reports and analysis (Greene, 2012)



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the terms 'integration' and 'security' are used in application to explanation of predominance of Russian political thoughts, 'ideologically weak' regime. The weakness is strongly connected with "repackaging" of the Soviet and post-Soviet space (CIS).

The idea of the buffer-zone is partly transformed into the positively connotated "bridge", giving new life to the well-known formula West-Russia-East in which Russia plays a distinctive role between two different (even opposite) worlds. In November, 2014, the head of Ministry of International Affairs, Sergey Lavrov, has rearticulated the mission of the Euroasian Economic Union as a specific bridge between Europe and Asian-regions: the Euroasian Union will be a very serious element of the bridge between Europe and Asian-and Far-East region. According to Lavrov, Europe graciously and arrogantly relates to this integration union, although many states, combining the Eurasian Economic Union, *have much more common* then member-states of the European Union (from the interview with S. Lavrov)[1].

This "bridging" strategy of Russia (or, more precisely, 'near abroad') is combined with efforts to use the resource of regional elites through economic, cultural and political dependency. The logic is the same with domestic strategy, logically flowing out of the post-Soviet period (Greene, 2012). Eurasian cooperation is based on sympathetic ties with cultural, linguistic, and historical memories. This step could be described as securitization of the cultural identity through antipathy toward Europe in the Western value system.

As "cultural templates" govern behavior, intervention strategy is based on the idea to accommodate people who could map a local knowledge system and cultural ties and make possible weakening of the Other. By 'cultural templates', the coined allusions of the Eurasian Union (Russia, Belorussia, Kazakhstan) is witnessed to a centre and two peripheries (Isakova, Plekhanov, 2012; Pomfret, 2014). By this a supraterritorial buffer-zone is created in which sovereignty is understood as an opposition to "Western democracy".

In support of this passage, the speech of the Kazakhstan president Nursultan Nazarbayev in 1994 could be mentioned who, for the first time, announced the idea of Eurasian regional integration as the basis for the new Kazakh identity[2]. In 2011, another president, Vladimir Putin, in his speech argued the idea of Eurasian integrity as a collective project by referring to economic benefits for all member-states[3]. It was correlated with the example of the EU, but distinguished as the case, located between politically challenging Europe and economically pressuring China. In these circumstances, the Eurasian Union seemed inevitable.

Returning to semantic-discursive categories used in texts of Eurasian integration, we could assume that securitization processes through silencing political opposition, controlling security regimes, and maintaining a state sovereignty on the international arena; and that helps to support political stability. However, dependency on other countries (as it is the case of Eurasian Union) in terms of national security and economic prosperity could seriously undermine legitimacy of extraordinary decisions in the context of extraordinary threats and spark social and political stability. This is the case of Uzbekistan, which is suspitious on benefits of Eurasian Economic Union, tightly linking economic and political effects of any steps toward integration. One of the reasons is potential threat for domestic labour market and extra-migration to Russia, which makes difficult for the country to be a sovereign economic actor. Recently the president of Uzbekistan coined Uzbek migrants in Russia 'lazy', revealing highest concern in securitization of it.



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If to consider securitization as a fact of acceptance by audience, in the current economic situation, the Eurasian Union hardly can become as integrated as the EU. At the same time, it has purposefulness in stabilization of the context and facilitation of cooperation, applying to the common ground, memory, and heritage. As proclaimed opposite to the EU, the project of the Eurasian Union is becoming attractive for non-European surrounding states (as it is seen in the Russia-Vietnam or Russia-China agreements).

## CONCLUSION

The search of possible connections between cultural memory, insecurity, economy of risks, and global decision-making is vital for the future directions of securitization studies. However, it is important to reflect upon how these connections are being publicly articulated and the impact these discursive representations have upon international policy areas.

Our discursive historical approach confirms the hypothesis that the Eurasian Economic Union has been securitized by application of historical memory of the common Soviet Past and have been shaped through the relevant policy domains. Our intentions of casting light on the process of influence of communicative discourse on economic securitization have been approved. Our analysis of the Russian National Security Strategy suggests this process was explicit. This was justified by relatively low number of applications toward Soviet memories as a semantic-discursive category. But instead of it there are some practices: 1) demonization of Russia as a dominator which is the component of the topic of tyranny; 2) escapism as a tendency in policy-making; 3) implicit representation of security in the context of economy of risks and global threats, and as a part of it legitimizing strategic and immediate policy decisions and moral imperatives.

Documents analyzed develop intuitive connections between memory and insecurity, and a new economic union as a beneficial solution to economic risks and associated threats. To some extent, these documents demonstrate tautological arguments through representation of the Past as a component of welfare. Finally, the analysis demonstrates the importance of context in the success of securitization of the risk economy, and Crimea acceleration of the paradigm for European and Eurasian discursive treatment of economic integration. We suggest that a communicative discourse has constituted integration and security as an issue for European and Eurasian elites.

It could be understood only through application to the social, cultural and political context of recent events. The significant period is observed as 2004-2014 as the time when NATO and the EU enlargement struck the Russian and partnering lands and generated a new sense of vulnerability and anxiety. This situatation created a specific political climate in which the priorities were detailed and revised together with greater resources. Insecurity had to be addressed through revised policy and new level of investments which, in turn, demanded a new type of discourse, forceful and sustained. The discourse of economic integration constitutes a security and moral impreratives for the Eurasian region, and legitimizes connection of memory-insecurity-integration. In this case, the final stage of securitization demands a receptive audience for whom such discourse is delivered.



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# Chapter 74
# Firm-Level Determinants of Foreign Investment and M&A Activity: Evidence from Turkey

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## ABSTRACT

*The last decade is marked with acceleration of mergers, corporate restructuring and governance activities. M&A activity has been driven by factors such as technological change, globalization, free trade, deregulation, attempts to attain economies of scale, rise in entrepreneurship, and economic growth. Corporations need to adjust to the change in the environment and expand their markets to achieve growth and protection against volatile economic conditions. Firms can achieve international expansion through foreign direct investments (FDIs) which can take the form of cross-border acquisitions (brownfield investments) and Greenfield investments. This chapter covers an overview of the literature on the determinants of FDI forms of entry, and M&A activity followed with an empirical investigation of the firm-level determinants of foreign investment in Turkey with emphasis on cross-border acquisitions and Greenfield investments. Summary of the findings is followed with the economic implications of forms of FDI entry. The concluding remarks cover the implications of the results for policy makers.*

## INTRODUCTION

Increasing volatility and complexity of the business environment forces companies to reduce their vulnerability to adverse changes and enhance their competitiveness in the market. In addition to the emergence of new industries like e-commerce and biotechnology, old industries are being transformed. The high rate of technological change and development in transportation and communications have increased the pace of globalization. The intensity of competition in global markets has led to deregulation in airlines,

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financial services, telecommunications, electricity and other utilities industries. Globalization is driven by reduced barriers to the free flow of goods and services and technological advancements that lead to better communication, information processing and transportation technologies (Hill, 2006). Firms can expand into international markets in a variety of ways such as licensing, franchising, strategic alliances exporting and through foreign direct investments (FDIs) with either a wholly- or partially-owned local enterprise.

Firms have economic and strategic motives for participating in mergers and acquisitions (M&As). The economic motive is to create value for shareholders through the realization of synergies that stem from additional revenues and savings in costs. Strategic motives aim to improve the strategic positioning of the firm to achieve long-term growth and protection against volatile conditions in the region. The quest to survive in the global market is a strategic driver of cross-border M&As.

The first part of this chapter includes a theoretical overview that covers country-level determinants of M&A activity and foreign direct investment (FDI), integrated with evidence from firm-level drivers of M&As and foreign investment. The second part of the chapter documents an empirical study that displays firm-level determinants of M&A activity and foreign investment in the 500 largest firms of the Istanbul Chamber of Industry in Turkey. The initial part of the empirical study focuses on the determinants of the M&A activity in the sample. The second part displays the foreign investment determinants with a comparative analysis of drivers of cross-border mergers and Greenfield investments. A summary of the findings is followed by a section that elaborates on the economic implications of the evidence on FDI and its forms of entry. Concluding remarks cover the implications of the results for policymakers of the host country.

There are several contributions of this study. While most of the studies on M&A activity rely on data from developed countries, this study documents differences in firm-level determinants of M&A activity and FDI modes of entry in an emerging country. Unlike most of the studies in this field, the sample for this study includes unlisted firms which are surrounded by higher information asymmetry and documents the differences in firm-level drivers of M&As and foreign investment for private and publicly traded firms.

The results have implications for policymakers of the host country and firm managers that aim to attract FDI. The higher likelihood of foreign investment in R&D-intensive firms implies the need to increase R&D efforts at the country level. The findings, therefore, point to the need for government investment in accumulating knowledge and human capital that will serve to reduce the technological gap between foreign investors and local firms. The results indicate that M&A involvement is a means of sharing risks and attaining improvements in efficiency for corporations. Foreign investment seems to be driven by high exports, R&D intensity, production of high value added goods, and existence of operational efficiency in local firms. These findings reveal the need for local firms to focus on productivity and innovativeness in the products and services they provide to generate high value added output that will increase their competitive advantage in global markets.

## THEORETICAL BACKGROUND

The studies on determinants of mergers and acquisitions can be grouped as those that focus on country-level drivers of M&A activity and firm-level analyses. After an overview of the literature on the country-level drivers of M&A activity, the theoretical background covers evidence on firm-level determinants of M&A activity with an emphasis on cross-border mergers and Greenfield investments.



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## Country-Level Determinants of FDI

The existing literature on FDI determinants has generally focused on macroeconomic factors that affect the FDI flows and their effects on M&A decisions of local firms. One study employs panel data of M&A deals for the 1990-1999 period and documents that the size of financial markets and the level of financial development have significant positive effects in terms of encouraging domestic firms to invest abroad (diGiovanni, 2005). Empirical evidence shows that market size is a determinant of FDI (Love & Lage-Hidalgo, 2000; Chakrabarti, 2001; Lipsey, 1999; Tuman & Emmert, 1999). Research on the effects of economic policy indicators on FDI shows that tax incentives are important in attracting FDI (Tung & Cho, 2001) as well as macroeconomic stability (Obwona, 2001; Lipsey, 1999; McMillan, 1999; Barry & Bradley, 1997). Noorbakhsh et al. (2001) provide evidence that human capital attracts FDI. A recent study, employing a Bayesian model, displays that more than half of the previously suggested FDI determinants are not robust (Eicher et al., 2011). The authors claim that trade agreements and currency unions encourage FDI in specific instances and market potential is no longer an FDI determinant since cost advantages of the producer drives FDI. On the other hand, some factors may lead to a decline in capacity to attract FDI. Debt overhang and sovereign risk reduce FDI (Nunnenkamp, 1991, 1997). Similarly, there is evidence that exchange rate volatility can be detrimental to FDI in developing countries (Benassy-Quere et al., 2001). Furthermore, Xiaoying and Xiamug (2005) test the effects of FDI using data from 66 developing countries and document that macroeconomic policies and institutional stability are preconditions for FDI driven growth to materialize. They document that a low inflation rate, government consumption, and taxes all have significant effects on FDI.

The most common country-level factors that attract FDI are competition intensity and the market structure of the host country (Buckley & Casson, 1998), country-specific culture (Kogut & Singh, 1988; Barkhema et al, 1996) and transaction costs resulting from economic and political uncertainty (Brouthers et al., 2003). An increase in the host country population, market size, per capita income and decreases in tax rates attract both cross-border M&As and greenfield FDI to the country (Nagano, 2013; Neto et. al., 2008). Entry through Greenfield investment increases local capacity and intensifies competition, whereas cross- border acquisitions do not have these effects (Buckley & Casson, 1998). They maintain that governments often attempt to attract Greenfield investments while restricting acquisitions. The governance system prevailing in the host country affects the mode of entry. A home-country firm tends to choose Greenfield FDI when the host country adequately enforces intellectual property rights (Nagano, 2013). A similar study that investigates the macroeconomic determinants of cross-border M&As in European countries uses GDP, stock market capitalization, and credit to the private sector as well as institutional factors related to legal and regulatory environment (Manchin, 2004). The study finds support for the outcome hypothesis (Rossi & Volpin, 2002) which posits that good domestic M&As are more intense in countries where investor protection is better. Weaker governance leads to fewer M&As (Dyck & Zingales, 2001). Manchin (2004) also provides support for the governance hypothesis which predicts that M&As occur in corporations that have different levels of governance. An inefficiently managed firm becomes a target and creates value after restructuring. Differences between countries in laws, regulations and their enforcement might increase transaction costs and asymmetries in information, which can explain characteristics of cross-border M&As. Target firms adopt the governance practices of the acquirer. If certain factors such as corruption are inherent in the country where the target operates, these companies benefit less from M&As. Results confirm that companies listed in countries with a higher quality of regulatory environment and higher economic freedom are more likely targets than those in countries with greater



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government involvement in the economy in the form of tax policies and lower levels of openness. The industry-level determinants of FDI seem to be technological intensity along with advertising, sales force and competition intensity in the sector (Neto et al., 2008).

## Determinants of FDI in Emerging Markets

Most emerging markets are characterized by rapid economic development, weak corporate governance, inadequate shareholder protection, poor legal enforcement and high stock market volatility (Gibson, 2003; Bekaert & Harvey, 2003; Dennis & McConnell, 2003). The evidence on M&As in emerging markets reveals that, although the determinants of M&As in European transition economies are similar to those in developed economies, governance variables display a highly significant positive correlation with the M&A activity, implying that the rule of law and control of corruption are more important than financial variables (Visic & Skabic, 2010). Another research based on Korean firms displays that information asymmetry is one of the strongest determinants of M&A activity in the country (Choe et al., 2010). These authors show that firms facing high information asymmetry are those that are small in size, are in the high growth stage and face financial constraints such as high leverage and low cash flows. Companies surrounded by high information asymmetry tend to acquire companies with low information asymmetry. Nagano (2013) has studied the determinants of cross-border M&As and greenfield investments, focusing on Japanese firms pursuing FDI in emerging countries in Asia and Oceania. The evidence shows that a firm pursuing a cross-border M&A achieves higher cumulative returns in stocks following the investment, while a firm pursuing a Greenfield investment experiences an increase in stock prices immediately before the investment. In a study of FDI in Taiwan, foreign ownership was found to be significantly associated with increased R&D expenditures and improved performance as measured by Tobin's Q and accounting returns (Huang & Shiu, 2009). The authors argue that this may be because foreign investors possess superior stock selection ability or they are able to positively influence management.

### Determinants of FDI in Turkey

There are empirical studies and surveys that shed light on the macroeconomic determinants of FDI in Turkey. Deichmann et al. (2003) find that agglomeration, depth of local financial markets, human capital and coastal access dominate the location decision for the sample of foreign investment in Turkey. Erden (1996) finds that multinational firms are attracted to Turkey by its market potential, geographic proximity, and low labor costs. Tatoğlu and Glaister (1998), studying multinational firm location factors in Turkey, reveal that Turkey's most important assets include market size, economic growth, and government policy towards FDI, including repatriability of profits. Ernst & Young's attractiveness survey of Turkey (2013), resting on results of 201 foreign firms operating in 29 countries, reveals similar findings. The survey results confirm the previous empirical findings and reveal that the most important factors that make Turkey appealing to foreign investors are, in order of importance, geographical location, size of the domestic market, and reasonable labor costs. 65% of the foreign investors included in the survey (Ernst &Young, 2013) are established in Turkey and the rest operate outside the country. Foreign firms have expressed their preferred forms of investment are shown in Table 1.

Thus, 45.5% of respondents established in Turkey revealed plans for expanding their existing operations, while the majority (69.2%) of firms established outside Turkey declared their investment plans as joint ventures, M&As, and greenfield investments. Only 21.5% of existing foreign investors plan to



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*Table 1. Preferred forms of investment*

| Foreign Firms Established In Turkey | | Foreign Firms Established Outside Turkey | |
|---|---|---|---|
| Expansion of facility | 45.5% | Joint ventures /alliances | 47.6% |
| Increasing labor force | 16.6% | M&As | 9.6% |
| Joint ventures/alliances | 7.7% | Greenfield investments | 12.0% |
| M&As | 7.0% | | |
| Greenfield investments | 6.8% | | |
| Other | 10.6% | | 14.5% |
| Can't say | 5.8% | | 16.3% |
| Total | 100.0% | | 100.0% |

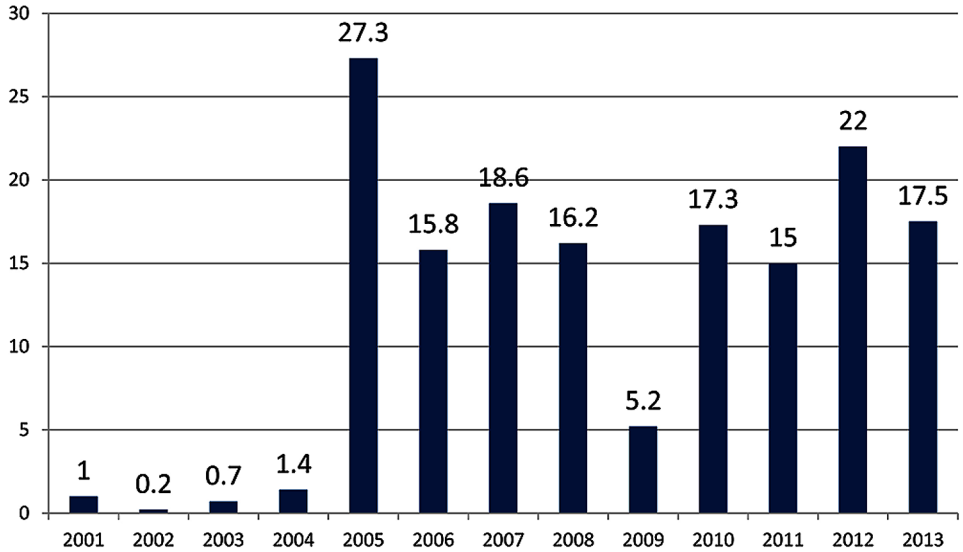
be involved in M&As, JVs, or Greenfield investments. The value of M&A deals in Turkey reached its peak in 2005, followed by a significant drop in 2006, as illustrated in Figure 1. The total value of M&A deals reached $17.5 billion in 2013.

When total M&A activity/GDP is analyzed, Turkey seems to lag behind APAC and EMEA countries, although it has made a significant increase since 2011. The value of M&A activity/GDP dropped slightly to 2.16% in 2013.

## Evidence on Firm-Level Determinants of M&As and FDI Modes of Entry

Firms have multiple possibilities to reach a target market beyond their national borders, the most direct of which are foreign acquisitions (cross-border acquisitions) and foreign start-ups (Greenfield investments). The factors that affect the choice of cross-border acquisitions (brownfield investments) or greenfield

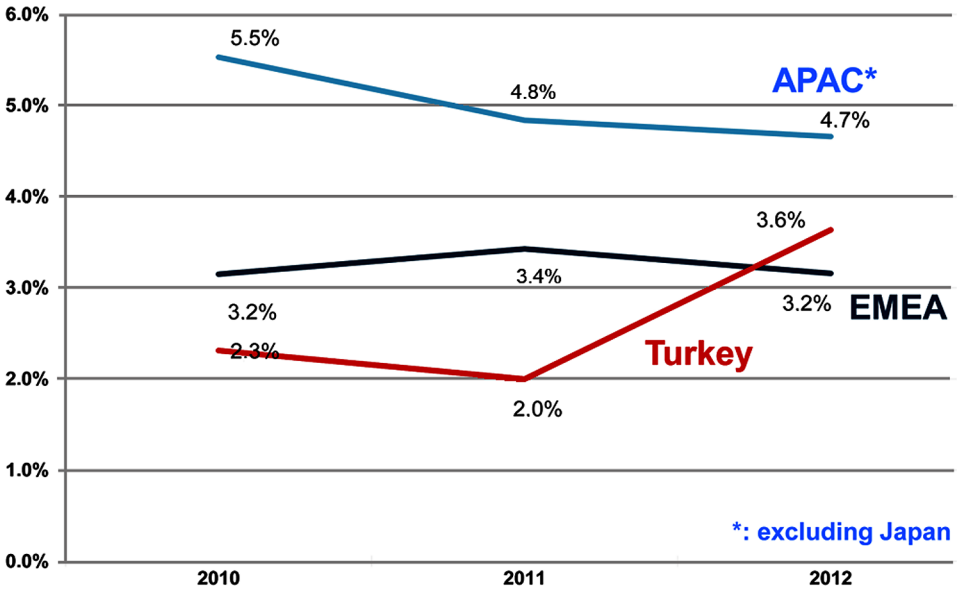
*Figure 1. Total values of deals in Turkey*
*Source: EIU, Deloitte Analysis, ISPAT.*






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*Figure 2. Total M&A activity / GDP*
*Source: IMF, Mergermarket.*




investments can be classified as country-level, industry-level and firm-level factors (Neto et al., 2008). There are numerous firm-level determinants that affect the choice of entry mode between cross-border M&As and greenfield investments. The level of technological advancement of the firm over its competitors in the foreign market affects the entry mode. A high technological gap leads to greenfield investments since they are less dependent on technological capabilities of existing firms (Hennart & Park, 1993). Evidence shows that the R&D intensity of investors affect the choice of the entry mode (Harzing, 2002; Hennart & Park, 1993) and that R&D intensive investors prefer Greenfield investments.

Organizational culture and product diversification are other firm-level factors that affect the choice of entry mode. In their research, Mudambi and Mudambi (2001) show that a younger age of the parent, a lower degree of multinational experience of the parent, and a narrow scope of output indicate a higher level of home country risk and make the choice of greenfield investment more likely. Transferring technological capabilities and organizational culture from the parent to the subsidiary can be challenging in brownfield investments (Hill, 2006). In the case of greater cultural distance between the firm and the host country, Greenfield investments are more likely (Kogut & Singh, 1988).

Transaction costs of the firm also affect the mode of FDI entry. Transaction costs are affected by asset specificity, behavioral uncertainty of partners or stakeholders as well as economic uncertainty. Transaction cost theory does not a priori prescribe a preference for either brownfield or Greenfield investment. A firm's multinational diversity leading to development of its technological capabilities pushes the firm toward setting up a new operation abroad rather than acquiring a new venture (Barkhema & Vermeulen, 1998). A firm tends to choose Greenfield FDI when it has regional networks in the host country and it chooses cross-border M&As when its purpose is to establish sales distribution channels (Nagano, 2013).

M&As are an effective means of resolving corporate financial distress (Jensen, 2001). Research on distressed acquisitions is scarce and is concentrated on the comparison between acquisitions in bankruptcy and acquisitions outside bankruptcy (Hotchkiss & Moordian, 1998) or the study of acquisitions



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of distressed companies (Clark & Ofek, 1997), or on the comparison of acquisition and bankruptcies as exit strategies (Bergstrom et al, 2005). M&As were an exit route for companies in financial distress during the 2007-2008 financial crisis. The question of whether a distressed M&A can be a value-generating strategy for either the buying or selling counterparty is unanswered. Faelten and Vitkova (2014) show that newly combined firms where the target is either distressed or bankrupt generally benefit from an improvement in performance in the long run compared to their combined pre-bid performance, indicating synergy effects. However, the authors report a deterioration of the combined post acquisition performance of the acquirer compared to its pre-bid performance. Hotchkiss and Mooradian (1998) find positive abnormal returns for the acquirer and the bankrupt target. Bergstrom et al. (2005) and Buehler et al. (2006) compare mergers and bankruptcies and reveal that the financially distressed firms are more likely to merge than to file for bankruptcy. Faccio et al. (2006) who analyze the relationship between the target's leverage and the likelihood of emerging from distress through bankruptcy or M&A find that the likelihood of merger during the Asian crisis increases with the target's leverage.

Evidence shows that one of the strongest determinants of M&A activity and FDI in emerging markets is information asymmetry between investors and the firms (Choe et al., 2010). Investors tend to prefer firms with low information asymmetry. In the finance literature, firm characteristics used as proxies of information asymmetry between investors and controlling shareholders show variety. Some common firm-specific measures of information asymmetry displayed in the literature are size (Poulsen & Stegemoller, 2008; Scherr & Hulburt, 2001), asset growth (Poulsen and Stegemoller, 2008; Bris et al., 2004), profitability (Poulsen & Stegemoller, 2008), growth opportunities (Pagano et al., 1998; Brau et al., 2003; Smith & Watts, 1992) and export sales (Dahlquist & Robertsson, 2001). As size, profitability and export sales increase, information asymmetry between insiders and investors is expected to decrease. Growth, R&D intensity and variability of returns increase information asymmetry.

There is a growing body of research on information asymmetry between domestic and foreign investors. Kang and Stulz (1997) have documented the "home bias" of foreign investors resulting from information asymmetry between domestic and foreign firms in Japan The authors measure how well known a firm is to its foreign investors with the extent to which a firm exports and document that foreign ownership rises with the exports/sales ratio significantly for small firms, but the relationship disappears in large firms. They use a model in which foreign investors know more about large domestic firms than small domestic firms. Firms undertake M&As to reach a critical size to survive the intense competition. Foreign investors know large, profitable firms that export goods and services and tend to invest in the firms they are familiar with (French & Poterba, 1991; Lewis, 1999). Domestic investors may have more information about the local environment or business firms but foreigners may have better technological, financial or human expertise, experience or resources. These advantages may provide a stronger reputation and credibility to foreigners than domestic investors and may be more important when target firms are from emerging markets. The evidence on foreign investment is mixed. Some evidence documents that foreigners are better able to select winners (Grinblatt & Keloharju, 2000; Huang & Shiu, 2009) while conflicting evidence exists from South Korean stocks (Choe et al., 2005). In a recent study, Dvorak (2005) documents that while domestic individuals possess an information advantage, global brokerages are better able to pick long-term winners. Evidence on Swedish firms reveals that foreign firms show a preference for large firms, firms paying low dividends and firms with large cash positions (Dahlquist & Robertsson, 2001). The authors find that market liquidity, presence in international markets measured through export sales or listings on other exchanges seem to identify foreign investors. Furthermore, they document that foreign investors avoid firms with a dominant owner. They conclude that there is



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an institutional bias rather than a foreign investor bias. Other evidence reveals that foreign investors are associated with higher R&D expenditures and have an ability to select high performing firms for investment (Huang & Shiu, 2009).

The information asymmetry between insiders and capital market investors or potential acquirers is the key driver of the public ownership decision. Chemmanur and Fulghieri (1999) show that in an IPO, a large number of investors need to be convinced about the value of a firm in an M&A transaction and these costs can lead to a reduction in share price. However, it is also possible that an acquirer can extract value from a target when there are a few potential competing acquirers resulting in lower price (Poulsen & Stegemoller, 2008). M&A decisions in firms with concentrated ownership may lead to agency issues for minority shareholders, especially in an environment where corporations have pyramidal structures. Concentrated ownership may reduce trading activity and reduce market liquidity (Coffee, 1991). While the expropriation of minority shareholders may be an issue that involves both listed and unlisted firms, there is evidence that listed firms are more concerned about minority shareholders, disclose more information, and have better performance than unlisted firms (Loderer & Waelchli, 2010).

Recent literature focuses on merger-motivated IPOs where the main motive for corporate listing is to facilitate subsequent mergers and acquisitions (Çelikyurt et al. 2010; Hovakimian & Hutton, 2010). Evidence documents that initial public offerings facilitate acquisitions in a number of ways. Hovakimian and Hutton (2010) find that firms that undertake IPOs benefit from the cash raised in the IPO and have easier access to debt and equity markets. Public ownership enables exchange of publicly traded stocks in subsequent acquisitions. So, merger motive is a primary consideration for IPO firms (Çelikyurt et al., 2010; Hovakimian & Hutton, 2010). Public ownership facilitates acquisitions by relaxing financial constraints that may impede a private firm's ability to acquire attractive targets and allows faster growth, by pursuit of more acquisitions that lead firms to bid very large targets that could be out of their reach because of the extensive borrowing requirements beyond their financial capacity (Hovakimian & Hutton, 2010). Netter et al. (2011) note that the correlation between IPO and acquisition activity displayed by Çelikyurt et al. (2010) and Hovakimian and Hutton (2010) depends on the breadth of the sample. They document that the correlation between current acquisition and lagged IPO activity act drops from 0.584 for publicly traded acquirers to 0.152 when all acquirers are included. Nitter et al. (2011) work on a large sample of mergers and acquisitions from 1992 to 2009, including private bidders and small targets, and they document some differences in their findings than those which utilize only large deals involving public firms. The-finding that mergers occur in waves is attenuated by the presence of smaller and/or not publicly traded firms, and it is noted that the clustering of mergers is driven by the acquisition of publicly traded firms.

## Firm-Level Determinants of FDI and M&A Activity in Turkey: An Empirical Study

This section displays empirical research that aims to reveal firm performance indicators that affect the likelihood of involvement in mergers and acquisitions (M&As) and FDI in Turkey. Foreign investment determinants are analyzed and the differences and similarities of determinants of cross-border mergers and Greenfield investments are displayed.

The measures of information asymmetry used in the analyses include profitability, size, growth, export sales and variability of profits, following Li and Zhao (2008). Listing on the stock exchange is also an indicator of the degree of information asymmetry surrounding the organization since publicly traded firms disclose more information and are more transparent in their operations than unlisted firms. The



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study aims to reveal whether the determinants of M&A involvement differ among listed and unlisted firms to control for the effects of public ownership on corporate M&A activity.

## Measurement of Information Asymmetry

### *Size Measures*

1. Log sales
2. Number of employees working for the firm *(EMPLOYEE).* As firm size grows, information asymmetry decreases.

### *Export Sales (EXSALES)*

Export sales reflect the globalization of the firm and its reputation abroad. EXSALES is measured as export sales divided by total sales. Higher export sales reflect lower information asymmetry between a firm's foreign investors and blockholders.

### *Growth Measures*

1. Growth in sales *(SGROW)*
2. Growth in assets *(AGROW)* measured as change in total assets divided by total assets.

Some evidence reveals that firms choose to go public, leading to high information disclosure after achieving high growth (Pagano et al., 1998; Smith & Watts, 1992) while some studies reveal contrary findings (Brau et al., 2003). Firms with higher growth rates tend to go public and are more likely to undertake an IPO. Firms with higher growth opportunities are more likely to use equity financing than those with fewer growth opportunities (Myers, 1984).

### *Profitability Measures*

1. *ROA* is measured as net income divided by total assets.
2. Profit margin is measured as net income divided by sales *(PMARGIN)*

Higher profitability reduces the information asymmetry for the investors.

### *Public Ownership*

The firms are classified using a binary variable that equals one if the firm is listed in BIST and zero otherwise.

### *Distress Measures*

Evidence reveals that M&As provide a means of distress resolution for corporations. The study employs several measures of financial distress as determinants of M&A activity and foreign investment. Equity to total assets is used as a solvency measure (Ravid & Sundgren, 1998). In addition, having at least two years of consecutive losses is used to indicate the level of financial distress faced by companies



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(DeAngelo & DeAngelo, 1990). Leverage is also used as an indicator of financial distress which makes mergers more likely for the target firms (Faccio et al., 2006).

### *Equity Erosion*

This solvency indicator is measured using total equity divided by total assets to reflect the vulnerability of firms to distress when leverage is not included in the analyses. The firms having equity to assets above the median are healthy firms. Table 8 displays that 24% of the firms below the median are distressed firms, which constitute 11.7% of the sample. Those firms that are below the median and have an equity to total assets between 24% and 50% are vulnerable firms denoted as $FINDIST_2$. These constitute 37.3% of the sample.

### *Consecutive Losses*

Firms that have at least two years of consecutive losses are treated as distressed firms ($FINDIST_1$). This is a dummy variable that equals one if the firm is distressed and zero otherwise. The distressed group constitutes 11.7% of the sample.

### *Leverage*

Leverage is used as an indicator of financial distress and is measured as the book value of debt divided by book value of assets.

### *Other Risk Measures – Corporate Stand-Alone (Total) Risk*

The total risk of the company is measured by the standard deviation of return on equity (*RISK),* which reflects the stand-alone or total risk of the firms.

## Empirical Predictions

***$H_1$*:** Listed firms are more likely to be involved in M&As than unlisted firms. Public ownership facilitates M&A activity in several ways (Hovakimian & Hutton, 2010; Çelikyurt et al, 2010). There is a strong contemporaneous relationship between acquisition activity and IPO activity for publicly traded acquirers (Netter et al., 2011).

***$H_2$*:** Highly levered firms that have exhausted their debt capacity are more likely to engage in M&A activity (Jensen, 2001; Bergstrom et al., 2005; Buehler et al., 200; Faccio et al., 2006). This relationship is expected to be stronger for unlisted firms that have limited access to debt and capital markets.

***$H_3$*:** The likelihood of foreign investment increases as export sales rise. High export sales increase the familiarity of foreign investors with the firms and reduces information asymmetry (Dahlquist & Robertsson, 2001; Hung & Shiu, 2009, Kang & Stulz, 1997).

## Empirical Design

The analyses rest on data of the M&A activity of the 500 largest firms of the Istanbul Chamber of Industry during the 2005-2010 period. For firms that have been involved in more than one M&A transaction, the first M&A transaction is used in the analyses. The M&A data covers domestic and foreign firms. The



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determinants of merger likelihood are studied separately in Equation (1), where M&A is the dependent variable, while listing and foreign ownership are independent variables. This intends to disclose whether acquisitions are motivated by public ownership of the firm, which enables a fair value to be set in the market. Financial distress is included in the equations to detect whether M&A activity is a means of distress resolution for the firms involved.

Foreign investment is studied separately in Equation (2) to reveal differences in determinants of foreign ownership, if any, than those that are detected when all M&As are involved. Listing and M&A activity are included as independent variables, and having foreign investors is a dummy used as dependent variable in Equation (2). Furthermore, the equation is run separately for cross-border M&As in listed and unlisted firms and direct foreign investment.

$$\text{M\& A:} = a_0 + a_1\,\text{LISTING}_{i,t} + a_2\,\text{FOREIGN}_{i,t} + a_3\,\text{EXSALES}_{i,t} + a_4\,\text{FINDIST}_{12i,t} + a_5\,\text{FINDIST}_{2i,t} + a_6\,\text{LEV}_{i,t} + a_7\,\text{PMARGIN}_{i,t} + a_8\,\text{VAD}_{i,t} + a_9\,\text{SIZE}_{i,t} + a_{10}\,AGROWTH_{i,t} + a_{11}\,IND + a_{12}\,TAT_{i,t} + a_{13}\,SGROW_{i,t} + e \quad (1)$$

$$\text{FOREIGN:} = b_0 + b_1\,\text{LISTING}_{i,t} + b_2\,\text{M\&A}_{i,t} + b_3\,\text{EXSALES}_{i,t} + b_4\,\text{FINDIST}_{1i,t} + b_5\,\text{FINDIST}_{2i,t} + b_6\,\text{LEV}_{i,t} + b_7\,\text{RISK}_{i,t} + b_8\,\text{PMARGIN}_{i,t} + b_9\,\text{VAD}_{i,t} + b_{10}\,\text{SIZE}_{i,t} + b_{11}\,\text{IND} + b_{12}\,\text{AGROWTH}_{i,t} + b_{13}\,\text{TAT}_{i,t} + e \quad (2)$$

*LISTING* is a dummy variable that has a value of one if the firm is listed and zero otherwise. *FOREIGN* is a dummy variable that equals one if the firm has a foreign investor and zero otherwise. The *M&A* dummy equals one if the firm had M&A activity during the period and zero otherwise. *EXSALES* is export sales divided by sales. *TAT* is total asset turnover and is equal to sales divided by total assets. $FINDIST_1$ is a dummy for financial distress that equals one if the firm has consecutive losses over at least two years. $FINDIST_2$ reflects vulnerability to financial distress and equals one if the equity to total assets ratio is below the median and above 24%, which is the threshold value for distress obtained from frequency of the data. *LEV* is leverage and is calculated as the ratio of book value of total debt to total assets. *RISK* is a measure of total risk and measured as standard deviation of return on equity. *PMARGIN* is net income divided by sales. *VAD* is value added measured as EBIT + interest payments + gross wages and salaries – income besides main operations + allowances. It is a dummy that equals one if the firm's value added is above the median and zero otherwise. *SIZE* is log sales. *AGROWTH* is change in total assets divided by total assets. *SGROW i*s the growth in sales. *IND* is a dummy for industry that equals one if it is an R&D intensive sector and zero otherwise.

We aim to investigate whether listing increases the likelihood of foreign investment due to lower information asymmetry attained by the disclosure of data related to the public firm. The second stage of the analysis includes dividing the sample into three as listed firms, listed firms involved in M&As, and unlisted firms involved in M&As. Firms that have neither public ownership nor M&As are used for a robustness check of the findings. Foreign investment likelihood is further analyzed for cross-border mergers and Greenfield investments.



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## DATA AND METHODOLOGY

### The Data

This research rests on a sample of the 500 largest industrial firms of the Istanbul Chamber of Industry during the 2005-2010 period. The firms that have existed in four years of the six-year period are included. Thus, the sample size was reduced to 453 firms. The classification of the manufacturing firms according to Standard Industrial Classification (SIC) codes is presented in the Appendix (see Table 12). Pharmaceuticals, chemicals and vehicles industries are placed in the R&D-intensive group in the analyses.

Since only 18.5% of these industrial firms are listed on Borsa Istanbul, the analyses rest mainly on the data of unlisted companies. Financial statements of these firms are not disclosed. Only some selected accounts from the balance sheet and income statement are published. Ownership data is not disclosed except for the percentage of foreign shareholdings. The M&A activity data (Table 2) is derived from the Dealwatch database. The 2005-2010 period was selected because of the availability of standardized financial tables of listed companies after 2005.

Within the sample, only 93 firms (20.5%) had at least one M&A during the period of analysis. If a firm had more than one M&A during the period, the first M&A transaction was used (Table 3).

Firms that are involved in M&A can be classified as domestic or foreign. Most of the M&A activity (55%) has been with a foreign investor, and 45% has been among domestic institutions. The proportion of M&As in unlisted firms (50.5%) is slightly higher than those in listed firms (49.5%) for the period of analysis (Table 4).

When missing firms are eliminated, mean foreign ownership is 62.3% and the median is 63.7% (n=654). However, when only those firms between 15% and 85% of foreign shareholdings are included in the preliminary analyses, mean and median foreign ownership become 50% (n=312). If the missing

*Table 2. M&A activity of listed and unlisted firms*

| Ownership Characteristics | | No. of Observations | % |
|---|---|---|---|
| I. Listed Firms | | 84 | 18.5 |
| Had M&A<br>Did not have M&A | 46<br>38 | | |
| II. Unlisted Firms | | 369 | 81.5 |
| Had M&A<br>No M&A | 47<br>322 | | |
| Total | | 453 | 100.0 |

*Table 3. Cross-border and domestic M&As*

| Breakdown of M&A Activity | No. of Firms | % |
|---|---|---|
| M&A with foreign firms | 51 | 55 |
| M&A with domestic firms | 42 | 45.0 |
| Total | 93 | 100.0 |



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*Table 4. Foreign Ownership and Control*

| Foreign Ownership Percentages | N | % |
|---|---|---|
| 0.00-0.49 | 43 | 33.0 |
| 0.50 | 14 | 11.0 |
| 0.51-0.85 | 19 | 14.0 |
| 0.86-0.98 | 9 | 7.0 |
| 0.99-1.00 | 45 | 35.0 |
| Total | 130 | 100.0 |

values are treated as zero, the mean drops to 18% (n=2361), as indicated in Table 8. A breakdown of foreign investors' shareholdings reveals that approximately 35% of foreign investments are Greenfield FDI. Breakdown of Foreign Ownership in Listed and Unlisted Firms is shown in Table 5.

The majority of foreign investment has occurred in unlisted firms. As documented in Table 8, 68% of the firms involved in M&As are targets. The rest of constitute Greenfield investments. In 85% of the private sale cases, the acquirer has purchased a controlling stake. The descriptive statistics are presented in Table 7 and a summary of binary variables is presented in Table 8. Financial distress data is reflected in Table 6 and Table 8. The FINDIST variable includes two different proxies of distress. $FINDIST_2$ indicates vulnerable firms that have equity to total assets below the median and above the lowest threshold of 24%, which is derived from the frequency of data. Those firms that have equity to total assets below 24% are distressed firms (11.7%). $FINDIST_1$ is a proxy for firms that have losses over two consecutive periods. These firms constitute 11.7% of the sample. As can be observed in Table 6, 75% of the distressed firms are unlisted.

7% of the listed firms are distressed while 13% of the unlisted firms are classified as distressed. So, unlisted firms have a higher proportion of distressed firms than listed firms.

## Variables

The variables used in the analyses can be grouped as those that reflect performance, ownership structure and firm characteristics that affect information asymmetry between investors and blockholders. The descriptive statistics of the variables are presented in Table 7 and Table 8.

*Table 5. Foreign ownership and listing*

| | N | % |
|---|---|---|
| Unlisted | 187 | 62 |
| Listed | 116 | 38 |
| Total | 303 | 100 |

*Table 6. Financial distress and listing*

| $Findist_1$ | N | % |
|---|---|---|
| A. Listed | 80 | 25.0 |
| B. Unlisted | 239 | 75.0 |
| Total | 319 | 100.0 |



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*Table 7. Summary statistics*

| Variable | No. of Observations | Median | Mean | Standard Deviation |
|---|---|---|---|---|
| EQUITA | 2184 | 0.504 | 0.503 | 0.2222 |
| LEV | 2184 | 0.4955 | 0.4973 | 0.2222 |
| EXSALES | 2113 | 0.00018 | 0.0002 | 0.0002 |
| PMARGIN | 2122 | 0.0454 | 0.0663 | 0.1341 |
| ROA | 2094 | 0.0576 | 0.0738 | 0.1139 |
| EMPLOYEE | 2250 | 690 | 1198 | 1723 |
| VADEMP | 2086 | 77043 | 636,667 | 75.776 |
| SIZE | 2359 | 19.3166 | 19.5269 | 0.8998 |
| CONTROL | 516 | 100.00 | 85.7649 | 22.3204 |
| TAT | 2223 | 1.2123 | 1.4452 | 1.3000 |
| AGROWTH** | 1823 | 0.082 | 0.0296 | 0.46227 |
| SGROW | 1856 | 0.0917 | 0.0888 | 0.3506 |
| RISK | 2093 | 0.0269 | 0.0615 | 0.1965 |
| FOREIGN* | 2361 | 0.0000 | 0.1802 | 0.3413 |

* The mean value is calculated by counting non-foreign firms as zero. ** 37% of the firms have negative asset growth (downsizing) while 63% have growth in assets

*Table 8. Summary descriptives for binary variables*

| Variable | Group | | Total Number Observations |
|---|---|---|---|
| | (1) | (0) | |
| **1) FOREIGN** | **Yes** | **No** | |
| % | 11.1% | 88.9% | 100.0% |
| No. of observations | 303 | 2415 | 2718 |
| **2) FINDIST$_2$** | **24%<E/TA <50%** | **Otherwise** | |
| % | 37.0% | 63.0% | 100.0% |
| No. of observations | 808 | 1376 | 2184 |
| **3) FINDIST$_1$** | **Distressed (NI<0)** | **Non Distressed (NI>0)** | |
| % | 11.7% | 88.3% | |
| No of observations | 319 | 2399 | 2718 |
| **4) M&A** | **Exist** | **(Don't Exist)** | |
| % | 20.5% | 79.5% | 100.0% |
| No. of observations | 558 | 2160 | 2718 |
| **5) TARGET** | **Yes** | **No** | |
| % | 68% | 32% | 100.0% |
| No. of observations | 378 | 180 | 558 |
| **6) CONTROL PERCENTAGE** | **Equal to or less than 50%** | **Greater than 50%** | |
| % | 15% | 85% | 100.0% |
| No. of observations | 78 | 438 | 516 |



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## METHODOLOGY

In the first part of this paper, univariate *t*-tests are used to reveal the significant variables that can be used in regression analyses. The second part involves use of logistic regressions and least squares regressions. The regressions are checked for multicollinearity. The first two logistic regressions involve total M&A activity and foreign investment as dependent variables, respectively. The regressions rely on panel data for the six-year period. In the second stage, logistic regressions are run for listed M&As and unlisted M&As. The group that has neither M&As nor public ownership is analyzed for robustness check. We expect to have similar significant variables only with opposite signs to verify our findings. The results in Table 10 show that the relations we find are robust. Similarly, FDI is analyzed as listed cross-border M&As, unlisted brownfield investment and greenfield investments. These logistic regressions reveal results for different modes of entry of foreign investment.

The problem of endogeneity may arise when both ownership and performance are determined by omitted variables (Huang & Shiu, 2009). Foreign ownership may be endogenous when performance affects ownership. To eliminate the probability of endogenoity, we have adopted two- stage probit regression analyses in this study. All the performance indicators are regressed against $FINDIST_1$ and $FINDIST_2$ and the fitted values of $FINDIST_1$ and $FINDIST_2$ are placed in Equation (1) and Equation (2). The two-stage probit results reveal that variables which significantly affect merger activity and foreign ownership are the same as the previous results. The analyses can be provided upon request.

## EMPIRICAL FINDINGS

### Univariate Tests

The univariate *t*-test results are presented in the Appendix. When total M&A activity is analyzed, firms that are involved in an M&A activity are shown to have a significantly higher return on assets, value added and are larger in size than the firms that are not involved in any M&A transaction. These firms are significantly large and have lower exports and asset turnover than firms that are not involved in any M&A activity. The results are displayed in Table 13 in the Appendix. Listed M&As have lower leverage and asset turnover than unlisted M&As. However, listed M&As are larger and have higher equity to total assets (above the median) than unlisted M&As as displayed in Table 14.

### Multivariate Results

Determinants of total M&A activity are analyzed making use of Equation (1) and foreign investment are investigated using Equation (2). The results are displayed in Table 9. The determinants of M&A involvement and foreign investment are analyzed using logistic regression equations.

The results displayed in Table 9 reveal that the firm-level determinants of M&A activity differ from foreign investment. Foreign investors seem to prefer firms that have high export sales and value added and operate in R&D intensive industries. A factor that affects M&A activity but is insignificant in foreign investment regression is leverage. The likelihood of M&A activity increases as leverage rises. This



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*Table 9. Determinants of M&A activity and FDI: Logistic regression results*

| Variable | All M&As: Domestic and Foreign (Equation 1) | | Foreign Investment (Equation 2) | |
|---|---|---|---|---|
| | **Coefficient** | **Marginal Effects** | **Coefficient** | **Marginal Effects** |
| CONSTANT | -11.2120 | -2.5245*** | - | - |
| LISTING | 1.8848 | 0.4245*** | -1.4730 | -0.1203*** |
| FOREIGN | 0.8986 | 0.2024*** | n.a. | n.a. |
| M&A | n.a | n.a. | -0.0491 | -0.0040 |
| EXSALES | -0.0438 | -0.0099 | 0.3754 | 0.0306*** |
| PMARGIN | 0.3033 | 0.0683 | -0.9344 | -0.0763 |
| TAT | -1.0132 | -0.2282*** | 0.9508 | 0.0776*** |
| LEV | 1.3265 | 0.2987*** | -0.5857 | -0.0478 |
| RISK | n.a | n.a | -2.9858 | -0.2438 |
| VAD | 0.1204 | .0271 | 1.4958 | 0.1221*** |
| SIZE | 0.4752 | 0.1070*** | -0.3231 | -0.0264* |
| AGROWTH | 0.0617 | 0.0139 | 0.0805 | 0.00663 |
| $FINDIST_1$ | -0.2578 | -0.0581 | -0.2514 | -0.0205 |
| $FINDIST_2$ | -0.1355 | -0.0305 | -0.6819 | -0.0557 |
| IND | 0.0284 | 0.0056- | 1.5061 | 0.1230*** |
| SGROW | 0.0617 | 0.0139 | n.a | n.a |
| Pseudo $R^2$ | 0.22 | | 0.20 | |
| LL | -624.36 | | -247.00 | |
| N | 1492 | | 1133 | |

documents that firms with high leverage are more likely to be involved in M&As to resolve financial distress, which supports the evidence in the literature (Jensen, 2001; Bergstrom et al., 2005; Buehler et al., 2006; Faccio et al., 2006).

The factors that are common to both, although with opposite signs, are public ownership, size and efficiency. M&A activity for listed firms is more likely for firms that are large but have lower efficiency. These M&As aim to attain economies of scale and improvement of efficiency from synergy effects. On the other hand, foreign investment is more likely for unlisted, small firms that have high efficiency in asset utilization. Asset growth seems to be insignificant in both regressions. Public ownership is positively related to M&A activity but reveals a negative relationship with foreign investment.

The firms from high-tech industries have higher information asymmetry surrounding them. Their operations are less transparent due to the fact that high-tech firms are more unique in their operations, which gives them a higher competitive advantage. The combined effect of these features on the likelihood of involvement in M&A activity is ambiguous, as documented by Hovakimian and Hutton (2010). However, findings reveal that firms in high-tech industries are more likely to be involved in cross-border mergers.



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The determinants of foreign investment are investigated using Equation (2). Unlisted firms have a higher likelihood of private sale to foreign investors. This may reflect the fact that foreign investors possess an information advantage through their familiarity with the firm in previous years or through globalization of the firm with high export sales. Export sales are significantly positively related with foreign investment, supporting Dahlquist and Robertsson (2001) and Huang and Shiu (2009). Consequently, hypothesis three is accepted

Public ownership is positively related to M&A activity in Equation (1). Listing on the stock exchange increases the likelihood of M&As, supporting Hovakimian and Hutton (2010) and Çelikyurt et al. (2010). Public ownership facilitates acquisitions by relaxing financial constraints, creating a fair value for the firms, and allows faster growth by pursuit of more acquisitions that would be out of reach for private acquirers. Firms that go public benefit from the cash raised and exchange publicly traded stock in subsequent acquisitions. So, hypothesis one is accepted, supporting Hovakimian and Hutton (2010) and Çelikyurt et al. (2010).

Leverage has high marginal effects on M&A activity. The findings in Table 9 reveal that as leverage rises, the likelihood of M&A activity increases, supporting the evidence in the literature (Jensen, 2001; Bergstrom et al., 2005; Buehler et al., 2006; Faccio et al., 2006). The positive relationship holds for the total M&A sample and unlisted M&As, as displayed in column (3) of Table 10, leading to the acceptance of hypothesis two.

As Netter et al. (2011) document, our findings seem to be affected by the nature of the sample used in the analyses. Table 9 shows that IPOs and M&As reveal a positive contemporaneous relationship when the total sample is analyzed but reveal a negative contemporaneous relationship when only foreign acquirers are included in the sample. Similarly, Table 10 documents that mergers may be a means of reducing financial constraints for unlisted firms that face difficulty in accessing debt and capital markets. As shown in Table 10, the sign of the leverage variable is significantly positive in column (3) for unlisted M&As while it is negative for listed M&As as displayed in column (1). Findings indicate that public ownership mitigates the relationship between M&A activity and leverage.

The positive relationship between risk and public ownership suggests that M&As with listed firms constitute a means of risk sharing and supports the evidence in the literature (Anderson & Dyl, 2008; Scherr & Hulburt, 2001). This relationship is insignificant in mergers with unlisted firms.

The regressions of cross-border M&As and greenfield investments in Table 11 document a significant negative relationship between risk and foreign ownership only in greenfield investments. This implies that foreign investors tend to avoid firms with high stand-alone risk, and financial distress supporting Dahlquist and Robertsson (2001). The drivers of cross-border M&As seem to differ from greenfield investments in several ways. The results are displayed in Table 11.

Table 11 displays the determinants of FDI classified as cross-border M&As, with listed and unlisted firms, and greenfield investments. All cross-border M&As and greenfield investments tend to take place in R&D-intensive industries. So the R&D intensity of the sector is an industry-level characteristic that is common to all foreign investments.

Greenfield investments have several drivers in common with cross-border M&As of unlisted firms. Export sales, efficiency of asset utilization, and R&D intensity of industry are positively related to both cross-border M&As of unlisted firms and greenfield investments. As size gets smaller, the likelihood of mergers increases.



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*Table 10. Determinants of M&A activity: Logistic regression results*

| | Listed | | | | Unlisted | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) Listed Firm M&As | | (2) Listed but Not Involved in M&As | | (3) Unlisted Firm M&As | | (4) Unlisted and Not Involved in M&As | |
| | Coefficient | Marginal Effects | Coefficient | Marginal Effects | Coefficient | Marginal Effects | Coefficient | Marginal Effects |
| CONSTANT | -21.8919 | -4.9738*** | -5.7639 | -4.0231*** | -2.7290 | -0.3108 | 13.8678 | 9.8745*** |
| FOREIGN | 0.2097 | 0.7503 | 0.1004 | 0.0701 | 1.1116 | 0.1266*** | -0.6197 | -0.4325*** |
| EXSALES | -0.0165 | -0.2817 | 0.0368 | 0.0257 | -0.0101 | -0.0011 | -0.0011 | -0.0008 |
| PMARGIN | -0.4176 | 0.5599 | 2.8311 | 1.9760*** | 2.1247 | 0.2420*** | -3.1083 | -2.1695*** |
| TAT | -1.5259 | -0.3467*** | 0.1510 | 0.1054 | -0.3296 | -0.0375** | 0.6784 | 0.4735*** |
| LEV | -1.2693 | -0.2884*** | -0.6194 | -0.04323 | 2.3362 | 0.2660*** | -.0.0764 | 0.0532 |
| RISK | 2.3220 | 0.5276*** | 1.1864 | 0.8281*** | -0.2971 | -0.0338 | -2.571 | -1.7946*** |
| VAD | 0.1737 | 0.5499 | 0.5499 | 0.3838** | 0.4461 | 0.0508* | -0.2063 | -0.1439 |
| SIZE | 1.0959 | 0.2489*** | 0.1721 | 0.1201* | -0.0509 | -0.0058 | -0.6847 | -0.4779*** |
| AGROWTH | 0.1613 | 0.6038 | -0.5997 | -0.4186** | -0.1155 | -0.0132 | 0.4435 | 0.3095*** |
| IND | 0.5743 | 0.1305*** | -0.1005 | -0.0701 | -0.4745 | -0.0540** | -0.0122 | -0.0085 |
| Pseudo $R^2$ | 0.21 | | 0.05 | | 0.05 | | 0.12 | |
| N | 1454 | | 1454 | | 1454 | | 1454 | |

*** significant at 1% level ** significant at 5% level * significant at 10% level

Greenfield investments reveal a strong negative relationship to financial distress and stand-alone risk. Since Greenfield investment indicates a foreign start-up, corporate risk has no relevance for well diversified international investors. There is no significant relationship between corporate risk, financial distress and cross-border M&As.

Results reveal that FDI is more likely for firms that have high exports, value added and efficiency because foreign investors prefer to invest in firms that they are familiar with from international markets through their export sales. They tend to prefer small firms for which the significance of exports is higher, supporting Kang and Stulz (1997). These findings support the evidence that foreign investors focus on firm characteristics that reduce information asymmetry surrounding the firms (French & Poterba, 2001; Lewis, 1999; Dahlquist & Robertsson, 2001).

## SUMMARY OF FINDINGS

This chapter provides evidence on the firm-level determinants of M&As and foreign investments with emphasis on cross-border M&As and greenfield investments. The determinants of M&As, including domestic mergers, reveal similarities to those of foreign investment. The factors that are common to both, although with opposite signs, are public ownership, size and efficiency of asset utilization. The likelihood of M&A activity rises as firm size increases but efficiency decreases. These M&As aim to attain



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*Table 11. Determinants of Cross-border M&As and Greenfield Investments: Regression Results*

| | (1) Cross-Border M&As in Listed Firms | | (2) Cross-Border M&As in Unlisted Firms | | (3) Greenfield Investments | |
|---|---|---|---|---|---|---|
| | **Coefficient** | ***t*-Statistics** | **Coefficient** | ***t*-Statistics** | **Coefficient** | ***t*-Statistics** |
| Constant | -0.4202 | -4.1242*** | 0.5794 | 3.1650*** | 0.4987 | 2.8976*** |
| M&As | 0.0607 | 5.6052*** | 0.0019 | 0.0979 | n.a. | n.a. |
| EXSALES | -12.9029 | -0.5517 | 0.0214 | 4.3518*** | 0.0195 | 4.0999*** |
| PMARGIN | -0.0454 | -0.0085 | 0.0304 | 0.3817 | 0.0405 | 0.4755 |
| TAT | 0.0035 | 0.5920 | 0.0667 | 6.3557*** | 0.0740 | 7.1413*** |
| LEV | -0.0037 | -1.5629 | 0.0174 | 0.4173 | -0.0218 | -0.4767 |
| RISK | -.0.0318- | -0.9780 | -0.0716 | -1.2499 | -1.1019 | -1.7906*** |
| VAD | 0.0067 | 0.5664 | 0.0825 | 3.9165*** | 0.0819 | 3.9617 |
| SIZE | 0.0241 | 4.4290*** | -0.0232 | -2.4219** | -0.0201 | -2.2432** |
| AGROWTH | -0.0129 | -1.1474 | -0.0053 | -0.2648 | 0.0085 | 0.3401 |
| IND | 0.0262 | 2.4881*** | 0.1417 | 7.6093*** | 0.1708 | 9.4977*** |
| $FINDIST_2$ | n.a | n.a | n.a | n.a | -0.0146 | -0.8271 |
| SGROW | n.a | n.a | n.a | n.a | -0.0196 | -0.7107 |
| $FINDIST_1$ | n.a | n.a | n.a | n.a | -0.0682 | -2.6274*** |
| Ad. $R^2$ | 0.08 | | 0.09 | | 0.11 | |
| N | 1454 | | 1454 | | 1454 | |

*** significant at 1% level ** significant at 5% level * significant at 10% level n.a. not applicable

economies of scale and efficiency improvements arising from synergy effects. On the other hand, foreign investment is more likely for unlisted small firms that have high efficiency. Asset growth is insignificant in all the analyses, revealing that growth is not an important motive for M&As and foreign investment.

Foreign investment determinants are different from those of M&A activity. Foreign investors focus on firm characteristics that reduce the information asymmetry surrounding the firm's environment. The results reveal that FDI is more likely for firms that have high exports, value added, and efficiency. This evidence supports the premise that foreign investors prefer to invest in firms they are familiar with from international markets, their past relationships and export sales (French & Poterba, 2001; Lewis, 1999; Dahlquist & Robertsson, 2001; Huang & Shiu, 2009). Foreign investment is negatively related to size and public ownership. Export sales is a strong driving force in cross-border mergers involving unlisted companies and Greenfield investments. Exports are more important for unlisted firms and substitute for the smaller size of the unlisted firms in reducing the information asymmetry, supporting Kang and Stulz (1997). Export sales become insignificant in cross-border mergers of listed firms, indicating that public ownership increases the familiarity of investors with the firms, and substitutes for the effects of exports. Since there is a positive relationship between the size of the firm and listing on the stock exchange, the significance of exports may have disappeared in the sample of listed firms due to their larger size, as Kang and Stulz (1997) indicate. Similarly, other information asymmetry measures such as profitability and risk are insignificant in the group of listed firms.



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A factor that affects M&A activity but is insignificant in foreign investment is leverage. Leverage is positively related to the total sample of M&As. This shows that highly levered firms which face distress are more likely to be involved in M&As and supports the evidence in the literature (Jensen, 2001; Berkstrom et al., 2005; Buehler et al., 2006; Faccio et al., 2006). M&A activity is a means of reducing financial constraints only for unlisted firms that have limited access to debt and equity markets. As these firms exhaust their debt capacity and need to make use of higher debt capacity of the parent firm and the internal capital market of the acquirer, they tend to be involved in an M&A transaction. The relationship between leverage and M&A activity is negative for listed firms revealing that listing mitigates the relationship between M&As and leverage. However, FDI is not significantly related to leverage in any of the analyses.

FDIs, including cross-border M&As and greenfield investments, are more likely to emerge in R&D intensive industries. This industry-level characteristic is common to all foreign investments, supporting Huang & Shiu (2009).

Greenfield investments have several drivers in common with cross-border M&As of unlisted firms. Export sales, efficiency of asset utilization, value added generated by firms, and R&D intensity of industry are positively related to both cross-border M&As of unlisted firms and greenfield investments. Consequently, foreign investors seem to invest in good performers. Value added, export sales of firms and R&D intensity in the industry are not significant determinants of M&A activity for the sample where domestic acquisitions are included.

FDI modes of entry have different drivers. There are some differences in determinants between cross-border mergers and Greenfield investments. Greenfield investments reveal a strong negative relationship to financial distress and stand-alone risk. There is no significant relationship between corporate risk, financial distress and the likelihood of cross-border M&As. Leverage is insignificant in all FDI regressions.

This study rests on a sample of firms which represents a small (18.5%) portion of listed firms and the data that is disclosed for unlisted firms is not sufficient for a more detailed breakdown of ownership among domestic firms that are group-affiliated and those that are stand-alone firms. The M&A involvement may be studied separately for acquirers and targets, provided that all financial data is available for both groups. The breadth of data employed in the analyses might affect the results, as indicated by Netter et al. (2011).

## Economic Implications of FDI Forms of Entry

Recent researches provide mixed evidence on the economic effects of Greenfield investments and cross-border mergers. Some studies that focus on the relationship between FDI and economic growth find a positive impact of FDI on economic growth (Borensztein et al., 1998; Pain, 2001; Neuhaus, 2006), while others find a negative relationship (Kim, 2009; Mencinger, 2003). Further studies document that cross-border M&As are less beneficial for economic development than entry by setting up new facilities (Mencinger, 2003; Wang & Wong, 2009; Harms & Meon, 2011; Kim, 2009). Foreign acquisitions often transfer domestic ownership and control to foreign hands, accompanied by layoff of employees and the closing down of production activities. Hence FDI through M&As may correspond to lower level of productive investments than the same amount of greenfield investments, or none at all (Harms & Meon, 2011). However, Greenfield investments can be welfare-improving when the technology advance of the investor is higher than the critical value (Kim, 2009). The mixed evidence on the effect of FDI on economic growth results from combining effects of cross-border M&As and greenfield investment,



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which offset each other (Mencinger, 2003). Cross-border M&As often lead to employment loss and can be used to reduce competition. They tend strengthen market power through increasing concentration and lead to anti-competitive results. Greenfield FDI increases the number of firms in existence and does not increase market concentration upon entry. The effects of cross-border M&As on competition can be influenced by policies adopted by the governments of the host countries. With the emergence of global markets for firms, this may require cooperation of authorities at international sphere.

The effect of FDI on total factor productivity is shaped by technology transfers as well as the intensity of the market competition. FDI is expected to increase factor productivity through transfer of technological and managerial knowledge. Some evidence displays that cross-border M&As have higher R&D intensity and positive impact on total factor productivity of the host country in developed countries while greenfield investment has no significant effects (Bertrand et al., 2007, 2012; Ashraf et al., 2014). Ashraf et al. (2014) conclude that restricting M&As in favor of greenfield investments could reduce FDI-related transfers to host countries. Contrary evidence suggests that cross-border M&As are less likely to transfer new or better technologies or skills than greenfield FDI (Liu & Zou, 2008). The authors document that there are inter-industry and intra-industry spillovers from Greenfield investments, but only inter-industry M&A spillovers.

Most of the shortcomings of FDI through M&As as opposed to greenfield FDI relate to effects at entry or soon thereafter. In the longer term, many differences between the impacts of the cross-border M&As and greenfield investments diminish or disappear. Evidence shows that higher cross-border M&As are followed by higher greenfield investments in industrial and developing countries. The subsequent expansion of Greenfield FDI is at least as large as the initial increase in cross-border M&As in developing economies (Calderon et al, 2004). The authors note that, in the long run, cross-border M&As lead to increased investments and manufacturing, which may be followed by technology transfer and increased employment if later investments are made.

## CONCLUDING REMARKS

This empirical study reveals that foreign investors are able to choose high performing firms that have efficiency and value added above the median, supporting the evidence provided in the literature (Grinblatt & Keloharju, 2000; Huang & Shiu, 2009). These advantages may provide stronger credibility to foreigners than to domestic investors and may create favorable signals to minority shareholders and investors in the market regarding the prospects of the firms that foreign investors choose (Huang & Shiu, 2009). The favorable signals may result from a variety of factors such as the ability of foreign investors to pick good performers, the adoption of strong governance systems of the foreign investors by the targets, and the ability of foreign investors to positively influence management of the acquired firm. This signaling effect may be important if the target firm is unlisted and prevails in the asymmetric information environment of an emerging market (Huang & Shiu, 2009). The majority of the investments by foreign investors in the sample were controlling stake acquisitions and Greenfield investments where they were able to exert substantial monitoring, impose changes and make improvements in the governance systems of the corporations and the host country.

The strategic implications of the findings for the management of a firm that aims to attract foreign investors include attempts to increase the production of high value added products in the sales mix, to emphasize efficiency-improving restructuring of assets and operations, to stimulate export sales and



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to increase R&D investments. Investment in human capital seems to be an important factor that will contribute to the accumulation of technological and managerial knowledge and a reduction in the gap between foreign investors and the firms in the host country.

The findings of this study are similar to the existing evidence in terms of the implications for policymakers of the host country. Besides the assurance of the factors that stimulate FDI inflow such as economic stability, level of financial development, tax policies, higher quality of the legal and regulatory environment, economic freedom, and well-functioning markets, governments of the host countries need to work on enhancing the accumulation of technological know-how and human capital in the domestic market to reduce the gap between the foreign investors and targets in the host country. Policymakers should allocate more capital to reach a threshold of human capital, enhance domestic technology by establishing R&D centers to stimulate innovation, and assure free mobility of R&D personnel. For FDI to create technological spillovers and productivity in the host country, innovation in the domestic firms and competitiveness in the market should be encouraged by the policymakers of the host country. As FDI restrictions are liberalized worldwide, these should not be replaced by anti-competitive practices. Efforts to attract FDI should be complemented by policies that restrict anti-competitive practices of cross-border M&As. This requires international cooperation among all countries, including the smaller emerging markets for which competition policy is an important concern.

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## KEY TERMS AND DEFINITIONS

**Cross-Border Mergers:** A cross-border merger is a transaction in which the assets and operations of two firms belonging to or registered in two different countries are combined to establish a new legal entity. The control of assets or operations is transferred from a local to a foreign company, with the former becoming an affiliate of the latter.

**Greenfield Investment:** A form of foreign direct investment where a parent company starts a new venture in a foreign country by constructing new operational facilities. In addition to building new facilities, most parent companies create long-term jobs in the host country by hiring new employees.

**Public Ownership:** This term implies that a portion of a corporation's stock is publicly traded. It can be used synonymously with stock market listing, which is being on the official list of stocks that can be bought or sold on a stock exchange.

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# APPENDIX

## Univariate *t*-Test Result

*Table 12. Industry breakdown of the sample*

| | | **No. of firms** |
|---|---|---|
| Food and Beverage | | 94 |
| Textiles and leather | | 49 |
| Forest Products | | 11 |
| Paper and Paper Products | | 15 |
| Chemicals & Pharmaceuticals | | 63 |
| Chemicals | 13 | |
| Pharmaceuticals | 20 | |
| Petroleum & Plastic Products | 30 | |
| Sand and Stone Products | | 36 |
| Machinery, Equipment, Vehicles | | 158 |
| Vehicles | 39 | |
| Other equipment | 51 | |
| Primary metals | 68 | |
| Other manufacturing (utilities) | | 27 |
| **TOTAL** | | **453** |
| Panel A: | | **No. of Firms** |
| R&D intensive (Chemicals & Pharmaceuticals, Vehicles) | | 102 |
| Others | | 351 |
| **TOTAL** | | **453** |



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*Table 13. t-test results for M&A activity*

| Variable | GROUP | | | *t*-Statistics |
|---|---|---|---|---|
| | Number of Observations Equal =1/Equal =0 | Had M&A Activity | No M&A Activity | |
| ROA | 460/1634 | 0.0829 | 0.0712 | 1.947** |
| VADEMP | 461/1625 | 285, 359 | 144, 688 | 4.204*** |
| EXSALES | 452/1625 | 0.00021 | 0.00024 | -2.814*** |
| TAT | 473/1750 | 1.1183 | 1.5336 | -6.217*** |
| SIZE | 506/1853 | 19.8679 | 19.4339 | 9.811*** |
| EMPLOYEE | 483/1768 | 1575 | 1095 | -5.460*** |

*** significant at 1% level ** significant at 5% level * significant at 10% level

*Table 14. t-test results: Listed and unlisted M&As characteristics*

| Variable | Number of Observations Equal =1/Equal =0 | (1) Listed M&As | (0) Unlisted M&As | t-Statistics |
|---|---|---|---|---|
| LEV | 248/212 | 0.450 | 0.527 | -3.504*** |
| TAT | 250/223 | 1.024 | 1.223 | -3.105*** |
| SIZE | 260/246 | 20.150 | 19.569 | 6.716*** |
| EMPLOYEE | 253/230 | 1892 | 1226 | 3.994*** |
| EQTA ($FINDIST_2$) | 250/221 | 0.545 | 0.472 | -3.504*** |

*** significant at 1% level ** significant at 5% level * significant at 10% level



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# Chapter 75
# Promoting Foreign Direct Investment:
## Corporate Social Responsibility as Signaling Device and Tool for Corporate Governance

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## ABSTRACT

*If audits serve as formidable internal monitoring tools which facilitate corporate governance, and Corporate Social Responsibility has been proven to serve as "an extension of corporate governance", as well as a signaling device, are both tools not instrumental in promoting Foreign Direct Investment? Through an analysis and evaluation of the literature relating to audits and Corporate Social Responsibility, this chapter aims to investigate the above claim and question on how Corporate Social Responsibility, as "an extension of corporate governance", as well as a signaling mechanism, could facilitate and promote Foreign Direct Investment.*

## INTRODUCTION

The role of the emerging and BRICS economies in propelling global growth, as well as determining and forecasting the direction of stock markets, is increasingly becoming apparent. This change in the previous trend which was previously dictated by the state of the United States economy, also presents a source of concern given apparent uncertainty and political tensions between certain leading economies and the United States. In addition to the leading and pivoting role assumed by China, the influence and impact

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of oil prices on stock markets has been witnessed and observed with increased interest since the end of October 2014. The importance of financial disclosure and transparency in leading market economies – particularly for institutional investors has continually and persistently been brought to the fore. Owing to concerns of steep drops in the Dow and persistent uncertainty about the future and not the current state of the United States economy, on the 24th August 2015, a massive sell-out was instigated following a dip of about 1000 points.[1] This being attributed not only to dipping commodities such as oil prices, but primarily in response to observations that prognosis on China's growth was weaker than forecasted, as well as concerns about extent of cover ups about actual state of China's economy.

The vital question remains the extent to which BRICS are able to sustain the expected momentum as propellers of growth and Foreign Direct Investment – at a global level - as merely opposed to a regional level. Furthermore, was the massive sell out which followed in response to the Dow's loss, an over-reaction to China's stock market figures and the fact that expected prognosis about growth, particularly within China's manufacturing sector, may not be as robust as initially anticipated? Or is a combination of other factors such as uncertainty over the hike in interest rates by the Fed Reserve, as well as policy responses by other central banks attributable to the panic?

Is a slow down or bust period approaching in China or the BRICS economies – particularly having experienced a boom cycle whereby China was able to resist the pressures encountered by many other advanced economies following the Financial Crisis of 2008? Such bust cycle periods having been evidenced in the Asian Financial Crisis of 1997 and then a decade later when the 2008 Global Financial Crisis was preceded by a boom period in the housing markets?

This chapter aims to contribute to the literature on how Corporate Social Responsibility, as "an extension of corporate governance" (Sacconi, 2004:6), as well as a signaling mechanism (Goyal, 2006:4), can facilitate and promote Foreign Direct Investment.

## Background and Literature Review

In addition to UNCTAD reports following post 2012 decline – with inflows rising 9 per cent in 2013, to $1.45 trillion, and projections, that FDI flows could rise to $1.6 trillion in 2014, $1.7 trillion in 2015 and $1.8 trillion in 2016, with relatively larger increases in developed countries, the following key observations were also made (UNCTAD, 2014):

- FDI flows to developed countries increased by 9 per cent to $566 billion, leaving them at 39 per cent of global flows, while those to developing economies reached a new high of $778 billion, or 54 per cent of the total.
- FDI outflows from developing countries also reaching record levels with developing and transition economies together investing $553 billion, or 39 per cent of global FDI outflows, compared with only 12 per cent at the beginning of the 2000s.
- Megaregional groupings' impact on global FDI – with Asia-Pacific Economic Cooperation (APEC) remaining the largest regional economic cooperation grouping, with 54 per cent of global inflows.
- The poorest countries are becoming less and less dependent on extractive industry investment and natural resources – with manufacturing and services now make up about 90 per cent of the value of announced projects both in Africa and in LDCs.



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The highlighted observations (above) can be contrasted with the following observations provided by Goyal (2006:2):

*The economic size and potential growth of a developing country are the major determinants of the foreign capital it attracts. There is intense competition to attract FDI. Liberalization, incentives such as lower tax rates, and investment targeting are among the measures governments are taking. After the East Asian crisis, FDI has been recognized as a more stable component of foreign inflows. But the developing country share of FDI has never recovered its peak share of 44% reached in 1997, and aggregate FDI has continued to be below the dollar 1.4 trillion reached in 2000. However, UNCTAD, based on its surveys, expects FDI to rise again in 2004 and a renewed surge to follow in the next few years, especially in the services sector. There are signs that this is materializing.*

According to 2014 UNCTAD data and figures, at regional level (UNCTAD, 2014):

- FDI inflows to Africa rose by 4 per cent to $57 billion, driven by international and regional market-seeking and infrastructure investments with expectations for sustained growth of an emerging middle class being cited as contributory factors in the attraction of FDI in consumer-oriented industries: including food, IT, tourism, finance and retail. The overall increase was driven by the Eastern and Southern African sub-regions, as others saw falling investments. In Southern Africa flows almost doubled to $13 billion, mainly due to record-high flows to South Africa and Mozambique. In both countries, infrastructure was the main attraction, with investments in the gas sector in Mozambique also playing a role. In East Africa, FDI increased by 15 per cent to $6.2 billion as a result of rising flows to Ethiopia and Kenya. Kenya is becoming a favored business hub, not only for oil and gas exploration but also for manufacturing and transport. Intra-African investments are increasing, led by South African, Kenyan, and Nigerian TNCs.
- With total FDI inflows of $426 billion in 2013, developing Asia accounted for nearly 30 per cent of the global total and remained the world's number one recipient region. Whilst FDI inflows to East Asia is reported to have risen by 2 per cent to $221 billion, inflows to South-East Asia is also recorded to have increased by 7 per cent to $125 billion. Inflows to South Asia rose by 10 per cent to $36 billion in 2013 - the largest recipient of FDI in the sub region, being India. Most notable are reports of FDI flows to West Asia having decreased in 2013 by 9 per cent to $44 billion – with failure to recover for the fifth consecutive year.
- Elsewhere, uneven growth in FDI was reported for Latin America and the Caribbean. Whilst flows to Central America and the Caribbean (excluding offshore financial centers) are reported to have increased by 64 per cent to $49 billion, and FDI outflows from Latin America and the Caribbean (excluding offshore financial centers) are reported to have declined by 31 per cent to $33 billion, a slight decline was reported in relation to Brazil - a slight decline by 2 per cent, despite a reported 86 per cent increase in flows to the primary sector. FDI in Chile and Argentina are also reported to have declined by 29 per cent and 25 per cent to $20 billion and $9 billion, respectively, due to lower inflows in the mining sector. [2]



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Further evidence of persistent regional tensions and political uncertainties as being contributory to holding back investors – even though differences are reported between countries (UNCTAD, 2014:xx) are currently being witnessed in recent news and stock market reports – impacted by declining oil prices and the difficulties encountered by BRICS in sustaining the forecasted acceleration of growth.

Timokhina (n.d.)h ighlights the role and vital importance assumed by BRICS - as well as the resilience of China through the recent global financial economic crisis:

*Brazil, Russia, India, China and South Africa – so-called BRICS countries became significant capital exporters in the last 20 years. Abbreviation "BRIC" appeared in 2001, when it was suggested that by 2050 aggregate GDP of these countries will exceed the corresponding indicator of the developed economies, and South Africa joined the group in 2011.*

China's strategic role – not only as a vital propeller and accelerator of global growth, but also its influence in its "economic role to promote Africa's development" is highlighted (Timokhina, n.d.).

Goyal (2006) argues that CSR works as a form of signaling and that since it reduces the returns from non-cooperative strategies it implements an efficient equilibrium.[3] In capital markets where so much uncertainty and asymmetric information is involved, reliable signaling mechanisms in the form of audits also serve as vital corporate governance mechanisms.

## ISSUES, CONTROVERSIES, PROBLEMS

### The Significance and Impact of Reliable Signaling Mechanisms in Capital and Stock Market Economies

Recent stock market crashes end of August 2015[4] at the New York Stock Exchange, are not only indicative of panic and loss of investor confidence, but also a huge degree of uncertainty hovering over the markets. Amidst very high volume trading on the NYSE and explanations of a possible market correction, the consolation that trading markets worldwide were also affected by the crash in China's stock markets, and based on the dynamics which were in operation with major Financial Crises in the two previous decades, it was concluded and predicted that a rebound in the stock markets would take place.

A rebound in the stock markets did take place – however temporarily. Even though the NYSE closed on the 24th August 2015 with a loss of 588 points, following an initially devastating drop to 1000 points in the first few minutes of the opening bell, there was a temporary rebound the following day. Following a move by the Chinese central bank to lower interest rates, a measure prompted by the stock market crash, following the "Black Monday" in China, stocks in Wall Street and other major stock markets temporarily rebounded as evidenced from data generated across global stock markets. However the Dow ended the day, 25th August 2015, with a loss of 205 points. Based on the previous trading figures from the previous five days,[5] an aggregate loss of 1850 points was recorded and a 3000 point drop in three months from the all-time high which was registered on the 19th May 2015.

Issues impacting loss of investor confidence in the Chinese stock markets can certainly be attributed to the lack of transparency in the markets, uncertainty, the reliability of accounting data emanating from the markets and consequently, how to adequately price shares and stocks. Even though the "stock market correction" which occurred on the 24th August 2015 in the NYSE was considered by many analysts and



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some investors as an inevitable and anticipated event which was also widely considered necessary within the NYSE, the massive sell off, panic, and surprise – even to traders, could also be explained by the differences in operating dynamics when compared with the 1997 Asian Financial Crisis and the 2008 Global Financial Crisis. In comparison to the 2008 Financial Crisis where financial structural issues within the banking system and regulatory issues were contributory, massive regulatory reforms have been operating since then to bolster Tier One capital as well as other measures implemented following Basel III reforms. The extent of the surprise could also partially be explained by the fact that the Chinese economy, in contrast to its counterparts and other leading economies, had maintained resilience through the 2008 Financial Crisis – having weathered the storms and turbulence of the recent Financial Crisis which culminated in September 2008.

The uncertainty of data emanating from China was not the only factor which was contributory to the Dow's plunge. As highlighted, falling commodity prices in oil, as well as uncertainty surrounding interest rate hikes, all played a role in the massive stock market sell off in the week beginning 24th August. This happening despite the fact that the build up to China's slow down had been evident for months. Such expectancy is also reflected in the distinction between the fundamentals of the US economy and present occurrences in Wall Street.

The current reasonably healthy state of the United States economy – as evidenced by relatively low unemployment rates, low interest rates, lower household debt was highlighted.

Even though uncertainty currently hovers over global stock markets, it is argued by many analysts that there should be no cause for concerns – particularly based on results from previous stock market crashes and financial crises. Whether the present situation will draw similar and comparable repercussions remains to be seen. Present concerns are certainly justified – not only given the slow-down in the BRICS anticipated growth – and the consequent big worries emanating from these emerging markets, but also worries over oil and oil exporting countries. Oil was not the only commodity affected in the Dow's plunge, but also other commodities such as gold and silver – so-called safe haven for investors. Certainly China's role as a major player and its impact and 15% assumption of the world economy, places global markets in a very vulnerable and volatile situation where its economy is affected – as demonstrated by recent events. The dynamics have certainly changed over the years. Policy responses by major economies will certainly play crucial roles in addressing the present stock market uncertainties.

The present situation with global financial markets is further compounded by the fact that many governments cannot lower interest rates than the present levels. Hopefully the worst fears surrounding the extent of the slow-down in the emerging economies will not materialize. Is the market melt-down over yet? Can the emerging economies sustain their expected momentum? It will be interesting to see what unfolds in the months to come – particularly the policy response of the Fed Reserve in September 2015. Whilst the United States economic fundamentals remain solid – or relatively robust, and the high likelihood that Federal Reserve will not raise interest rates in September 2015 persists,[6] policy responses from leading economies still justify the concerns and volatile reactions in the markets.

Maybe the recent events[7] at Wall Street and the "correction" may be just what is needed to bring many investors, analysts, and traders to the reality of what should be expected and be better prepared to deal with asset bubbles.



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## SOLUTIONS AND RECOMMENDATIONS

As highlighted by Ojo (n.d.), the crucial factors fueling panics and sudden crashes, frequently boils down to information asymmetries, extent of uncertainty, and lack of transparency and disclosure of vital financial data. Improving Foreign Direct Investment, will therefore require increased transparency, disclosure of financial information and data as a means of addressing information asymmetries between the principal and the agent. Further, with broader stakeholders who fall within the scope and ambit of the stakeholder theory, such asymmetries can be mitigated as proposed by Sacconi (2004) under his model of Corporate Social Responsibility as a tool of extended corporate governance.

According to Sacconi (2004:6), corporate social responsibility can be defined as:

*a model of extended corporate governance whereby those in control of the firm have responsibilities that range from the fulfillment of their fiduciary duties owed towards the owners (principal) to the fulfillment of analogous fiduciary duties owed towards all the firm's stakeholders."*

The engagement of stakeholders as proposed under the model, as well as

*the engagement of stakeholders at appropriate stages, as well as the incorporation of applicable and most suitable forms of rules during such phases of the mediation process between agents and stakeholders, such that flexibility is facilitated in the process to allow for contingencies whilst also compelling effective enforcement and compliance mechanisms, corporate social responsibility should be fostered through the outcomes emanating from better, focused planning, control, decision making, as well as more effective accountability, compliance and enforcement mechanisms, (Ojo, 2016)*

would considerably address information asymmetries between the principal and investors – whether such investors fall within the scope of the traditional principal agent theory or whether they fall under the broader stakeholder theory.

## FUTURE RESEARCH DIRECTIONS

In order to address information asymmetries which contribute to considerable uncertainty, lack of transparency and disclosure in financial markets, considerable measures are being undertaken to enhance audit quality – particularly aspects relating to the provision of certain categories of non-audit services, pursuant to the Sarbanes Oxley Act – which was implemented in 2002, in the aftermath of Enron. The provision of such categories of non-audit services by audit firms, being considered to impair auditors' independence and objectivity. However it has also been argued that the provision of non-audit services by audit firms contributes to knowledge spill overs which are acquired where an audit firm has acquired certain knowledge and skills – as a result of the provision of such non audit services and that such spillovers result in savings and cost reductions which would not otherwise be acquired by engaging a different audit firm. The engagement of a different firm implying that more costs would be employed in such a firm's acquisition of new knowledge. It is therefore also argued that greater focus should revolve around the proportion of non-audit fees generated by an audit firm – in relation to the audit fees earned.



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Where such a proportion of non-audit fees in relation to audit fees is considerably high, then it can reasonably be inferred that undue reliance is being placed by the audit firm on its client and hence, greater likelihood that the audit firm's objectivity and independence is likely to be compromised.

In addition to above arguments, and lack of concrete empirical data and research to support the claims that the provision of non-audit services by an audit firm, are detrimental to the extent that such firm's objectivity and independence are compromised, a focus on audit quality has been propounded.

Similar arguments which apply to the provision of non-audit services can be related to another factor which is considered to affect and impair auditors' independence and objectivity, namely, mandatory rotation of audit firms. Whilst a failure to rotate its auditors within an acceptable and stipulated time period is attributable to many corporate collapses, as well as facilitating an environment where creative accounting practices which distort the reliability and relevance of accounting information are practised, it is also argued that an appropriate balance needs to be struck such that auditors are not so frequently rotated that knowledge has to be re-learned by new audit firm – to the detriment and cost disadvantage of the client corporate firm. Whilst ten years, appears to be a growing consensus for the period of mandatory audit rotation, particularly in Europe, other jurisdictions are not of the same opinion.

In various jurisdictions such as South Africa and Malaysia, partial mandatory audit firm rotation is considered a more flexible and feasible option.

As a result of the need for consensus, on a global level, in matters relating to factors which impair audit objectivity and independence, particularly the issue of mandatory audit firm rotation, such factors also contributing to audit quality and the relevance, accuracy and reliability of accounting information generated through financial statements, further efforts aimed at arriving on such a global consensus are required.

## CONCLUSION

Whilst lack of transparency, disclosure of financial and accounting information have been proven to contribute to information asymmetries, uncertainty and panics in financial markets, it also needs to be highlighted that accuracy, reliability and relevance of accounting information is of paramount importance – such that this vital information can be reasonably relied upon by investors.

For these reasons, the focus on audit quality, as well as the importance of audits as vital signaling mechanisms, continue to constitute significant areas – both in terms of Corporate Social Responsibility, as well as factors which determine and influence Foreign Direct Investment in matters of uncertainty and forecasted growth in financial global markets.

As highlighted under the literature review, maybe the recent events at Wall Street and the "correction" may be just what is needed to bring many investors, analysts, and traders to the reality of what should be expected and be better prepared to deal with asset bubbles. It is certainly the case that a great deal of uncertainty persists as regards the actual pace of economic growth in emerging economies, as well as the degree of reliability to be placed on financial data and accounting information in certain economies.

Recent events in global financial markets – particularly with January 2016 heralding a very volatile start to the year, indicate that issues relating to doubts and uncertainty surrounding financial information and the actual pace of global growth are not just temporary one-off events. With the Dow having plunged by more than 300 points to -364.8 during the second week of January 2016[8] – and with all three major indices (the Dow Industrial, S& P 500 and NASDAQ) going into correction zones – and the S&P 500



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reaching its lowest level since September 2015, the volatility resonating around and within financial markets is certainly not solely restricted to the United States, but also to other major European. Asian financial markets and other leading economies, who have witnessed plunges during the first months of 2016.

The falling oil prices - as well as the response undertaken by OPEC and oil cartels, China's growth and that of other emerging economies, certainly constitute vital areas of attention during 2016. So is the response undertaken in the areas of monetary policy – and also measures aimed at bolstering audit quality and facilitating financial transparency and disclosure.

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## ENDNOTES

1. A plunge of about 1078 points (-1078) at the beginning of the day – which ended with a recovery of about 700 points by the end of the day.
2. "Flows to Peru also decreased, by 17 per cent to $10 billion. In contrast, FDI flows to Colombia increased by 8 per cent to $17 billion, largely due to cross-border M&As in the electricity and banking industries." See ibid at page xx
3. A Goyal (2006), "Corporate Social Responsibility as a Signaling Device for Foreign Direct Investment", at page 4
   It is also added that "CSR may serve as a credible signal of a firm's type. Although the country prefers the cooperative strategy it opts for the non-cooperative one if that is the dominating strategy for the firm, but signaling expenditure can change the payoffs to the firm, so that cooperation becomes its dominant strategy. This binding to cooperation makes the efficient equilibrium possible. The accommodating firm has the capacity to design credible signals of its type if it has a longer-term commitment to a business plan, since it is then willing to amortize its signaling expenditure over a longer period." Ibid at page 6
4. 24th August 2015
5. With losses of 163, 358, 531, 588 and 205 points



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6 On the 31st August 2015, Dow capped worst month in five years – dropping 15 points that day to end August with the worst monthly percentage since 2010. In August 2015, Dow lost 6+% of its value. The following day, the 1st September 2015, China's worst manufacturing results in 3 years sent Dow plunging down at 400+ points (-467) amidst revelation of reports. On the 17th September, interest rates were retained unchanged by the Federal Reserve. Fed Reserve said that rates would remain near zero because present global developments may restrain economic activity.

7 As of the 7th January 2016, shares experienced steep plunges and dives following a continuation of incidents attributed to a slowdown of China's economy – as well as plunging oil prices which reached their lowest levels in 12 years. Following announcements by Chinese regulators that they would "pull the plug on circuit breakers" which had been implemented seven days before, US investors were engaged in massive sell offs which were also triggered by the fear of resulting losses which could occur if swift action to sell was not undertaken before stocks stopped trading. The Dow and shares on the NYSE not only witnessed a 2.4% drop – but also impacts of the global slowdown – which were experienced in other major financial markets around the world.

8 The 13th January 2016

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# Chapter 76
# Role of Institutional Owners in Devising Firms' Risk-Taking Behavior:
## Evidence From a Developing Economy

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## ABSTRACT

*Role of institutional owners is becoming vital regarding strategic decision making in modern day business corporations. Financial institutions are capable to monitor the empowered company insiders and to regulate the capital market positioning of firms due to their specialized expertise and low cost of monitoring the managers. This article is an attempt to investigate the role of institutional owners on firms' risk-taking behavior in an emerging market. By using the sample of 58 non-financial firms listed at Karachi Stock Exchane-100 (KSE-100) index for a period of 2010 to 2017, these results revealed that institutional ownership can influence firms risk taking decisions. This influence depends on type of institutional ownership; passive owners play negative role in risk taking while active owners play a positive role in risk taking. Size of institutional ownership does not matter in risk taking.*

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## 1. INTRODUCTION

Failure of some giant corporations such as WorldCom, Enron, Anderson Global Crossing, Etoys, Merrill Lynch created awareness among investors and corporate regulators regarding the ethical collapse of organizations. These corporate failures astounded the world by their plethora of unethical and unlawful activities and ignited discussions about governance issues in business firms. These corporate failures are attributed to malpractices such as dubious accounting standards, conflict of interest, lucrative compensation management, deceitful operations, power abuses, raw directors, unequal voting rights and free rider problems (Afza & Nazir, 2015). This vulnerability damages economic system and undermine investors return significantly. Moreover, the global financial crisis of 2007-2009 also highlighted several flaws in governance mechanisms regulating the business firms in developed and emerging economics (Akbar et al., 2017).

Corporate governance has a significant impact on strategic business decisions like external financing, risk bearing policies and investment portfolios (Huang et al., 2016; Srivastav & Hagendroff, 2016). Some core ingredients of corporate governance are: responsibilities of board and managers, transparent conduct and accountability, information flow, regulatory and legal environment, and authentic risk management parameters. Implementation of corporate governance is a real task because having rules and regulations is not enough, but implementation is the real milestone to be attained. The amalgam of ethical and legal mechanism to guarantee the business probity proves to be the best remedy of corporate dilemmas. Application of such mechanism comes in various forms of conflicts named as agency conflicts, evoked by (Berle & Means, 1932). Berle and Means (1932) provided evidence to portray such conflicts which are rooted in separation of ownership and control, further refined by Jensen and Meckling (1976) into Agency Theory. These conflicts can arise among shareholders and managers, minority shareholders and large shareholders, managers and debt holders as well so they can be of any nature.

Corporate risk-taking has been a topic of research since last many decades and it is a well-recognized issue. As investors take a high risk to earn more profits, whereas this same kind of trade-off exists at firm level. Managers should invest in those projects which have high idiosyncratic risk to maximize the shareholders wealth in corroboration of "High risk - High return", but reality is very different where managers are hesitant to invest in risky projects to safeguard their personal interests and their risk averse nature (Fama, 1980). Shareholders have options to diversify away the firm specific risk, but managers do not want that, and they even gave up risky but rewarding projects due to their conservative underinvestment approach. The first preference of the managers is their personal wellbeing as compared to the firm profits, continuing with this behavior, their decision-making is in personal favor by lowering down the firm's risk profile and also decreasing shareholders wealth (May, 1995; Holmstrom, 1999). According to Bertrand and Mullainathan (2003) whenever there is an opportunity to take risk, managers always go for less risk. On the similar lines, Amihud and Lev (1981) purposed that sometimes managers support unrelated mergers to lower the risk related to human capital, but such mergers are precarious for corporate health and devastate shareholders wealth.

However, In the corporate governance context ownership structure plays a vital role in shaping up risk-taking behavior of firms. It is an effective mechanism to monitor the risk-taking decisions of the firms and help in reducing agency conflicts between managers and shareholders (Barbosa & Louri, 2002). According to agency theory, managers are conventionally risk-averse, and they prefer their job security over not opting for risky but rewarding projects leading to underinvestment (Akbar et al., 2017). Presence of institutional shareholders with large equity stakes can be a powerful source to constrain detrimental



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risk-taking. Shleifer and Vishny (1986) proposed that large institutional blockholders have an opportunity to monitor the managerial activities and influence their decisions with respect to undertaking risky but rewarding projects. Similarly, Jarrell and Poulsen (1987) reported that sophisticated and well-informed institutional investors owners can vote in favor of their economic interests as compared to less informed shareholders who follow managers (active monitoring hypothesis vs. passive voting hypothesis). Moreover, Holderness and Sheehan (1988) narrated that blockholders and institutional investors promote shareholders driven business strategies and have influential power to enhance firm performance. While according to Eling and Marek (2012), high level of monitoring, increased compensation and more blockholders are negatively associated with risk-taking. Moreover, the active role played by financial institutions also add value in firm decision making as financial institutions provide managerial and skill resources to the firm by their active participation in board meetings. In this context, Cheng et al. (2011) also found a significant relationship between institutional ownership and risk-taking of insurance firms. Institutional shareholders having greater proportion can better monitor managers and restrain mangers to protect their own personal benefits (Brickley et.al, 1988). Some institutional owners are active and vigilantly favor the shareholders' interests as they can influence managers directly by voting power and indirectly by trading of shares in capital markets (Baysinger et al., 1991; Bushee & Noe, 2000; Wahal & McConnell, 2000; Navissi & Naiker, 2006; Afza & Nazir, 2015). But passive institutional shareholders might have a strategic alliance with insiders and they vote in favor of managers by setting aside the interests of true owners (Gillan & Starks, 2000; 2003; 2007). The above discussion highlights the existing evidence that institutional ownership might influence the level of risk-taking behavior of firms. As per the authors' best knowledge, little attention has been given to this area of study in the context of Pakistan. As the number of institutional owners is increasing day by day their role in corporate decision making cannot be ignored, hence, this article can be considered pioneer in its nature to investigate the impact of institutional ownership on the risk-taking behaviors of firms in Pakistan, which focuses on size and type of institutional owners. The significant contribution of this paper is to highlight the role of institutional investors in devising the risk-taking behavior of the non-financial firms listed on Pakistan Stock Exchange. In addition, by categorizing the institutional investor in the active and passive investors, we tried to investigate that whether the degree of influence is dependent on the type (passive and active) and the proportion of the institutional investors. Hence, this paper is unique in this perspective aimed at to investigate to find out effect of ownership proportion held by institutional owners and to figure the interactive effect of type and proportion of institutional ownership on risk-taking of Pakistani firms.

## 2. LITERATURE REVIEW

Fama and Jensen (1983) developed agency theory to answer the issues raised by Berle and Means (1932) and Jensen and Meckling (1976). The theory focused on contracting environment of the organizations because the organization is a nexus of written and non-written contracts. This theory focused on the decision processes, allocation of residuals claim and devices to control agency conflict which is borne by separation of ownership and control. They purposed two complementary hypotheses regarding decision management (commencement and execution) and decision control (approval and monitoring). Due to this separation of ownership and control in business firms, the conflict of interests arises between managers and shareholders due to different objectives. Managers want perquisites from their job, whereas shareholders need appropriate rate of return on their invested capital (Nazir, 2016). The literature on



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corporate governance proposes that these diverged interests can be converted by the implementing the effective corporate governance system in the organizations either through incentive alignment or effective monitoring (Jensen & Meckling, 1976; Hubbard & Palia, 1999; Dalton et al., 2003).

Under the incentive alignment hypotheses of agency theory framework, many earlier researchers have cited corporate managers as risk-averse because of employment and reputational risks, and firms do offer their managers compensation plans to align their interests with those of shareholders (Jensen & Meckling, 1976; Fama, 1980), which motivate their managers to undertake risky but rewarding projects to increase the corporate value (Jensen & Murphy, 1990; Baysinger & Hoskisson, 1990). However, the literature has also documented that these large and attractive financial compensation packages also led the mangers to focus on short term personal objectives on the cost of long term value goals and to undertake unnecessary risk and overinvestment which was considered as the one the sources of global financial crisis of 2008 (Kirkpatrick, 2009; Pathan, 2009; Minton et al., 2014). Hence, certain other monitoring governance mechanism could be more appropriate, such as internal board structures or external monitoring by financial institutions and blockholders, in pursuing the manager to undertake optimal risk-taking for increasing corporate value in long term (Staikouras et al., 2007; De Andres & Vallelado, 2008; Belghitar & Clark, 2015).

With respect to efficient monitoring hypothesis by external shareholders, it has been argued that "Bigger is always better" (Afza & Nazir, 2015). In this context, diversified large investors and risk-taking attitude, Gorden (2010, p. 4) narrated "Competitors of the failed firm may do better; suppliers to the failed firm may do worse, but the consequences are 'unbiased.' If all firms are taking good bets, however, then on average the diversified investor will be better off." As institutional investors are large shareholders and they can diversify their risk by investing in different stocks, their anticipation about greater future returns induces them to motivate corporate managers to prefer more risk which enhances corporate risk taking (Pathan, 2009). Moreover, according to Shleifer and Vishney (1986), large institutional shareholders propose a tender offer to replace incumbent management. They also suggest that the tender offer is not the only way to improve performance, but mechanism "Jaw Boning" i.e. negotiations with the management to replace policy can also be used. Finally, they revealed that large shareholders prefer dividends over capital gains due to tax deductions while small shareholders favor capital gains which induce managers to take long term projects instead of short term speculation.

In addition, it has been argued in literature that financial institutions need to show the return performance to their shareholder. This pressure of short term performance induces them to motivate the corporate managers of their investee firms to take risky projects (Baysinger et al., 1991; Aquilera et al., 2007). Financial institutional investors are inclined to immediate short term returns such as maintenance of short term competitiveness, or by mergers and acquisitions instead of considering the long-term value associated with investing decisions (Graves, 1988). They may persuade managers to risk taking by their proxy voting, as they have a large stake in the organization (Johnson et al., 2010; Callen & Fang, 2013).

Considering the risk averse behavior of manager as reported by Jensen and Meckling (1976), Subramaniam et al. (2009) argued that without the efficient monitoring, the managers might reject risky but rewarding projects to avoid their employment risk, however, such projects could be beneficial to long term value of the company. They further narrated that institutional investors should encourage decision makers to undertake all the business ventures which are providing the firms with positive cash flows despite of the chances of their likely failures. In this context, Agrawal and Mandelker (1990) conducted a study to explore the two alternate hypotheses related to institutional investment in firms, namely, "active monitoring hypothesis" and "passive voting hypothesis". They suggested that the presence of



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active institutional owners (active monitoring hypothesis) positively affect the stock returns when anti-takeover amendments are presented whereas passive institutional owners (passive voting hypothesis) and managerial equity have no relation with stock price variations.

Moreover, Cheng et al. (2011) conducted a study to explore the relationship of institutional ownership, managerial ownership and risk-taking in the insurance sector. The results highlighted that stable institutional ownership directs toward lower investment and underwriting risk while the presence of active institutional owners reduces total risk and increase systematic risk. In addition, Deng et al. (2007) studied the role of institutional owners in risk-taking activities of bank holding companies and argued that diversification is an instrument which is used by institutional owners to reduce risk taking of bank holding companies. Contrary to earlier studies, they considered both proportion and stability of institutional ownership to explore their monitoring effects on managers and influence on risk-taking decisions through diversification. Hence, their overall results reported that the institutional owners with a larger equity stake for longer periods are in the better position to scan mangers decisions and can support diversified investments to undertake optimal risk taking by the sample firms.

There has been a tremendous increase in number of institutional investors over the last decade with the growth of investment companies and establishment of treasury departments within commercial banks in Pakistan, where institutional investors ownership increased from 5.94% in 2005 to 32.09% in 2015 (Nazir, 2013). Therefore, firms cannot ignore their presence and monitoring role which making any short or long term strategic investment decisions (Hutchinston et al., 2015) which is also providing rationale for the present study to investigate the role of institutional ownership in corporate risk-taking. Keeping in view the above discussed literature, the idea of the present research study is twofold; whether size of institutional investors is affecting the level of risk-taking by the firm; and how the type of institutional investors (i.e. active/passive institutional investors) effect this risk-taking behavior of firms in Pakistan.

## 3. METHODOLOGY

Population of the study is listed firms on Pakistan Stock Exchange (PSX), (formerly Karachi Stock Exchange, KSE) and indexed in Karachi Stock Exchange-100 (KSE-100) index for a period of 2010 to 2017. Out of 100 companies of KSE-100 index, 42 companies are disqualified from the preliminary sample as they either belong to the financial sector, which does not fall under the scope of the study due to different reporting structure in Pakistan or excluded due to the unavailability of data required for this analysis. Final sample is restricted to 464 firm-year observations representing 58 firms for eight years. Data is collected from multiple sources. Ownership and other financial variables are collected from the published annual reports. Daily stock prices of the firms are taken from the daily quotations from PSX (www.psx.com.pk) whereas KSE-100 index values are retrieved from Vital Information Service investor database (www.jcrvis.com.pk).

This research aims to find out the impact of size and type of institutional ownership on corporate risk-taking. Following the literature, this study proxies risk by both market measures and balance sheet/accounting measures of risk-taking. To measure risk, we took five risk measures:

- Total Risk (TR)
- Systematic Risk (SYSR)
- Idiosyncratic Risk (IDOR)



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- Earnings Volatility (σROA)
- Z-Score

Total risk (TR) is measured by annual standard deviation of daily stock returns with a maximum 248 days and minimum 30 days in a year following the study of Pathan (2009). As we assumed stock price reflects the activities of the firm so volatility in stock prices represent the risk taken by firms. It is most popular proxy of total risk adopted by firms, confirmed from many prior studies (Nguyen, 2012; Knof & Teal, 1996). In addition, systematic risk (SYSR) is measured by beta coefficient of single index market model by using KSE 100 index daily returns and daily stock returns of particularly company. Anderson and Fraser (2000) and Gadhoum and Aydi (2003) also employed single index market model to calculate the systematic and firm specific risk. The two-factor market model could also be used, but in that there is a problem of the autocorrelation and the possibility of the relationship between interest rate changes and market return changes. Although such relation between interest rate and market returns can be neutralized by orthogonalization (i.e. E(Yit, Xit) = 0) (Chance & Lane, 1980) but it also reports some biasness (Kane & Unal, 1988). Hence, we go for the simple single index model because there is no significant difference in results (Anderson & Fraser, 2000). The single factor market model is:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

where *i* and *t* denotes the firm and time respectively $R_{it}$ is equity return of firm and $R_{mt}$ is the return on KSE-100 market index. The α is the intercept term, β is systematic risk and related to movement in market factors. It underlies economic and financial conditions of a particular industry and shows sensitivity of firm stock in relation to the market and can be proxied for perception of investors about a firm stock. Idiosyncratic/ firm specific (IDOR) risk is measured by the standard deviation of residuals of above mentioned single index model, consistent with numerous previous studies (Anderson & Fraser, 2000; Pathan, 2009).

Moreover, balance sheet measures of risk are also considered because it gives insight regarding internal risk of the firm and study has used earnings volatility and Z-score as balance sheet measures of risk. Following Laeven and Levine (2009), earnings volatility is calculated by standard deviation of Returns on Assets (ROA). Earnings volatility can be also used to check out the earnings smoothing and fair practices of managers in the presence of disclosure requirements. Moreover, Z-score is a composite measure of risk of firm's insolvency as proposed by Roy (1952) and used by other researchers (Laeven & Levine, 2009; Houston et al., 2010; Vyas, 2011). It is situation when losses are more than profits and firm is not able to pay its debt. It shows that how stable the firm is, high value of Z-score indicates more stability and less risk. It is calculated as:

$$Z - Score = \left(ROA + CAR\right) / \sigma ROA$$

In case of financial institutional ownership, we consider two dimensions. Firstly, the fraction of shares held by institutions as (IOS) measured by the number of shares held by financial institutions divided by the total outstanding shares and, secondly type of institutional ownership (IOTYP) which is either active and or passive institutions because both these types separately affect risk taking of firm. Active intuitional shareholders are those which have a nominee director on the board in which they have their



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ownership stake whereas other financial institutions are passive if they just have invested and staying behind the wall (Navassi & Naiker, 2006). If a firm has active institutional owners, it holds a value of 1 and 0 otherwise. We also employed five control variables namely size, liquidity, leverage, Tobin's Q, and profitability to control the impact of firm-specific factors other than institutional shareholdings on corporate risk-taking behavior. The econometric form of the model is:

$$RISK_{it} = \alpha_1 + \alpha_2 IOTYP_{it} + \beta_1 IOS_{it} + \beta_2 (IOS_{it} * IOTYP_{it}) + \beta_3 Size_{it} + \beta_4 LIQ_{it} + \beta_5 LEV_{it} + \beta_6 \text{ Tobin's } Q_{it} + \beta_7 PROF_{it} + \varepsilon_{it}$$

where:

i = 1, 2, 3……58 (it is cross sectional identifier)
t = time-series identifier from period 2010 to 2017)
RISK = risk is taken as total risk (TR), Systematic risk (SYSR) and Idiosyncratic risk (IDOR) forms (market measures) and volatility of earnings by Standard deviation of ROA (accounting measure). Z-score is a composite measure of risk
IOS = institutional Ownership; it is divided in two dimensions: one % of shares held (IOS) and second type of institutional owners (IOTYP)
Tobin's Q =is growth opportunity and measured by Market Value of equity + debt/total assets
Size = Firm Size measured by log of total assets
LIQ = Liquidity measured by ratio of current assets and current liabilities
LEV = leverage measured by ratio of debt and total assets
PROF = profitability of the firm taken by ROA

Keeping the pooled time series characteristics of present study data where we have 464 firm year observation for 58 firms over eight years, we have used panel regression analysis to check whether ownership variables cause cross sectional variation in risk over time. As our data is pooled over different cross sections of business firms and has different time series, the best estimation technique is to use panel data models (Hsiao et al., 1999). The model discussed in Eq. (i) can be estimated by Ordinary Least Square (OLS) as well as Generalized Least Square (GLS). OLS is a best linear unbiased estimate for fixed effects models, while GLS is the best linear unbiased linear estimates for random effects models. In fixed effects models, it is assumed that the intercept term of the model is invariant, and it does not vary over time whereas this is not an assumption in random effects models (Gujarati, 2003). Moreover, to choose for the best model between REM and FEM for the present study, we employed Hausman specification test.

## 4. ANALYSIS AND DISCUSSION

Table 1 reports the descriptive statistics for the sample 58 non-financial firms listed on the Pakistan Stock Exchange (KSE) for the period of 2010 to 2017 for the study variables. The mean value of value of total risk is 4.2% per annum whereas the mean of idiosyncratic risk is also 4.2%, however systematic risk is greater than firm specific risk. Systematic risk is averaged at 0.79, but dispersion in total and idiosyncratic risk is more than market risk. The total risk level in Pakistani non-financial firms is quite



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less than other economies as reported by Nguyen (2011). Conversely, total risk in US firms is less than Pakistani firms which is 2.13% (Anderson & Fraser, 2000). The average volatility in balance sheet earnings is 3.8% which is less than market risk. The mean (median) value of Z-score is 3.775 (15.80) with a minimum of -1.42 and maximum value of 4059.35. There are significant changes in risk levels (measured by different formulas) over the study period. Results reported in Table 2 show the significance of joint effect of years and industry on different risk measures and outlay that risk level changes from year to year and industry to industry.

With respect to financial institutional ownership in the sample firms, the average level of equity stake held by financial institutions in Pakistan is 14.5% of total shares issued by the firm. It shows that sample firms have significant share of financial institutions in their businesses. Moreover, 66.4% of the sample firms have passive institutional shareholders and 33.6% of the firms have active institutional shareholders. Large active institutional shareholders have power to influence managers to take short term actions to optimize business decisions (Hutchinson et al., 2015). Growth of institutional investors in corporate sector is unprecedented so their presence in capital markets cannot be ignored. Institutional investors are involved in corporate decision that we cannot disregard their role while discussing corporate risk taking.

Table 1 also portrays the characteristics of control variables. The average size of sample firms in terms of total assets is 28 billion PKR with the minimum value of 212.713 million and the largest firm in the sample possesses total assets worth of 36.267 billion PKR. The average of LIQ is 2.011 which is quite good and represents a healthy liquidity position of the sample firms. Moreover, the mean (median) of leverage ratio is 0.246 (0.136) depicts that the sample firms have financed one-fourth of their total assets with the help of short and long-term debt obtained from the debt market. Moreover, the sample firms are moderately profitable with average ROA of 11.3%, whereas their growth prospects as perceived by capital market participants and measured by Tobin's q are also good as average Q value is 1.688

*Table 1. Descriptive statistics*

| Variables | Mean | S.D. | Min. | 1st Quartile | Median | 3rd Quartile | Max. |
|---|---|---|---|---|---|---|---|
| TR | 0.042 | 0.072 | 0.000 | 0.019 | 0.025 | 0.030 | 0.758 |
| IDOR | 0.042 | 0.075 | 0.006 | 0.017 | 0.022 | 0.028 | 0.761 |
| SYSR | 0.799 | 0.058 | -1.620 | 0.442 | 0.081 | 1.105 | 2.819 |
| Z-Score | 3.775 | 201.67 | -1.420 | 10.93 | 15.80 | 29.81 | 4059.35 |
| σROA | 0.038 | 0.029 | 0.000 | 0.015 | 0.033 | 0.057 | 0.1293 |
| IOS | 0.145 | 0.139 | 0.000 | 0.032 | 0.102 | 0.234 | 1.180 |
| Size *(in billion PKR)* | 28.068 | 41.079 | 0.212 | 3.953 | 12.857 | 33.435 | 36.267 |
| LIQ | 2.011 | 1.821 | 0.069 | 1.019 | 1.402 | 2.313 | 13.973 |
| LEV | 0.246 | 1.048 | 0.000 | 0.003 | 0.136 | 0324 | 22.264 |
| Tobin's Q | 1.688 | 1.148 | 0.185 | 1.009 | 1.341 | 1.947 | 10.816 |
| PROF | 0.113 | 0.093 | -0.173 | 0.047 | 0.099 | 0.175 | 0.402 |
| Institutional Type | Freq. | Percent | | | | | |
| Active | 156 | 33.6 | | | | | |
| Passive | 308 | 66.4 | | | | | |
| Total | 464 | 100 | | | | | |



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which is quite higher than the standard threshold of 1. In addition, Table 2 presents the results of Wald test of joint significance run for year and industry dummy to test whether study control variables are varying over time and across different industries. Except leverage and liquidity, other control variables experienced significant time changes and vary over the study period. Moreover, Table 2 also indicates that, except LEV, other control variables also differ across different industries.

Table 3 reports the empirical results estimated for probing the relationship between financial institutional ownership and risk-taking behavior of sample firms. Panel A of Table 3 reports the initial results in which only level of institutional shareholdings is regressed against the different measures of risk taking. F-value is statistically significant for total risk, idiosyncratic risk and earnings volatility (σROA) which is the indication of the mathematical appropriateness of these models. Hausman test statistics point out that the results of fixed effect regression should be interpreted; hence, only those results have been reported in the Panel A of Table 3. The variable coefficients are robust as these have been estimated by adjusted clustered standard errors. It is evident that higher level of financial institutions equity stake in companies is statistically related to total risk, systematic risk and the earnings volatility risk of the firms. In case of total and market risk, institutional ownership has significant positive impact on firm's risk-taking. Institutional owners have the capability and power to influence and monitor managers in a better way and induce them to work in favor of shareholders value maximization. They are in a better position to direct managers to undertake risky but rewarding projects to increase the returns of shareholders, and managers under the monitoring of institutional investors work more prudently and vigilantly as compare to other equity stakeholders (Cebenoyan et al. 1995). This result is consistent with the results of Shleifer and Vishny (1986), Hutchinson et.al (2015) and Shah et al. (2012) who also found similar positive results.

However, in case of internal risk measures of risk, only earnings volatility, as measured by variations in ROA, is found to be statistically and negatively significant at the 5% level. Earnings volatility of the companies which is directly related to the operations of the business, its investments and then return on these operations with the help of the assets induction are found to be negatively influenced by equity ownership by financial institutions. As discussed earlier, institutional owners make managers more

*Table 2. Joint significant test for year and industry fixed effects*

| Variables | Year Fixed Effect F-Value | Industry Fixed Effect F-Value |
|---|---|---|
| TR | 110.205*** | 1.711** |
| IDOR | 92.279*** | 1.736** |
| SYSR | 2.600** | 19.565*** |
| Z-Score | 15.637*** | 4.150*** |
| σROA | 32.348*** | 3.009*** |
| IOS | 0.749 | 9.204*** |
| Size | 5.044*** | 32.894*** |
| LIQ | 0.142 | 5.104*** |
| LEV | 1.086 | 1.186 |
| Tobin's Q | 2.187** | 11.379*** |
| PROF | 1.812* | 8.113*** |

Note: This table represents Wald F-statistics for joint significance of time fixed effect. ***, **, and * indicate statistical significance at 0.01, 0.05 and 0.1 levels, respectively.



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vigilant in selecting projects, the managers undertake the projects with positive net present value or the projects increasing the long term economic value of firms, which, in turn, smooth the cash flows of the firms and reduce earnings volatility.

The role of institutional investors in corporate sector is unprecedented so their presence in capital markets cannot be ignored. Institutional investors have significant impact on corporate decisions and one cannot omit their role while discussing corporate risk-taking. Keeping in view their importance and statistically more robust results, we divided institutional owners into two categories, active and passive. Active institutional investors have their representation on the board of directors in which they have an equity stake through nominee directorship, whereas passive investors do not have this representation and participation in corporate decision making in board of directors. We created a dummy variable to check the effect of the type of institutional owners and interaction of level and type of institutional owners so that we come to know that whether large and active owners positively affect risk taking of the firm or vice versa. We developed an ANCOVA regression model which is a mixture of qualitative (dummy) variable and quantitative regressors (covariates), it is developed by extending ANOVA model which only takes dummy variables (Gujarati, 2003).

With the help of the Hausman test, we checked the appropriateness of the best fit model to our data between fixed and random effect generalized least square regression. The results of estimated models are presented in the Panel B of Table 3 where Model 1-5 report the results of institutional ownership on different types of market and internal risk. As indicated by Hausman test statistics, fixed effect estimations are more appropriate in case of SYSR, IDOR, Z-score and σROA, whereas the random effect model is the best fit for TR. All models are mathematically best fitted as indicated by Wald $\chi^2$ and F-values.

With respect to coefficient results, the level of shareholdings by financial institutions (IOS) is found to be insignificant for all risk measures. Without considering the effect of control variables, the estimated equations for different dependent variables measurements of risk would be like:

$$RISK_{it} = \alpha_1 + \alpha_2 IOTYP_{it} + \beta_1 IOS_{it} + \beta_2 \left(IOS_{it} * IOTYP_{it}\right) + \varepsilon_{it} \tag{1}$$

where mean function of risk for passive investors would be:

$$E\left(RISK|IOTYP_{it} = 0, IOS_{it}\right) = \alpha_1 + \beta_1 IOS_{it} \tag{2}$$

and mean function of risk for active investors would be:

$$E\left(RISK|IOTYP_{it} = 1, IOS_{it}\right) = \left(\alpha_1 + \alpha_2\right) + \left(\beta_1 + \beta_2\right) IOS_{it} \tag{3}$$

In Equation (1), $\alpha_2$ is the differential intercept and $\beta_2$ is the differential slope coefficient (also named as slope drifter), indicating that how much is the effect of active institutional owners (when dummy variable is one) on corporate risk taking differs from the passive investors. The introduction of dummy variable in interactive form enables us to find out difference of impact of both type institutional owners on corporate risk taking. However, in additive form it enables us to distinguish the intercept of both ownership types (Gujarati, 2003). If we look at the regression results in Table 3, we can infer that passive institutional owners have negative effect on all type of risk measures because $\alpha_1$ has negative coefficients



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*Table 3. Results of institutional ownership and risk taking*

| Variables | Model 1: TR | Model 2: SYSR | Model 3: IDOR | Model 4: Z-Score | Model 5: σROA |
|---|---|---|---|---|---|
| ***Panel A:*** | | | | | |
| **Intercept** | -3.611 (-78.040)*** | 0.721 (21.480)*** | -3.704 (-72.040)*** | 5.587 (45.244)** | 0.040 (21.031)*** |
| **IOS** | 0.415 (1.802)* | 0.541 (3.221)*** | 0.315 (1.235) | 0.702 (1.149) | -0.020 (-2.124)** |
| *F-Value* | *3.231*** | *10.390*** | *1.500* | *1.300* | *4.482*** |
| *Adjusted-$R^2$* | *0.005* | *0.020* | *0.001* | *0.001* | *0.007* |
| *Hausman Test Statistics* | *20.370*** | *15.292*** | *19.512*** | *136.000*** | *136.000*** |
| *N* | *464* | *464* | *464* | *464* | *464* |
| ***Panel B:*** | | | | | |
| **Intercept** ($\alpha_1$) | -3.087 (-7.707)*** | -0.738 (-1.328)*** | -0.562 (-0.400) | 18.688 (8.382)*** | -0.375 (-10.423)*** |
| **IOTYP** ($\alpha_2$) | 0.085 (0.644) | 0.114 (1.145) | 0.011 (0.047) | 1.813 (4.314)*** | -0.019 (-2.863)*** |
| **IOS** ($\beta_1$) | 0.522 (1.328) | -0.165 (-0.717) | 0.155 (0.257) | 0.918 (0.958) | -0.003 (-0.179) |
| **IOS*IOTYP** ($\beta_2$) | -0.413 (0.4738) | -0.166 (-0.529) | 0.059 (0.077) | -1.141 (-0.860) | 0.017 (0.810) |
| **Size** | -0.025 (-1.040) | 0.088 (2.800)*** | -0.204 (-2.441)** | -0.877 (-6.699)*** | 0.025 (11.990)*** |
| **LIQ** | -0.015 (-0.799) | 0.004 (0.340) | -0.000 (-0.000) | 0.120 (0.221) | 0.000 (0.201) |
| **LEV** | 0.008 (0.251) | 0.012 (0.891) | -0.012 (-0.311) | -0.027 (-0.469) | -0.002 (-1.698)* |
| **Tobin's Q** | -0.024 (-0.691) | 0.063 (2.560)** | 0.104 (1.580) | -0.081 (-0.730) | 0.005 (3.190) |
| **PROF** | -0.541 (-1.211) | -0.081 (-0.300) | 0.116 (0.160) | 6.428 (5.741)*** | -0.028 (-1.548) |
| *F-Value* | -- | *2.11** | *1.70** | *19.06*** | *24.42*** |
| *Wald $\chi^2$* | *10.150**** | -- | -- | -- | -- |
| *Adjusted-$R^2$* | *0.022* | *0.129* | *0.008* | *0.098* | *0.009* |
| *Hausman Test Statistics* | *3.351* | *33.891**** | *17.591*** | *48.740**** | *126.581**** |
| *N* | *464* | *464* | *464* | *464* | *464* |

***, **,* indicate statistical significance at 0.01, 0.05 and 0.1 levels respectively. Figures in the parenthesis are t-statistics.

in all cases except Z-score and all coefficients are statistically significant as well. In model 4 of Z-score, it is positive that means presence of passive institutional owners make the firm more stable. Passive institutional owners may have strategic alliance and relationship ties with managers and their effective monitoring role suffers (Brickley et al., 1988).

The coefficient of IOS is insignificant in all regression. It means the size of passive institutional owners do not matter because they remain passive whether their investment in firms increase or not. Differential intercept $\alpha_2$ is only significant for σROA and Z-score which is an indication that active



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institutional owners positively affect corporate risk taking regardless of their level of ownership as they can influence firms directly by monitoring managers and indirectly by trading shares (Gillan & Starks, 2003). Active institutional owners effect managers to produce a short-term return by adopting risky projects (Hutchinson et al., 2015). The coefficient of $\beta_2$, which is the differential slope (interaction) coefficient, is insignificant in all regression positing that size of institutional ownership do not moderate the relationship between level of institutional shareholding and risk-taking behavior of firms in Pakistan. If the institutions are active, they the level risk-taking (earnings volatility) decreases and it also increase the long-term sustainability of the organizations (z-score). Hence, presence of active institutional owners improves the internal risk position of the company. These results are also robust to the problem of endogeneity[1]. As suggested by Gujarati (2003), this type of estimation is called parallel regression in which intercept differential is significant and slope differential is insignificant.

Overall, panel A of Table 3 indicates that institutional ownership is positively and significantly related to total and systematic risk of the firm which is consistent with the findings of Cebenoyan et al. (1995). One unexpected result we found is coefficient of institutional ownership which is negative and statistically significant when we take σROA as an internal risk measure. One reasonable explanation could be that institutional owners make managers so vigilant and prudent in selection of positive net present value projects that reduces that earnings volatility. Although, it secures the future cash flow of projects but, so much certainty in projects selection leads towards redundant projects which expose firms to more market/systematic risk. Most institutional investors are those institutions which have to show progress to their investors on quarterly basis such as asset management companies and mutual funds (Baysinger et al., 1991; Graves, 1988). Hence, in achieving their goals, they pursue corporate managers for short term returns goals with high and certain results, which ultimately make firm more sensitive to market risk and increase overall level of risk. Considering the type of institutional ownership, the results show that regardless of their level of ownership, active financial institutional shareholders reduces the earnings volatility of firm's long-term solvency increases.

With respect to control variables of study, size has expected results proved from previous researches. Larger firms are low level of total and firm specific risk because of their ability to diversify away the risk through different business lines and geographic diversification (Gursoy & Aydogan, 1998; Nguyen, 2011). But systematic risk is positively related to Size, larger firms are more exposed due to market changes as compare to smaller firms as the level of information asymmetry is quite higher in large firms as compared to their smaller counterparts. Tobin's Q is also positively and significantly related to systematic risk as growth firms are more volatile because of their ability to take risky project in order to achieve growth.

## 5. CONCLUSION

Corporate risk-taking is an important phenomenon and it is critical to firm performance. Optimal level of risk-taking is decided by multiple parties, and one of the key players are institutional owners. They are key participants of capital markets and their role is unprecedented in current era. Institutional owners are substitute for external corporate governance mechanism and they monitor manager in order to run an organization in a better way. The present study is aimed at to investigate the role of institutional owners in devising firm risk-taking behavior. Study findings revealed that the institutional ownership is positively related with external measures of risk and negatively related with internal measure of corporate risk-taking. Overall, institutional owners have the positive and significant effect on the total and



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systematic risk of the firm and play a significant role in monitoring managerial decisions and guide them to undertake risky and rewarding projects which reduces the cashflow volatility but enhances market vulnerability. The robustness of the results has been examined by dividing the institutional owners into active and passive category. The results further provided evidence that, regardless of the size of the institutional owners, active owners negatively affect the earnings volatility and positively influence long term solvency, as measured by z-score.

The results of the present study provide practical implications for managers. From the managerial point of view, corporate insiders can understand the importance of effective monitoring by active financial institutions and their participatory role in decision making while selecting and undertaking business projects. As active institutional shareholders and blockholders are in a better position to monitor managerial decisions, their expertise can be utilized for the evaluation of the business venture. The study also has certain limitations which can be addressed by future research. We just considered non-financial firms listed on KSE-100 index. Because of the difference of risk measures, same theoretical models with bank specific risk measures can be extended to the financial sector of Pakistan. Furthermore, our results showed that risk practices and ownership structure vary from industry to industry, however, we just studied the combined effects. With the help of least square dummy variable model, individual industrial difference can also be obtained and interpreted. Future research should also consider these industry differences, because it will help in understanding each industry risk pattern in more comprehensive form. Finally, cross country comparison can be performed by using country level governance and institutional framework of shareholdings.

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## ENDNOTE

[1] Endogeneity between the study variables have been tested using Hausman Specification Test. To detect endogeneity between institutional ownership and risk-taking, the present study estimated Eq. (i) as; $Risk_{it} = \alpha + \beta_1(IOS_{it}) + \varepsilon_{it}$ (i) The unstandardized predicted values of IOS and residual are saved as IOS_pre and IOS_res. At the second stage Eq. (ii) is estimated as; $IOS_{it} = \alpha + \gamma_1 IOS_pre_{it} + \gamma_1 IOS_res + \varepsilon_{it}$ (ii) The coefficient $\gamma 2$ is found statistically insignificant, that means that there is no endogeneity between IOS and different variables of risk and both, dependent and independent variables are being exogenously determined.

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# Chapter 77
# Making Innovation Development Policies Work for MENA:
## The Need for Entrepreneurship

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## ABSTRACT

*This chapter analyzes the Middle Eastern North African economies' growth prospects and investigates the role of entrepreneurial activities in achieving sustainable economic growth and social development. It explores the existing macroeconomic, political and social characteristics of the region and brings the different literatures together to understand the policy implications of theory and practices. The chapter shows that entrepreneurial activities can cure a lot of problem in the region as long as supported by the central authorities, and the region has a strong potential to be used by the entrepreneurs.*

## INTRODUCTION

This chapter aims to raise practical solutions to the major development and growth problems of the Middle Eastern North African region (MENA), which are theoretically supported. The main answers revealed by the theoretical surroundings are gathered around the entrepreneurial activities. Thus, the chapter proposes that the entrepreneurial activities are not only important for the individuals in the economy, but also for the salvation of the whole economy, in the development perspective. The study is based upon the strong connection between microeconomic and macroeconomic measures and emphasizes the importance of investing on entrepreneurship in MENA. Our analysis calls the policy makers to finance entrepreneurial activities and claims that it worth, because it pays back with economic development and growth at the same time both in the short and long run time.

To this aim, this chapter investigates the forces which drive trade and global integration in fostering economic development for the special case of MENA region. The extent to which we can attribute economic development to economic growth is a question on the one hand; we ask which structural reforms

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are actually missing in the region to achieve a faster economic growth and whether the pointed structural changes affect the economic measures as would be expected. A detailed investigation on the macroeconomic measures lead us to an answer where microeconomic approaches are required: Entrepreneurship.

Taking the new growth theories into account, the innovation and technological improvements are suggested as the main cure in most of the recipes for triggering development and economic growth at once. Then, the key ingredient in the production process becomes the entrepreneurial ability. In that respect, the institutional design in providing the required support for the innovational activities has to be at the center of the discussions, because the fulfillment of infrastructural necessities are significantly important especially if the macroeconomic environment is not ready for the entrepreneurial activities.

When it comes to Middle Eastern North African (MENA) countries, even in the process of identifying the major problems of the region, entrepreneurship arise as a major answer to many problems of the region. This study questions the existence of appropriate macro environment to support micro decisions of individuals and firms regarding to start-up new businesses and to investments on research and development activities which leads the economic growth and development, eventually.

The first section takes a macroeconomic snapshot of the region to observe its current economic situation in the world. The picture clues in on surprising facts regarding the links between development and growth. Controlling almost 60% of the world's oil, being controlled mostly by very strong autocratic governments, including the world's richest countries and some of the poorest countries together, being in a chronic post-conflict context, having a segmented and highly regulated labor markets, with social relations mainly shaped by Islamic rules, a huge unregistered economic production and almost lack of financial markets, the region differ from other developing regions sharply. Although there are considerable differences among countries in the region, the 90's data on the income inequality, poverty and health care demonstrate relatively low levels of poverty and equitable income distribution in compared to other developing regions. On the other hand, a more recent data shows a relative degradation with an accelerating growth of the other developing regions. In compared to countries in other regions at similar levels of income, the governments in MENA region look like more effective in distributing the social services and aids, but inadequate to support the accumulation of the capital required in manufacturing.

It is widely agreed upon that the economic growth generates suitable but not sufficient conditions for economic development. The poverty and inequality are linked to economic growth in an ambiguous way. Many works following Kuznet (1955) study how the economic growth affects inequality. While many studies shows a negative relation between economic growth and inequality (e.g. Perotti, 1996), some empirical works suggest that economic growth increases the inequality (e.g. Forbes, 2000). Indeed, Panizza (2002) shows that the method of measuring the inequality result in differences in the estimated relationship between inequality and growth. Recent works focus on how inequality affects the growth (Galor, 2011). Doyle and Stiglitz (2014) claim that inequality drags down growth in oppose to Krugman (Budis, 2014).

The way of causality between is not clear. However, empirical evidences show that East Asia has experienced a rapid growth and a relatively low level of income inequality at the same time. In contrast, Latin America and Caribbean region has experienced high levels of income inequality and almost zero economic growth over the same period of time (Birdsall et al., 1995). In the same period, the measures in the MENA region are surprising. Poverty indicators exhibit low levels of poverty and Gini coefficients which are similar to those of Europe with very low rates of GDP growth. (Adams and Page, 2003)

This study takes the tension between income inequality and economic growth into consideration, following Ravillion (2001) who explains how the gains from an economic expansion are utilized by dif-



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ferent income groups differ across the countries. In this respect, micro and country-specific approaches can more successfully explain the interaction between economic growth and development in the country at issue. Therefore, economic growth and development policies suggested to a country or a region has to take social and structural elements of the country into account. MENA is a region of its own characteristics in many respects and policies that do not take these specialties into account are off their target. The study claims that policies sourced from new growth theories may be successful, if they are complemented by appropriate structural reforms. Growth strategies should target to balance the speed of growth and well-being of the region. The study analyzes the current financial markets, labor markets and the post-conflict political environment of the region. Also, it is discussed how the oil revenue surplus can be managed so that the infrastructural needs of the region can be fulfilled. In order to compare the macroeconomic conditions of the countries with each other, with European countries and with other developing regions, the data from World's Bank and IMF reports and some cases from countries are used. The effects of Islamic rules on development indices and how these rules would affect the development policies at issue are also discussed, in this chapter.

We organize the rest of the work as follows: In the next section, economic facts about the region are collected. Then, the impacts of political and cultural structure of the region on economic performance are discussed. The next section focuses on why the region needs some policy reforms in its growth and development process, theoretically. The last section, questions the adaptation process and emphasize the need for searching a bunch of compatible policies which respect the distinctive characteristics of the region.

## REGIONAL OUTLOOK

### Economic Measures

A region is defined by the cultural, social and geographical elements. In that respect different classifications of the countries can be considered. Moreover, different mathematical techniques which handle the time series and cross sectional data of the countries are used to construct the regional data. (Hančlová,et al. 2004, Nielsen, 2011) Due to the reliability and comparability issues, this study mainly focuses on data provided by World Bank to analyze regions' economic activity. The regions are defined geographically as North America, Europe and Central Asia, East Asia and the Pacific, South Asia, Latin America and Caribbean, Middle East and North Africa, Sub-Saharan Africa. As it is defined by World Bank, Middle East North Africa (MENA) region includes high-income countries Bahrain, Israel, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates together with 13 developing countries Algeria, Jordan, Tunisia, Djibouti, Lebanon, West Bank and Gaza, Egypt, Libya, Yemen, Iran, Morocco, Iraq and Syria.[1]

The countries in MENA region are so diversified that the region can be segmented into subgroups according to various variables such as resource endowments, geographical distances, economic relations and trade unions etc. This study mainly follows the classifications by World Bank and assumes that the region is developing one, but takes the diversification into account and uses the subgroups in analysis.

Figure 1 and Figure 2 shows GDP per capita and GDP per capita growth of the region including all income level countries versus the only developing countries, respectively. The difference between the two groups in GDP per capita income decreases in 1980's and increases from 1990's and on. The GDP growth of developing countries which is significantly higher in early 1980's decrease suddenly and small deviations are seen until recent years. The effect of 2008 crisis is higher on growth of developing coun-



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*Figure 1. GDP per capita of MENA*
*Source: http://data.worldbank.org*

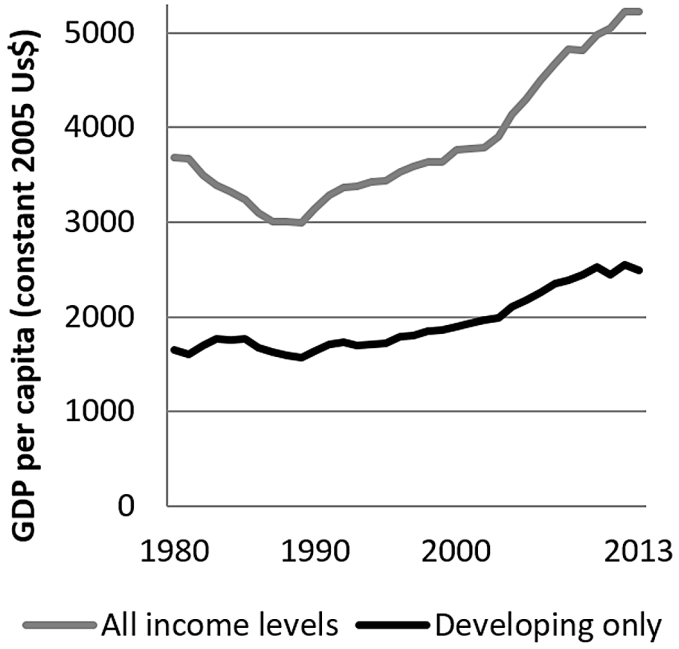
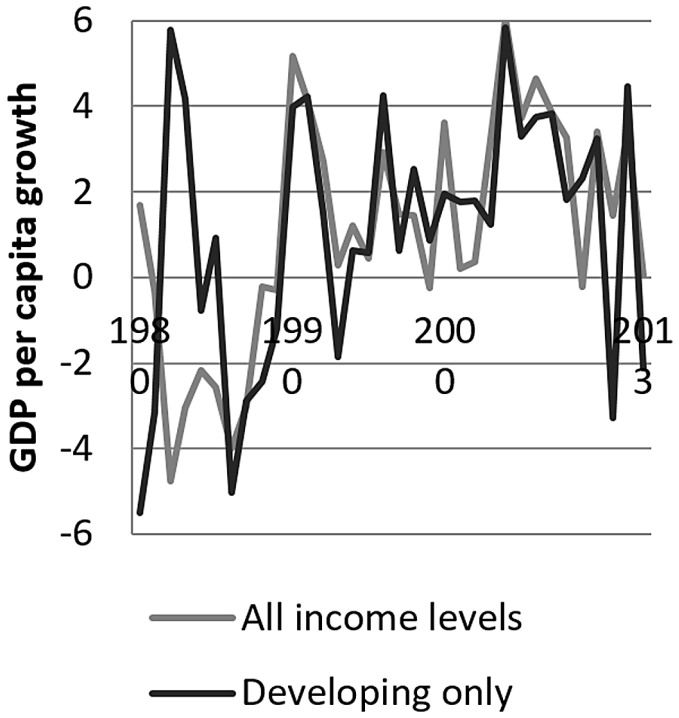



*Figure 2. GDP per capita growth of MENA*
*Source: http://data.worldbank.org*



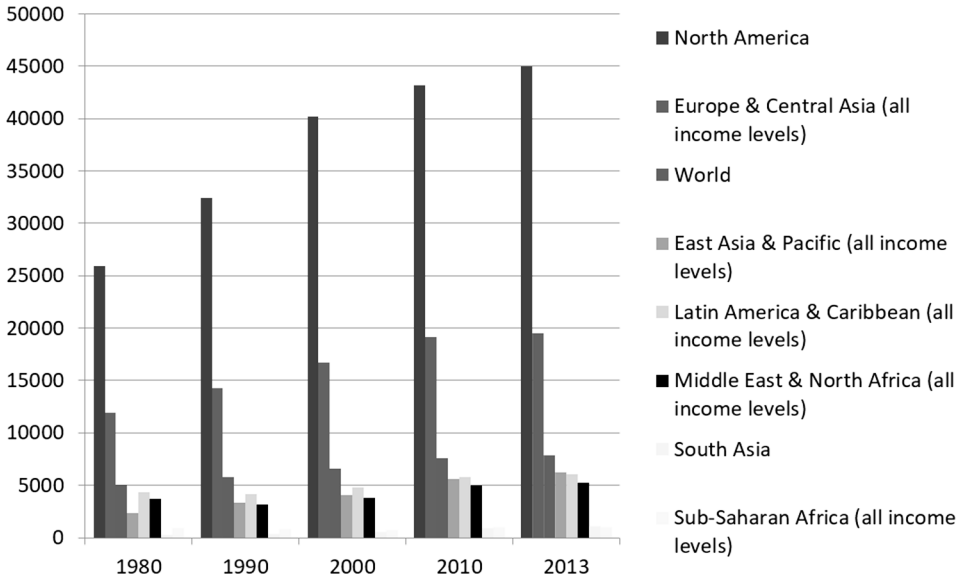



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tries in the region. The relative position of the region's GDP per capita with respect to the other regions in the world is read from Figure3. Even though the regional data include high income level countries, the regional income gaps between MENA and North America and MENA and Europe and Central Asia are significant. The position of average income of MENA economies change starting in 1990's with the growth of East Asian and Pacific economies. While the East Asian and Pacific region and South Asian region has been decreasing the income gaps with other regions, MENA and Latin America and Caribbean region couldn't achieve such growth trend. Average income of MENA region is behind the World average and the difference has not been decreasing since 1980's.

Figure 4 demonstrates the average GDP per capita growth rates over 10-year periods of the regions between 1980 and 2013. Besides the negative average of 80's GDP per capita growth, the sharp recovery of 90's is also striking. In Figure 2, we see a continuous decrease in the late 90's, but the growth rate fluctuates around 0.5% and 3.5% until 2000's and stays close to world's average. In the first decade of 2000's, region's growth is slightly higher than the world's average. The V-shape growth rates between 2008 and 2010 point out the 08' crisis. In 2013, GDP per capita growth is negative on the average for developing countries in the region and significantly lower than the rest of the world even though all income levels are included. The recovery period after the 08' crisis looks like not completed yet in any regions. However, MENA and Europe and Central Asia regions are the only ones which experience almost zero growth by the end of 2013. Over the period, MENA's growth rate ranges from -4.8% to 6.7% which is the widest interval that no other region experienced. Although the negative growth rates of 80's are not observed in later years, the sharp decrease at 2012 together with political instability of the region is ringing the alarm bells.

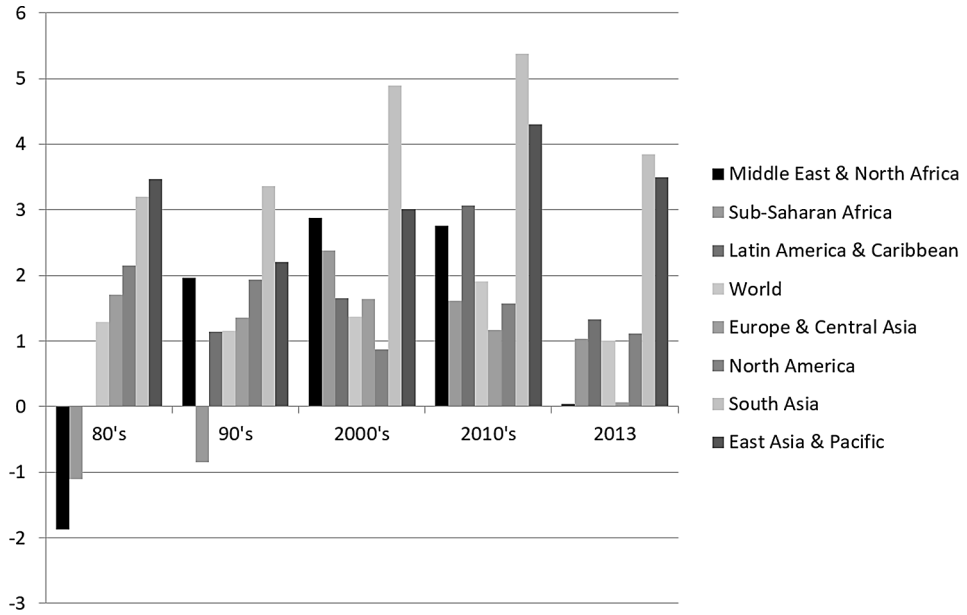
*Figure 3. GDP per capita (constant 2005 US$) of Regions (all income levels)*
*Source: http://data.worldbank.org*






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*Figure 4. Average GDP per capita growth rates of regions (all income levels)*
*Source: http://data.worldbank.org*




Some major indices regarding the economic growth and development of the countries in MENA as of 2013 are listed in Table 1. A very wide range of countries is observed in which world's richest countries Kuwait, Oman, United Arab Emirates, Saudi Arabia and almost the poorest countries Djibouti, Yemen exist.

Why MENA is a very much diversified region economically and how the policies should be shaped in accordance, cannot be analyzed without understanding the differences in terms of resource endowments, government structures, religious beliefs, cultural values.

## Resource Endowments

MENA includes the richest countries in oil, gas and mineral reserves. Other than the fact that the countries in the MENA region own 59% of the world proven crude oil reserves, and 45% of the gas proven reserves, minerals such as phosphate (76%), sulfur (18%), bars (15%), strontium (13%), and iron ore (4.3%) in addition to copper, gold and silver constitutes a significant portion of global reserves.[2] In Figure 5, we see that total natural resource rents as percentage of GDP's which are the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents is the highest for MENA. Yet, neither the mining activities nor oil and gas productions are effective as they are expected with the available capacity. The natural resource endowments of the countries are diversified within the region.

The mismanagement and corruption in revenue management have many consequences on overall economy. Indeed, not only in the MENA region, but many countries all around the world are not able to govern their abundant natural resources, efficiently. In most of the cases, revenues cannot be collected. Even when revenue objectives are achieved, governments take policy actions with respect to the short-term interest. Resource Governance Index (RGI) measures the quality of governance in the oil, gas and



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*Table 1. Indices by countries in MENA*

| MENA Countries | GDP (millions of US$) (2013) | GDP/per capita ($) (2013) | GDP Growth (%) (2013) | Adult Literacy Rate | Life Expectancy (years) (2012) | HDI (rank) | Gini Index |
|---|---|---|---|---|---|---|---|
| Algeria | $210,183 | $13,304 | 2,71% | 91,8% | 71 | 93 | 0,35 |
| Bahrain | $32,788 | $43,824 | 5,50% | 94,60% | 78 | 44 | n.a. |
| Djibouti | $1,456 | $2,998 | 5,00% | 70,00% | 61 | 170 | 0,39 |
| Egypt | $271,930 | $11,085 | 2,10% | 73,90% | 71 | 110 | 0,30 |
| Iran | $368,904 | $15,586 | -5,80% | 85,00% | 74 | 75 | 0,38 |
| Iraq | $222,784 | $15,188 | 4,00% | 80,20% | 69 | 120 | 0,3 |
| Israel | $291,357 | $32,760 | 3,00% | 97,10% | 82 | 19 | 0,39 |
| Jordan | $33,678 | $11,782 | 2,80% | 93,40% | 74 | 77 | 0,35 |
| Kuwait | $183,219 | $85,660 | 0,82% | 94,00% | 79 | 46 | n.a. |
| Lebanon | $44,352 | $17,110 | 0,90% | 89,60% | 80 | 65 | n.a. |
| Libya | $75,456 | ** | -9,40% | 94,20% | 75 | 55 | n.a. |
| Morocco | $104,374 | $7,200 | 4,40% | 67,10% | 71 | 129 | 0,40 |
| Oman | $80,570 | $44,052 | 2,80% | 81,40% | 72 | 56 | n.a. |
| Palestine | $4,016 | $4,576 | *13,8% | 95,60% | 73 | 107 | n.a. |
| Qatar | $202,450 | $131,758 | 5,60% | 96,30% | 82 | 31 | 0,41 |
| Saudi Arabia | $745,273 | $53,758 | 4,00% | 86,60% | 75 | 34 | n.a. |
| Syria | $73,672 | ** | ** | 79,60% | 75 | 166 | 0,35 |
| Tunisia | $47,129 | $11,092 | 2,80% | 88,30% | 75 | 90 | 0,36 |
| UAE | $383,799 | $58,042 | 4,40% | 77,90% | 78 | 40 | n.a. |
| Yemen | $35,955 | $3,958 | 4,40% | 63,90% | 63 | 154 | 0,37 |

*According to 2012 data
* *Because of domestic problem, there are no correct values.

mining sector of 58 countries.[3] Norway is the first and Myanmar is the last in the RGI ranking list of the 2013 Resource Governance Index Report. In Table 2, we list the RGI rankings of countries in the MENA region. Those countries appear in *italics* are defined as resource-rich by IMF. Most of the countries in MENA are resource-rich but not able to manage a good governance of resources.

Data given leads to conclude that even though the share of the natural resources on GDP is high, revenues obtained from these resources do not always lead to growth. Indeed, considering that the oil is almost the most crucial factor of production, an obvious question is why all countries endowed with oil are neither the richest nor the most developed ones in the world. Among many other causes that are underlined in the later sections, an economic phenomenon which is named as Dutch Diseases has a crucial role to this end. Corden and Neary (1982) show the effect of revenue surplus obtained from a natural resource on the relative decline of internationally tradable manufacture sectors with respect to the non-tradable good's sector. The model explains that as a result of the boom in natural resource sector real income and so the demand for non-tradable service increases. With increasing prices in service sector, real exchange rate appreciates and the tradable manufacture sector lags behind. Indeed, we observe that the developing countries are mainly endowed with a certain natural resource and /or a



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*Figure 5. Total natural resource rent as percentage of GDP in 2012*
*Source: http://data.worldbank.org*

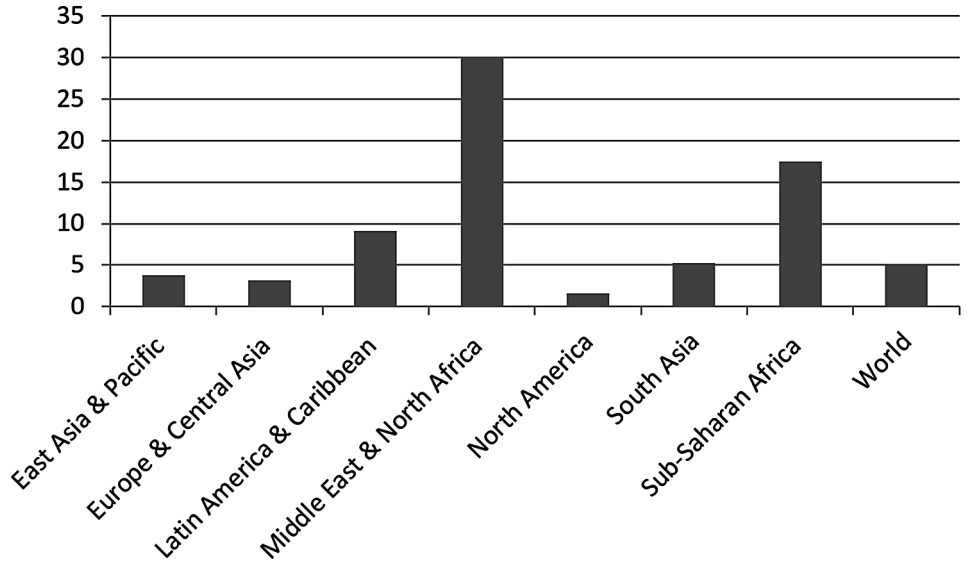



*Table 2. Resource governance index ranks*

| Country | Resource Measured | RGI Rank |
|---|---|---|
| Morocco | Minerals | 25 |
| *Iraq* | Hydrocarbons | 29 |
| *Bahrain* | Hydrocarbons | 31 |
| *Yemen* | Hydrocarbons | 37 |
| Egypt | Hydrocarbons | 38 |
| *Kuwait* | Hydrocarbons | 42 |
| *Algeria* | Hydrocarbons | 45 |
| *Saudi Arabia* | Hydrocarbons | 48 |
| *Iran* | Hydrocarbons | 53 |
| *Qatar* | Hydrocarbons | 54 |
| *Libya* | Hydrocarbons | 55 |

Source: http://www.resourcegovernance.org/rgi

primary product which constitute a highly significant share of exports. However, variety and maturity of exported products are important variables of income derived from international trade. As the product matures in production process, in other words as the product gets more differentiable, higher profit can be expected. In that respect, considering the role of international trade on economic growth, the natural resources may be considered as a curse rather than a blessing. (Auty R., 1993) Yet, this study suggests that whether the natural resource is a curse or blessing mostly depends on the governments' policies. The analysis shows that the mismanagement of the revenues and the lack of infrastructure required for the development of the lagging tradable sectors are the main cause of the problem.



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Although the region has abundant oil, natural gas and mining, the scarcity of water and arable land which are main resources in agricultural production creates a dependency on the imported food and give rise to one of the major policy challenges in the region. Being the most water scarce region in the world, MENA's average water availability per person is approximately 1,200m3/person/year whereas the world's average is approximately 7,000m3/person/year. One half of MENA's population lives under conditions of water stress. Moreover, the population of 300 million today is expected to be around 500 million in 2025 and the per capita availability of water is expected to halve by 2050. The pollution of water resources is another dimension of the problem. Most of the water need is obtained from the Nile, the Jordan and the Tigris-Euphrates river systems. The rest is from winter rain and underground layer of water-bearing porous stone, earth, or gravel. Despite the scarcity, the fact that rivers and lakes in the region are polluted mainly by industrial and domestic wastes is dramatic. (Bakir, 2001) The Nile basin has a large drainage basin and nine countries share it, the Euphrates and Tigris are shared by Turkey, Iraq and Syria and Turkey, Syria, Iraq and Iran, respectively. The Jordan River is one of the small international basins in the world shared by Syria, Jordan, Israel and Lebanon. However, the scarcity of the water supply brings complexities to allocation problem and it adds to Arab –Israeli conflict. (Kliot, 2005)

The use of total water supply in agricultural production, 80%, is significantly higher than the domestic (17%) and industrial use (17%). The mismanagement of agricultural activity plays a crucial role on the water security issue.

The data available in The Statistical Year Book 2012 and 2013 of Food and Agriculture Organization of the United Nations (FAO), shows that in the recent decade the international food and agricultural markets have been experiencing very high price volatilities, directly and adversely affecting the importer countries' food security. Creating a self-sufficient food market is seen as an important task in the region. Governments provide subsidies to the market which amounts to $21.6 billion or 0.7% of the total GDP in 2011 and the irrigation water charges are negligible in most of the countries. The agrarian reform of 50's and 60's which redistributed the land to peasants to smooth out the income inequality and to please an important proportion of the society was mainly targeting to increase the agricultural production. (Warriner, 1962) Although the emancipation of peasantry was resulted to an extent, the targeted level of agricultural production efficiency was not achieved. (Clawson et al., 1971, Springborg, 1977)

Today, governments in the region exerts efforts to improve water supply by investing on large-scaled projects such as desalination, dam construction, inter-basin water transfers, tapping fossil ground water aquifers, and importing virtual water. Sowers et al. (2011) discuss the efficiency of the supply side policies and emphasize the importance of management of water demand. Our investigation on the regional data and theoretical literature points that which of the supply or demand side of water problem should be focused in policies depend on other regional structures. Solving the water and food security problem is one of the most important steps taken in the way of achieving a sustainable growth.

Policies that are provided to cure problems of market economies supported by the growth theories should be carefully updated for the region taking the differences of the region. Indeed, the case of the emancipation of peasantry and the land reform of 50's and 60's can be interpreted as a good step in providing support to entrepreneurial activities. However, missing the creation of individual incentives to achieve profit together with lack of know-how of the new landowners in managing the agricultural activities drew the limits of the production efficiency. Similarly, the privatization of many sectors would share the same destiny with agrarian reform. In that respect, not only the fiscal and monetary policies, but also the supportive/complementary policies to create the pre-conditions for economic growth play crucial role to foster economic growth and development.



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How the policies are practiced by the governments in the region is also of significant importance. The governmental structures in MENA countries are highly dominated by autocracies, religious principles affect economic decisions in the region as well as the cultural life, markets lack basic mechanisms, and most of all, conflicts in the region is the biggest obstacle that prevents any kind of development.

## Governance in MENA

Governance is broadly defined as "The traditions and institutions by which authority in a country is exercised" by Kaufmann et al (1999). United Nations Development Programme (UNDP) defines governance as "The exercise of economic, political, and administrative authority to manage a country's affairs at all levels." According to the International Institute of Administrative Sciences, the governance is different than government, and it involves the interaction between the formal institutions and the civil society.

Defining the "good" governance is not a straight forward issue. UNDP (1997) emphasizes the importance of participatory, transparent, accountable, effective and equitable governance. A good governance is supposed to be supported by the rule of law. Representation of each and every different layers of the society in the reallocation process in achieving social and economic development is critical. Public sector management, accountability, legal framework for development, and transparency and information are the key concepts in defining the good governance. Interesting more on the policy management requirements of the governance, World Bank provides a set of governance indicators developed by Kaufmann et al. (2010). Worldwide Governance Indicators (WGI) aim to assess the quality of governance using a research data set provided by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries is used. WGI has six dimensions: Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption. Estimates are degreed from -2.5 (weakest) to 2.5 (strongest). Table 3 shows the regional averages constructed from the data provided by World Bank. MENA has significantly less scores in all dimensions in compared to other developing regions.

Whether the democracy is both a necessary and sufficient condition for economic growth is another question, it obviously offers suitable conditions for a market economy to grow. In that respect, questioning the existence of democracy in the region is an important issue, although the answer is obvious. Even in a most broad definition, democracy requires the supreme power to be vested in the people and exercised

*Table 3. World Governance Index (WGI) estimate scores*

| Averages / Dimensions | MENA | Latin America and Caribbean | South Asia | Sub-Saharan Africa | Europe and Central Asia | North America | East Asia and Pacific |
|---|---|---|---|---|---|---|---|
| Control of Corruption | -0,2 | 0,1 | -0,6 | -0,6 | 0,4 | 1,5 | 0,2 |
| Government Effectiveness | -0,8 | 0,1 | -0,5 | -0,7 | 0,6 | 1,4 | 0,1 |
| Political Stability and Absence of Violence/Terrorism | -0,3 | 0,2 | -1,1 | -0,5 | 0,4 | 0,9 | 0,5 |
| Regulatory Quality | -0,2 | 0,0 | -0,7 | -0,6 | 0,6 | 1,4 | 0,0 |
| Voice and Accountability | -1,0 | 0,2 | -0,5 | -0,7 | 0,4 | 1,2 | 0,2 |
| Rule of Law | -0,1 | -0,1 | -0,6 | -0,6 | 0,5 | 1,5 | 0,3 |

Source: http://www.resourcegovernance.org/rgi



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directly by them or by their elected agents under a free electoral system. However, the practical issues regarding how the power is vested in the people and exercised by them or by representative agents cause a lot of trouble in defining and measuring the democracy in a country. Dahl (1971) points out that the democracy has two dimensions; one is related with public contestation and the other is related with public participation. After Dahl's set of indices, (followed by Gasil 1991, Bollen 1980, 1991, Hadenius 1992) many other measures attempt to scale democracy in countries over years: Economist Intelligence Unit Democracy Index (EIU), Freedom House Index, Neuer Index der Demokratie, Polity index, Polyarchy Dataset, Unified Democracy Scores, Vanhanen's Index of Democracy. Although the list is not full, democracy scores related to MENA are significantly beyond the average. Table 4 shows the three years of EIU Democracy Index which ranges between 0 (most authoritarian) to 10 (most democratic). MENA is the least democratic region in the world. Similarly, Freedom House Index which classifies countries as "free", "partly free" and "not free", measures only Israel as free, Kuwait, Lebanon, Morocco, Tunisia and Egypt as partly free and the rest as not free in 2013.

Once the constitutional democracy is set naturally in a society as it is the case for Western societies, the market economy may be expected to work, properly - Even though the 2008 crisis makes one think about it twice. However, it is not easy to enforce democracy in societies where the preconditions for constitutional democracy are not fulfilled, and it is naïve to wait for a quick positive result. Zakaria (1997) discusses how promotion of democracy in developing countries may cause democracy without constitutional liberalism that produces centralized regimes, ethnic competition, conflict and war.

International democracy aids aim to develop democracy. Huber (2008) defines democracy assistance as "the type of foreign policy that aims explicitly at positively and actively initiating democratization, supporting democratization or strengthening democracy, as well as human rights in foreign countries." He compares the democracy assistance by the US and the EU with respect to the substance, method and recipient of the aids. Both support NGO's related to women, the media and human rights. In general, aids are provided for civil society, political parties and elections and state institutions. Even though it fluctuates over time, the US democracy assistance has been continued since 1990. At the beginning of 2014, in order to support the democracy and governance programming in MENA region, the Obama administration requested $298.3 million from the congress which is almost 2/3 of the one in previous fiscal year. It looks like that the failure of Arab Spring or in most optimistic view the sluggish stage of region's democratization process make international actors to hesitate over democracy assistance.

*Table 4. EIU Democracy Index across regions*

| Region | 2010 | 2011 | 2012 |
|---|---|---|---|
| North America | 8,63 | 8,59 | 8,59 |
| Western Europe | 8,45 | 8,4 | 8,44 |
| Latin America and Carribean | 6,37 | 6,35 | 6,36 |
| Asia and Austraila | 5,53 | 5,51 | 5,56 |
| Central and Eastern Europe | 5,55 | 5,5 | 5,51 |
| Sub-Saharan Africa | 4,23 | 4,32 | 4,33 |
| MENA | 3,52 | 3,62 | 3,73 |
| World | 5,46 | 5,49 | 5,52 |

Source: Democracy Index 2010, 2011 and 2012 Reports



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The Arab Spring which refers a series of revolutionary anti-government non-violent and violent protests and demonstrations, uprisings and armed rebellion that started at the end of 2013 was a breakthrough event and had sharp economic, political and social effects on the region. Protests gave rise to economic, political and in some cases governmental changes in Libya, Egypt, Tunisia, Kuwait, Yemen, Jordan Saudi Arabia, Morocco, Bahrein and Oman. Major conflicts in Sudan and civil war in Iraq and Syria are still going on. The last wave of Israel- Palestine conflict which dates back late 1940's and is very wide-ranging, inflamed the quarrels among the other countries in region. The civil wars and conflicts causing a lot of deaths are turning the hopes on democratization process off.

Along the history of the MENA region, governance of countries changes in a wide range of political regimes which does not include the democracy. After the socialist waves between late 50's and late 90's, which is different from all other forms of socialism in the world and shaped by the Islamic rules, monarchies, dictatorships, autocratic regimes are mostly dominant in the region. After the World War I, the fall of Ottoman Empire and the rise of Republic of Turkey have changed the future of the region forever. The world's superpowers interest on the region with a lot of subsequent political, economic and even cultural interventions that were generally not focused on the region's existing inner dynamics gave rise today's economic and politic conditions with an extraordinary and complex national relations in the region.

## Post-Conflict Environment and Government Policies

MENA has always been a scene for, and sometimes subject of, conflicts and wars which give rise today's very complex and confusing economic, political and cultural network under the effect of external forces and internal dynamics. A wide range of religion and ethnic roots have crucial roles in this dynamic. Islam with its different sects is the major religion. Besides the three Abrahamic religions, minorities such as Druze, Yazidi, Baha'i and Zoroastrianism exist. Arabs, Jews, Kurds, Egyptians and Persians live together, not peacefully sometimes. Recent conflicts between two major sects of Islam, Sunni and Shi'a, and between Kurds and Arabs are being most influential than any other time.

Each and every conflict and war have characteristics that are both unique and generic to others in the region. Analysis of these characteristics is beyond the aim of this study. However, the social and economic reasons and results of the conflicts are directly related to policy making process. The policy makers act regarding the short-term conflict resolutions instead of the long-term growth and development. Considering the Iran-Iraq war between 1980-1988, Gulf War between 1990-1991, Iraq war between 2003-2011, Arab-Israeli conflicts beginning with War in 1948, civil wars following Arab spring or the recent ISIS war, it is not wrong to claim that the allocation of natural resources such as oil and especially scarce water sources or fertile arable lands among different religious and ethnic groups has been and is the main cause of conflicts and wars throughout the history. On the other hand, even after the colonial period, first the United Kingdom and then the United States and former USSR (United Soviet Socialist Republics) and now Russia and China are being effective and competing against each other for having potent in the region.

MENA economies are sharply affected by the conflicts in terms of both explicit costs such as loss of labor, physical and human capital, increases in health spending, decreases in productivities, and increases in international debts, and implicit costs such as environmental pollution, high risks of epidemic diseases, decreases in motivation to produce, weakening international trade relations, increase in transaction costs and concessions on policies to resolve conflicts.



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The government policies are directed to solve conflicts and post-conflict problems regarding both the domestic politics and international relations. High level of military expenses, the requirement to focus on short-term policies in order to ease the effect of conflicts and wars such as providing huge amount of energy and food subsidies, restrictions in generating government's revenue, pervasive trade policies because of post-conflict political restrictions are only measurable effects on government policies. Conflicts and post-conflict problems challenge the long-term development policies that require increasing investments on specific fields such as education, human rights and necessary institutions for development.

Explicitly, the region has the highest military expenditure per GDP throughout the history since the data is available. The Table 5 shows the years of highest and lowest military expenses of MENA as a percent of GDP, comparing with the other regions. Almost 6% share of military expense in GDP and its growth rate starting from 2008 is certainly remarkable. According to the IHS Jane's Annual Defence Budgets Review in February 2014, defense spending across the MENA region grew by %12.1 which is the highest growth rate of defense spending in the world. The report reveals that Saudi Arabia, Oman, Iraq and Bahrain are featured in the top five growth markets, and defense spending in MENA accounts for %7.8 of worldwide expenditure in 2014.

Being surrounded by a post-conflict environment, the subsidies are widely used by governments to provide short term resolution to social problems. Especially, subsidies in food and energy sectors have a significant part in governments' budget in the region. In natural resource abundant countries, high level of subsidies is related to the redistribution of surplus created by the abundant resource. Governments aim to reduce shocking impacts of large swings in commodity prices on society. Especially in the post- conflict context, public's expectation to share countries' wealth is generally fulfilled via subsidies. However, subsidy policies are neither oriented for social protection, nor cost-effective. The lack of comprehensive social security system is balanced by supported real wages and incomes and low prices on widely consumed products, so that the governments save the day instead of investing on intensive social security policies that may have permanent resolutions only in the long-term. Similarly, the industrial subsidies such as below-market-price energy inputs are used in order to support certain industries. In some cases, the target is to provide protection to employment in the private sector and in other cases, it is to recover the losses incurred by state-owned enterprises that results from inefficient market structures and subsidized prices. (Sdralevic et al. 2014)

*Table 5. Military expenses (% GDP)*

| Country Name | 1988 | 1991 | 1996 | 2001 | 2008 | 2009 | 2011 | 2013 |
|---|---|---|---|---|---|---|---|---|
| East Asia & Pacific | 1,41 | 1,46 | 1,44 | 1,47 | 1,63 | 1,74 | 1,65 | 1,73 |
| Europe & Central Asia | 2,83 | 2,58 | 2,17 | 1,95 | 1,86 | 1,98 | 1,84 | 1,87 |
| Latin America & Caribbean | 1,94 | 1,58 | 1,47 | 1,32 | 1,31 | 1,43 | 1,32 | 1,32 |
| MENA | 7,95 | 11,6 | 5,93 | 6,56 | 4,11 | 4,96 | 4,56 | 5,93 |
| North America | 5,26 | 4,3 | 3,21 | 2,83 | 3,94 | 4,35 | 4,23 | 3,54 |
| South Asia | 3,86 | 3,31 | 2,94 | 3,02 | 2,60 | 2,84 | 2,60 | 2,51 |
| World | 3,43 | 2,96 | 2,32 | 2,26 | 2,42 | 2,66 | 2,46 | 2,34 |

Source: http://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS



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Figure 6 shows that including only petroleum, electricity, natural gas and coal, the pretax subsidies, in the region amounted to 48% of world subsidies. Petroleum products have the highest share, which is about 50%, of the total cost of pretax energy subsidies ($119.3 billion or 4.3% of GDP). Natural gas with 23% ($55.2 billion or 2% of GDP) and electricity with 26% ($62 billion or 2.3% of GDP) follow. On the other hand, food subsidies amounts to $21.6 billion or 0.7% of GDP in 2011. Subsidies on water, financial products, medicines, housing, and other products and services that are difficult to measure are maintained in the region, but are not included in the overall estimates of IMF.

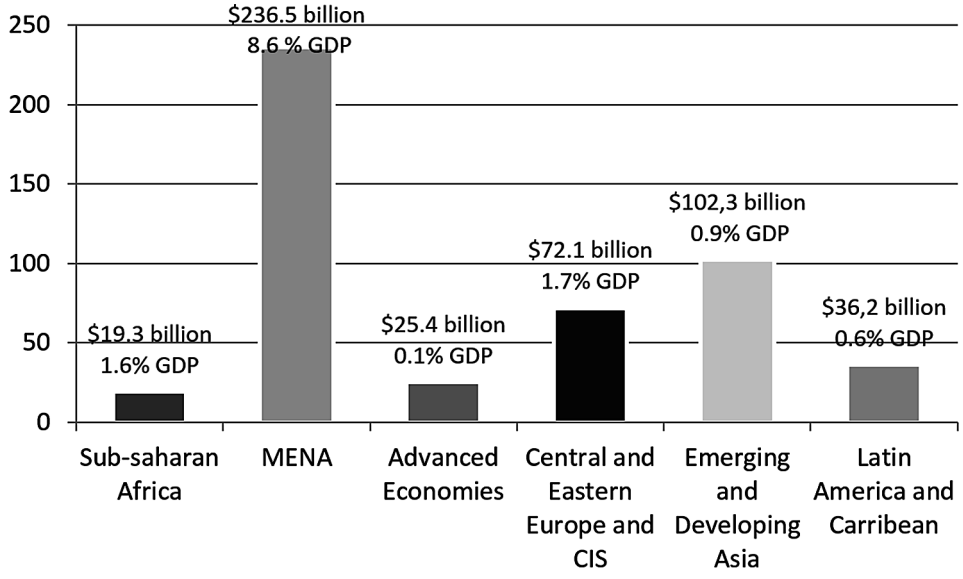
Government revenues are generated from mostly oil, natural resources, tax revenues and grants. The distribution of sources varies across countries. Especially in GCC, the share of tax in total revenue is not significant. Figure 7 shows the average value of tax share in government revenue which is the percentage of the total revenue excluding the grants between 2008 and 2012. The oil and other natural resources are the main sources in countries such as Kuwait, Oman, UAE, Iran and Qatar. There are additional fees, fines and rents such as revenue obtained from Suez Canal in Egypt.

## Business Environment, Financial Markets, and Islamic Rules' Effects

The role of financial markets in raising the productivity of investments, supporting a strong business environment is crucial for both entrepreneurs and the macroeconomic growth and social development. There exists a two way relation between financial markets and firms: As the firms demand higher investment, financial markets expand, and as the financial markets support higher level of investment, the firm activity accelerates in the economy.

The commercial laws that are defined as a transpose of the European rules by Mallat (2000) and regulations in the region shape the private sector. Governments are dominant and regulatory. State –owned enterprises are significant, and family firms that operate in highly protected markets constitute a large

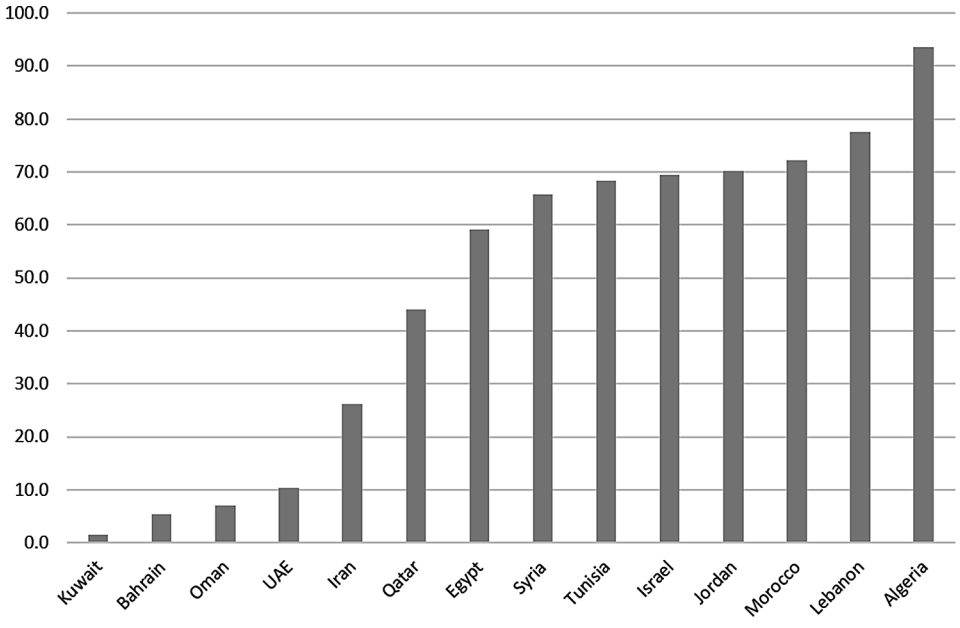
*Figure 6. Total pretax energy subsidies by region, 2011 ($492 billion; 0.7% of GDP)*
*Prepared based on data by Sdralevic et al. 2014.*






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*Figure 7. Average tax revenues as a percentage of total government revenue, 2008-2011*
*Source: http://data.worldbank.org/*




part of the existing private sector. Because of the weak enforcement and laws relating to bankruptcy and liquidation, the exit of firms from business is restricted as well as the entry. Licensing and inspection rules are strict and enforcements of these rules are unpredictable. Allocation of key resources such as credits, physical inputs and infrastructural needs is regulated. Governments apply price controls to subsidize the consumers. In this business environment, it is not easy to find the appropriate conditions to start a business for an entrepreneur. Entrepreneurs are old and had paid jobs before becoming entrepreneurs. Firms are either small with less than 10 workers or very large. Firms report low productivity of labor and capital. (Fawzy, 2002, MacElwee and Al-Riyami, 2003) Especially after the onset of Arab Spring, with undermined business confidence, affected tourist arrivals, and depressed domestic and foreign direct investment, incentives of entrepreneurs to start and run a business is lower. (Yusuf, 2014)

Access to industrial land is a problem in the region. Land markets are segmented with large price differences between privately and publicly owned land and between rural and urban areas. Most of the economic activity is clustered in big cities where the land is restricted. Although the land is limited, there exist idle land because of many reasons such as that the public enterprise that own the land is bankrupt or that the private owner hold the land to increase the price. (Devlin, 2010) Access to credit is another problem. On the average 40% of the firms reveals the credit access as a major constraint. (Beck & Honohan, 2008).

In this type of business environment where a lot of uncertainty exits, the weakness of financial markets is not surprising. Existing studies that are of limited number shows that financial markets are thin and strongly regulated, as the governments impose restrictions and price controls. Creane et al. (2006) develop a comprehensive set of indices to assess the financial market's development in the region. Financial structure is diversified. The GCC countries, especially Bahrain, are in a different position then the



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rest of the region, in terms of the institutional environment, financial openness and use of the monetary policies which guarantee the long term development of markets. However, government ownership is significant, and market forces cannot properly work in the whole region.

Pearce (2011) investigates the state of financial inclusion in the region, and shows that MENA is behind the regions of similar income on the key indicators of bank deposits and loans accounts per population. World Bank report (2012) shows that credit to private sector ranges from 60% of GDP (Jordan, Kuwait, Lebanon) to 30% of GDP (Algeria, Syria, Yemen). In MENA, the number of firms that use the financial institutions to finance their investment demand is relatively lower than the number of firms in other developing regions. Firms confront much higher collateral requirements to access loans, in compared to their comparators.

Stock markets in the region are small and highly volatile. The share of Foreign Direct Investment (FDI) net inflows in GDP in 2013 is 1,68% in MENA in compared to 3,5% in Latin America and Caribbean and 3,1% in East Asia and Pacific. Iqbal and Nabli (2004) point that non-GCC countries, received net inflows of FDI of about $2.2 billion in 2000 which is nine times less than $19 billion that the group of five Eastern European countries (Czech Republic, Hungary, Poland, Turkey and Russia) together received, three times less than $8 billion what the three East Asian countries (Malaysia, Philippines, and Thailand) received, and twenty two times less than $50 billion what the group of four Latin American countries (Bolivia, Chile, Mexico, and Brazil) received. It shows the potential of the region. However, as Chau et.al (2014) shows that that political uncertainty increased after Arab Spring contributes to the financial volatility. Malik and Awadallah (2013) claim that Arab Spring causes the replacement of old political players with new ones. However, it only led to re-configuration of political power leaving the economic and institutional problems unsolved. With an increasing political uncertainty neither the financial markets completed its global integration nor the business environment improved.

The commercial law that highly influences and shapes the business environment in MENA strongly reflects the effects of Islam which is the widest religion in MENA region. Saudi Arabia, Sudan, Iran, United Arab Emirates and Qatar are governed by Islamic law, sharia. In Algeria, Djibouti, Egypt, Lebanon, Morocco, Tunisia sharia applies in some issues such as marriage, divorce and inheritance. In general, the effect of religious culture on economy is significant all around the region. Qur'an which doesn't include many economic regulations, specifies rules related to the inheritance in detail. Because the extended relatives also reserve a specified amount, the accumulation of capital over generations is prevented. Although a system called waqif which does not exist in Qur'an was created over time to keep family money over generations being tax-free, it never became an efficient way of accumulating the capital. Kuran (2003) discusses the role of Islamic inheritance law on capital accumulation. The lack of corporate structures in Islamic law gave rise of the waqif which are not sufficient to create the conditions for a strong private sector and human and physical capital accumulation. In this regard, the main reason of why MENA economies transferred from reasonable to sluggish levels throughout the 18th century can be identified as the legal infrastructural stagnation. Indeed, Islamic rules of Qur'an do not directly manage the economy either at a macro or a micro level. Two principals regarding the economic decisions were followed in the region: The first one was provisionism that focused on the supplies of essential commodities required for urban life favoring the imports. The second one was fiscalism that mainly focused on raising the revenue in the treasury. Instead of governmental infrastructural investments, the state was directly financing the public goods such as mosques, hospitals and schools. Mainly, waqif founded by rich families were managing the financial flow to support who needed the offered service. They were responsible from the redistribution of income. By the rules, it was possible to protect



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the family's money from taxes and inheritance rules. Although the system worked partially, it distorted the reallocation of the surplus created by the production. Because the founders of waqif were mainly the close relatives of the rulers and highest officials, they took decisions parallel with ruler's interest. However, they were helping just enough so that an alternative system was not strongly questioned and civil societies couldn't become powerful.

While the market economy was rooting in the Western Europe by naturally finding necessary preconditions, the most of the Middle Eastern countries' private sectors, except the oil market, isolated from the international markets. The absence of skills, know-how and accumulated capital and cultural reluctance to be in a network with Western societies worsened the backwards of economies. It should be emphasized that there is no rule against the market economy in Islamic law. Islamic law does not conflict with modern economic developments except issues regarding the interest rates and extreme consumerism. Although creation of the preconditions for market economy such as existence of financial markets, property rights and the entrepreneurial abilities have been prevented in the region, that was most probably not because of the Islamic law itself. The state-centered development policies compatible with Islamic law were not enough to create the required incentives for the development of human capital and financial markets. Moreover, some economic reforms regarding the banking system, stock markets and trade agreements bring the MENA economies closer to the international markets.

Although Islamic banking majorly centers on the GCC countries, Iran and Malesia and constitutes only 1% of the global financial assets, it is a growing sector at an annual rate of approximately 18% between 2009 and 2013, and is projected to grow by an average of almost 20% a year to 2018. Islamic finance assets grew from almost US$200 billion in 2003 to almost US$1.8 trillion in 2013 (International Monetary Fund, 2015). It's not hard to understand why in Cameron's administration finds the future of Islamic finance bright and London volunteers to become a center for it (UK Excellence in Islamic Finance, n.d.).

## Labor Market

The region has the highest unemployment rate following Sub-Saharan Africa and it almost doubles the world's average in 2013. World Bank data shows that the unemployment rates are not volatile since 1990 and are between 10% and 11%. As of 2013, the youth unemployment in the region is so severe that it increases up to 51% in Libya. The percentage of unemployed women in the female labor force is more than 20%.

The most significant characteristic of the labor market in the region is that it is dominated by the public sector. In the GCC countries, public employment is an important way of distributing oil revenues to nationals. Having small populations, the GCC countries have been applying open door policies in the labor market for a long time period. IMF data shows that the expatriate labor ranges from 50% of labor in Saudi Arabia to 90% in United Arab Emirates in early 2000's. (Fasano and Goyal, 2004). The labor policies have changed starting from late 1980's. At first, governments and state-owned enterprises took the leading role. Then, in order to nationalize the private sector workforce, mandatory measures such as quantitative regulations have been used. However, enforcing the use of national labor force in private sector had its own drawbacks and created some complexities especially in the long-run. Lower productivities of the nationals together with easy access of private companies to expatriate labor challenge the nationalization policy in labor market. The nationalization policies followed by countries diversify in the region and named after the country such as Emiratization, Omanization etc. The size of labor force



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and unemployment rates are the effective variables on policies followed. From Bahrein, Oman, Saudi Arabia to Qatar practices different types of mandatory measures. However, neither the job creation process nor the management of existing business environment looks sufficient to realize the nationalization programs. (Al-Waqfi et al., 2014)

The dominance of the government in markets through regulatory actions and state-owned enterprises leads the segmentation of the labor market. Fasano and Goyal (2004) shows that most of the new jobs created by the private sector is in non-oil, services sectors. Paying low wages and requiring low skilled labor, these jobs do not appeal the nationals. Due to high regulation in most of the region, the informality increases. At the same time, the adjustment of the labor market is prevented. Highly protected jobs make the labor almost a fixed input in the production. Thus, firms hesitate to offer new jobs causing higher unemployment rates and segmentation in the market. It also effects the motivation of nationals in taking education. Protected jobs offered by governments have high demand and nationals do not have the incentive to improve their skills over the levels required by these jobs.

The World Bank data shows that the percentage of the population age 15 and above who can, with understanding, read and write a short, simple statement on their everyday life was only about 80% and 5% less than the world's average in 2010. As of 2013, the MENA region has 17 students for every one teacher (a pupil-teacher ratio of 17:1) compared to the world average of 24:1. However, the knowledge level is lower compared to their counterparts in the developed countries as it is justified by international test scores. The quality of teachers is a main explanatory variable. Countries in the region face shortage of teachers. Therefore, those hired to serve as teachers are often not adequately qualified for the position. Most of the countries in the region support the private schools and paid education. The private education sector in MENA is the fastest growing according to report 'Trends in Private Education Investment and Expansion in MENA 2014' by Education Investment.

## A QUICK LOOK INTO GROWTH THEORIES

Practices over years have evidently shown that policies which follow Solow's growth model (1956), mainly based upon physical capital accumulation were not sustainable. As the economic structure has changed all around the world, new insights have been required in explaining, analyzing and designing economic theories, policies and practices.

New growth theories following Romer (1989) and Barro (1991) define the growth as a perpetual motion machine. The key concept of the theory is knowledge which is not subject to diminishing returns. Accumulated human capital causes innovations to occur which make capital and labor more productive, and which affect consumption side of the economy as well. The growth is claimed to be self-feeding and sustainable with a strong emphasis on human capital. (Barro et al., 1995; Benhabib & Spiegel,1994; Temple, 1999, 2001a; Easterly & Levine, 2001; Vandenbussche et al., 2006; Cohen & Soto, 2007). Most of the endogenous growth models take for granted the incentives to innovate and to earn higher profits. Indeed, what makes the growth sustainable are mostly the incentives and accumulation of human capital.

More recent criticisms on the growth theories focus on the missing explanation of how the stable equilibrium can be achieved. The strong relation between technologies, institutions and industry are neglected. Institutions related to markets, property rights, monetary exchange and international trade as well as the education and health programs are crucial for creating the proper incentives and fostering the human capital productivity. In that respect, central authorities' direct control over economies can be



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criticized, and use of policies in action which provide appropriate conditions for individual producers to innovate and to produce effectively can be suggested. The independent and reliable institutions are supposed to govern the required systems such as financial and legal systems. (Nelson, 2005)

There exist substantial theoretical and empirical studies suggesting that financial systems become more developed as countries get richer. At the same time, financial developments accelerate the economic growth. A weakness in the financial system can cause systematic problems for the whole economy. Differences between growth rates of market-oriented economies and of centrally planned economies are put forward by many studies. (Demirgüç-Kunt & Levine, 2004; Stiglitz, 2000; Alfaro et al., 2004; Bruno et al., 2012) In addition to open financial systems, the positive impact of international trade on economic growth through efficient use of resources is theoretically accepted. (Krugman P., & Obsfeld M., 2000) Although the empirical studies in the literature does not fully support the theories (Frankel, J. A. & Romer, D., 1999; Yanıkkaya, 2003; Rodrik, 2005; Herzer D., 2013; Shahbaz,, 2012), existence of the long-run positive effects and that the extend of trade impact on growth is highly related to the policies on education, technology and institutional quality is widely accepted.

Starting from 80's, including MENA economies; many developing countries and centrally-planned economies in Europe shifted their growth strategies towards market-orientation. Complementary policies that support development of financial systems, openness to trade and accumulation of human capital were enacted. (Devlin, 2010) Some of developing countries such as China seem like to achieve growth targets. However, inequality and poverty measures do not mostly follow the fast growth trend. (Kenwood et al., 2013; Kanbur, 2008) Indeed, according to neoclassical growth theories; because accumulation of physical capital is provided by increasing propensity to save, the growth process is stimulated by income inequality. Therefore, a tolerable level of income inequality has a positive impact on physical capital accumulation. However, when human capital is replaced by physical capital, inequality is not anymore a binding constraint for growth. (Galor & Moav, 2004) In this respect, creation of the preconditions for entrepreneurial activities is of crucial importance. As long as the supportive policies for small firms and entrepreneurs are practiced by governments, the economic growth that is achieved by economic activity triggered by human capital, technological advances and profit oriented entrepreneurs can be accompanied by social development and improvements in income equality.

Whether centrally planned or not, the use of government expenditures is always effective in growth and development. Literature shows that the effect of government expenditures on the economic growth is ambiguous. Recent studies shows the importance of type of expenditures in identifying the relationship. Expenditures in the form of investments that provide the required infrastructural structures and accelerate the accumulation of physical capital and labor, increase the quantity and efficiency of factors of production and lead to higher growth. Expenditures on health, education and other services supports the accumulation of human capital, increase the productivity and lead to higher growth. However, beyond an optimal level, the government expenditures may crowd out the private spending and cause inefficiencies in both the factor markets and the final goods markets. According to neoclassical approach increasing tax rates negatively affects the supply side of the economy and it distorts the markets so that economic activity decreases. With respect to the new growth theory, the negative effect of higher tax rates is even higher because the level of technology is negatively affected. However, what Barro (1990) calls as productive government spending may lead to higher level of human capital accumulation and technological improvements offset the negative effects of taxes on the economic activity. (Bergh et al., 2011) Berg and Henrekson (2011) provides a survey on the relation between the government size and the economic growth. They also provides an explanation to the contradictory results in the literature.



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They suggest that social trust increases the big governments' impact on economic growth. Moreover, market-friendly policies followed by big governments compensate the inefficiencies in the markets created by the high taxes and expenditures.

## ENTREPRENEURSHIP AS A GROWTH ENGINE IN MENA

This study brings different literatures together in analyzing the importance of entrepreneurial activities for a sustainable economic growth accompanied by social development. The needs of MENA region in its growth and development process are questioned by taking the existing macroeconomic, political and cultural measures into account. An overall look of the region shows that the countries are from a very wide range of variety and it is almost impossible to adopt a unique formula prepared for economic growth or social development. Especially, the practiced receipts of Western or East Asian world are likely to fall far away from the target. Yet, the measures of region shows us that the entrepreneurial activities may be an answer to many problems at once: Economic growth, income equality and social development. Besides, MENA region has a strong potential to host and enjoy the entrepreneurial activities.

In the region, rich natural resource sectors, oil, gas and minerals, are dominant and creates a pervasive revenue effect in economic activity. The giant governments create an inefficient production process and labor markets are segmented. The unemployment, especially youth unemployment is a major problem not only in economic terms but also accelerating the social unrest and political instability. The scarcity of arable land and water adds a lot of trouble to the existing religious, ethnical and historical conflicts between different groups and countries in the region. Climate change and estimated average temperatures within 30 years which is not suitable to live in makes the problems even worse.

In this respect, the entrepreneurial activities supported by governments in non-oil sectors may solve the problems. Specifically, some sectors have a strong capacity to be expanded by entrepreneurs. Although it is not a complete list, the solar energy, biotechnology, chemical industries, water and air cleaning, agricultural production, Islamic finance, private education are all the sectors on which entrepreneurs can find profit opportunities when the required regulations and policies are supported by the governments. Supporting the infrastructural necessities for human capital and technology required in these sectors and proving the protective and encouraging laws for the entrepreneurs, the central authorities' destructive power is transformed into a creative one. Particularly, the support provided to small and medium enterprises, women and youth plays a crucial role. The successful start-ups would boost the profit incentives of new entrepreneurs and start a perpetual motion in growth accompanied by social development.

The study shows that the use of policies which accelerates the innovation and technology creation in the specified industries enlightens the way to growth and development. However, the microeconomic conditions of each sector and how the firms, new entrepreneurs and governments should proceed in their own decision making process by taking both the individual and social interests into consideration should be analyzed industry by industry and country by country. This type of microeconomic analysis are very much valuable for the macroeconomic policies.



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## ENDNOTES

1 The World Bank categorize countries into 5 groups with respect to their gross national income per capita: Low-income, lower-middle- income, upper-middle- income, high-income and high-income OECD countries. The countries in the low- and middle- income groups are labeled as developing.

2 *Source: OPEC Annual Statistical Bulletin 2014*



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[3] RGI evaluates four key components: Institutional and Legal Setting to assess whether the laws, regulations and institutional practices enable comprehensive disclosures, open and fair competition, and accountability; Reporting Practices to evaluate the actual disclosure of information and reporting practices by government agencies; Safeguards and Quality Controls to measure the checks and oversight mechanisms that guard against conflicts of interest and undue discretion, such as audits; Enabling Environment to understand the broader governance environment generated using over 30 external measures of accountability, government effectiveness, rule of law, corruption and democracy.

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# Chapter 78
# Major Macroeconomic Dynamics for Labor Market in Turkey: A Causality Analysis

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## ABSTRACT

*The relationship among inflation, unemployment, and economic growth can be treated as a trade-off in general. When the economy is in recession, inflationary pressures are expected to decrease while unemployment is increasing. On the contrary, a decrease is expected while inflationary pressures are rising. Thus the relation between these twin macroeconomic variables and their relation to economic growth are a focal point for developing countries. The aim of this study is analyzing the relationship among unemployment, inflation, and economic growth in Turkey by alternative methods. Thus the causality among these variables is tested with modified Wald statistic developed by Toda-Yamamoto. Findings obtained from causality test will provide policy recommendations for Turkish economy on a macroeconomic level.*

## INTRODUCTION

As the basic economic indicators of modern economic conditions, the concepts of unemployment, inflation, and economic growth are macroeconomic variables which are often analyzed and of which relations among themselves are studied in detail in the context of interaction. Whereas an economic growth could occur as a result of financial activity level in an economy, an inflationary setting and/or high unemployment rates could also be observed.

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To the extent that the mutual trade-off among those principal macroeconomic variables has generally been accepted, the likelihood of being subject to the different type of interaction in the whole country or different time period is stronger. Hence, it is needed to analyze the relationship among mentioned variables by focusing on especially the country and period which are wanted to be studied.

Regarding the recent past of the Turkish economy, high unemployment, inflation and low economic growth keep remaining on the agenda as the common problems. Beyond any doubt, ensuring a sustainable economic growth in an economy is based on primarily ensuring economic stabilization. Like Turkey's, in an economy which is equipped with both powerful and treating features in terms of labor force, the interaction demonstrated by those three outstanding variables gains great importance.

In the present chapter, it is aimed to analyze the relationship among variables about annual economic growth in the period of 1960-2014, inflation rate and unemployment data in Turkey through modified Wald statistics developed by Toda-Yamamoto[1] and to present political suggestions in the level of macroeconomy for the economy of Turkey in the light of those findings. Accordingly, the literature review about causality relation of those three major macroeconomic variables mentioned in the present study was given, the macroeconomic developments in the related period were analyzed, and the findings of causality analysis which was conducted in the light of data were presented.

## LITERATURE REVIEW

Being major macroeconomic variables of an economy, unemployment, inflation, and economic growth relation are often discussed in the literature, though they might be in the characteristic of variability from period to period. Like all of the other economies in the world, it is seen that the literature searching the causality relation among those factors which regard financial and real dimensions of the economy as well as in Turkey supports the stated evaluation. Focusing the literature in terms of unemployment, inflation, economic growth and the constraint of Turkish economy; the outstanding findings could be summarized as:

Uysal and Erdoğan (2003, p. 45) focused on the relation between the unemployment rates and price level in Turkey between 1980 and 2002. In the study, the related time period was evaluated according to different periods. Hereunder, the fact that there is a positive relation among variables in the 80s whereas there is a negative between 1990 and 2002 is remarkable. Karaca (2003, p. 254) searched the relation between inflation and growth in Turkey using quarterly data for the period of 1987-2002 and observed the existence of one-way Granger causality from inflation to growth. It is emphasized that the inflation in the economy of Turkey in the related period downgraded the growth rate.

Berber and Artan (2004, p. 115) analyzed the relation between inflation and economic growth in Turkey for the period of 1987-2003 and they found out one-way causality relation from inflation to economic growth. Furthermore, it is also a remarkable finding that inflation influences economic growth negatively. On the other hand, Terzi and Oltulular (2004, p. 31) analyzed the relation between the inflation and growth rates at the sectoral level in the economy of Turkey with annual data in the period of 1923-2003. The findings point out a negative causality relation from inflation to sectoral growth. Considering those findings, it is emphasized that inflation is a considerable obstacle to growth and price stabilization is significant in this respect.



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Göktaş Yılmaz (2005, p. 74) performed Granger and Hsiao causality tests in order to specify the causality relation between the growth and unemployment rates in Turkey in the period of 1978-2004. The findings show that the causality relation is only from unemployment rate to growth rate. Thereby, for the related periods, unemployment is among the factors influencing economic growth and in response to this, it is seen that economic growth cannot decrease unemployment rate. On the other hand, Yapraklı (2007, p. 297) analyzed the relation between inflation and economic growth in Turkey with the quarterly data for the period of 1987-2007 by using Granger causality test. Accordingly, in the related period, inflation influences economic growth while economic growth does not affect inflation.

Uysal, Mucuk, and Alptekin (2008, p. 66) found out that there is a one-way Granger causality from inflation to economic growth in the period of 1950-2006 according to the results of Granger causality test analyzing the relation between inflation and economic growth in Turkey. Karaçor, Şaylan, and Üçler (2009, p. 71) conducted Granger causality test by using quarterly data of the 1990-2005 period of the Turkish economy and reached the conclusion that there is a double way interaction between growth and inflation rates.

Şentürk and Akbaş (2014, p. 9) analyzed the relation between economic growth and unemployment rate represented with industrial production index in the economy of Turkey from 2005 to 2012 and inflation rate by using Toda-Yamamoto causality test. Accordingly, it is seen that there is a two-way causality relation between the industrial production index and the unemployment rate in the related period and inflation rate. Süleymanov and Nadirov (2014, p. 123) studied the inflation-growth relation in the Turkish economy in the period of 2003-2013, and they found a one-way causality relation from growth to inflation. Similarly, Akan and Kanca (2015, p. 17) reached a finding of one-way causality relation from growth rate to inflation in the period of 1980-2013 in the Turkish economy.

Focusing on the literature, as stated commonly in the studies supported by empirical findings, it is seen that the relationship among unemployment, inflation, and economic growth variables may vary according to studied period. Hence, analyzing the relations among those variables through a different and new method for the Turkish economy has a great significance in terms of empowering the information scale in the literature as well.

## THREE MAJOR MACROECONOMIC VARIABLES IN TURKEY

In the economy of Turkey, the observation of macroeconomic developments for the period of 1960-2014 will end up with some evaluations. The most significant of all is, no doubt, the Turkish economy which suffered from high inflation in a considerable part of this period and which came up against more fragility as its own integration to global economy got stronger.

In Figure 1, the process of inflation, unemployment and economic growth series as the three major macroeconomic variables of Turkish economy in the period of 1960-2014 is shown. The process of inflation and economic growth in the figure points out a significant relation between those macroeconomic variables in the related period. Likewise, while there is an inflationary process going on in an economy, and annual gross domestic product (GDP) is growing in real terms, it is possible to mention growth with inflation. And it stands out that there is that kind of relation for a considerable period except for the years in which some crisis effects are observed for the Turkish economy. It could be stated that the process of the unemployment rate in the related period is more stable than the other variables.



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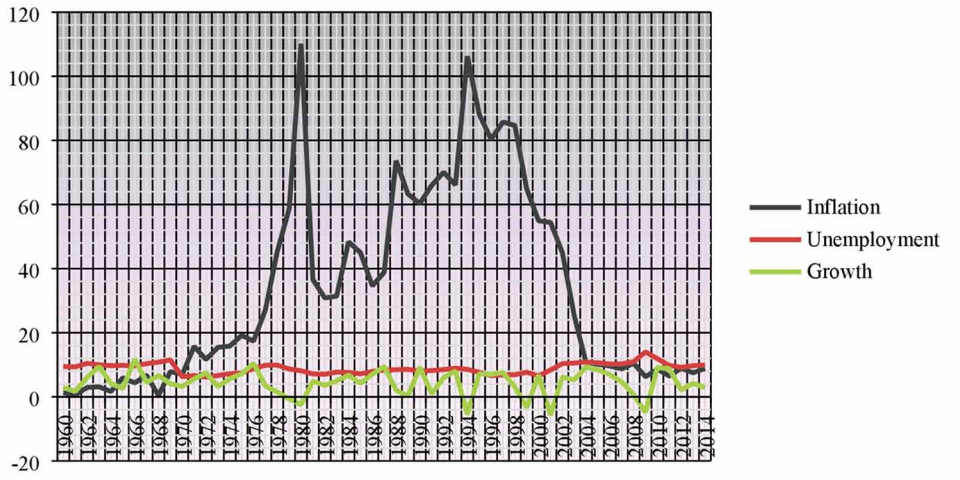
Since Figure 1 reflects a long period of time, it enables to specify the developments which end up with dramatic results clearly in the economy as well. For instance, the fact that the oil crisis which broke out as a result of oil embargo declared by Organization of Arab Petroleum Exporting Countries [OAPEC][2] on 15th October 1973, caused an increase in the world oil price and peaked in 1979 caused one of the most dramatic inflation increases in the economy of Turkey reflects the graphic. This period took its place on the stage of history as a time in which the world experienced stagflation at the same time, questioned the aspect of 'activist government interventionism' and new alternative trends came out.

The year 1980 represents a process in which the economy of Turkey came to the new path and the drift in the financial politics differentiated from the previous periods with the experienced paradigm shift. The effects of fluctuation and developments observed in the world economy as a result of constraint abolition on the capital movements in 1989 were started to be seen in the economy extremely. 1993 and 1994 were the years of devaluation and economic crisis. 1999 corresponds to the effects of great Marmara earthquake which stroke breeder power directly and 2000-02 correspond to the periods in which backstopping negotiations were being made with International Monetary Fund (IMF), and economic crisis were observed.

Since the declaration of "Transition to the Strong Economy Program" in 2001, great structural reforms, which first interest financial sector and aim radical changes and transformations in the medium-long terms, have been made (Taşar, 2012, p. 84). It is possible to associate the general level of prices and positive progress in the economic growth in the 2000s to the acquisitions in the same period. However, it is not possible to state that the positive developments in GDP, industrial production, the rates of capacity utilization and foreign trade created a significant acceleration for the indicators to employment (Kol & Karaçor, 2012, p. 392).

The developments related to prices in Turkey for the period of 1960-2014 are seen in Figure 2. It is observed that increasing inflation in the economy of Turkey with the stagflation atmosphere which the world economy came across in the 1970s starts to influence the growth in a negative way. Thus, Turkey met two digit inflation in the 1970s and in the following process, due to the rapid increase in the infla-

*Figure 1. Three major macroeconomic variables in Turkey: 1960-2014*
*Source: Republic of Turkey Ministry of Development, Turkstat, Organization for Economic Co-operation and Development [OECD] Statistics.*






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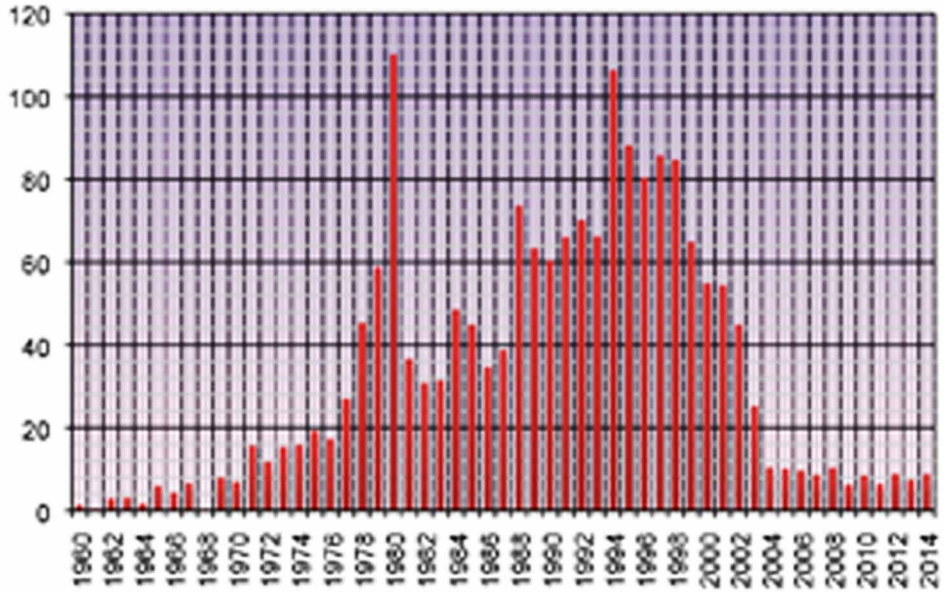
tion, economic and social uncertainties came out, which ended up with a regression in the potential revenue of the economy. During this process, the fact that the inflation reached three digit numbers in February-October 1980, January 1998 and the period between April 1994 and March 1995 reflected the history books. However, in return for this, it could be expressed that crazy inflations which marked the parts of Latin American and European countries have not been seen in any periods of Turkish economy (Özatay, 2011, p. 248).

After Turkey had experienced the transition process to the inflation targeting in the period of 2002-2005, it went into inflation targeting period. Thus, a process in which direct inflation was aimed by the Central Bank of the Republic of Turkey (CBRT) without using any intermediate objective started (Kara & Orak, 2008, p. 60). The main aim of practicing inflation targeting process in the economy of Turkey is to provide price stabilization and from this point of view, economic stabilization. It is discussed that inflation targeting process which has been in practice in Turkey recently results in an average inflation decrease which has positive effects on economic growth with its dimensions of financial sector development and financial deepening (Meçik & Karabacak, 2011).

Inflation targeting regime, for the period after 2002 in which political stabilization was enabled with convenient global economic developments, ensured the inflation separated from the previous periods and approached one digit levels. However, it is hard to say that monetary authority was successful when descending to the particulars of inflation targeting process. Yet, as seen clearly in the graphic, it is possible to say that the process of inflation which did not show fluctuation relatively in the 2000s is a significant acquirance compared to the previous periods.

The unemployment rates in the related period are available in Figure 3. It is seen that the unemployment rate has relatively a low process between the 1970s and the 2000s. When this period is evaluated with the movement resulted from the increase in the general prices level in Figure 2, the trade-off rela-

*Figure 2. Inflation rate in Turkey: 1960-2014*
*Source: OECD Statistics.*






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tion between inflation and unemployment is striking. The inference made with the annual average data for Turkey reminds the theoretical relation which is framed with Phillips curve[3].

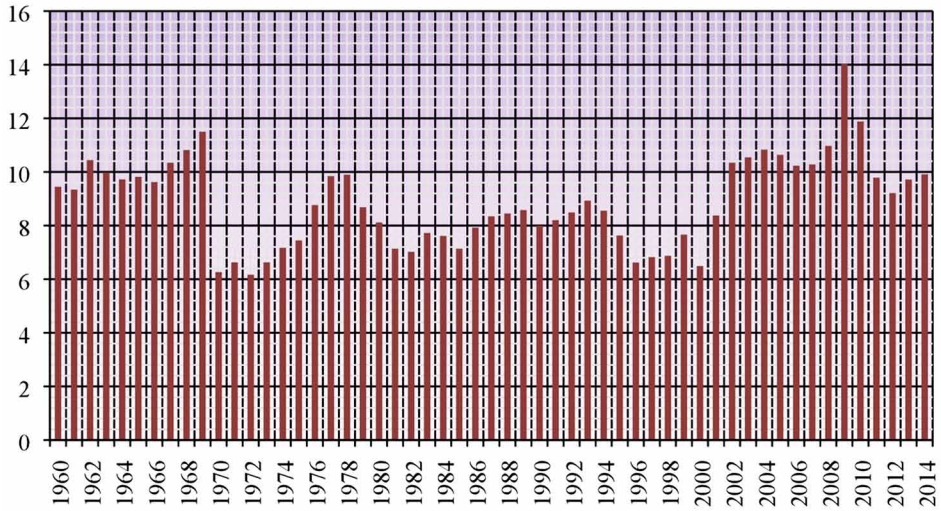
It is seen that the ability of Turkey to generate employment did not change especially after the 1980s and consequently the developments which could decrease unemployment did not occur. Beyond any doubt, monetary and fiscal policies have a great role for this reality. Likewise, the fact that monetary authority adopted inflation targeting regime and the fact that fiscal policies focused on budget deficits and creating primary surplus caused a significant decrease in the generation of employment power (Köksel and Fisunoğlu, 2013, p. 45).

The fact that unemployment in the Turkish economy displays a non-decreasing characteristic requires the questioning of the traditional politics aimed to solve this problem. In this context, it should be noted that the politics which could decrease unemployment should require the sustainability of economic growth. It should be emphasized that first of all there should be a paradigm shift in the labor force market and a process which includes education policies aiming flexible employment and decrease in cost burden at micro level and aiming increase in the quality at macro level (Türk Sanayicileri ve İşadamları Derneği [TUSİAD], 2002, p. 235).

Economic growth, defined as the positive increase in the GDP and per capita GDP from one year to the other, reflects the Figure 4 as below for the period 1960-2014 in Turkey. According to this, on a yearly basis, it stands out that economic growth has a floating and low potential process in general.

The paradigm shift in 1980 and the drift in economic policies distinguished this period from the previous ones and the effects of fluctuation and developments observed in the world after the abolition of constraints on capital movements in 1989 on the economy were started to be felt considerably. As a result, in this process, it is seen that economy went into an unsteady growth process with fluctuation in capital movements at an increasing level (Boratav, 2008, p. 172). As well as the fact that Turkey started to face instability more often under international capital movements with the free capital mobility of Turkey increased the fragility in the economy, it also caused discussions about applications like Tobin tax[4] (Meçik, 2014, p. 362). However, the most significant condition, in order to empower the economic

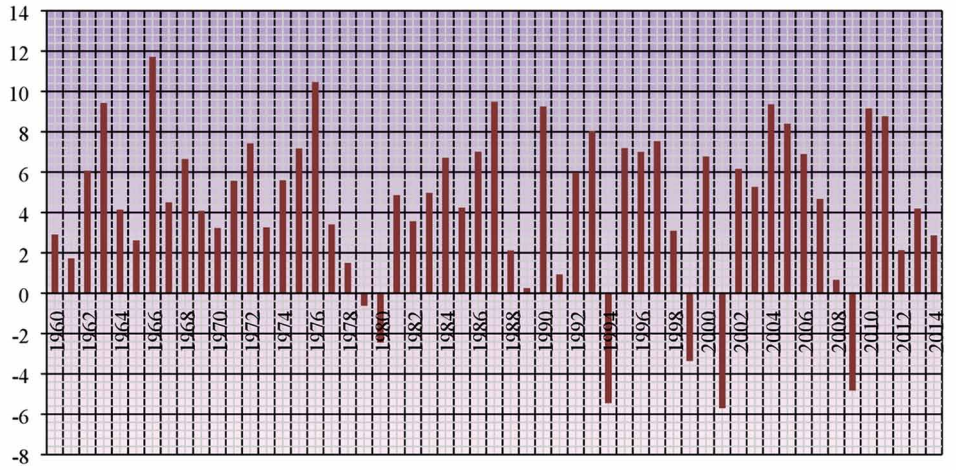
*Figure 3. Unemployment rate in Turkey: 1960-2014*
*Source: OECD Statistics.*






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*Figure 4. Economic growth rate in Turkey: 1960-2014*
*Source: Republic of Turkey Ministry of Development, Turkstat.*




growth in Turkey, should be rendering sustainable growth. Likewise, the recent empirical findings remark joint relation of economic growth and employment. Especially, the fact that the countries with high-income level reach a better employment level and the role of economic growth in this reality is emphasized (Ghose, Majid, & Ernst, 2010, p. 99). It is a well-accepted reality that a sustainable economic growth is based on the technology keeping up with the present era and also the production of technology (Kepenek & Yentürk, 2005, p. 636).

Evaluating the Turkish economy for the period of 1960-2014 in terms of macroeconomic variables such as unemployment, inflation, and economic growth; it is possible to state that the introvert, protective and interfering industrialization model of the 1930s yielded to opening foreign countries in the frame of market-friendly neoliberal politics after 1980. During this period, it is seen that the average growth speed of Turkish economy resembled the developing countries while macroeconomic performance did not develop significantly in spite of paradigm change and political choices (Pamuk, 2014, p. 346).

The Turkish economy is in a period of change related to sectoral based labor productivity which is under the effect of not only global developments but also development acceleration of the economy. Therefore, it is seen that the percentage of the agricultural sector in the revenue and employment regressed while the percentage of the service sector came into prominence. In the same process, while the sectoral distribution of labor force was getting changed, resistance seen in the rates of unemployment in spite of all developments leads to inferences on jobless growth[5] (Meçik & Afşar, 2014, p. 19).

## THE MODEL

### Data

In the empirical analysis; the data of annual inflation rate, unemployment rate, and economic growth were used as three major macroeconomic variables for the Turkish economy in the 1960-2014 period. Whereas inflation rate data (INF) was taken as the general level of prices rate of increase series which



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was calculated by OECD[6] for the base year 2010 Consumer Price Index (CPI) series, the unemployment rate data (UN) was provided from the series presented in the OECD Statistics database. The economic growth series is the numbers of growth speed taken from Republic of Turkey Ministry of Development web page and calculated for GDP series harmonized with Turkish Statistical Institute (Turkstat) data.

## Methodology

The methodology in the present chapter was developed according to Granger causality testing which a statistical hypothesis is testing in order to find out whether a time series is useful in forecasting another time series. Such cause and effect relations among economic variables are analyzed with causality tests in a frame of economic theory (Tarı, 2010, p. 437).

Even though the applicability of the causality test developed by Granger (1969) is high, there is a need to make some pre-testings about stationarity and cointegration. The Granger methodology is highly sensitive to the characteristics such as stationarity and cointegration of series. Since series with unit root do not have standard distribution as stated in Gujarati (1995), F test procedure and Granger methodology will not be valid.

On the other hand, dynamic causality test developed by Granger (1988) which enables to test the causality through a vector error correction mechanism, requires all of the series to be integrated I(1) order one. It does not allow testing the causality among the series at different integration orders (Büyükakın, Bozkurt & Cengiz, 2009, p. 111). Hence, Toda and Yamamoto (1995) developed a test which provides an analysis of causality relation without regarding the integration orders of series and the existence of cointegration relation.

Toda-Yamamoto test developed according to a VAR model requires the estimation of VAR ($p$+$d$) model given in equation (1) while $p$ is the optimal lag length and $d$ is maximum integration order[7]. In the equation (1), $A$ represents parameters matrix while $x$ a vector consist of $k$ variable and ε and υ represent error terms vector and constants vector respectively (Akçay, 2011, p. 84).

$$x_t = v + A_1 x_{t-1} + \ldots + A_p x_{t-p} + \ldots + A_{p+1} x_{t-p-d} + \varepsilon \quad (1)$$

The null hypothesis on the non-existence of Granger causality is tested by practicing a constraint supposing the first $p$ parameter in the equation (1) equals to zero. MWALD (Modified Wald) statistics obtained from the estimation equation (1) has an asymptotic chi-square distribution (Kar, Nazlıoğlu, & Ağır, 2014, p. 69). However, Hacker and Hatemi-J (2006) suggested applying the test based on bootstrap distribution instead of standard chi-square distribution since the performance of MWALD statistics with standard chi-square standard is weak when the sample size is small. Likewise, bootstrap distribution displays a better performance when applied to both small and big samples compared to asymptotic chi-square distribution.

## Empirical Evidence

There is no precondition for the variables in leveraged bootstrap Toda-Yamamoto causality test developed by Hacker and Hatemi-J (2006) such as being stationary or cointegrated. However, maximum integration order of the variables should be known in order to apply the test (Büyükakın, Bozkurt & Cengiz,



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2009, p. 111). Because of it, Augmented Dickey-Fuller and Phillips-Perron unit root tests were applied in order to find out the integration order of the variables involved in the analysis. According to the results acquired from the Unit root test, the maximum integration order of the variables was defined as "1".

AS stated beforehand, the causality analysis developed by Hacker and Hatemi-J (2006) is based on a VAR ($p+d$) model estimation. Thereby, first of all, a VAR ($p$) model should be specified providing stability condition and necessary assumptions in order to analyze the causality between variables. In this context, after necessary testings, it was concluded that VAR (10) model is appropriate for the analysis of relation between inflation and economic growth; VAR (3) model for the analysis of relation between unemployment and inflation and again VAR (10) model for the analysis of relation between inflation and unemployment.

According to the results given in Table 2 about causality analysis, there is only one-way causality from economic growth to inflation. Since MWALD statistics obtained from causality tests applied for the other variables are smaller than the bootstrap critic values, the null hypothesis cannot be rejected. That is, it is not possible to refer to causality between unemployment and inflation.

*Table 1. Unit root test results*

| **INF** | **Level** | | | | **First Difference** | | | |
|---|---|---|---|---|---|---|---|---|
| | **Constant** | **Trend** | **Constant** | **Trend** | **Constant** | **Trend** | **Constant** | **Trend** |
| ADF | -2.0542 | [0.2636] | -1.8942 | [0.6440] | -8.8262 | [0.0000] | -4.2400 | [0.0000] |
| PP | -1.8728 | [0.3425] | -1.6486 | [0.7603] | -9.0051 | [0.0000] | -9.5579 | [0.0000] |
| **UN** | **Level** | | | | **First Difference** | | | |
| | **Constant** | **Trend** | **Constant** | **Trend** | **Constant** | **Trend** | **Constant** | **Trend** |
| ADF | -2.6335 | [0.0926] | -2.7443 | [0.2238] | -7.0722 | [0.0000] | -7.0164 | [0.0000] |
| PP | -2.7074 | [0.0793] | -2.7467 | [0.2230] | -8.1007 | [0.0000] | -8.3253 | [0.0000] |
| **Growth** | **Level** | | | | **First Difference** | | | |
| | **Constant** | **Trend** | **Constant** | **Trend** | **Constant** | **Trend** | **Constant** | **Trend** |
| ADF | -1.6469 | [0.4520] | -1.4336 | [0.8396] | -5.9688 | [0.0000] | -5.7576 | [0.0001] |
| PP | -1.7287 | [0.4113] | -1.3995 | [0.8501] | -6.4024 | [0.0000] | -11.041 | [0.0000] |

The values in brackets are the probability values.

*Table 2. Causality test results*

| | **MWALD Stat.** | **Bootstrap Critical Values** | | |
|---|---|---|---|---|
| | | **% 1** | **% 5** | **% 10** |
| INF⇒GROWTH | 6.791 | 30.649 | 22.003 | 18.312 |
| GROWTH⇒INF | 29.094 | 31.842 | 22.106 | 18.329 |
| GROWTH⇒UN | 3.013 | 12.786 | 8.510 | 6.653 |
| UN⇒ GROWTH | 0.457 | 12.734 | 8.424 | 6.544 |
| UN⇒INF | 5.289 | 33.461 | 23.679 | 18.943 |
| INF⇒UN | 7.537 | 35.873 | 24.852 | 20.235 |



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## CONCLUSION

Unemployment, inflation and economic growth could be listed as the most significant indicators of an economy at the macroeconomic level. It is known that there exists some trade-off among those variables proposed in the theoretical framework. According to this, while unemployment rate decreases in an economy, it could be expected that inflationary pressures may increase.

In the present chapter, it is aimed to analyze the relation among the economic growth, unemployment rate and inflation variables for the period of 1960-2014 in Turkey and in consideration of the findings, to present some policy suggestions at macroeconomic level for the Turkish economy.

As emphasized in the literature, since those relationships could vary from period to period, analyzing this relation through different and new methods has a supportive quality to empower the knowledge in the literature. Though findings of the analysis suggest that there is one-way causality from economic growth to inflation, it is not possible to state that there is a causality relation between unemployment and growth; and unemployment and inflation. So, like the statement in the literature and emphasized commonly in the studies about unemployment, inflation and economic growth relation; the relation among unemployment, inflation, and economic growth variables could vary from period to period; and the findings of the present study about the 1960-2014 period of Turkish economy could be taken confirmatory since they are parallel to the findings of the studies about the same period performed by Süleymanov and Nadirov (2014) and Akan and Kanca (2015).

In accordance with the findings of the analysis, it is possible to speculate that the growth process in the related period is in the manner of creating inflation and corresponds to an inflationary growth process as a characteristic. Additionally, it is also observed that the conditions created by the global economic crisis in the last period of Turkish economy cyclically changed the mentioned relation for a while.

In the light of the findings acquired from the time series analysis, it is possible to emphasize that policymakers should be in an approach regarding the structural features of the economic growth dynamics in the framework of price stability. Therefore, the need for structural reforms which has been discussed very often recently in the Turkish economy should be highlighted once more. Likewise, the present situation shows that the economic growth process should well-analyzed in terms of problem solutions such as unemployment and inflation.

In order to keep the growth process sustainable, the economy of Turkey should be built in a manner of promoting growth dynamics; based on technology and meanwhile not only importing technology but also producing it. It is obvious that it will bring new requirements in the context of the labor market, quality and productivity increase.

It is expected that bringing about sustainable economic growth will be effective to empower the economy in terms of finance; to support price stability and to diminish unemployment problem. Thus, it could be noted that permanent political designs which are for medium or long terms should be formed for the economy of Turkey instead of short term solutions.



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## KEY TERMS AND DEFINITIONS

**Economic Growth:** The increase in an economy's production possibilities frontier over time. There are three main causes of economic growth: increases in the stock of capital; technological progress embodied in new capital equipment; and growth in labor input due primarily to population growth, immigration, and changes in participation rates.

**Granger Causality:** The Granger causality test is a statistical hypothesis test for determining whether one time series is useful in forecasting another, first proposed in 1969. The intuition behind the Granger causality test is the quite straightforward. Ordinarily, regressions reflect "mere" correlations, but C. Granger argued that causality in economics could be tested for by measuring the ability to predict the future values of a time series using prior values of another time series.

**Inflation Rate:** The annual percentage increase of the cost of living as measured by the consumer price index. Consumer price indices are based on a representative basket of goods and services purchased by consumers in an economy. Composition and relative weights of the basket are reviewed periodically.

**Inflation Targeting:** Inflation targeting is a monetary policy in which a central bank has an explicit target inflation rate for the medium term and announces this inflation target to the public. The assumption is that the best that monetary policy can do to support the long-term growth of the economy is to maintain price stability. The central bank uses interest rates as its main short-term monetary instrument.



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**Phillips Curve:** The Phillips curve is a single-equation empirical model, named after A. W. Phillips. Phillips curve states the negative correlation between the unemployment rate and rate of inflation. The decreases in unemployment will end up higher rates of inflation.

**Unemployment Rate:** Unemployment rate is the number of unemployed people as a percentage of the labor force, where the latter consists of the unemployed plus those in paid or self-employment.

## ENDNOTES

1 For further information: Toda and Yamamoto (1995).

2 OAPEC is a regional Arab organization of an international character specializes in the affairs of oil. For further information: www.oapecorg.org.

3 For further information: Phillips (1958).

4 A means of taxing spot currency conversions that was originally suggested by James Tobin. The Tobin tax was developed with the intention of penalizing short-term currency speculation, and to place a tax on all spot conversions of currency.

5 Growth without creation of proportionate employment opportunities is called "jobless growth". Machinery and capital when displaces labor (and not helps it) in production, results in an increase in unemployment and causes "jobless growth".

6 The mission of the OECD is to promote policies that will improve the economic and social well-being of people around the world.

7 Maximum lag of the series should not exceed the optimal lag of count of VAR model. Otherwise Toda-Yamamoto causality test should not be applied.

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# Section 7
# Critical Issues and Challenges

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# Chapter 79
# Does Trust Matter for Foreign Direct Investment Decisions?

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## ABSTRACT

*Factors affecting the investment decisions of multinational companies are heavily researched in the literature. However, the number of studies dealing with the socio-cultural characteristics of host countries among these factors is quite limited. Among the cultural characteristics affecting location decisions, one of the primary cultural characteristics is the general level of trust between individuals. In this scope, this chapter intends to research whether the general level of trust in a society has an effect on the location decisions of foreign investors. In line with this objective, an analysis will be conducted by employing the panel data method for 39 emerging market countries for the period between 1998 and 2011. According to the results of the study, a low general level of trust in the host country represents a significant disadvantage for the attraction of foreign direct investments.*

## 1. INTRODUCTION

The impact of foreign direct investments (FDIs) on economic development is intensively researched in the literature. The relevant literature has proven many times that FDI promotes economic growth in the host country by providing the transfer of new knowledge and technologies, creating employment opportunities and increasing capital accumulation. Thus, FDIs are particularly important for emerging markets, as they do not have sufficient capital accumulation for industrialization. Due to the importance of FDIs, the literature has heavily researched the factors affecting FDI decisions. The studies underline that there are many factors that influence multinational firms' decisions about FDIs, such as the host country's market size the distance to other markets, openness, and incentives given to foreign investors, macroeconomic stability, tax advantages, human capital, and infrastructure quality. However, there are quite a few studies on the impacts of the socio-cultural dynamics of host countries on FDI decisions in the relevant literature.

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Among the socio-cultural characteristics of host countries that affect location decisions, one of the primary cultural characteristics is the general level of trust between individuals. So, the primary objective of this study is to assess the impact of the general level of trust in the host country on the FDI decisions in that country. As there are quite few studies conducted in this sphere, it is thought that this study will contribute significantly to the literature. In line with this objective, an analysis will be conducted by employing the panel data method for 39 emerging market countries for the period between 1998 and 2011.

The plan of this study is as follows: The introduction section will present the subject and aim of the study, as well as its contributions to the literature. The theoretical background and related literature section will deal with the place and importance of trust in economics, and it will also address the impact of the level of trust on investment relations by discussing the impact mechanisms. The third section will deal with the empirical methodology employed in the study. The fourth section presents the model and data. The fifth section will present the empirical findings. Lastly, the empirical results obtained under the title conclusions are discussed.

## 2. THEORETICAL BACKGROUND AND RELATED LITERATURE

According to Fukuyama (1995), a nation's well-being, as well as its ability to compete, is conditioned by a single pervasive cultural characteristic, which is the level of trust inherent in the society. As communities rely on association based on trust, and *trust is determined by culture*, it may be said that the general level of trust differs in distinct cultures. In fact, there are many studies in the literature advocating that trust and, particularly, the level of social trust are important determinants of the performance of economies.

The first study known to comprehensively address the effects of mutual trust on the economy is "The Moral Basis of Backward Society", conducted by Banfield and published in 1958. Banfield (1958) attributes the economic backwardness of Southern Italy, in comparison with Northern Italy, to the low general level of trust in the south. Family ties in Southern Italy are very strong, but the other individuals of the society beyond the family exhibit a low level of mutual trust. According to Banfield (1958), the poor general level of trust hampers the communication, cooperation, and interaction between individuals. This prevents the creation of large organizations that would promote economic development. Similarly, La Porta et al. (1997) stated that in large organizations and social structures in which the members interact with each other infrequently, trust was needed to support cooperation. In fact, La Porta et al. (1997) supported this claim by detailing empirical evidence as well.

According to Arrow (1972), the lack of trust plays a significant role in economic backwardness and underdevelopment. Arrow (1972) emphasizes that each commercial transaction relies, in itself, on trust, and that each transaction will definitely come to an end within a given period. Simply, the level of mutual trust is important for the formation of a market. This is because the future involves uncertainty and risk, and economic activities require that economic units trust the future behaviors of others. The linking of supply and demand implies that there has been an explicit or implicit mutual agreement in the background. Economic units that comply with their contracts and thus have gained trust in the market are forced to resort to legal action when the other party fails to comply with the conditions set, which causes significant losses for the complying party in terms of time and money. In other words, the low level of general trust in a society is expected to increase the cost of transactions due to asymmetric information and associated market distortions.



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The relationship between the level of trust and FDIs is based on cooperative behavior, market distortions, and the costs arising from them. In the location decisions of multinational companies for the FDI, the perception of risk regarding the host country and the ensuing costs have an important role to play. As is the case with all economic exchanges, each party in a given FDI possesses special information, resulting in information asymmetry. However, this information asymmetry is greater due to the differences in social-cultural, economic, and legal structures of countries involved, especially with respect to foreign investments. Accordingly, it is possible to say that multinational companies may encounter greater uncertainty and risks when they make investments in another country in comparison to the ones they make at home. Contracts, which bind multiple parties in legal agreement over the transaction period, represent an attempt to mitigate the problem of asymmetric information and uncertainty. However, all of these contracts result in significant incremental costs that may eventually impact the location decisions of multinational companies (Bhadwarj et al. 2007; Kukharsky, 2012).

The general level of trust in a society is the result of the mutual experiences of its members. High interpersonal trust is expected to be created in an orderly, honest, and cooperative society, relying on norms mutually shared by its members. In other words, in order to attain a high level of interpersonal trust in a society, the relationships must be based on cooperation, and they should avoid opportunistic behavior (Fukuyama, 1995; Bhadwarj et al., 2007). In other words, each and every transaction has intrinsic information asymmetry; however, the societies with high generalized trust have a lower tendency to take advantage of this information for their own advantage. Accordingly, the monitoring and transaction costs are expected to be lower in societies with a high level of trust than in those societies with a low level of trust (Butter and Mosh, 2003).

People who do not trust each other in societies with a low level of trust will conduct their business relations within a system of formal rules, which ultimately pushes them to negotiate, come to terms with, and bring actions against others. This process considerably increases the transaction costs. This also indicates that the quality of functioning of the formal institutions becomes even more important in communities with a low level of trust. Nevertheless, a high level of trust is expected to substantially eliminate the adverse effects of an underdeveloped institutional environment on the location decisions made by the FDI's decision makers (Delios and Henizs, 2003; Kolstad and Villanger, 2004). For instance, despite the fact that the formal institutions of China are not sufficiently developed, its economy has grown so rapidly and has attracted FDI based on its high level of social trust. Given the fact that law and enforcement in developing countries in general are relatively weak, it is possible to say that the high level of general trust in the host country may reduce the perception of risk among foreign investors (Ang et al., 2009).

In conclusion, the steps that must be taken in order to consider and prevent any problems that could arise from a low level of trust do not only increase transaction costs, but they also result in significant opportunity costs for multinational companies in an environment where global competition is on the rise. The perception that opportunistic behavior is rarer in societies with a high level of trust and therefore the transaction costs will be lower and information sharing will be higher thanks to cooperative behavior, is expected to affect the location decisions of multinational companies. This high level of trust not only reduces the contractual costs, but it also decreases litigiousness, thus cutting legal transaction costs (Bhadwarj et al., 2007; Dearmon and Grier, 2009; Durlauf and Fafchamps, 2005)

However, the number of studies on this subject in the relevant literature is quite limited. The first known study to empirically research the effect of trust on bilateral trade was conducted by Butter and Mosch (2003). They determined that increasing trust by one standard deviation can encourage changes of up to 90-150% in bilateral trade. Guiso et al. (2004) found that the level of trade, portfolio invest-



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ments, and direct investments are at a lower level in countries where the level of mutual trust is low. As far as known, this is the first study investigating the effects of trust on FDIs. Moreover, Bhardwarj et al. (2007), Bottazzi et al. (2007) and Zhao (2011) noted that a high level of trust in the host country is an important determinant for the location decisions in relation to FDI. Additionally, Botazzi et al. (2007) stated that education and work experience reduce the effect of trust but do not eliminate it. Finally, Kukharsky (2012) found that a 1% increase in a country's level of trust leads to a more than 3% increase of the US FDI in this country.

## 3. EMPIRICAL METHODOLOGY

This study employs the dynamic panel approach. Many economic behaviors substantially involve a dynamic structure. As such, panel data may be extended in such way where economic behaviors can be adjusted dynamically at the individual level. At this point, with the inclusion of the lagged values of the dependent variable into the model as regressors, dynamic relationships are distinguished from the static panel data approach:

$$Y_{it} = \delta Y_{i,t-1} + X_{it}^{'}\beta + \mu_{it}\,,\ i\in\{1,2,\ldots,N\},\ \text{and}\ t\in\{1,2,\ldots,T\} \tag{1}$$

Here, *i* denotes the units such as individuals, countries, regions, etc. – in other words, the cross-section dimension of the panel data. Further, *t* denotes the time and is the time-series dimension of the panel data, $Y_{it}$ denotes the dependent variable vector, $X_{it}$ denotes the explanatory variables matrix, β denotes the parameter vector, $\mu_i$ denotes the unobservable unit specific impact, and $\mu_{it}$ denotes the error term. δ is a constant and denotes the dynamic adjustment. The error term is as follows:

$$\mu_{it} = \mu_i + \varepsilon_t + \nu_{it}\,. \tag{2}$$

Here, $\mu_i \sim iid\left(0,\sigma_{\mu}^2\right)$, $\varepsilon_i \sim iid\left(0,\sigma_{\varepsilon}^2\right)$ and $\nu_i \sim iid\left(0,\sigma_{\nu}^2\right)$ apply and are independent from each other.

In dynamic models, there may be a correlation between $Y_{i,t-1}$ and $\mu_{i,t-1}$ due to the impact of past shocks. Additionally, as $Y_{it}$ is a function of $\mu_i$ in panel data models, $Y_{i,t-1}$ is also a function of $\mu_i$. Therefore, for the model given in (1), $Y_{i,t-1}$ is correlated with the error term containing $\mu_i$. So, the assumption of strict exogeneity, which implies uncorrelatedness between the regressors and the error term, is invalid. Therefore, the estimators are not unbiased and consistent.

Arellano and Bond (1991) suggested the use of the generalized moments method (GMM) for dynamic panel data. This approach is also known as "two-stage instrumental variables" approach. The first-differenced model with the general instrumental variable can be written as:

$$Z'\Delta Y = \Delta Y_{-1}\delta + Z'\Delta X\beta + Z'\Delta u_{it} \tag{3}$$

or



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$$Z'\Delta Y = \Delta Y_{-1}\delta + Z'\Delta X\beta + Z'\Delta u_{it} \tag{4}$$

again, where $\Delta X = \left[\left(Y_{i,t-1} - Y_{i,t-2}\right), \left(X'_{it} - X'_{i,t-1}\right)\right]$. Accordingly, the GMM estimator can be obtained as:

$$\tilde{\Theta} = \left[\Delta X'Z\left(Z'\Omega Z\right)^{-1}Z'\Delta X\right]^{-1}\Delta X'Z\left(Z'Z\right)^{-1}Z'\Delta Y, \tag{5}$$

where Ω is the variance–covariance matrix.

To test the validity of the set of instruments, the Sargan (1958) test can be applied for GMM estimation. Additionally, the use of GMM requires the assumption that the first difference of the error term does not have a second-order serial correlation. The invalidity of this assumption implies that the lagged instrumental variables have not been set correctly. It is natural for the model to have first-order autocorrelation when the model includes the one lagged value of the dependent variable; this does not imply the presence of a specification error. Thus, it is important to test the presence of a second-order autocorrelation. For this purpose, the Arrelano-Bond (1991) *m*2 autocorrelation test is widely used.

## 4. MODEL AND DATA

For the objective of this study, this section delves into the effects of trust in emerging-market countries on FDI within the framework of a dynamic panel data model. The dynamic panel data model that was set up in line with this objective is as follows:

$$\begin{aligned} fdi_{it} &= \beta_0 + \delta fd_{i,t-1} + \beta_1 trst_{it} + \beta_2 \inf_{it} + \beta_3 \ln gdp_{it} \\ &\quad + \beta_4 gfc_{it} + \beta_5 invpr_{it} + \beta_6 enr_{it} + \beta_7 tax_{it} + \beta_8 opn_{it} + u_{it} \end{aligned}, \tag{6}$$

where $fdi_{it}$ represents the percentage of inward FDI to GDP, δ is the coefficient indicating the dynamic adjustment for FDI, and $\beta_k (k=0,1,\ldots,S)$ is the coefficient vector of the explanatory variables. Furthermore, $u_{it}=\mu_i+\varepsilon_t+v_{it}$ denotes the error term involving country- and time-specific effects.

This approach inevitably includes the control variables in the model for the accurate estimation of the effect of the level of trust in emerging market countries on FDI. Based on this, information regarding the effects of the control variables on the attraction of FDI and the dataset used is given below.[1]

- ***Trust*** ($trust_{it}$) represents the general level of trust in a given society, and the present study uses the Gallup World Poll's measure of trust as data. The dataset from 2011 was used, as it is the most comprehensive dataset for the countries within the scope of this research. Interpersonal trust is measured using the question, "*Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people*?" Trust is the percentage of respondents in each country replying, "*most people can be trusted*".



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- ***Inflation*** ($inf_{it}$) was added into the model to represent macro-economic stability. Kairuki (2015) notes that high inflation may increase the foreign companies' costs of doing business. A high inflation rate in the host country may also deter foreign investment, as the real local currency value of capital is already invested, and future returns may become smaller due to high inflation (Hayakawa et al., 2013). Additionally, inflation causes the prices to lose their signaling function. This makes it more difficult for foreign investors to make cost/profit predictions and long-term plans (Lewandowski, 1997). Gedik (2013) claims that policies aiming at reducing inflation have demand-restricting effects, and that this may adversely affect the decisions of foreign investors.
- ***Real per capita GDP*** ($gdp_{it}$) is widely used as a proxy for market size in host countries. Market size represents the domestic demand, and therefore the volume of sales. It is an important determinant, especially when the reason underlying the FDI decision of multinational companies is the market-seeking strategy. In other words, when multinational companies intend to carry out production for domestic demand, the market size and growth potential of the host country become more important (Busse and Hefeker, 2007). In this context, FDI becomes economically sensible, only when the volume exceeds a level at which the average cost of serving the market through exports exceeds the average cost of production within the market (Davidson, 1980). However, there are also views holding that market size does not affect or adversely affect investment decisions. Loree and Guisinger (1995) assert that factors affecting location decisions vary de pending on the FDI strategy used, and that location decisions of export-oriented FDIs are affected by costs rather than the market size. According to Asiedu (2004), who holds a different viewpoint, foreign investors tend toward economies where the return on capital is high. Since capital is scarce in countries in which the income per capita is relatively low, the return on capital is higher. In conclusion, when it comes to export-oriented foreign investments, a high GDP per capita is expected to negatively affect the FDI decisions.
- ***Gross fixed capital formation*** ($gfc_{it}$) is used as a proxy for infrastructure in the host country. Insufficient infrastructure causes disruption at each stage of production, thus increasing costs. On the other hand, with good infrastructure, it becomes more efficient to transport goods from one place to another, communicate with people involved in business operations through the use of technology, have buildings that are well set up and have uninterrupted power, and have ample water supplies (Kariuki, 2015). Therefore, it is thought that the high level of infrastructure in the host country positively affects the location decisions of foreign investors.
- ***Investment profile*** ($invpr_{it}$) includes the factors related to the risk of investment that are not covered by other financial and economic risk components. The investment profile index was derived from the dataset of the International Country Risk Guide (ICRG), provided by the PRS Group. The investment profile rating assigned is the sum of three subcomponents (Contract Viability / Expropriation, Profits Repatriation, and Payment Delays), each with a maximum score of 4 points and a minimum score of 0 points. A score of 4 points equates to Very Low Risk and a score of 0 points to Very High Risk. As high values of the investor profile imply low risk, high index values are expected to positively affect FDI decisions.
- ***Secondary school enrolment rate*** ($enr_{it}$) is used to represent the level of human capital in the country. High skills and trained labor are expected to reduce the transaction costs, as they minimize the duration of training required for the use of new production techniques and new technologies. Furthermore, the level of human capital is determinative of management skills, communication in business relationships, and the effectiveness of decision-making processes. In conclusion,



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a low level of human capital is expected to adversely affect location decisions since it reduces the efficiency and profitability of investments.

- ***Taxes*** ($tax_{it}$) are one of the basic factors taken into account by foreign investors in their assessments, which are based on costs. The model uses the corporate tax rate of the host country to represent the taxes. High tax rates are expected to adversely affect location decisions.
- ***Openness*** ($opn_{it}$) refers to the trade openness of the host country. The ratio of the sum of imports and exports to GDP was used to represent openness. In the case of export-oriented FDI (called vertical FDI), foreign investors prefer more open economies, as trade restrictions substantially increase transaction costs. However, according to the tariff-jumping hypothesis, in horizontal FDIs, foreign investors tend to prefer less open economies to protect against the competition brought about by imports. In line with these explanations, it may be said that the effect of openness on the decisions of foreign investors varies depending on the country in question.

## 5. EMPIRICAL RESULTS

The model given in equation (11) in the study is estimated to take into account the annual panel data for 39 emerging market countries for the period between 1998 and 2011.[2] Table 1 gives the descriptive statistics for the variables.

Examining Table 1, it is evident that the null hypothesis that all variables in the model are normally distributed is rejected. The estimation results of the dynamic model given in Equation (6) are shown in Table 2.

Paying close attention, one can see that the model is estimated by adding the one-period lagged values of all variables, excluding trust. This is related to the purpose of eliminating the potential problem of endogeneity among the variables, and to the expectation that investment decisions will be taken with a delay (see Asiedu and Lien, 2004; Naude and Krugell, 2007; Majocchi and Presutti, 2009; Anyanwu, 2011).

Examining the estimation results, it can be seen that the general level of trust in the host country is a significant determinant of the FDIs flowing into the country. In other words, economies with a low level of trust have a significant disadvantage in attracting FDIs. This finding is consistent with the find-

*Table 1. Descriptive statistics*

| | Mean | Median | Max. | Min. | Std. Dev. | Skewness | Kurtosis | Jarque-Bera | p-value |
|---|---|---|---|---|---|---|---|---|---|
| $fdi_{it}$ | 28.15 | 24.01 | 101.35 | 1.02 | 18.87 | 1.07 | 3.92 | 122.92 | 0.00 |
| $trust_{it}$ | 21.03 | 20.00 | 58.00 | 8.00 | 10.38 | 2.10 | 8.13 | 998.54 | 0.00 |
| $invpr_{it}$ | 8.63 | 9.00 | 12.00 | 2.42 | 2.19 | -0.57 | 2.73 | 31.22 | 0.00 |
| $gdp_{it}$ | 8204.03 | 4942.45 | 57558.72 | 326.68 | 10397.85 | 2.70 | 10.89 | 2077.84 | 0.00 |
| $gfc_{it}$ | 24.21 | 23.01 | 48.27 | 5.47 | 6.99 | 0.54 | 3.71 | 37.99 | 0.00 |
| $inf_{it}$ | 7.45 | 4.88 | 85.74 | -11.37 | 9.54 | 4.07 | 26.32 | 13880.64 | 0.00 |
| $enr_{it}$ | 81.48 | 85.92 | 110.03 | 23.25 | 19.09 | -1.15 | 3.75 | 132.93 | 0.00 |
| $tax_{it}$ | 26.48 | 28.00 | 55.00 | 0.00 | 9.10 | -0.01 | 4.95 | 86.47 | 0.00 |
| $opn_{it}$ | 83.27 | 69.88 | 220.41 | 15.87 | 43.06 | 0.95 | 3.20 | 82.49 | 0.00 |



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*Table 2. Dynamic panel GMM estimation results*

| *Dependent Variable:* $fdi_{it}$ | *Coefficient* | *t-Statistics* | *p-Values* |
|---|---|---|---|
| constant | 7.7020 | 2.2397 | 0.0256 |
| $fdi_{it-1}$ | 0.7066 | 8.2928 | 0.0000 |
| $trust_{it}$ | 0.1047 | 3.0786 | 0.0022 |
| $inf_{it-1}$ | -0.0160 | -1.8177 | 0.0697 |
| $\ln gdp_{it-1}$ | -0.6652 | -2.0820 | 0.0379 |
| $gfc_{it-1}$ | 0.1963 | 3.2902 | 0.0011 |
| $invpr_{it-1}$ | 0.5173 | 3.5408 | 0.0004 |
| $enr_{it-1}$ | 0.0526 | 2.5458 | 0.0113 |
| $tax_{it-1}$ | -0.1519 | -2.6387 | 0.0086 |
| $opn_{it-1}$ | 0.0502 | 2.9954 | 0.0029 |
| *Adjusted R-squared* | 0.9235 | | |
| *Observations* | 546 | | |
| *Wald test* | 3274.147 (*p-value*=0.000) | | |
| *Sargan test* | 0.3227 (*p-value*=0.57) | | |
| m*2 serial corelation test* | 1.0795 (*p-value*=0.281) | | |

ings of Guiso, Sapienza, and Zingales (2004), Botazzi et al. (2006), Bhardwarj et al. (2007), Ang et al. (2009), Zhao (2011), and Kukharsky (2012). As stated in Ang et al. (2009), high general levels of trust in a society facilitates social exchange by reducing the need for time-consuming and costly monitoring, and therefore makes it possible for more efficient economic exchanges in a more favorable business environment that attracts foreign investors. Besides, level of generalized trust in host country for foreign investors determines perception of their risk of dealing with strangers in host country. Additionally, it was observed that the high general level of trust in emerging markets was better able to attract FDIs than macroeconomic stability, trade openness and human capital. As stated above, since institutional and legal environments of emerging economies are not sufficiently development, this finding indicates that general level of trust in host country has a greater effect on location decisions of foreign investor.

Assessing the control variables in the model, it can be seen that all variables, excluding inflation, are individually significant and generally fit the expectations. However, the parameter concerning the inflation rates variable is significant only at a significance level of 10%, but it may be said to fit the expectations. The finding that inflation adversely affects the location decisions of a given FDI is consistent with the findings of Kolstad and Villanger (2004). Furthermore, Naude and Krugel (2007) and Demirhan and Masca (2008) estimated that the sign of inflation is negative at a level of significance of 10%, which



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is similar to the findings of our study. Kok and Acikgoz Ersoy (2009) found that the effect of inflation was negative, although very minor. Finally, Schneider and Frey (1985), Vijaakumar et al. (2010), and Mhlanga et al. (2010) could not find a statistically significant relationship.

The sign of real GDP per capita, which represents the market size, is negative according to the model estimation. Asiedu (2002) states that foreign investors prefer those countries where the return on capital is high. Since the capital is scarce in the countries where the GDP per capita is low, the return on capital in these countries is higher. In other words, since the return on capital is lower in the countries where the GDP per capita is high, there is an inverse relationship between real GDP per capita and FDI. On the other hand, according to Asiedu (2004), in order for the real GDP per capita to positively affect FDI decisions, it must exceed a certain threshold. The findings of this study are consistent with the findings of Edwards (1992), Jaspersen et al. (2000), and Asiedu (2002; 2004) in that real GDP per capita is inversely related to FDI/GDP.

It is clear from the model findings that gross fixed capital formation, which represents the infrastructure of the host country, is a crucial determinant of location decisions. According to the model results, the infrastructure of the host country has a greater effect on location decisions than all other explanatory variables, excluding the investor profile. This finding indicates that the transportation, communication, and technological facilities of the host country substantially contribute to the attraction of FDI. This finding is consistent with the findings of Habib and Zurawick (2002), Kariku (2015), Kok and Acikgöz Esoy (2009), Awan et al. (2011), and Gichamo (2012).

With respect to the investor profile index, it can be seen that its sign is positive and that it is the factor with the greatest effect on investment decisions within the framework of the model.[3] High values of the investor profile index, consisting of three subcomponents – namely, contract viability, profit repatriation, and payment delays – represent low investment risk. As the host country's risk decreases in terms of these three subcomponents, it has greater advantages for attracting FDIs. Since the effect of the investor profile index is positive, and given that this effect is relatively high, the findings of this study are consistent with those of Busse and Hefeker (2007), and Baek and Qian (2011).

According to the results of the model, human capital has a positive effect on FDIs. This finding verifies the opinions of Lucas (1990) and Dunning (1988), in that a low level of human capital increases transaction costs and decreases efficiency, thereby detracting from the return on FDI. This finding is also consistent with the findings of Noorbakhsh, et al. (2001), Asiedu (2006), Bhadwarj et al. (2007), Dutta and Osei-Yeboah (2010), and Kim and Park (2013).

With respect to taxes, it is seen that environments where high taxes are imposed adversely affect the location decisions of foreign investors, which is in accordance with expectations. This finding is consistent with those of Demirhan and Masca (2008), Tang (2012), and Gedik (2013). Additionally, tax policies have a greater effect on location decisions than human capital, macroeconomic stability, and even trade openness.

It can be seen that trade openness has a positive effect on FDI. It was previously noted that there are different views in the literature regarding the effect of trade openness on location decisions, and that the results vary depending on the countries and FDI strategies. In the model that was formulated, trade openness positively affects location decisions. This finding verifies the view that foreign companies intending to make export-oriented FDIs prefer countries that have higher trade openness, which is based on the idea that trade restrictions increase transaction costs. The finding that trade openness contributes to the attraction of FDIs is consistent with the findings of Asiedu (2006), Kariuki (2015), and Janicki and Wunnava (2004).



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Finally, the high adjusted determination coefficient in the model implies that the changes in the explanatory variables substantially account for the changes in the dependent variable, and that the null hypothesis where the coefficients for the Wald test are simultaneously equal to zero is rejected in favor of the alternative hypothesis that the model is generally significant. Additionally, the Sargan test statistic calculated for the model fails to provide sufficient evidence for the rejection of the null hypothesis, which implies the suitability of the instrumental variables used to estimate the dynamic model. That is, the instrumental variables used for the dynamic panel GMM estimations are suitable. Moreover, when the $m2$ serial correlation test statistic proposed by Arellano and Bond (1991) – as required by the use of second lags as instrumental variables for GMM estimations – is examined, the null hypothesis implying that none of the models have serial correlations cannot be rejected. Accordingly, this means that there is no second-order serial correlation problem in the model.

## 6. CONCLUSION

In addition to its contribution to capital accumulation and employment, FDI also provides important advantages for emerging economies, such as the transfer of technology, management, and organization applications. In their location decisions, foreign companies tend to gravitate toward countries that would provide them with various advantages. The factors that have an effect on FDI decisions are widely researched in the literature. Characteristics of host countries, such as the presence of domestic demand, proximity to markets, and costs, are heavily researched. However, the number of studies on the cultural identities of countries is quite limited.

The primary characteristic among the cultural characteristics that affect location decisions is the general level of trust between the individuals in the host country. Each commercial transaction is based on the mutual trust between parties. The lack of trust between parties requires that various measures be taken for the accomplishment of the commercial transaction. Each measure taken will increase the transaction costs. In FDIs, it is difficult for the home country to know and assess to the full extent of all legislations and procedures in the host countries. In addition to the knowledge of legal processes, it is necessary to assess the quality of functioning of the legal processes as well. In other words, the presence of laws does not necessarily mean that the enforcement of law is satisfactory.

At this point, the importance of interpersonal trust for commercial relationships becomes more obvious. The level of interpersonal trust results from the mutual experiences of individuals in the society. A high general level of trust in a given society indicates that the parties are unlikely to act contrary to expectations. In societies where the general level of trust is low, the problems arising out of the information asymmetry between parties are more serious. Information asymmetry exists in any society, irrespective of whether they have low or high levels of trust. However, societies with a low level of trust are more likely to suffer from problems arising from information asymmetry. Such an environment increases transaction costs, and it also makes it more difficult to carry out management/organization activities and to make predictions and long-term plans. Consequently, a low general level of trust in a society puts that country at a disadvantage in relation to the location decisions for FDI. The model that was set up for 39 emerging economies also shows that a low level of interpersonal trust poses a serious disadvantage in attracting FDIs.



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## ENDNOTES

1 The definitions and sources of the variables are listed in the appendix, Table 3.
2 The list of 39 emerging market countries is given in the appendix, Table 4.
3 Note that real per capita GDP is used in logarithmic form.

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## APPENDIX

*Table 3. Emerging Market Countries*

| Code | Country | Code | Country |
|---|---|---|---|
| ARE | United Arab Emirates | LVA | Latvia |
| ARG | Argentina | MAR | Morocco |
| BGD | Bangladesh | MEX | Mexico |
| BGR | Bulgaria | MYS | Malaysia |
| BHR | Bahrain | NGA | Nigeria |
| BRA | Brazil | PAK | Pakistan |
| CHL | Chile | PER | Peru |
| CHN | China | PHL | Philippines |
| COL | Colombia | POL | Poland |
| CZE | Czech Republic | QAT | Qatar |
| EGY | Egypt, Arab Republic | ROU | Romania |
| EST | Estonia | RUS | Russia |
| GRC | Greece | SVN | Slovenia |
| HUN | Hungary | THA | Thailand |
| IDN | Indonesia | TUR | Turkey |
| IND | India | UKR | Ukraine |
| IRN | Iran, Islamic Republic | VEN | Venezuela |
| ISR | Israel | VNM | Vietnam |
| KOR | Korea, Republic | ZAF | Republic of South Africa |
| LTU | Lithuania | | |



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*Table 4. Emerging Market Countries*

| Variables | Definition | Source |
|---|---|---|
| **Definition of the Variables** | | |
| FDI | Percentage of Inward FDI to GDP | The United Nations Conference on Trade and Development (UNCTAD) |
| **Explanatory Variable** | | |
| Trust | Percentage of respondents answering "can be trusted" to the Gallup World Poll question, "Generally speaking, would you say that most people can be trusted or that you have to be careful in dealing with people? | Galup World Poll |
| **Control Variables** | | |
| Inflation | Inflation rates of consumer prices (2005=100) | International Financial Statistics CD-Rom |
| GDP per capita | Real GDP per capita in US Dollar (2005=100) | International Financial Statistics CD-Rom |
| Gross fixed capital formation | Percentage of Gross fixed capital formation to GDP | International Financial Statistics CD-Rom |
| Investment profile | Investment profile index | International Country Risk Guide |
| Enrolment rates | Secondary school enrolment rates | UNESCO |
| Taxes | Corporate tax rates | World Tax Database |
| Openness | Percentage of import and export to GDP | International Financial Statistics CD-Rom |



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# Chapter 80
# Small Active Investors' Perceptions and Preferences Towards Tax Saving Mutual Fund Schemes in Eastern India: An Empirical Note

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## ABSTRACT

*Perception and preference factor plays an important role and help the investor to understand and make the meaningful investment decisions. These two factors are highly influenced by demographic differences of an investor. The present study aims to examine the perception and preference factors influencing the investment behavior of an investor based on various demographics differences. Survey method of primary data collection techniques was adopted to collect responses of 750 respondents from Eastern India particularly (state capital or satellite towns having the population of 10,00,000) Bihar, Jharkhand, Odisha, West Bengal, Sikkim and Assam. Results of the present study suggest that significant demographics differences occur in investment perceptions and preferences towards tax saving mutual fund investments among the investors.*

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## INTRODUCTION

India's financial market has gone through tremendous changes either in terms of regulatory framework, stakeholders' participation, its size, efficiency or effectiveness and outreach to the bottom of pyramid. The Government understand the vulnerability of investors and hence introduced better protection norms for them as financial markets otherwise has had a long history of frauds and deception. Regulatory bodies have also introduced laws that have resulted in speedy settlement and reduced costs. Settlement time has been brought down to overnight from seven days as it existed earlier. Regulatory bodies have also launched awareness campaigns that are expected to make new investors careful and confident. The recent thrust of financial inclusion policies has further enriched the scope of economy leading to a sea change in the financial market. Throughout the world financial markets are becoming well-organized and providing more encouraging solutions to the investors. Consistent with this evolution, Indian Mutual Funds industry has also witnessed a rapid growth and opened new vistas to millions of investors by virtually taking investment to their doorstep. The Mutual Fund Industry in India has grown tremendously and the assets and under management has increased from Rs. 90,587 crores in 2001 to Rs. 9,05,120 in 2014. Although the Indian Mutual Funds Industry has understood the importance of investor's perception and preference towards high return; professional management; trust and long term financial benefits, still they continue to differentiate their products as a response to the economic changes. It, therefore, became important to understand and examine investor's perception and preference, and disclose some valuable information to support meaningful investment decisions. This is considered important from regulatory bodies, investors and AMCs point of view. The question we have explored is "what perceptions investors as of now have vis-à-vis trust, long-term safety, risk, returns and other relevant parameters. Gender, geographical location, age, education, occupation, income, saving and marital status have been studied as moderating variables. Study aims to investigate and identify the small active investor's perception and preference for Tax Saving Mutual funds particularly in eastern India. Further the study also examines the various factors that small investor takes into consideration before investing in a Tax Saving Mutual fund schemes. The study is concentrating on the behavior of small active investors and hence it is a part of behavioral finance area.

## REVIEW OF LITERATURE

This literature review has been undertaken to understand the various demographic factors having influences on investor's perception and preference to towards mutual funds. Jambodekar (1996) studied to explore the awareness about Mutual Funds among investors and to identify the factors which encourage the purchasing decision and the selection of a specific fund in India. Findings suggest that newspapers and magazines are the main source of information through for investors to get the details about Mutual fund schemes and fund provider service. Sundar (1998) conducted a survey to understand an insight into the functioning of private mutual fund company based in India with reference to Kothari Pioneer Mutual Fund. Findings suggest that the mutual fund agents and distributors play a significant role in spreading the Mutual Fund investment culture whereas small investors' age and income are the two important factors in the choice of scheme selection. However, fund return and brand image are the key considerations while purchasing of Mutual Fund Schemes. Panda and Tripathy (2001) used factor analysis and principal component analysis for survey based study to explore the factors affecting investors



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purchasing and preference decision based on a sample size of 300 respondents. The factors affecting the purchasing decision of the investor were hassle free trading, brand name and lock in period. Safety, liquidity, regular income and tax benefits acts as determinants of preferences of the investors for mutual fund. Singh and Vanita (2002) have conducted a survey of 150 investors in Delhi. The study has revealed that the investors' favored to invest in public sector mutual funds companies with an investment objective of availing tax exemptions benefits. The study further concluded that the majority of the investors were dissatisfied with the performance of their Mutual Funds who had opted for growth schemes. Wilcox (2003) in his study examined how investors choose a Mutual Fund within a given range of funds/ schemes. The key findings are that investors pay a great deal of attention to past performance. Investors vastly overweight loads relative to expense ratios when estimating a fund's overall fee structure. He also found that investors with knowledge of basic finance are less likely, not more likely, to make rational fund choices. Singh and Chander (2004) have conducted research to find the significant factors affecting perception of investors of Mutual Funds. The study has surveyed 400 investors and infers that middle class investors preferred to invest in Mutual Funds in order to get tax benefits. Further it was found that Mutual Funds to be better investment alternative and public sector investments to be less risky for small investors. Ranganathan (2006) has examined the related characteristics of the fund selection behavior of individual investors towards mutual funds. The study highlights that the individual investor's investment objective was to save for retirement purpose. The author argued that low awareness level regarding the mutual funds may be one of the reasons for not preferring mutual funds as a viable option for their portfolio investment. The author adds that the mutual fund industry players should understand the individual behavior before it introduces different types of funds to penetrate the market successfully and to improve their professional management skills as investors are apprehensive to invest in mutual funds due to lack of professional management. Walia and Kiran (2009) in their study have tried to identify critical gaps in the existing structure for mutual funds. The study also extends to understand the need of redesigning existing mutual fund services by Acknowledging Investor Oriented Service Quality Arrangements in order to understand investor's behavior while introducing any financial innovations. Rao & Parashar (2010) in his study made an attempt to identify the factors affecting the perception of investors regarding mutual funds investment. They concluded that tax incentive was one of the important factors affecting the retail investors while investing in mutual fund. Saini, Anjum and Saini (2011) have analyzed the investors' awareness and perception regarding investing in mutual funds and studied the investors' opinion regarding main deficiencies in the working of the Mutual Fund industry. The present investigation outlined that mostly the investors have positive attitude towards mutual funds investment. In order to maintain their confidence in mutual funds they should be provided proper and systematic information relating to different developments and changes in the Mutual Fund industry. Singh (2012) argued that the majority of the respondents' lack knowledge regarding functioning of mutual funds. He further suggested that demographic variables (gender, income and qualification) have significantly influence the investors' attitude towards mutual funds. In an advanced the benefits provided by mutual funds are concerned, return prospective and liquidity are considered as the most important factors by the investors followed by transparency, flexibility, and affordability. Rathnamani (2013) suggested that the investors prefer to invest in Mutual Funds in order to have high return at low level of risk, liquidity and safety of investment. The study further concluded that the Mutual Fund as an investment option is catching the attention of various segments of the society, for investors, professional, industrialists, academicians, financial intermediaries and regulators for varied reasons. Bhuvaneswari (2014) confirmed that funds rate of return, liquidity, and market share act as the major factors influencing the perception



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of investors. Sharma and Agrawal (2015) analyzed the impact of demographic factors in influencing buyers' decision and to identify the intensity of various factors that positively and adversely affect their decision. Findings suggest that the success depends upon high return, and professional competence of fund managers. However, liquidity, flexibility, tax savings, service quality and transparency etc. are some of the factors which have a higher impact on perception of investors.

From the literature review we find that hardly any such studies have been conducted for the eastern India that may differ from other regions of India. Our research gaps hence may be summarized as:

Geographical Gap: No such study, to the best of literature survey conducted, has been undertaken about Tax Saving Mutual Fund, and its perceptions and preferences in Eastern India. Government focuses towards financial inclusion particularly for the bottom of pyramids at the national level can't be fulfilled without understanding the investor's perception and preferences in this part of the country.

Time Gap: Study on the Small Active Investors (SAI) is contemporary (Current data collected is during 2013-14). As the investors' perceptions and preferences are dynamic in nature it is important to undertake such studies recurrently. Allocation of funds and performance of AMCs (offering Tax-Saving Mutual Fund schemes) have been studied for period 2004-05 to 2013-14.

Activity Gap: Perception and Preference of SAI for Tax-Saving Mutual Funds, Investment Objectives, Decision-influencers and Reason for Investment. Performance Measuring Techniques: In all, four techniques Sharpe, Treynor, Jensen, and Eugene FAMA models have been used to analyze the performance of the Tax-Saving Mutual Fund scheme. By using these technical models, systematic and unsystematic risks associated with the selected schemes have been highlighted.

## Research Design

The research is based on exploratory and conclusive research designs. Explorations are needed to develop all-inclusive understanding of a problem that needs to be comprehended. It is exploratory study which helped us to determine the best research design, data collection method and selection of subjects. The study is descriptive also as the work required describing certain trends, and beliefs. Descriptive study has helped us to arrive at conclusions. This research design has helped the researcher in enhancing familiarity with the problem under investigation and to clarify concepts. Since conclusive research tests the hypothesis of the research problem and draws definite conclusion for implementation, thus, our research is also conclusive in nature. Analytical and evaluative techniques have been employed for analysis and to arrive at the conclusions and hence the study design is analytical and evaluative also. Study employs descriptive statistics (Mean, Standard Deviation), Independent Sample t-test and ANOVA for the analysis of respondent's response.

## Limitations of the Study

As the study focus mainly on eight cities of Eastern India consisting of 1 metro, 5 state capital or 2 satellite cities, empirical findings should be interpreted with care. Further, study does not further classify the investors in high net worth, or retail investors. The second limitation of the study is that from the available source of perception and preference, only ten major sources have been selected for the study. This list may not be exhaustive. Perception has been measured on the basis of expressed belief which may or may not be accurate in all cases. Care has been taken to utilize appropriate sampling procedure but it has not been possible to establish that it represents the population.



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## OBJECTIVES OF THE STUDY

The objective of the study is to measure the small active investors' perceptions and preference towards Tax-Saving Mutual Fund Schemes of selected urban and sub-urban towns of Eastern India. Thus, corresponding null hypothesis is no significant difference in investment perception and preference among the Small Active Investors on the basis of their Geography, Gender, Age, Marital Status, Qualification, Occupation, Income, Saving, and Investment Objective.

Being exploratory and empirical in nature, study mainly focuses on small active investors who are investing on their own, having stock market or mutual fund market experiences \ with a threshold portfolio value of Rs. 20,000 per annum in the Eastern India particularly state capital or satellite towns (having the population of 10,00,000) Bihar[1], Jharkhand[2], Odisha[3], West Bengal[4], Sikkim[5] and Assam[6]. The cities selected were either state capital or satellite town having population 10.00.000 or more. The number of respondents approached was 825 comprising of Bhubaneswar (125), Ganagtok (75), Guwahati (50), Kolkata (125), Muzaffarpur (100), Patna (125), Ranchi (125), and Siliguri (100) respectively. However, analysis has been performed on the sample size of 700 respondents after final sorting. Further, respondent's selection was purely based on convenience sampling available through individuals networking.

## RESULTS AND DISCUSSION

### Descriptive Measures

Investment decision of small active investors (SAI) for Tax-Saving Mutual Fund Schemes has been discussed with respect to perception of SAI towards Tax-Saving Mutual Fund Schemes. Perception factors have been evaluated on the basis of Rank (1 being the most important and 10 being the least import criteria). The objective behind this data collection was to test the reliability of the responses of the study. Further, Preference factors have been evaluated on the basis of Rank only (1 being the most important and 10 being the least import criteria). Figure 1 reflects ranking of SAI Perception towards investment in mutual funds. Findings suggest that Long Term Safety placed on the first rank is the most important perception towards investment in Mutual fund by SAI followed by Professional Management, Trust, Risk, Long Term Financial Advantage, Liquidity in Investment, Flexibility in Investment, Short Term Safety, Quality of Services, Innovative Schemes as second third, fourth, fifth, sixth, seventh, eighth, ninth and tenth rank respectively.

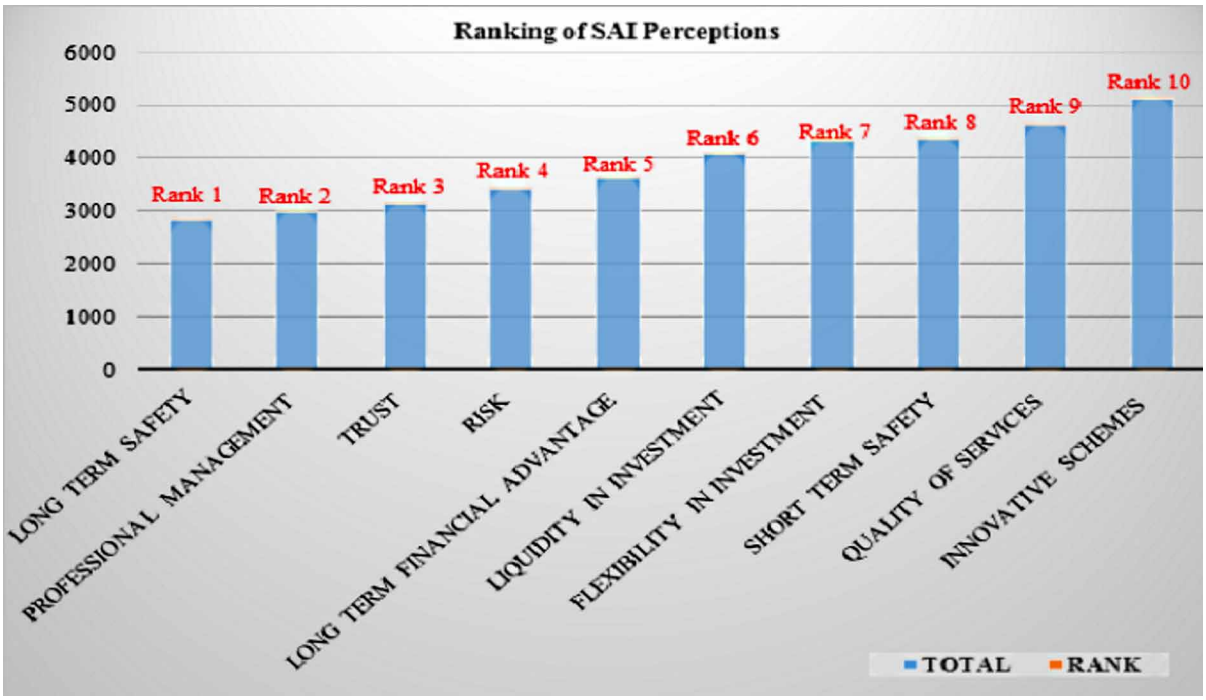
### Statistical Measures

As null hypothesis is no significant difference in investment perceptions among the Small Active Investors' on the basis of various demographic categories. This has been analyzed with respect to the following Investment Perceptions namely Trust, Long Term Safety, Short Term Safety, Risk, Long Term Financial Advantage, Liquidity in Investment, Professional Management, Flexibility in Investment, Quality of Services and Innovative Schemes. This part of the analysis is further supplemented with respect to different demographic categories. More specifically, t-tests have been employed to test the null hypothesis for variables Gender and Marital Status. The tabulated value for t statistic (at degree of freedom above 200) is 1.96. Null hypothesis, therefore, will be rejected if the t statistic value is more than 1.96 and



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*Figure 1. Ranking of SAI Perception towards investment in mutual funds*




corresponding p-value is below 0.05. Gender has significant impact only on three investment perceptions namely short term safety, flexibility in investment and innovative schemes in deciding investment strategy. These are quite common in Indian perspectives because females intend to be little bit more conservative towards investment since beginning. However, marital status has no significant impact on investment perceptions except in case professional management because of more conservative approach towards investment in post marital life (see Table 1).

This part of the analysis is further discussed with respect to different demographic categories namely geography, age, occupation, education, income and saving. One-way ANOVA has also been employed to test the null hypothesis. The tabulated value of F statistic for requisite degree of freedom is 2.6 for geography and 2.37 for education, occupation, income and saving, and 2.21 for age respectively. Null hypothesis, therefore, will be rejected if the F-value is more than the tabulated value and corresponding

*Table 1. Independent Sample t-test: For Investment Perceptions*

| Demographic Categories | Trust | Long Term Safety | Short Term Safety | Risk | Long Term Financial Advantage | Liquidity in Investment | Professional Management | Flexibility in Investment | Quality of Services | Innovative Schemes |
|---|---|---|---|---|---|---|---|---|---|---|
| Gender | √ | √ | × | √ | √ | √ | √ | × | √ | × |
| Marital Status | √ | √ | √ | √ | √ | √ | × | √ | √ | √ |

Source: Author's Estimation,
Note: √ shows statistically significant at 5% significance level; × shows statistically insignificant at 5% significance level.



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*Table 2. Investment Perceptions (One-way ANOVA)*

| Demographic Categories | Trust | Long Term Safety | Short Term Safety | Risk | Long Term Financial Advantage | Liquidity in Investment | Professional Management | Flexibility in Investment | Quality of Services | Innovative Schemes |
|---|---|---|---|---|---|---|---|---|---|---|
| Geography | × | × | √ | × | × | √ | √ | × | × | × |
| Age | √ | × | × | √ | √ | √ | √ | √ | √ | × |
| Occupation | × | √ | × | × | × | √ | √ | √ | × | √ |
| Education | × | × | √ | × | × | × | √ | × | × | √ |
| Income | × | √ | √ | × | √ | √ | × | × | × | √ |
| Saving | × | × | × | × | √ | √ | √ | × | × | × |

Source: Author's Estimation,
Note: √ shows statistically significant at 5% significance level; × shows statistically insignificant at 5% significance level

p-value in all cases is below 0.05. Demographic variations like geography, age, occupation, education, income and savings have moderate to high impact on the various investment perceptions particularly risk, quality of services, trust, long term safety, short term safety, flexibility in investment, long term financial advantage, liquidity in investment, innovative schemes selections etc. Age, education and saving have the maximum impact as investment objectives and expected outcome depends mainly upon one's age, education and saving potentials. However, occupation, income and age have least impact on investment perceptions (see Table 2).

## Descriptive Statistics

Rank of Criteria on the basis of Preference affecting Investment Decision of SAI for Tax-Saving Mutual Fund Schemes

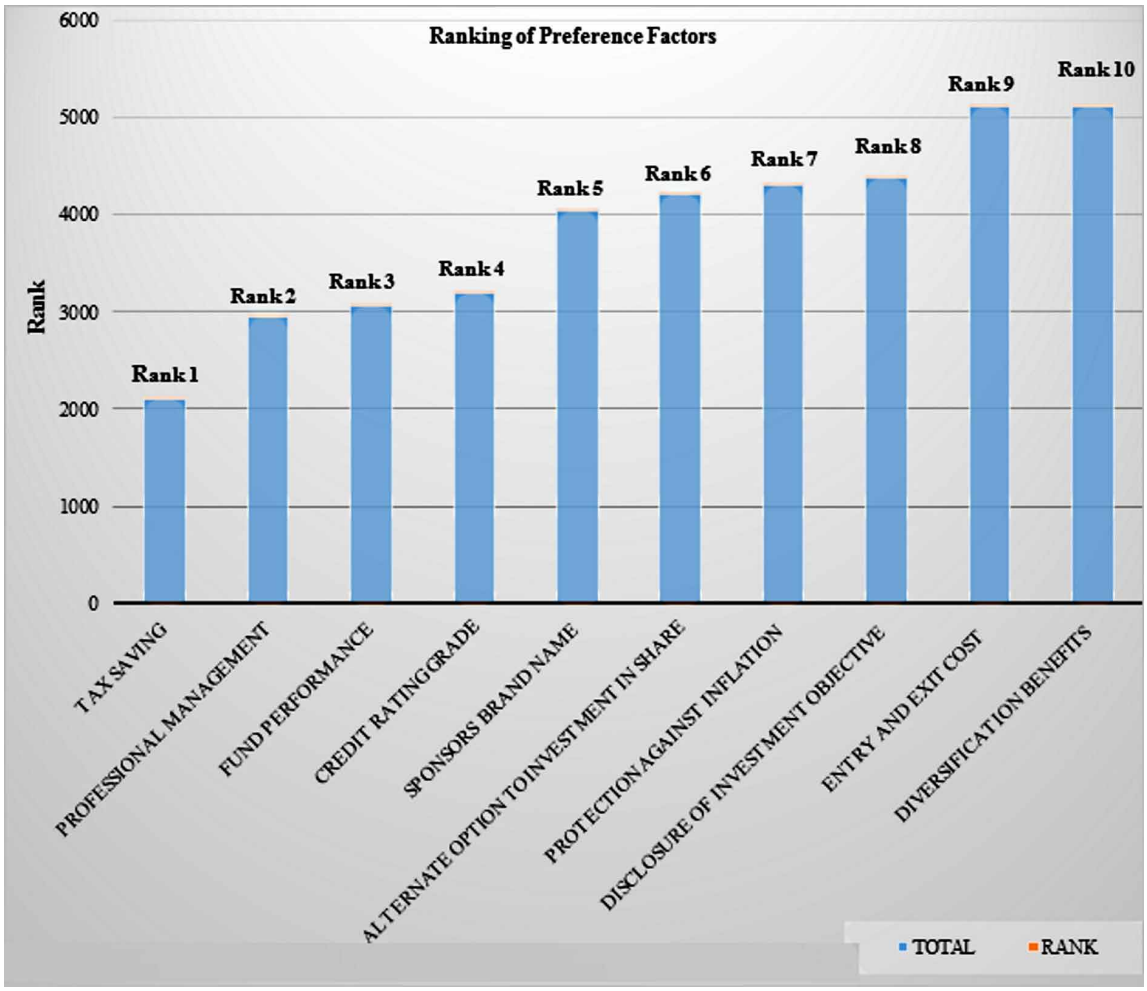
Figure 2 shows ranking of preference factors towards Investment in mutual funds. Study finds that tax-saving has been given first rank i.e. the most important preference towards investment in mutual funds by SAI followed by professional management, fund performance, credit rating, sponsors brand name, alternate option to investment in shares, protection against inflation, disclosure of investment objective, entry and exit cost, diversification benefits as second third, fourth, fifth, sixth, seventh, eighth, ninth and tenth rank respectively.

**Statistical Measure:** Null hypothesis is validated on the basis of various demographic categories. Gender has no significant impact on investment preference parameters except in case of sponsor's brand name. That means fund performance, tax benefits, professional management, alternative investment options, inflation, diversification; entry and exit loads are common features which are important to all investors irrespective to gender. However, marital status has significant impact on the investment preferences particularly fund performance, disclosure of investment objectives, tax benefits, and diversification aspects. Probably, marital status puts some consideration in investment strategy for safer returns (see Table 3 and Table 4).



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*Figure 2. Ranking of Preference Factors*




This part of the analysis is further discussed with respect to different demographic categories using t-statistics findings for variables Gender and Marital Status. The tabulated value for t (at degree of freedom above 200) is 1.96. Null hypothesis, therefore, will be rejected if the t value is more than 1.96 and corresponding p-value is below 0.05.

This part of the analysis is further discussed with respect to different demographic categories namely Geography, Age, Occupation, Education, Income and Saving based on One-Way ANOVA employed for examining the null hypothesis. Demographic variations like geography, age, occupation, education, income and savings have low to very high impact on the various investment perceptions particularly fund performance, disclosure of investment objectives, tax-saving, credit rating grade, sponsors brand name, professional management, alternate option to investment in share, protection against Inflation, diversification benefits, and entry and exit loads. Geography has minimum impact followed by age, occupation, savings, education and income. Thus, Income acts as most significant demographic categories for investment preferences. Fund performance is the most sensitive aspects for investors based on the demographic aspects whereas disclosure of investment objectives is least important for the investors.



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*Table 3. Investment Preferences (Independent Sample t-test)*

| Demographic Categories | Fund Performance | Disclosure of Investment Objectives | Tax-Saving | Credit Rating Grade | Sponsors Brand Name | Professional Management | Alternate Option to Investment in Share | Protection against Inflation | Diversification Benefits | Entry and Exit Load |
|---|---|---|---|---|---|---|---|---|---|---|
| Gender | √ | √ | √ | √ | × | √ | √ | √ | √ | √ |
| Marital Status | × | × | × | √ | × | √ | √ | √ | × | √ |

Source: Author's Estimation,
Note: √ shows statistically significant at 5% significance level; × shows statistically insignificant at 5% significance level

*Table 4. Investment Preferences (One-way ANOVA)*

| Demographic Categories | Fund Performance | Disclosure of Investment Objectives | Tax-Saving | Credit Rating Grade | Sponsors Brand Name | Professional Management | Alternate Option to Investment in Share | Protection against Inflation | Diversification Benefits | Entry and Exit Load |
|---|---|---|---|---|---|---|---|---|---|---|
| Geography | × | × | × | √ | × | √ | × | × | × | × |
| Age | × | √ | × | × | √ | × | × | √ | × | × |
| Occupation | × | √ | √ | × | × | × | × | × | √ | √ |
| Education | × | √ | √ | × | × | √ | √ | × | × | √ |
| Income | √ | × | √ | √ | √ | × | √ | √ | √ | √ |
| Saving | × | √ | × | √ | √ | × | √ | × | × | × |

Source: Author's Estimation
Note: √ shows statistically significant at 5% significance level; × shows statistically insignificant at 5% significance level



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## CONCLUSION AND IMPLICATIONS

The existing theory suggests that decision to invest in a particular mutual fund is influenced by demographic factors. In present study it is found that gender-based differences are significant in case of short term safety, flexibility in investment and innovative schemes in deciding investment strategy. This could be because women small-active-investors are more conservative and patient towards investment decisions. Further they show a distinct preference for diverse schemes which may be due to their proclivity for larger number of options in other respects also. In case of marital-based differences status has no significant impact on investment perceptions except in case professional management. This may be because of need for more traditional approach towards investment in post marital life. Difference arising due to age, education and saving have been found to be significant in the context of investment objectives as well as expected outcome. This could be because investment objectives are dependent upon differing needs during human life cycle characterized by age. Education may have impact because of varied earning capacity dependent on education and also perhaps because of varying investment information. Savings may play a role in determining investment objectives because of greater options available with higher savings. In case of preference towards mutual fund investment, demographics variable gender has no significant impact on investment preference parameters except in case of sponsor's brand name perhaps because brand names reflect greater credibility and are considered less risky. Marital status has been found to exert significant impact on the investment preferences particularly fund performance, disclosure of investment objectives, tax benefits, and diversification aspects. This could again be influenced because of the differing needs, perceptions and preferences of people having differing marital status. It is also found that geography has minimum impact followed by age, occupation, savings, education and income. Income acts as most significant demographic categories for investment preferences. Fund performance is the most sensitive aspects for investors based on the demographic aspects. Investor expects good rate of return thus fund manager should meet their expectation by their expertise knowledge and skills. However, disclosure of investment objectives is least important for the investors thus a customized training and workshop should be provided to small active investor to understand the fund's overall objectives, investment pattern and Risk appetite for optimal investment decisions. Our study has brought forth the investment patterns (in tax saving mutual funds) of a particular group of investors whom we have named as small active investors and who are a sub-group of retail investors. Such studies need to be repeated to establish its generalizability with ore structured tools to enhance validity and reliability. The present research work has implications for mutual funds industries, small investors and the regulators. The companies may factor Investment Advisor as the dominant force for SAI decision making as it has emerged as the most important source of information. They may also utilize advertisement and return on schemes to meet existing investor perceptions. Regulatory bodies must continue to ensure protection of the investors, particularly for the vulnerable sections such as women, old people and middle-income groups. Even the companies should sensitively design the Mutual fund products and selling for these vulnerable sections. As Tax Saving Schemes and Long term safety of investment critical for SAI, this may be taken into consideration by fiscal policy makers and RBI. Implications for the investors are that they must evolve their behaviour based on their differing needs that may emanate from their demographic realities. Appropriate investment has been a function of demographic realities and hence must be consistent with them.



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## ENDNOTES

[1] Patna (State Capital) and Muzaffarpur (having population above 10,00,000)
[2] Ranchi (State Capital)
[3] Bhubaneswar (State Capital)
[4] Kolkata (State Capital cum Metropolitan City) and Siliguri (having population above 10,00,000)
[5] Ganagtok (State Capital)
[6] Guwahati (State Capital)

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# Chapter 81
# Basic Types of Project Initiators: Contributor Relations in Platform-Based Online Crowdfunding

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## ABSTRACT

*Crowdfunding has helped many businesses and projects to take off easily and is replacing the traditional methods of fundraising since more platforms are being created. Evaluation of the risk for both the borrower and the donor is important before investing or borrowing to ensure that the project is a success. Crowdfunding is changing the way that projects and startups get funded. Most of crowdfunding money is raised on reward-based platforms, although equity crowdfunding is growing quickly. It can be expected that crowdfunding will become more popular, with many crowdfunding new opportunities available, which will make not easy for potential investors to choose what to support. In this chapter, we introduce the reader to the basic types of project initiators-contributor relations in online crowdfunding. We review the current literature identifying the research questions relevant for our purpose. We subsequently conduct a research method of systematic review to identify the relevant papers that address those research questions.*

## INTRODUCTION

People have many business ideas and innovations that are usually delayed or crippled due to lack of funds. There are many ways of raising money towards a given venture in order to kick-start a project. If an individual does not have the necessary funds, one of the alternative ways to raise funds is through fund-raising platforms. The money raised through a fundraising may it be through donation or on debt

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and it should only be used to successfully start the targeted project. The money raised can be through donations, mainly reward-based, equity-based or credit-based, all of which have to give some form of compensation to the contributor (Outlaw, 2013, p. 5).

It is very difficult to maintain an adequate long and short term financial plan when there is a shortage of funds for any particular business or a new venture. Furthermore, the working capital management will need to have adequate funds in order to cover the short term expenses. It is also possible that the creditors can demand payment at any time for the goods delivered to the business by them and for that is necessary to maintain the working capital or adequacy of the funds. Fundraising can also help the business to maintain the effectiveness of the business on a long term basis and the example could be related to the purchase of a new machine (Steinberg et. al., 2012, p. 35)

A new startup needs some amount of funds in order to get the business started. In order to transform the entrepreneurial project into a reality, then it is necessary to have adequate cash to execute all such plans. Moreover, the fundraising will help the entrepreneur to develop the business model for the growth of the project and a successful business marketing plan (Damus, 2014, p. 32)

The technological advancement and the use of the Internet have raised a new platform for fundraising known as crowdfunding. Crowdfunding involves three parties: the project initiator or owner who needs funding, the contributor who is willing to give their money and the moderating organization that facilitates the engagement between the contributor and the initiator (Young, 2013, p. 33). Moderation can also be done through technology by the project initiator himself, using Web 2.0 and outside of platforms (see for example Gerber & Hui, 2013 for a definition including such practices). The platform involves entrepreneurs or potential business owners asking for funding for their projects from the "crowd" or users from all over the world who may be interested in supporting their cause or business. Crowdfunding allow individuals the possibility to develop into their business ideas, even if it is only with a small amount of money. Governments encourage crowdfunding due to its positive impact on the economy as a whole, as it creates new jobs and fosters the economic growth of countries.

This chapter seeks to introduce the reader to the basic types of project initiators-contributor relations in online crowdfunding. For this, we have reviewed the current literature identifying the research questions relevant for our purpose. We subsequently conduct a research method of systematic review to identify the relevant papers that address our research questions.

## BACKGROUND

Although the name of crowdfunding and its use of the Internet are new concepts to the market and the population, it is usually mentioned that the construction of the Statue of Liberty's Pedestal took up the same idea. John Pulitzer, who was then a publisher, used his newspaper to rally up people donate money for the construction of the Pedestal, a project that later raised 100.000 dollars in six months. Pulitzer raised a fund and promised to print the identity of each donor, regardless of the amount of the donation. In August 1885, Pulitzer was finally able to announce that he had raised the final $100.000 for the statue's pedestal. The next year the Statue of Liberty, which had arrived from France packed in crates, was erected on top. (See Young, 2013 for more details). Crowdfunding is becoming hugely popular in many parts of the world and the Internet platforms that are being used for contributions are on the rise.



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In 2013, Crowdfunding raised over 5.1 billion dollars to help people in various projects all over the world and the figure is projected to increase in the future with the new platforms becoming more popular (See Crowdfunding Industry Report from Research firm Massolution). The new law of the Jumpstart Our Business Startups (JOBS) by President Obama in 2012 introduced a regulatory framework. Most of it still has to be translated into active regulatory elements to this date, protecting donors to crowdfunding projects and enabling businesses to use crowdfunding as a real source of funding. The Act enhanced the credibility of the platforms for crowdfunding while at the same time ensuring that the project owners or entrepreneurs had a viable and a good source of funding for their projects. Kickstarter and Indiegogo are some of the most popular platforms boasting of members in millions of all parts of the world, these websites have enough people to pool huge amounts of resources for the funding of their businesses. See Assadi in this book (In search of business models of crowdfunding) for a complete explanation of the business models of online crowdfunding websites.

The chapter starts describing the different types of crowdfunding and continues explaining the different types of relations between project initiators and contributor in online crowdfunding such as reward-based crowdfunding, equity-based crowdfunding, and credit-based crowdfunding.

## MAIN FOCUS OF THE CHAPTER

### 1. Reward-Based Crowdfunding

The reward-based form of crowdfunding is the most popular type with most contributors and initiators preferring this method due to the security of their funds under this method (See Crowdfunding Industry Report from Research firm Massolution, 2014). In reward-based crowdfunding, the target amount has to be established first for the completion of the project (Steinberg, 2012, p. 97). Then, the person or organization sets up donation amounts with an attached incentive that is proportional to the amount donated for the project. This method is hugely popular for artists, movie directors and other projects that have an aesthetic or prestigious value to the donor. For instance, if an artist was looking for a donation to help with a tour of Europe, he may offer signing autographs to people that will contribute $500 and backstage preparation with the cost to people contributing $1,000. These incentives ensure that the enthusiasts and the music lovers are motivated to donate to the cause (Young, 2013, p. 79). One of the unique characteristics with this method is that if the set platform allows for the project owner to get the amount only after the targeted amount is reached, he/she cannot be awarded the amount collected in case the donors do not raise all amounts. The donors can therefore get their money back and they have the confidence of recovery of the raised amount as a result (Agrawal, Catalini, & Goldfard (2015))

One of the major benefits of reward-based crowdfunding is that it has low risks for the promoter or the company that is behind the campaign to raise funds or donated amounts. Once a company has raised the required amount for the project and they may have had the donations only with a special clause for the specific project they are able to avoid dealing with debts, credit implications or interest that is attached to the loans or government grants. The reward-based crowdfunding method offers the chance to completely avoid all these problems and start their business or project without any possibility of future shortcomings due to any changes in the plans or the success of the project. The reward-based method also runs on low cost with the project owners being offered a chance to showcase their projects for only a small fee of their total collection and there are no high costs of managing the platform. As opposed



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to raising money through other conventional methods, where a person could end-up incurring a lot of costs for setting up the funds, crowdfunding sets this up at only a small fee and the project is viewed and supported by millions from all over the world (Roebuck, 2011, p. 104). The reward-based method also offers the donors a chance to gain a personal connection with the project they have donated towards and the people they have funded.

Given the nature of their agreement or the incentives that have accompanied a specific project the donors get a chance to meet with their project initiators and owners in some of the project or are offered a form of memorabilia that offers them a personal connection to the projects. (Roebuck, 2011, p. 108).

One should examine the project and the rewards that they have offered the people in order to ensure that they feel attracted enough to the project to offer their funds. As much as the project owner has to assess the amount of money that they need for their project, it is equally important to draft the best reward that is irresistible for the targeted crowd. The reward is very important to the project since it is the attractive aspect of the project and the main reason why people are interested in investing. The company has also to ensure that the reward selected does not detrimentally affect the project since they may end up spending a lot of time to give their rewards infringing on the results of the targeted project. (Young, 2013, p. 85).

The experiences and rewards that companies set for the people need to be measured and evaluated for their practicality since they may cripple the success of the project in the long-run. It is therefore advisable to limit the premium awards to only few elite and people that have hugely contributed towards the project. Depending on the amount that the project needs to be successful the owner should come up with premium rewards that are set to mirror the amount that he/she wants to raise (Young, 2013, p. 90). This means that the rewards for small projects should not have high premium awards in comparison to the rewards for a huge project that needs a lot of money.

Drafting a good plan to help with selling the project to the people in the right way to attract potential investors is also critical in a reward-based method. The right plan should consist of the ways to market the project and also the right rewards to the donors who have contributed to the project. Prior planning ensures coming up with the best strategy for marketing and representing the project in addition to the project itself (Roebuck, 2011, p. 139). It is also advisable to hire professional marketers in the event that the project is large and requires a lot of resources to ensure that it gets the amount of funding to complete it successfully. Professional crowdfunding marketers are essential in guiding and ensuring that the company has captured the main attributes of their project and that it may be attractive to donors. Giving incisive information on the best rewards for a given project are also some of the factors that may help in directing and giving a project owner. Generating a buzz for the project leads to funding and therefore the project should generate the buzz that is achieved through personally promoting the product across multiple channels and trying to forge personal connections with people to rally them behind the cause (Roebuck, 2011, p. 141). The reward-based method is regularly used, especially due to the fact that the project owner does not have to incur any financial loss in the undertaking, apart from a small amount that they pay to the platform owners once it is fully financed. Table 1 shows the advantages and disadvantages of this type of crowdfunding.

The crowdfunding platforms such as Indiegogo, Kickstarter, RocketHub, and Eppela host many reward-based projects. Moreover, an individual can establish a project that incorporates a text, video, and reward perks that will be accessed by a backer when the money is pledged by them to the initiative. Therefore, it can be said that these platforms are available to fund new innovative projects. Kickstarter is the pioneer in reward-based crowdfunding online platforms, where over $1 billion has been raised to projects. The online platform Kickstarter is the most creative way to provide funding for the creative projects.



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The platform Indiegogo is suitable for any kind of project. The most important fact is that it has attained more recognition worldwide and even more than Kickstarter. Initially, it used to fund theatre based projects, but then it expanded its development and made it open to almost any project.

Rockethub is another similar company that was originally meant for the artists, but later transformed to include the sciences and scientists' projects, especially after the launch of its SciFund Challenge (Roebuck, 2011, p. 32).

Eppela is a platform founded in 2011 in Italy (Tuscany) for projects in the fields of design, art and culture, technology, food, non-profit, sustainability, and social innovation. The platform mainly targets potential artists, writers, film makers, or designers. Eppela charges 5% of the sum raised to cover operating costs. 40% of projects posted on Eppela are successful, it has more than 90,000 registered users, a successful project raises an average of 6,500 euros. Some of the most successful projects of reward-based crowdfunding funded through Kickstarter include Coolest Cooler, a company started in 2014 and located in Portland (Coolest, 2014), which is the largest reward-based crowdfunding campaign to date. The project involves the design of a portable cooler, which include blended drinks and music. This project has received donations from 62,642 investors for a total of 13,285,226 dollars. Another successful project, and currently the most funded, is Pebble, which is a customizable watch, with many downloadable watchfaces and internet-connected applications. The company is headquartered in California, its watches can be purchased online at (Getpebble, 2015). Pebble can connect to iPhone and Android smartphones using Bluetooth, alerting customers with a vibration for incoming calls, emails and messages. The project was funded in 2012 and attracted 68,929 investors, raising a total of 10,266,845 dollars. Ouya is another prosperous project funded in 2012, it is a microconsole with its own version of the Android operating system. The console was released to the general public on June 2013, together with Ouya stores for applications and games designed for the Ouya platform, its products can also be purchased online. A total of 63,146 investors supported the project, which raised a total of 8,596,474 dollars. Another of the most funded project is Pono Music, funded in 2014 in San Francisco, California (Ponomusic, 2014), which is an audio player using high quality recordings sold through the PonoMusicstore. The project gained support from leading record labels such as Warner, Sony, and Universal, and has signed a full agreement with Warner. The company was fully funded in one day after launching its crowdfunding campaign, 18,220 people invested in the company raising 6,225,354 dollars.

## 2. The Equity-Based Crowdfunding

Equity-based crowdfunding is a form of crowdfunding where the contributors become part-owners of the company raising funds. Equity-based is not a popular form of crowdfunding since the majority of the projects are not huge companies that donors and people funding the projects can get a stake and own part of (Douw, 2012, p. 60). Most of the projects are by entrepreneurs who do not have shares that the

*Table 1. Reward-based crowdfunding in balance*

| Advantages | Disadvantages |
|---|---|
| • Raising money for the project or business without selling off an equity stake in the business.<br>• Getting hundreds or thousands of people committed to the success of the campaign. | • Once an individual has successfully raised money, he has got to ship whatever he is producing.<br>• The dock is ticking and it is no surprise that many of the top crowdfunding projects are very late in getting delivered to donors. |



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investors can invest in. However, since the enactment of the Act in 2012 this form of crowdfunding has gained popularity with most people seeing it as an investment opportunity for the interested investors in lucrative projects that the investors deem to pick up and be beneficial in a near future. This is offered at very low rates as compared to the market rate since the project owners will need to make their proposal and project attractive to the potential investors through their competitive prices and growth potential in the future (Douw, 2012, p. 60).

Equity-based form of crowdfunding is slowly catching up with the other methods of crowdfunding. It is, however, a safe and viable method to raise money for the company and beneficial for the donor if the company makes profits in the future and they gain from the dividends or distribution. Equity-based crowdfunding can also be used to create a venture finance market. Equity crowdfunding does not only involve the shares as the only forms of securities, but also debt notes, convertible notes, and hybrid forms of equity and debt (see Freedman & Nutting, 2015, p. 5). In addition, there are some forms of partnerships that qualify as securities in equity-based crowdfunding. One of the main attributes of equity-based crowdfunding in creating venture-based market is its ability to connect startup business and the medium businesses to the larger investor community. Equity-based crowdfunding offers a platform to reach out to the companies through a single advertisement on the web. It ensures that the information reaches out to interested potential buyers and sells the business to the investors (Mollick (2014)). The venture space is therefore in ensuring that the investors and the business people meet. In addition, the venture space ensures that people with similar businesses and ideas can interact and advise each other on the best practices and the best ways to improve the businesses. The venture space is not only useful in raising the funds, but also ideas and plans on the best ways to improve the business given that there are other members of the crowd with the same ideas. It can also lead to mergers and amalgamation of two or more different venture businesses since the equity-based crowdfunding targets the business people who are interested in increasing their venture capital either through shares or other securities. The equity-based finance structure has a pool of professional small and large businesses that need a regular appraisal either through funding or through further investments (Steinberg, 2012, p. 113). Economic growth is also a factor that is hugely influenced by the success of the equity-based crowdfunding, since the growth of business companies contribute to the economic growth of the country. Most governments all over the world are taking up the new platforms and legislations have already been passed to ensure that crowdfunding for businesses and individual projects help the larger financial community that is the whole country. The venture finance marketplace has therefore transformed the equity-based crowdfunding concept to rally the support of the government and security legislations since it has been viewed as a milestone and a new trend in the financial sector.

These platforms offer companies to obtain extra funding for their product without having to go through the normal bureaucratic procedures that tie up an Initial Public Offer or the sale agreements with the shareholders in a company. It is therefore a platform for buyers and sellers to meet as much it is a fundraising project since the donors stand to gain from their investment decisions (Dresner, 2014, p. 85). The Jumpstart Our Business Startups Act of 2012 has increased the number of people who are interested in investing in the projects as they are assured of getting a return on their investments. The process is similar to the reward-based method since one has to broadcast and market their project to many people in order to ensure that they get enough "crowd" to fully fund their projects. It is therefore essential that the company plans for the ways to sell the project and make it attractive to potential investors that invest in the company in the hope of getting returns on the investments in the form of dividends or distribution. Similar to reward-based crowdfunding sorting help from professionals, on crowdfunding



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under this method is also necessary since they need to generate enough buzz to ensure that their projects are funded. This implies a low risk as compared to get money through other channels such as debt financing since the shares are the tokens that are offered to the investors of the new project. In addition, the costs are also relatively low since instead of going through the usual channels and processes that require a lot of resources the company generates the funds at a very low cost with the only requirement being the small fee (ranging from 7% to 12%) charged by the platform operators. Although the investors are offered a stake in the company, the amount of stocks that are offered for a given amount needs to be proportional to their contribution (Dresner, 2014, p. 57). It is important to note the purpose of the project to the company and the implications of offering new members a part of the company keeping in mind that it should be high enough to attract new investors but should be financially feasible to ensure that the company remains in a competitive position. Offering too many shares for a lower amount may result to problems in the company due to one project and as a result, it is advisable to ensure that the amount given is managed by the company and does not cause any problems in the long-run.

The investors, however, bear the risk of losing if the company does not do well in the projects that it has invested in. As opposed to the reward-based method where the donors do not expect rewards that have a monetary value, although reward-based campaigns offer products as rewards, in equity-based method the donors take the risk of losing the money if the project or the company fails in the market. The opposite is true if the company performs well, investors are likely to get return on their investments from the project. The owners of the project are also able to pool the funds that they could not have accessed due to their financial constraints easily and more efficiently (Lawton & Dan, 2013, p. 86). Table 2 shows the advantages and disadvantages of this type of crowdfunding.

There are several online platforms that facilitate equity-based crowdfunding. They are IPOVillage.com, Seedrs, Crowdcube, Earlyshares.com, and MicroVentures.com. Their details are shared below:

IPO Village is the platform that utilizes equity-based crowdfunding in order to provide retail investors with exclusive IPOs emulated by the allowance of Main Street investors to get an access to the stock that was for Wall Street elites.

Cedars is the FSA regulated platform in the UK. It provides services for investments in the startups that includes equity-based crowdfunding investments as well. This platform lets the individuals to look for rewarding, tangible, places to get their money invested.

Crowdcube is another way to provide money to the startups and expand the business through equity-based crowdfunding while providing the entrepreneurs with a great platform to get connected with the ordinary people and ultimately give a raise to the venture capital.

A sample of recently funded projects funded through Seedrs includes Chapel Down (Chapeldown, 2015), a Premier English sparkling wine and beer producer based in Kent, England, admitted to trading on the ISDX Growth Market. The Company raised £4,350,000 through an equity issue in 2013 when it was funded, supported mainly by large investors and institutions. The company has launched a new equity issue in 2014. The company has been admitted to trading on the ISDX Growth Market and it is the first listed company that has undertaken an equity crowdfunding campaign anywhere in the world. Seedrs is also an example of a leading company funded by equity crowdfunding, the company is an online, cross-border platform for investing in startups (Seedrs, 2015). It aims to provide the infrastructure for private investments in early-stage businesses. They are looking to process and administer angel and group transactions and to create products and structures to provide a range of investor types exposure to startups. The company was launched in 2012 and has raised £2,583,420 since then with an equity offer of 33% of the company. NearDesk is another example of successful equity-funded company, the com-



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*Table 2. Equity-based crowdfunding in balance*

| Advantages | Disadvantages |
|---|---|
| • By taking angel investing (individuals investing in startups) online, equity crowdfunding has opened up this type of investing to more and more people. There are very accomplished investors using these platforms whose contribution may add to the success of the business long term.<br>• Equity crowdfunding allows raising money in a fast way on websites without the need to agree to fundraising commitments of venture capital companies.<br>• It would also allow entrepreneurs more freedom to set their own commitments compared to selling publicly traded stocks.<br>• Attracting hundreds of investors online also means gaining online popularity for a startup company. | • Not all entrepreneurs are comfortable posting their financial and business plans online for investors to see. Getting comfortable with equity crowdfunding means one must get comfortable with increased transparency into the business.<br>• Equity crowdfunding might not be able to compete with the experience and expertise in business growth that venture capitalists could bring to startups.<br>• As crowdfunding investors might have not much knowledge about the risks of online investment, it may be difficult for entrepreneurs to deal with investors' expectations.<br>• Equity crowdfunding (by non-accredited investors) is not yet legal in the United States as it is prohibited by the Securities Act of 1933 |

pany lets users rent desk and meeting space by the hour at different locations around the UK, it is based in London and its cards can be purchased through its website (Neardesk, 2015). Thus, customers only pay for the time they use, with a single monthly invoice. Cards are issued by NearDesk and by partners who provide co-branded cards. The company has raised £1.000.012 in 2014 with an equity offering of 22% in its third round. Another company worth mentioning is Shareeight, an application available to download on the iPhone and iPad that aims to bring together all of the major brands and retailers in one place. Shareeight is a unique search method to reach the top 500 retail search terms in just three taps, the interface organizes the results into manageable chunks of 8. Shareeight aims to bring all the major stores together to benefit both customers and shops. So far, more than 80 retailers and over 8.000 brands have joined Shareeight. The company was founded in 2014, it is based in London and its applications can be downloaded from its website (Shareeight, 2015). They have had two rounds of financing, in the first one they raised £605.000, equivalent to the 16% of the company, and a second round raising $1,000,000 in just 24 hours.

## 3. Credit-Based Crowdfunding

Credit-based crowdfunding is a method where the donors to a specific project loan out money to the person in the hope of future repayment of the amount owed. This is the safest method of crowdfunding for the donors since in case the project owner defaults in payment of the advanced loans the platform is liable for the payment of the loan to the donor (Tomczak & Alexamder, 2013, p. 341). Under this method the borrowers submit an amount that they wish to be loaned and the donors interested in the specific project advance the borrower the amount with a promise of repayment at a future date. The platform acts as the intermediary and or surety for the borrower and the donor to ensure that the donor gets the amount back and facilitate the pooling of funds for the borrower. The borrowers find crowdfunding attractive since it has very low or no interest rates for the borrowers and they only have to incur a fee to process the funds by the platform and agree on a flexible payment plan to refund the amount forwarded. In the event that there is any interest to be charged on the amount of money borrowed the borrower sets the interest to be charged that they are comfortable and can guarantee a refund within the stipulated time period (Mollick, 2014). This makes the method attractive for the borrowers since they are not required to pay a minimum or set interest rate that is predetermined and as a result they can guarantee payment.



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The lenders on the other hand have to evaluate the project for its risks or benefits and potential and establish if they are willing to lend money at the interest rate set by the borrower. The arrangement is similar to that of a bank loans with the main difference being the predetermined interest rates. Whereas in credit-based crowdfunding the borrower sets the interest rates, inviting donors to fund the project in a bank loan the borrower must agree to the terms set by the bank or the authorities involved (Althoff & Leskovec (2015)).

One of the main advantages is that the borrower does not have to give any form of collateral to the lender and they transact only in terms of good faith from the borrower and the donor of the project. The donor funds the borrower in the hope that they will repay the money not because they have a history of repaying or they have presented evidence to suggest that they are capable of repaying the money but only on faith they have on their project. This ensures that the platform eradicates many processes of loan funding and borrowing that would slow the timeline of acquiring a loan. Background checks run by the banks and also the examination of the presented information are a large part of the processing process making it tedious and time consuming. The process also rules out borrowing from poor and new business people that are looking for money to kick start their business and have no collateral or no history to guarantee payment of the amount that they have borrowed. Crowdfunding offers such people a chance to borrow even huge amounts of money without any form of guarantees and guarantors. Credit-based crowdfunding has been immense in eliminating the factors that hinder borrowing and lending since there are none in crowdfunding. The project and presentation of the ideas are the most important aspects of a project if one aims to be funded for a project accordingly. It is therefore advisable for one to lend both their time and resources in the presentation of the project to as many people as possible. Hiring professionals to market the product is necessary for a borrower that looks to get money for their project and within a specific timeline since the professionals are able to market the product to the potential lenders using the best techniques while also offering advice on aspects such as the interest rate that stands to attract investors in the market (Tomczak & Alexander, 2013, p. 350). Proper planning is also important for the borrower if they are to make the intended amount within the set timelines and be able to pay specific installments that they have set. Unlike the other two methods where awards are given to the people who invest in the project, the credit-based method requires an individual to have a well-structured plan on the mechanisms of payment. Table 3 shows the advantages and disadvantages of this type of crowdfunding.

Just like the above two crowdfunding platforms, there are several examples of online credit-based crowdfunding platforms. They are named as Funding Circle, Lending Club, Prosper, Zidisha and Index Ventures.

Funding Circle was developed with a big idea in order to revolutionize the outdated banking system and maintain a better deal for every individual. They have helped the businesses grow with thousands of loans along with the facilitation to let the investors prosper and stabilize the economy. It is the leading lender in the online marketplace which targets small business.

On the other hand, Lending Club got the status of an establishment as an alternative to the conventional banking system in that provides loans to the borrowers at a low interest rate and better returns to the investors. It is America's dominant online credit platform and has been pioneer in transforming the way the lending operates.

Index Ventures is the leading international capital firm with branches located in London, Geneva and San Francisco. They provide support to the companies and founders who look to become the Fortune 500 for the upcoming 50 years.



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Credit-based crowdfunding present some interesting statistics, Funding Circle (Fundingcircle, 2015) reports that 34,322 British investors have lent to business through their website and a total of £417,602,420 have been lent to British businesses since 2010. An average investor achieves an average return after fees and bad debts of 7.6%. Lending Club (Lendingclub, 2015) is the world's leading online credit marketplace, they have a simple credit marketplace, customers interested in a loan fill an application, the company examines the information, determines an interest rate and presents some offers to borrowers, then investors select loans in which to invest and can earn monthly returns. Lending Club has donated $6,205,366,548 in loans, and has paid $595,817,848 to investors. 83.17% of borrowers report using their loans to refinance existing loans or pay off their credit cards. The company has grown at more than 100% per year over the last few years. Prosper (Prosper, 2015) is America's first peer-to-peer lending marketplace, it has more than 2 million members and has funded more than $2,000,000,000 loans. Borrowers request loans between $2,000 and $35,000 and lenders invest from $25 in each loan listing selected, investors can see credit scores, rating and histories, as well as borrowers' personal loan descriptions, endorsements from friends, and community affiliations. The company reports an average return of 8.89% for investors. Zidisha (Zidisha, 2015) is the first online microlending community that matches lenders and borrowers, the company has raised $2,308,144 so far and has funded 8,127 projects, with a total of 9,504 lenders and 6,141 borrowers from 141 countries. Index ventures (Indexventures, 2015) is the oldest of the companies, founded 1996, they have funded 140 companies in 38 countries. The company has raised several venture funds, from Index Ventures I through VI; Index Growth 1 and 2; and a $200 million life sciences fund with the support of GlaxoSmithKline and Johnson & Johnson.

## 4. Donation-Based Crowdfunding

Donation-based crowdfunding is the last method available for funding new initiatives. In this method, funds are raised for an initiative of public interest, although there is no economic benefit to the community financing the initiative. One of the greatest challenges of social entrepreneurs today is accessing startup capital, that's why donation-based crowdfunding makes this method an interesting financing solution. One example of donation-based crowdfunding is the 2008 election campaign of President Obama, the campaign team collected more than $137 million by this method.

One of the risks in a crowdfunding initiative is targeting and unrealistic financing initiative, as crowdfunding platforms charge a larger percentage fee if the target is not met, failing to deliver on the project's promise will negatively affect the project's reputation. Thus, it is very important to engage the potential community into the project and design the project according to their interests. That's why advertising the campaign is an important part of the crowdfunding process, always keeping costs in mind, it is important to advertise the campaign through several channels and reaching the largest possible

*Table 3. Credit-based crowdfunding in balance*

| Advantages | Disadvantages |
|---|---|
| • Possibility of raising capital without giving away company's shares of capital.<br>• Funds are disbursed as personal loans through internet without financial intermediation.<br>• The fact that small sums are made to individual loans minimises losses. | • Less important contributor's involvement than in equity-based crowdfunding<br>• No pre-sale/audience building element as in donation-based crowdfunding.<br>• Funds are disbursed without collateral, with high risks involved. |



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potential supporters. Most donations-based crowdfunding initiatives reward donors with something in exchange for their contribution. Typically this is some kind of perk, this is usually the most expensive part of the crowdfunding campaign. The most challenging part of the crowdfunding process is moving from the zero donation phase, as potential donors usually imitate what other supporters did, then a potential donor might be not willing to give funding to a project when no money has been raised yet. Encouraging close friends and contacts to contribute in the initial stages of the campaign will be helpful. The Regional Studies Association (RSA) explains that the most critical zone is when the 10%-50% of the initiative has been funded, as most unsuccessful campaigns fail somewhere in this range. Thus, in order to take the initiative to reality it is essential to push the campaign after the launch with advertising and showing previous donations. In initiatives involving social entrepreneurship like the ones involving this type of crowdfunding it is more important to have the certainty that it is a feasible project, as a poor crowdfunding campaign could harm the reputation of the company and affect future initiatives to get funding. Another important issue to consider is that the amount raised can be affected by declined funds later on coming from credit cards, wrong donations, or fraud.

Not all of the main crowdfunding portals are suitable for social entrepreneurs. For example, Kickstarter is designed only for creative projects and is not aimed for social businesses or nonprofits. GoFundMe is the world's leading personal fundraising website, it is based in San Diego, California, and it was launched in 2010 (Gofundme, 2015). It has become the leading fundraising site for personal causes and life-events. It has raised $550 million from 8 million donors since inception. Some example websites that are usually employed by social business include: Indiegogo, which we already mentioned above, although the company was not created for social entrepreneurs it allows almost all donations-based initiatives. It has become a large network for social businesses and ONGs due to its flexibility and international recognition. Another platform for causes and charities is Crowdrise, which employs a specific system to advertise the charitable impact of social organizations. Rockethub jointly in partnership with A&E Project Start Up also offers donation-based crowdfunding services funding innovative projects for social entrepreneurs. Another portal which operates in a different way of the others listed above is Invested.in, this website offers the opportunity to social ventures to create its own crowdfunding community for donation-based fundraising. The platform argues that its procedure to raise money is simpler than other portals and its transaction fees are lower than the competition. Table 4 presents the advantages and disadvantages of this type of crowdfunding.

The most common examples of donation-based crowdfunding are projects involving some kind of community fundraising: improvement to schools, improvements to churches, financing for children school ground, or financing facilities for sports clubs. The initiatives that raised the largest amounts from the platform GoFundMe include "Saving Eliza" (SavingEliza, 2015), which is a campaign to save a 8 year old girl, who was diagnosed with a rare terminal genetic disease. The campaign has raised $1,758,500 from 32,794 people. Another campaign is "Bucks for Bauman", which helps a man injured in the Boston marathon attacks to pay for his medical bills, the campaign has raised $809,035 from 16,491 people. Also related to the Boston marathon attack is the "Celeste and Sydney Recovery Fund", which is a fund to recover both ladies physically and emotionally from the attack in Boston. The initiative has raised $794,934 from 11,271 people.



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*Table 4. Donation-based crowdfunding in balance*

| Advantages | Disadvantages |
|---|---|
| • There are usually no tax implications when receiving large sums of money in this kind of initiatives.<br>• No need to give up partial ownership of the company (although in many cases of donation-based crowdfunding there is not a company involved).<br>• Limited regulatory restrictions.<br>• Donors are assured that their money is put to good use.<br>• It provides a platform for many short-term and easy to measure social projects, which are initiated soon. | • The main disadvantage is that social entrepreneurs might be limited by the amount of money they raise, as this kind of initiative usually attract less money than other types of crowdfunding, the amount collected might not be enough for an ambitious initiative.<br>• People are reluctant to support a project if they do not obtain a financial return on their donation, this should be taken into account in the initial plan.<br>• Especially important for social projects is that the number of participants in these initiatives decreases in proportion to the likelihood of fraud.<br>• Reward initiatives can be expensive.<br>• It is difficult to differentiate a social project from others and get attention from the crowd given that barriers to entry are low. |

## CONCLUSION

In conclusion, crowdfunding has helped many businesses and projects to take off easily and is replacing the traditional methods of fundraising since more platforms are being created. Evaluation of the risk for both the borrower and the donor is important before investing or borrowing to ensure that the project is a success. The legislation of the Act has enabled the platforms to conduct business better and have a larger crowd since the donors have the backing of the government and the law while engaging in the business.

Crowdfunding is changing the way that projects and startups get funded. Most of crowdfunding money is raised on reward-based platforms, although equity crowdfunding is growing quickly. It can be expected that crowdfunding will become more popular, with many crowdfunding new opportunities available, which will make not easy for potential investors to choose what to support. A new business that seeks funds through the crowdfunding process comes out stronger as for the questions that has to answer and the scrutiny that it is put under, compared to convince a single angel investor. It is worth mentioning that because a startup does not obtain crowdfunding does not necessarily mean that the business is not viable. It might be that investors may not be on that platform or perhaps is not the right time. One of the biggest challenges ahead will be communicating efficiently and engaging with investors after successful funding. Investors will possibly be interested in the big numbers and updates instead of the news from daily operations. Investors will be more likely to reinvest if they are kept engaged and the company is looking after them. Creating a mutual interest might foster that investors act as ongoing mentors in the business.

It is widely believed that crowdfunding will democratize the investment market. The question remains if the sector will continue acting in a fair and trustworthy way in the future, or will make the same mistakes as banks during the financial crisis, in that case the sector can lose its credibility. In this sense, Crowdfunding research website TheCrowdCafe explained that there are no cases of fraud in the six main platforms monitored by them. Fraud means creating fake campaigns or companies. Although the number of fraud cases and scams in the crowdfunding industry has been recently growing, recent cases include: GoBe, Anonabox, Scribble or Holovision. Thus, investors should examine the project thoroughly before investing as the possibilities of fraud will increase in the near future as the industry grows.

Each type of crowdfunding has itws own advantages. Reward-based crowdfunding can raise money for the project or business without selling off an equity stake in the business, as well as getting hundreds or thousands of people committed to the success of the campaign. Equity-based crowdfunding attracts



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accomplished investors using these platforms whose contribution may add to the success of the business long term. It allows raising money in a fast way on websites without the need to agree to fundraising commitments of venture capital companies, and also allow entrepreneurs more freedom to set their own commitments compared to selling publicly traded stocks. Credit-based crowdfunding offers the possibility of raising capital without giving away company's shares of capital. Funds are disbursed as personal loans through internet without financial intermediation, and the fact that small sums are made to individual loans minimises losses. Finally, Donation-based crowdfunding offers no tax implications when receiving large sums of money in this kind of initiatives, with no need to give up partial ownership of the company, limited regulatory restrictions, while donors are assured that their money is put to good use.

While in the US, companies using crowdfunding platforms have to disclose their finances to potential investors and regulators, in European equity crowdfunding platforms are still approaching important concerns like transparency for potential investors. American crowdfunding platforms typically look for financial projections of companies and examine their business plans. The lack of crowdfunding legislation in Europe is an important obstacle in the advancement of this way of financing. In Europe, small and medium companies represent 99% of businesses and 67% of all jobs. According to the European Central Bank, bank loans decreased sharply after 2008 by 29%. Crowdfunding is a possible solution for the problems of financing small and medium-sized companies, but the existing regulations prevent growth in this market. Furthermore, the lack of integration of European regulation limits crowdfunding to national borders, which means that operating in a small market will make more difficult for small companies to satisfy their capital requirement.

In Europe, there are 28 different legal crowdfunding frameworks for one market, this fragmentation is the key problem for crowdfunding growth. Cross-border transactions will face problems with this situation. Thus, many investors are excluded from investing in crowdfunding projects due to their location in the UE. Many countries are pushing the European Commission to create a pan-European regulatory framework to foster growth in the sector. This problem has been clearly recognized in the United States, with the Jumpstart Our Business Startups Act', or the 'JOBS Act', a uniform regulation for crowdfunding has been created. According to Masssolution Market Researcher, Europe will represent 26% of the crowdfunding total market. Only in 2012, the European market handled transaction for 925 million, while the American market for crowdfunding managed 16 billion dollars. Europe will not be able to follow the United States when it comes to crowdfunding until a uniform legislation is created (Bruntje & Gajda 2016).

Finally, it is worth mentioning that many crowdfunding proposals do not go through the crowdfunding platforms, many companies prefer to launch their crowdfunding campaigns through their websites. One example is Lockitron, which was rejected by Kickstarter. The company, which makes electronic door locks, launched a campaign on its website and raised more than $2,000,000 in 30 days.

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## KEY TERMS AND DEFINITIONS

**Angel Investor:** An investor who provides funding for small startups or entrepreneurs.

**Credit-Based Crowdfunding:** Credit-based crowdfunding is a method where the donors to a specific project loan out money to the person in the hope of future repayment of the amount owed.

**Crowdfunding Platform:** Internet platforms which enable companies to advertise over the internet and obtain investments from registered users in return.

**Donation-Based Crowdfunding:** In this method, funds are raised for an initiative of public interest, although there is no economic benefit to the community financing the initiative.

**Equity-Based Crowdfunding:** Equity-based crowdfunding is a form of crowdfunding where the contributors become part-owners of the company raising funds.

**Jumpstart Our Business Startups (JOBS):** A regulatory framework, protecting donors to crowdfunding projects and enabling businesses to use crowdfunding as a real source of funding.

**Reward-Based Crowdfunding:** In reward-based crowdfunding, the target amount has to be established first for the completion of the project. Then, the person or organization sets up donation amounts with an attached incentive that is proportional to the amount donated for the project.

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# Chapter 82
# Shadow Economy:
## An Analysis for EU-27 and Turkey

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## ABSTRACT

*The aim of this chapter is to investigate shadow economy on an EU-27 and Turkey basis. For this purpose, firstly the definition, causes\ and consequences of shadow economy together with its relationship with tax evasion are discussed. In addition, the causes of shadow economy are examined for EU-27 during the period 2003-2012. It was done both statistically and empirically by employing scatter plot diagrams and the random effects model. While empirical findings confirm the effects of taxes, income level, trade and population on the shadow economy, statistical findings mention the effects of governance related indicators. Another main finding of this chapter is about Turkey. Accordingly, shadow economy in Turkey is observed to be higher than in the EU-27 and taking into consideration the comparative statistical findings about the causes of shadow economy, the main reasons of shadow economy in Turkey are thought to be governance related.*

## INTRODUCTION

Today a large share of economic activities performs in the so-called "shadow economy" in both developed and developing countries. In addition to its large volume, the shadow economy is usually perceived as an economic problem as it has harmful effects on the economy such as distorting taxation justice and decreasing the efficiency of economic policies. These circumstances, together with some increasing economic problems such as budget deficit and unemployment, increased the concerns about shadow economy. However, the definition, structure and the causes of shadow economy are still not clear. This chapter investigates related deficiencies on an EU-27 and Turkey basis.

The chapter is built on three main aims. The first aim of the chapter is to clarify the definition and the structure of shadow economy. For that purpose, previous studies together with the work of the OECD (2002) are employed and the structure of shadow economy, its specific characteristics, its relationship with

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other non-observed economic activities, and tax evasion are investigated. The causes and consequences of shadow economy are discussed and its measurement is given. The second aim of the chapter is to explore shadow economy and its causes in the EU-27. In line with these, both statistical and empirical relationships between shadow economy and various indicators are examined by using data from the period 2003-2012. The correlation between the shadow economy and some economic and governance related indicators are examined by employing scatter plots diagrams.

The last aim of the chapter is to explore the shadow economy in Turkey. The trend of the shadow economy in Turkey for the period 2003-2012 is given and a comparison with the EU-27 is made in order to have more rational inferences. The data of possible factors that cause shadow economy is compared with EU-27 averages. This chapter also presents a modest guide for policy makers as it relatively presents the effects of both economic and governance related indicators which would be beneficial while struggling with the shadow economy among the countries in question.

The chapter is organized as follows. It starts with the definition and some characteristics of the shadow economy and the impacts of shadow economy including both benefits and harms are also discussed. The causes and consequences of shadow economy are also given in that section. The following section investigates the measurement of the shadow economy and problems of data and measurement are given. In order to clarify the definition and structure of the shadow economy even further, its relationship with tax evasion is presented. The next section presents a detailed analysis of the shadow economy in the EU-27 and followed by an exploration of the structure of shadow economy in Turkey. The next section includes an empirical analysis which examines the relationship between shadow economy and its causes in the EU-27. Concluding remarks and views are provided in the last section.

## BACKGROUND

### Shadow Economy: Definition, Causes and Consequences

The shadow economy is one of the main problems of many countries in different forms and degrees. An important share of economic activities occurs in a shadow economy in both developed and developing countries. In addition, some economic problems such as the need for public finance, high unemployment rates, and budget deficit have increased the concerns about the shadow economy. However, a clear definition of shadow economy has not yet been formulated. Schneider and Enste (2000, p. 78) stated one commonly used definition of the shadow economy as "all economic activities that contribute to the officially calculated (or observed) gross national product but are currently unregistered." Choi and Thum (2002, p. 2) states that in simple term the shadow economy "constitutes activities that are not recorded in the government statistics."

Economists usually use different terms such as "shadow economy," "underground economy," "informal economy" or "hidden economy" without always clarifying what they mean. The OECD handbook for "Measuring the Non-Observed Economy" (2002, p.36) is a beneficial source that shed some light on the definition of shadow economy and its relationship with some other non-observed economic activities. The handbook states that "the groups of activities most likely to be non-observed are those that are underground, illegal, informal sector, or undertaken by households for their own final use." And "the deficiencies in the basic data collection program" are also admitted as being a part of non-observed economy.



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Accordingly, non-observed economy consists of five main areas: (i) underground production; (ii) illegal production; (iii) informal sector production; (iv) household production for own final use; and (v) production missed due to deficiencies in data collection program[1].

The shadow economy takes part in a non-observed economy and is especially related to underground and informal economy and usually considers T4, T5, and T6 in Figure 1 which is solely the economic part of the non-observed economy (Garvanlieva, Andonov, & Nikolov, 2012, p.8).

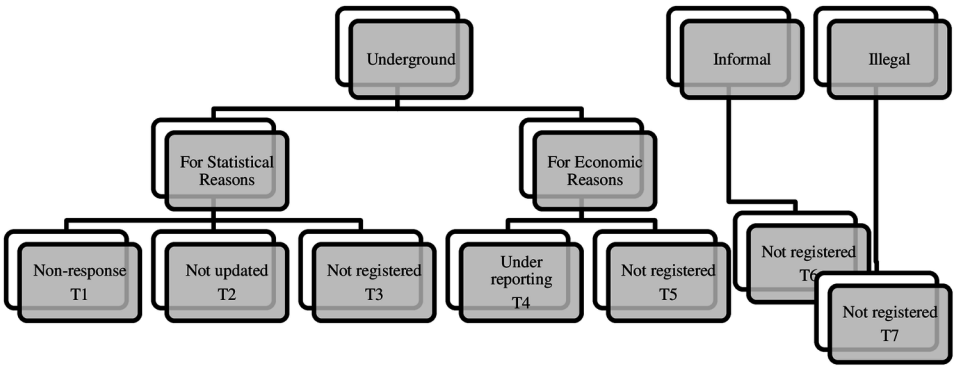
The shadow economy is usually related to low income levels; however, it is not a set of survival activities performed by destitute people. Yet, in some situations the shadow economy has been intertwined with the formal economy. Individual workers may switch between the two sectors even during the same workday. Thus, the shadow economy is not an individual condition, but rather a process of income-generation characterized by one feature: it is unregulated by the institutions of the society, in a legal and social environment in which similar activities are regulated (Castells & Portes, 1989, p. 12).

We can define some special characteristics for shadow economy by benefiting from related literature. First, the shadow economic activity must create economic value. However, it is not a sufficient condition in order to qualify an economic activity as shadow economic activity because shadow economic activities are not included in national accounts (Danopoulos & Znidaric, 2007, p.70), and government fails to measure actual volume of production activities. Even if labor force shifts from shadow economy to formal sector, measure of Gross Domestic Product (GDP) growth rates will be misleading.

Because the increase in growth rate has been caused by decreasing shadow economy, and the real growth in total income has been considerably smaller than indicated by the GDP (Feige, 1979; Petersen, Thiessen, & Wohlleben, 2010, p. 425). Secondly, as shadow economic activities cannot be observed and reported to governmental organizations, they do not constitute a tax base for government. Thus, while shadow economic activities increase net real income of workers, they distort government revenues and increase tax burden on the official sector. Thirdly, shadow economic activities are irregular. There are no rules for shadow economic activities such as minimum wage standard or job security, and workers in the shadow economy cannot benefit from various opportunities such as retirement benefits and health insurance.

Another feature of the shadow economy concerns the characteristic of labor. Workers usually receive fewer benefits or less wage accompanied with worse working conditions and these characteristics can be subsumed under the general heading of "*down-graded labor*" (Castells & Portes, 1989, p. 26). And

*Figure 1. Analytical framework*
*Source: OECD (2002, p. 43).*






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last, although the shadow economy is irregular and not included in national accounts, as Castells and Portes (1989, p. 26) suggested "it is an integral component of total national economies, rather than a marginal appendix to them." Thus, shadow economy and formal economy seems to have a systemic connection. The causes of shadow economy are not clearly defined, and there are different views about them. Schneider and Enste (2002) divided the economic causes of shadow economy into four groups: taxes, social security, transfer payments and regulations.

High tax rates are seen as one of the main causes of the shadow economy in a number of studies such as Schneider (1986, 2005, 2007), and that inference may be related to the inverse U shaped Laffer-Curve (Laffer, 1979, p. 75) which shows the relationship between tax rates and tax revenues. Accordingly, increasing tax rates will increase tax revenues; however, this is valid only up to a certain maximum tax rate level. Increasing tax rates beyond this level will result in tax evasion and avoidance and hence decrease in tax revenues. Gutmann (1981) modified the Laffer-Curve by including the shadow economy. For the economy consisting of the public sector, the official sector, and the shadow economy, he suggests that increasing tax rates beyond a certain level will result in a growing shadow economy. Indeed, as Petersen, Thiessen and Wohlleben (2010, p. 422) suggest, increasing burdens of direct and indirect taxes have created incentives to reduce labor supply and consumption in the official markets as governments often consider observable income and consumption as the major taxation base of the state.

Social security and transfer payments are seen as another main cause of the shadow economy as they break down the working incentives of people by guarantying a certain standard of living without any working obligation. In addition, Schneider and Enste (2002, p. 123) suggest that one of the incentives for transfer payment recipients to work illicitly is the increase in opportunity in finding a future regular job through contacts made during this occupation. The regulations especially aimed at labor markets create working disincentives for both employers and employees in the official sector, by increasing costs (Schneider, Buehn, & Montenegro, 2010, p. 445). Similarly, regulations about production such as license fees and registration requirements will increase production costs and tend people to work in shadow economy. Schneider (2012, p. 13) highlights that transition countries have higher levels of regulation and, hence, a higher shadow economy. Figure 2 gives an overview of the economic causes.

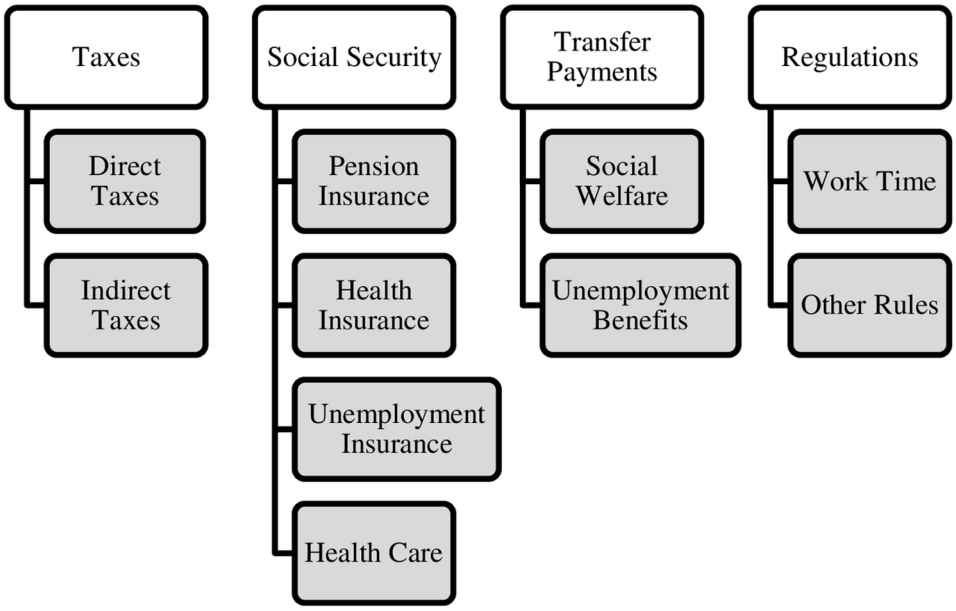
Besides tax and social security burdens, Dreher, Kotsogiannis, and McCorriston (2005, p. 2) suggest there is another school of thought that identifies institutional bureaucracy, regulatory discretion, corruption and weak legal system as the main causes of the shadow economy. Danopoulos and Znidaric (2007, p. 71) point to the fact that weak state institutions, official corruption, anemic or inconsistent law enforcement, and lack of political will on the part of the political system attract potential law breakers. There are a number of studies (Dreher, Kotsogiannis, & McCorriston, 2005; Torgler & Schneider, 2007a; Karlinger, 2009) which test the relationship between those factors and shadow economy empirically. Of those, Dreher, Kotsogiannis, and McCorriston (2005) and Torgler and Schneider (2007a) suggest that increase in institutional quality leads to a smaller shadow economy. Karlinger (2009) points to the effect of competition on shadow economy in countries having a different size of corruption.

Last, the volume of the shadow economy is affected by some macroeconomic variables such as inflation, unemployment, per capita income, and income equality. In addition, economic instability, uncertainty, and low standard of living increase tendency of people to work without records. Moreover, Castells, and Portes (1989, p. 28) point to the effects of international competition. Domestic production cannot compete with imports from countries which have low labor costs. This will inevitably tend domestic firms to either close down or to operate in the shadow economy.



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*Figure 2. Economic causes for the shadow economy*
*Source: Schneider and Enste (2002, p. 104).*




There are contradicting arguments about the effects of the shadow economy on overall economy and the basic arguments for and against it can be summarized as follows. The supporters of shadow economy argue that governments sometimes indulge in excessive and wasteful spending and also establish unnecessary and inefficient regulation in the economy. Shadow economy that arises from high tax rates makes governments to realize that there is a limit for how much they can spend (Spiro, 2005, p. 180). Another advantage of the shadow economy arises if there are many unnecessary and inefficient regulations. The shadow economy reduces the cost of bureaucracy and labor which in turn contribute to growth. As it decreased labor costs and creates new job opportunities, the shadow economy serves to decrease unemployment, thus forcing the official sector to reduce costs and improve quality due to competition.

However, the shadow economy contains some disadvantages. If tax revenues are decreased by tax evasion arising from high tax rates, governments may choose to increase tax rates in order to increase revenues. This policy will result in increasing tax burden on the formal sector and distort taxation justice. In addition, the shadow economy makes statistics less reliable and this may lead to incorrect economic policies. Danopoulos and Znidaric (2007, pp. 71-72) states the shadow economy renders government fiscal policy ineffective due to uncertainty about the actual amount of revenue. Last, as the shadow economy is easy to operate in small scaled firms, it is usually unproductive and less efficient.

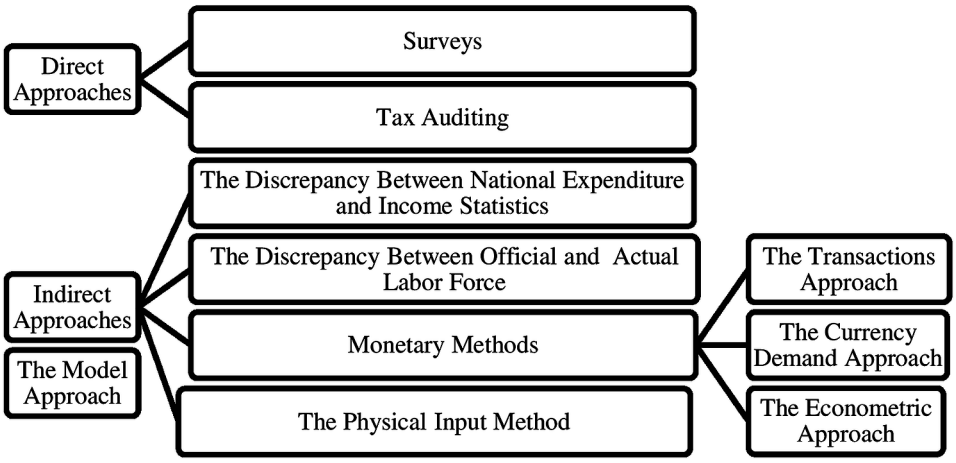
## How to Measure the Shadow Economy?

As mentioned in the previous section, the shadow economy is a critical issue and its incorrect measurement will distort the effectiveness of economic policies. As the size of shadow economy is still an unresolved issue, there are also difficulties in measuring it. Figure 3 gives the summary of all approaches including sub-categories.



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*Figure 3. A summary of approaches to estimate the size of shadow economy*
*Source: Frey and Pommerehne (1984), Schneider and Enste (2000), and Schneider and Enste (2002).*




Direct approaches are microeconomic approaches which depend on either surveys or samples based on voluntary replies, or tax auditing and other compliance methods. Direct approaches provide detailed information on the structure of the shadow economy. The main disadvantage of this method is its dependency upon the individuals questioned. The individuals in the sample may not reflect the whole population and they may prefer to hide their behaviors. Moreover, even if individuals in the sample are honest, they may be uninformed about the shadow economy and the results are sensitive to their understanding. Some kind of household production may be mistaken as shadow economic activities (Petersen, Thiessen, & Wohlleben, 2010, p. 432).

The results of direct approaches are also sensitive to the feature of the survey. Isachsen and Strom (1989) found out that almost twice as many people admitted to operating in shadow activity by mail after being interviewed. Direct approach is also leads only to point estimates and is unable to provide estimates of the shadow economy over a longer period of time. Isaschsen, Knovland, and Strom (1982), Isaschsen and Strom (1985), Mogensen, Kvist, Kormendi and Pedersen (1995), and Feld and Larsen (2005, 2008, 2009) are examples of studies which employ sample surveys in order to measure shadow economy (Schneider & Enste, 2000, pp. 91-92; Schneider, 2014, p. 10).

Indirect approaches are macro-economic in nature which use different indicators in order to measure the shadow economy. Four indirect approaches are commonly used: the discrepancy between national expenditure and income statistics, the discrepancy between the official and actual labor force, monetary methods and physical input approach. The first approach is based on the presumption that the discrepancy between the expenditure and income reflects the shadow economy. However, Frey and Pommerehne (1984, p. 6) point to many other factors influencing the national accounts calculations. The discrepancy between expenditure and income may reflect omissions, errors and tax authorities' behavior. In that context, results are not completely reliable.

Measuring the shadow economy by the discrepancy between the official and actual labor force is based on the idea of a decline in labor force participation will reflect an increase in the shadow economy. However, Schneider and Enste (2002, p. 17) suggest that differences in the rate of participation may also have other causes and individuals may simultaneously work in both official sector and shadow economy.



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Thus, the estimation results of this approach are not completely reliable. Monetary approach is based on the assumption that shadow economic activities are usually settled by paying cash. This assumption is reasonable as transactions paid in cash are easy to be hidden from fiscal administrations. Schneider and Enste (2002, p. 17) suggest that "if the demand for cash rises above the 'normal' relative or absolute value, one concludes that shadow economic activities are increasing." And, if the amount of currency used to make hidden transactions can be estimated, then it could be multiplied by the income-velocity of money in order to get a measure of the size of the shadow economy (Ahumada, Alvaredo, & Canavese, 2008, p. 97).

The size of shadow economy can be measured by monetary approach with three different methods: fixed ratio approach, transactions approach, and econometric approach. The first method assumes that the ratio between currency demand and money is fixed and the excess currency may reflect the size of shadow economy. This approach is first used by Cagan (1958) and it followed by Gutmann (1977) and Tanzi (1980). While Gutmann (1977) used statistical analysis, Tanzi (1980) estimated a currency demand function econometrically. The currency demand approach is employed by later studies (Tanzi, 1983; Bhattacharyya, 1990, 1999) and became the most commonly used methods. However, it has been criticized for the following reasons. Factors that cause shadow economic activity other than tax burden are ignored and, moreover, the assumption of equal velocity of money for both types of economies is suspicious. In addition, cash is not spent in the shadow sector only, but in the official sector. Therefore, the cash circulation in the shadow economy is much lower than in the official sector. However, shadow economic activities are usually paid immediately because of distrust, so money circulation in shadow sector may be faster than in the official sectors, too (Petersen, Thiessen & Wohlleben, 2010, p. 434).

The transactions approach was first developed by Feige (1979). This approach is based on an assumption that the relationship between the volume of transaction and money is constant over time. If this relationship holds, then the total stock of money gives an indication of total transactions in both the official and hidden economy. Relating total nominal Gross National Product (GNP) to total transactions, the hidden economy's GNP can be derived residually by subtracting officially measured GNP from total GNP (Frey & Pommerehne, 1984, p. 6).

The last monetary approach is the econometric approach. As there are a number of factors that affect currency demand other than shadow economy, recent studies have intensified effort to control these factors and ensure that the "extra" currency can really be attributed to the working of the underground economy (Frey & Pommerehne, 1984, p. 10). This approach is pioneered by Tanzi (1980) and Klovland (1980) and followed by some later studies (Tanzi, 1983; Isachsen, Klovland, & Strom, 1982; Langfeldt, 1982). It is assumed that shadow economic activities are paid for in cash and the velocity of money in both shadow and official sector are assumed to be equal. The main cause of shadow economy is assumed to be taxation and the discrepancy between currency demand with and without taxation is employed in order to measure shadow economy. However, this approach has been criticized for its unrealistic assumptions.

The last indirect measurement method which is the physical input method can be divided into two different methods. The first method is *Kaufmann-Kaliberda Method* and it is based on the assumption that electricity consumption is the single best physical indicator of overall economic activity (Kaufmann & Kaliberda, 1996). By employing electricity consumption they estimate a proxy for the overall economy and compare it with the official statistics. The difference between the growth of official GDP and the growth of electricity consumption is attributed to the growth of the shadow economy. However, it has also been criticized because all economic activities does not require electricity consumption. In addi-



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tion, technical progress has been ignored and there may be considerable differences in the elasticity of electricity/GDP across countries or changes over time (Schneider & Enste, 2000, p. 96).

The second physical input method is the *Lacko Method.* In this method, it is assumed that a certain part of the shadow economy is associated with the household consumption of electricity. In order to measure the actual size of shadow economy, one should know how much GDP is produced by one unit of electricity in the shadow economy of each country. However, as it is not known, she takes the result of the known shadow economy and applies it to the other countries. This method again has been criticized because it only considers the shadow economy occurring in the household sector and as it employs a base value for shadow economy the results may not be reliable (Schneider & Enste, 2002, pp. 23-24).

The last approach in order to measure the shadow economy is the model approach. Direct and indirect approaches assume that only one indicator reflects the size of shadow economy, however the shadow economy is affected by various factors. The model firstly links the unobserved variables to observed indicators and the model approach considers the multiple causes that contribute to the growth of the hidden economy as well as its multiple effects (Karaboytcheva & Andrada, 2012, pp. 168). Secondly, the casual relationships among the unobserved variable (the shadow economy) are specified (Schneider & Enste, 2000, p. 98). In summary, there are various methods that can be used to measure the shadow economy and each of them has their own advantages and disadvantages.

## MAIN FOCUS OF THE CHAPTER

### Shadow Economy and Tax Evasion: Distinctions and Linkages

The shadow economy and tax evasion are related concerns, but the linkages and distinctions between them have to be clarified. We can start by mentioning different sectors in which productive activities take place. Human productive activities[2] are taking place in the household sector, the market sector, and the shadow economy. Figure 4 represents different types of economic sectors. The right rectangle (MKJL) represents the subsistence economy or household production. Household production is exemplified by Ironmonger (1999, p. 3) as the provision of meals, child care, clean clothes, accommodation, shopping, voluntary work and self education. The left rectangle (ABCD) represents the market sector or formal sector which consists of public and private sector and the rectangle (BLDM) which is between market production and household production represents the shadow economy.

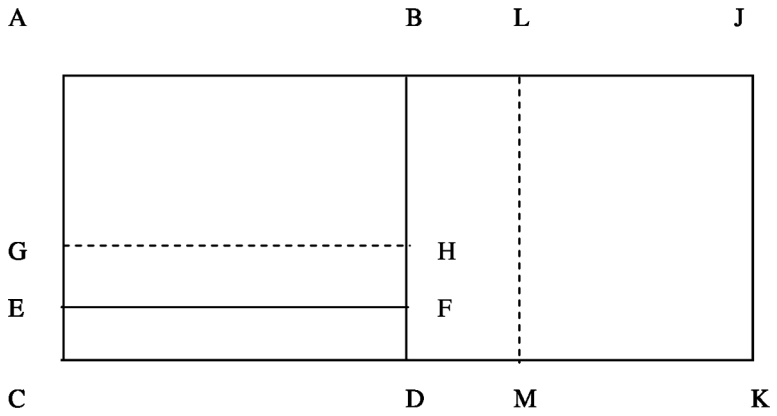
In the System of National Accounts (SNA) literature, household production together with shadow economy is considered as informal sector (BDKJ). However, household production was almost neglected in theoretical and empirical economics (Petersen, Thiessen, & Wohlleben, 2010, p. 425).

As the income from the shadow economy and household sector is unobservable, only the market income remains as a base for taxation. However, people may earn a remarkable amount of income from these sectors, so they must also be considered. Due to difficulties in determining these income generating activities, tax burden usually falls on the formal sector. In that context, increasing tendency of tax evasion may lead people from the official sector to the shadow economy again. Therefore, the shadow economy and tax evasion are interpenetrating subjects. Nevertheless, the informal sector, which consists of the shadow economy and household production is not the only source of tax evasion and tax avoidance[3].



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*Figure 4. Components of total income or wealth*
*Source: Petersen, Thiessen & Wohlleben (2010, p. 425).*




In Figure 4, one part of the market sector is legally withdrawn from the income tax base due to the existing tax allowances and exemptions (CDEF) while another part is illegally withdrawn from the income tax base (EFGH) in favor of tax evasion. This part (EFGH) is measured in the SNA, but not reported to the fiscal administration. The tax base here is hidden from tax authorities by underreporting incomes or overvaluing costs. A number of economic agents prefer this method in order to reduce production costs. Therefore, the size of tax distortion arising from formal economic activities is tidy.

However, many individuals engage in shadow economy depending on some reasons other than evading taxes. These reasons which have been discussed previously may include the intensity of regulations, distrust of public authority, dissatisfaction of public services and institutional quality, and avoiding international competition (Castells & Portes, 1989; Schneider & Enste, 2002; Dreher, Kotsogiannis, & McCorriston, 2005). In addition, Sam (2010, p. 168-172) suggests that while attempts to reduce shadow economy contribute to the government's revenue, measures to reduce tax evasion do not necessarily reduce tax evasion from the shadow economy. He also pays attention to the difference between taxable income and non-taxable income in the shadow economy. Accordingly, all economic activities are not taxable for example small enterprises are hardly taxed because their income is often below the tax threshold income level. In conclusion, tax evasion and shadow economy are intertwined; however, they do not reflect exactly same subjects.

## The Shadow Economy and Causes in The EU-27

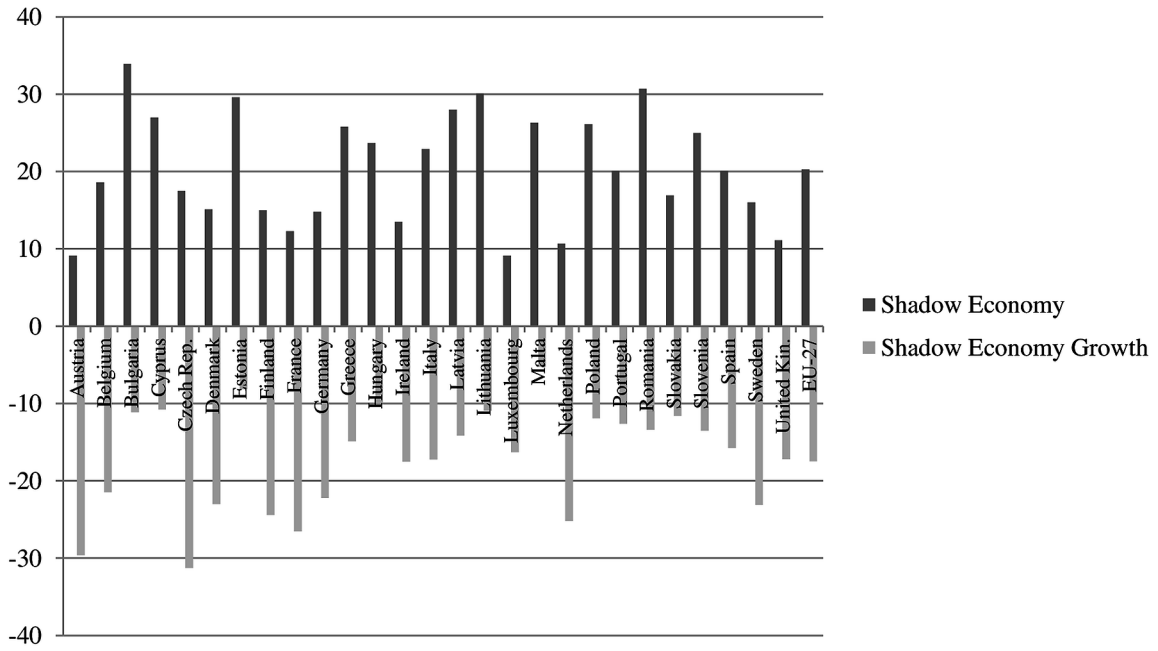
The shadow economy is sometimes perceived as the problem of developing countries; however, it is still a worthwhile issue for developed countries. On average across the EU-27, the shadow economy is as large as 18.4% of the economic activity in 2012 (Schneider, 2013). Figure 5 shows the size of shadow economies in 2012 and growth rates of shadow economy during the period 2003-2012 in the EU-27 countries.

As can be seen in Figure 5, Bulgaria (33.9%), Romania (30.7%), and Lithuania (30.1%) have the largest shares, while Austria (9.1%), Luxembourg (9.1%) and Netherlands (10.7%) have the smallest size of shadow economies. In general, the share of shadow economy increases from West Europe to East Europe. Overall, the EU-27 countries have negative growth rates for shadow economy, so size of shadow economies are decreased during 2003-2012 in all EU-27 countries. However, the size of shadow



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*Figure 5. Shadow economy (in % of official GDP (2003-2012 Averages)) and shadow economy growth (2003-2012) in EU-27*
*Source: Schneider (2013).*




economy in EU-27 is 20.3% of the official economy on the average which can still be interpreted as a high percentage rating. As the structure and the size of shadow economies vary in different EU-27 countries, different policy measures have been used in order to reduce the size of shadow economy. These policy measures include improved detection, increased penalties, promoting benefits of formal work etc. and more detailed information about some specific measures can be found in Eurofound (2008, 2009), Jensen and Wohlbier (2012), Packard, Koettl, and Montenegro (2012) and Schneider and Williams (2013).

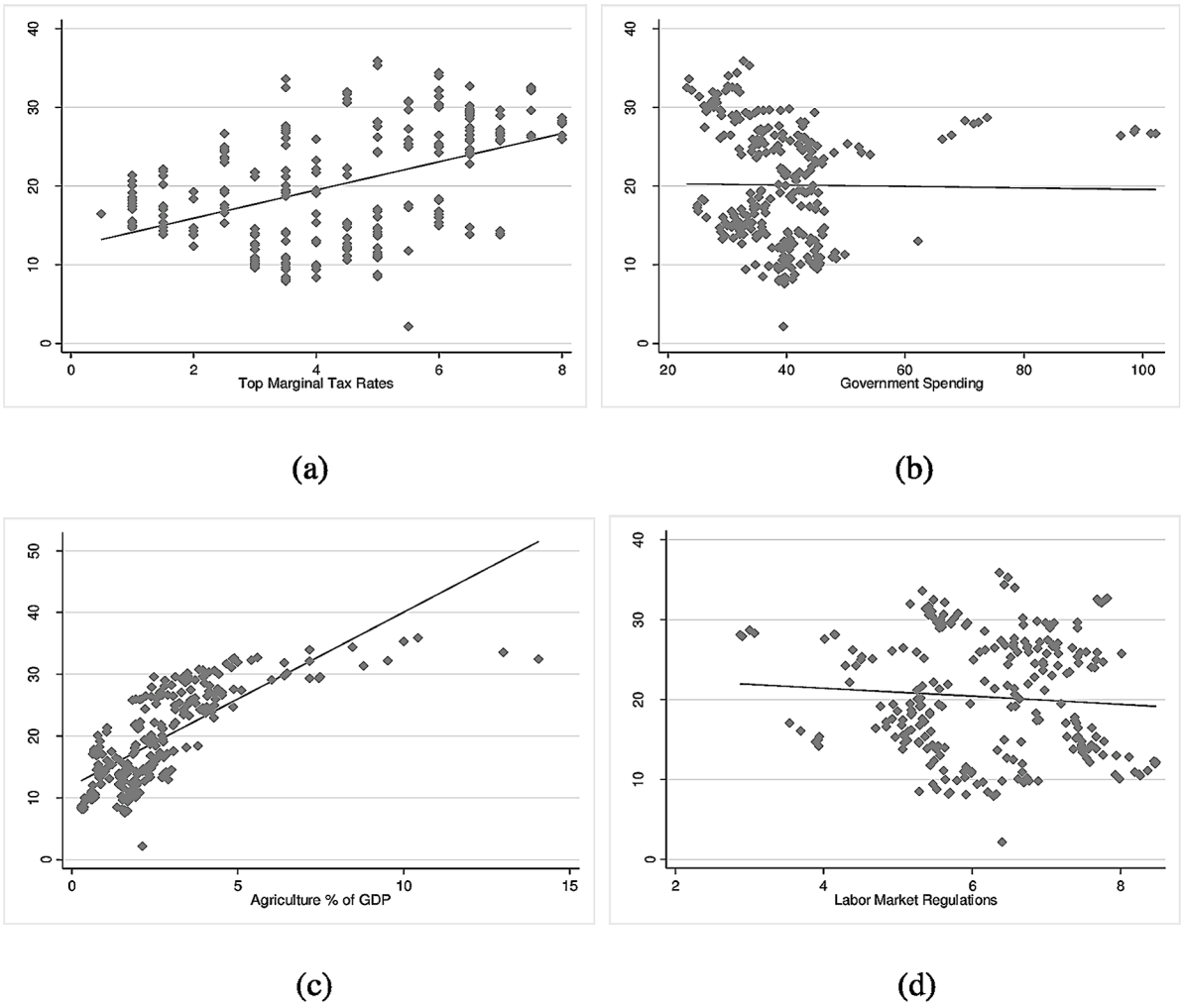
Different points such as government expenditures, tax burden, regulations, and institutional quality were listed as causes of shadow economy in the previous section. These factors are examined here to locate the main causes of the shadow economy in the EU-27, while scatter plots diagram is employed in order to observe the relationship between shadow economy and the other causes in question by using 2003-2012 data. As high tax burden is admitted as one of the main causes of the shadow economic activities, the correlation between top marginal tax rates and shadow economy is handled first. Although the relationship does not appear strong, a positive relationship is observed between top marginal tax rates and the size of shadow economy (Figure 6a). Therefore, countries with higher top marginal tax rates have larger size of shadow economies which is also consistent with our previous debates.

One of the other main causes of the shadow economy is huge government expenditures. It was mentioned above that the tendency to shadow economy may be caused by some kind of protest of people who think that government expenditures are excessive and wasteful. There seems no correlation between shadow economy and government spending (Figure 6b). Even so, Cyprus and Malta, both which have the highest government spending, face a high shadow economy. An interesting relationship is observed for



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*Figure 6. Scatter plots of shadow economy and some selected indicators*
*Sources: Fraser Institute (EFW, 2013), Schneider (2013), Heritage Foundation (2014) and World Development Indicators (WB, 2014).*




agricultural shares (Figure 6c). Accordingly, an increase in the share of agriculture in GDP is positively related to shadow economy but only up to a certain level. Beyond this level of agricultural share, the size of shadow economy seems uncorrelated with the agricultural share.

Additionally, it is worth mentioning that countries found in that region of the diagram which is denoted by largest agricultural share include Bulgaria and Romania, the two biggest shadow economies in the EU-27. Regulations especially related to labor markets are mentioned as important cause of shadow economy. The relationship between labor market regulations and shadow economy is observed to have weak correlation with the shadow economy (Figure 6d). Even Greece with lowest level of labor market regulations (4.34% for 2003-2012) still is one of the biggest shadow economies in Europe while the opposite is true for United Kingdom with highest level of labor market regulations (8.26% for 2003-2012).

Thus, labor market regulations are not a strong determinant of the shadow economy in the EU-27.



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In addition to economic indicators such as taxes and expenses, the sectoral composition of the economy and regulations; indicators related to governance may be effectively based on the size of shadow economy. In that context, World Governance Indicators (WB, 2013) are employed here and the relationship between shadow economy and different governance indicators are observed. World Governance Indicators[4] include six main topics: control of corruption, political stability and absence of violence/terrorism, regulatory quality, rule of law, voice and accountability and government effectiveness[5]. The relationship between control of corruption and shadow economy is observed as negative (Figure 7a) and this finding is consistent with the expectations.

In addition, Bulgaria and Romania which have large size of shadow economies, are the two countries that have lowest index rates for control of corruption on average (-0.1467 for Bulgaria, and -0.2192 for Romania). Similarly Austria, Luxembourg, and the Netherlands with small size of shadow economies have high index rates for control of corruption on average (1.8403 for Austria, 1.9529 for Luxembourg, and 2.1151 for the Netherlands).

All of other governance indicators again have a negative relationship with the size of shadow economy in EU-27 (Figure 7). However, the correlations of some indicators are not so strong. The index of political stability and absence of violence/terrorism has the weakest relationship with shadow economy. On the other hand, stronger relationships are observed for rule of law, voice and accountability and government effectiveness in the EU-27 countries.

In summary, control of corruption, regulatory quality, rule of law, voice and accountability and government effectiveness were observed to have stronger relationships with the size of shadow economies in the EU-27 compared to the political stability indicator. In addition, they seem also more effective when compared to economic indicators - top marginal tax rates, government spending and labor market regulations. These findings are important with respect to policy making and dealing with indicators which have stronger correlations with the shadow economy and they are recommended as a weapon which can be used to fight against shadow economy in the EU-27.

## Some Notes on Shadow Economy in Turkey

Although Turkey managed to decrease the share of shadow economy to GDP especially after 2003, nevertheless it still maintains to be one of the main economic problems. Schneider (2013) estimated the share of shadow economy in 2012 (in % of GDP) as 27.2% which is higher than the EU-27 averages. Figure 8 shows the trend of the shadow economy in Turkey (in % of GDP) which is always higher than the EU-27 average. Although the shadow economy in Turkey is very large compared to the EU average, it is smaller than the EU-27's largest shadow economy – Bulgaria. Nevertheless, this does not mean that shadow economic activities in Turkey are low. Especially in recent years, several measures have been taken effect such as "KADIM - The Project of Struggling Against Informal Employment" by the Ministry of Labor and Social Security and "The Action Plan of Struggling Against Shadow Economy" by the Finance Ministry[6]. In addition to some other ministries, governmental and sometimes non-governmental organizations also help to serve combating shadow economy.

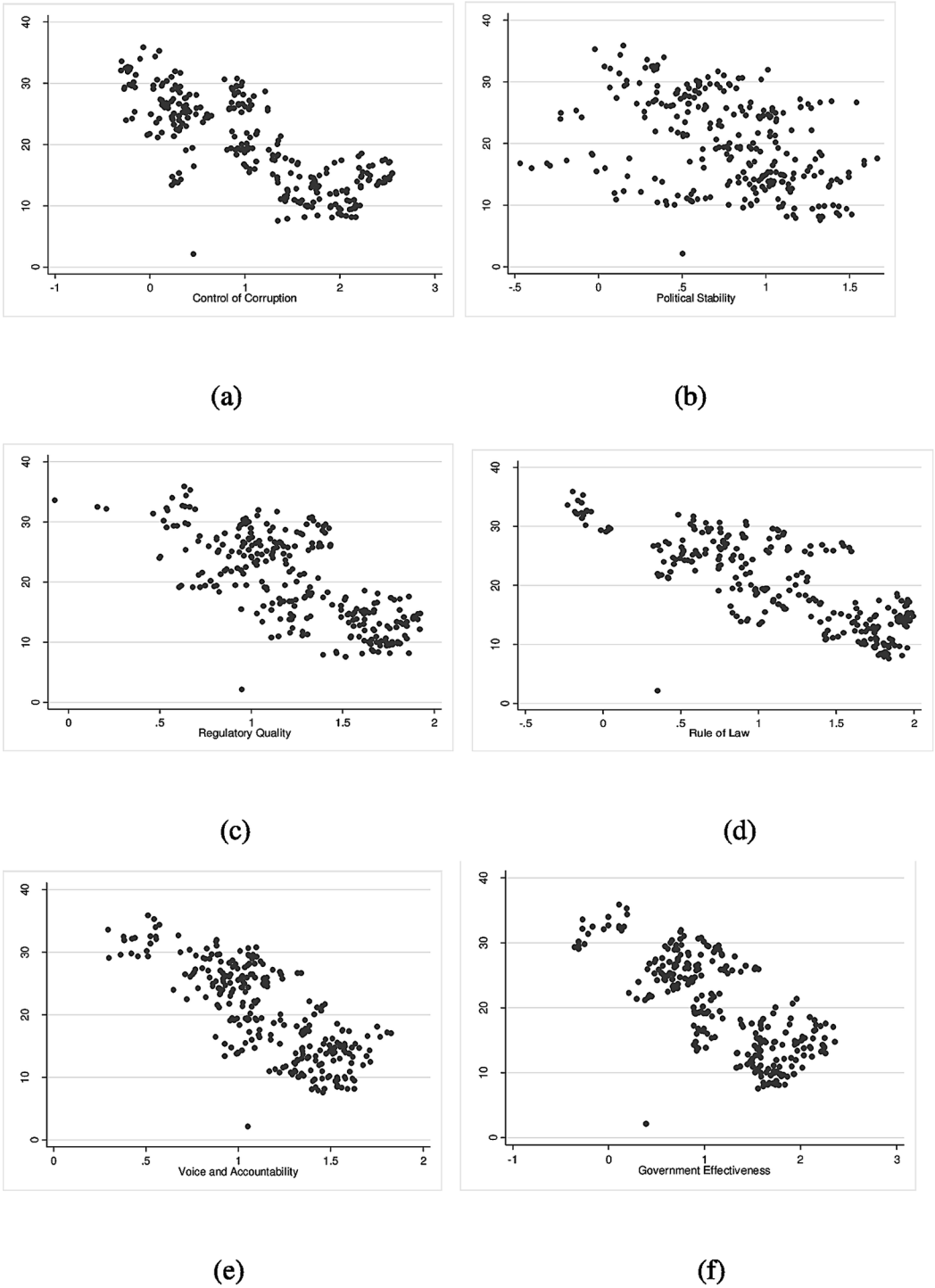
When we further make comparisons for tax evasion, a worse situation is observed in terms of Turkey. Figure 9 shows the trend of tax evasion (in % of GDP) in Turkey and the EU-27.

Although Turkey managed to decrease the share of tax evasion up to the global 2008 crisis, it started to increase again after that date depending on high inflation and decrease in the purchasing power of individuals. The difference between tax evasion shares of Turkey and Luxembourg which has lowest



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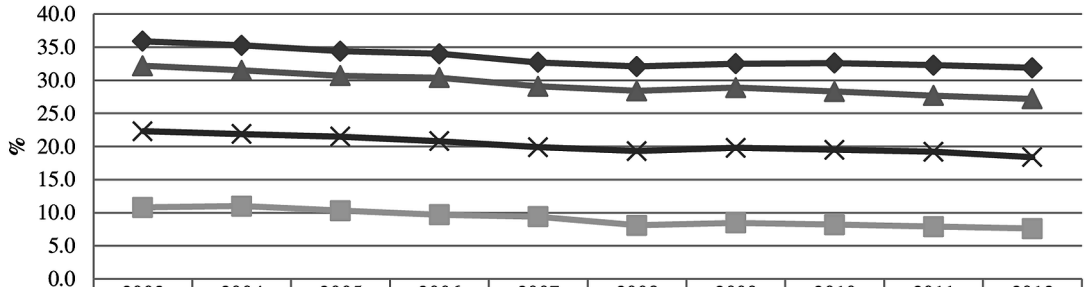
*Figure 7. Scatter plots of shadow economy and world governance indicators in EU-27 for the period of 2003-2012*
*Source: World Governement Indicators (2013), WB (2014) and Schneider (2013).*





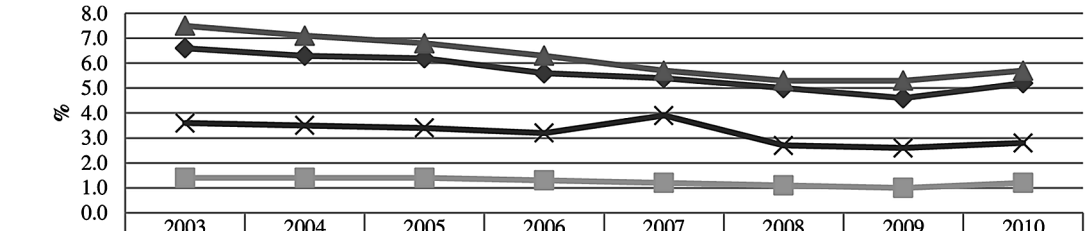

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*Figure 8. Shadow economy (in % of official GDP) in the EU-27 and Turkey*
*Source: Schneider (2013).*




| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| Bulgaria | 35.9 | 35.3 | 34.4 | 34.0 | 32.7 | 32.1 | 32.5 | 32.6 | 32.3 | 31.9 |
| Austria | 10.8 | 11.0 | 10.3 | 9.7 | 9.4 | 8.1 | 8.5 | 8.2 | 7.9 | 7.6 |
| Turkey | 32.2 | 31.5 | 30.7 | 30.4 | 29.1 | 28.4 | 28.9 | 28.3 | 27.7 | 27.2 |
| EU-27 | 22.3 | 21.9 | 21.5 | 20.8 | 19.9 | 19.3 | 19.8 | 19.5 | 19.2 | 18.4 |

*Figure 9. Tax evasion (in % of GDP) in selected EU countries and Turkey*
*Source: Schneider (2013).*




| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|---|
| Romania | 6.6 | 6.3 | 6.2 | 5.6 | 5.4 | 5.0 | 4.6 | 5.2 |
| Luxembourg | 1.4 | 1.4 | 1.4 | 1.3 | 1.2 | 1.1 | 1.0 | 1.2 |
| Turkey | 7.5 | 7.1 | 6.8 | 6.3 | 5.7 | 5.3 | 5.3 | 5.7 |
| EU-27 | 3.6 | 3.5 | 3.4 | 3.2 | 3.9 | 2.7 | 2.6 | 2.8 |

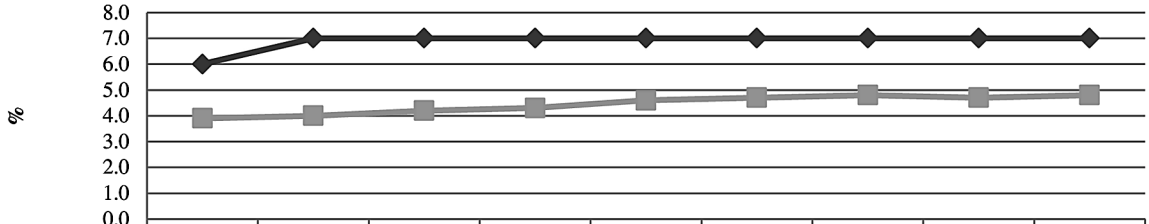
level of tax evasion share (as an average for the period of 2003-2012) seems worthwhile. In addition, average tax evasion in Turkey is higher than the EU-27 average and Romania which has highest level on average. The causes of the shadow economy in the EU-27 are examined by using scatter plots diagrams in the previous section, however as there is no large scale of data, this method is not preferred for Turkey. The magnitudes and trend of possible causes are rather compared with EU-27 averages. Figure 10 shows top marginal tax rates for Turkey and the EU-27. While EU-27 countries have a top marginal tax rate of 4.44% on average, the rate is 6.88% in Turkey.

Additionally, rates are always higher than in the EU-27 within the period 2003-2012. However, it is worth noting that the situation differs when tax revenues as a share of GDP is employed. After a change in budget system in Turkey in 2006, tax revenues as a share of GDP become 19.77% (WB, 2014) on average (2003-2012). However, tax revenue share of the EU-27 is 26.65% on average, which is higher than in that of Turkey. One must also note that the composition of taxes have to be considered in order to talk about the effects on the shadow economy.



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*Figure 10. Top marginal tax rates in Turkey and EU-27 during 2003-2012*
*Source: Fraser Institute (EFW, 2013).*




| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|
| Turkey | 6.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| EU-27 | 3.9 | 4.0 | 4.2 | 4.3 | 4.6 | 4.7 | 4.8 | 4.7 | 4.8 |

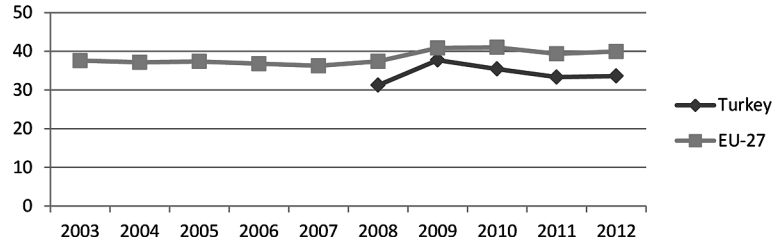
Indirect taxes may increase the size of shadow economy as they are more difficult to be retained and controlled. Furthermore, high indirect tax rates in some commodities such as cigarettes, alcohol and fuel oil may encourage smuggling thereby deepening the problem of shadow economy. In EU-27 the share of direct and indirect taxes are quite similar in recent years: the share of indirect taxes as a percentage of total tax burden is 34.5% and the share of direct taxes as a percentage of total tax burden is 33.2% in 2011 (EC, 2013, p. 178-188). However, tax revenues in Turkey depend heavily on indirect taxes. While the share of direct taxes to tax revenues is 32.2%, the share of indirect taxes was 67.6% in 2011. Thus, in Turkey, the composition of taxation may be more explanatory for the shadow economy than its magnitude.

Figure 11 shows the trend of government spending as a share of GDP in Turkey and the EU-27. Figure 11 shows that rates in Turkey are lower than in the EU-27. Considering the weak relationship between government spending and the shadow economy in the EU, it may be suggested that the main cause of shadow economy in Turkey is not government spending.

A weak relationship was observed between labor market regulations and shadow economy in the EU-27. The index rates in Turkey are far below that of EU-27 averages for the period of 2003-2012 (Figure 12). Moreover, the average rate of Turkey which is 4.36% close to the rate of a country which has lowest rate in the EU-27: Greece 4.34%. Thus, the size of labor market regulations does not seem be an important cause of shadow economy in Turkey just as in the EU-27.

Factors related to governance seem quite important for Turkey. Figure 13 shows World Governance Indicators in Turkey and EU-27 as an average for the period of 2003-2012. As can be seen from the figure the quality of governance in Turkey is quite different from the EU-27.

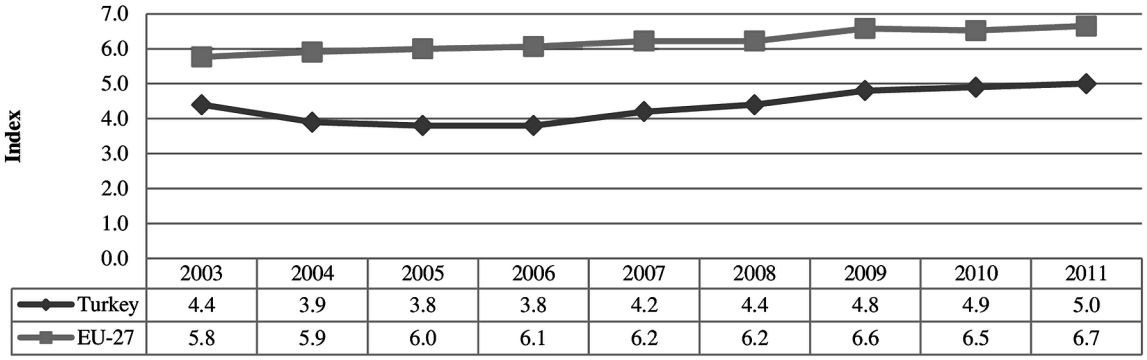
*Figure 11. Government spending (% of GDP) in Turkey and EU-27 during the period of 2003-2012*
*Source: WB (2014).*





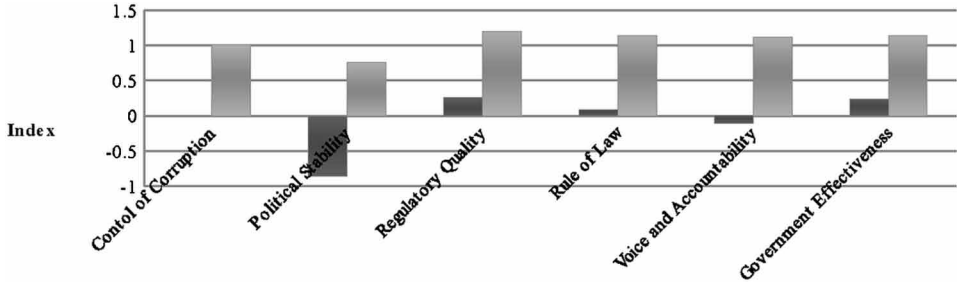

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*Figure 12. Labor market regulations in Turkey and EU-27 during the period of 2003-2012*
*Source: Fraser Institute (2013).*




| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|
| Turkey | 4.4 | 3.9 | 3.8 | 3.8 | 4.2 | 4.4 | 4.8 | 4.9 | 5.0 |
| EU-27 | 5.8 | 5.9 | 6.0 | 6.1 | 6.2 | 6.2 | 6.6 | 6.5 | 6.7 |

*Figure 13. World governance indicators in Turkey and EU-27 as an average of the period 2003-2012*
*Source: World Governance Indicators (WB, 2013).*




All of these indicators have a lower index in Turkey. Even the signs of political stability and absence of violence/terrorism and voice and accountability indexes are negative on the average. The correlation between governance indicators and shadow economy was found to be stronger than economic causes for the EU-27. The effect of these factors may be more severe in Turkey, where a lower level of governance quality is operational. Thus, Turkey has to increase voice and accountability, control of corruption, regulatory quality, government effectiveness and political stability in order to struggle with the shadow economy.

Last, the correlation between tax evasion and shadow economy is examined in the EU-27 (Figure 14a) and Turkey (Figure 14b) by using scatter plots diagram. As can be seen from the figure shadow economy and tax evasion are positively related and the correlation between them seems strong for both the EU-27 and Turkey.

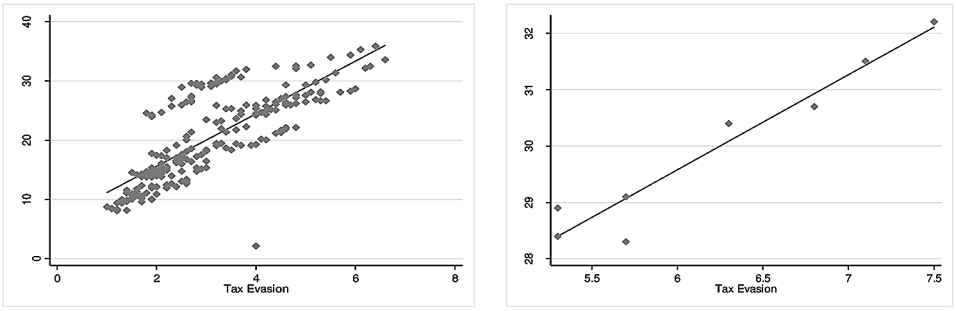
## An Empirical Analysis for EU-27

The causes of shadow economy are discussed in previous sections both theoretically and statistically. In this section, we tried to discover some empirical evidence about the determinants of shadow economy in EU-27. For this purpose, three different econometric models are employed and variables are determined in accordance with Torgler and Schneider (2007a, 2007b), Schneider (1997, 2005), and Schneider, Buehn and Montenegro (2010).



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*Figure 14. Scatter plots of shadow economy and tax evasion in Turkey and EU-27 for the period of 2003-2010*
*Source: Schneider (2013).*




**(a)** **(b)**

**M1:** $SHADOW_{it} = \beta_0 + \beta_1 TAXE_{it} + \beta_2 LOGGDPPC_{it} + \beta_3 LOGLABOR_{it} + \beta_4 AGR_{it} + \beta_5 LOGPOP_{it} + e_{it}$

**M2:** $SHADOW_{it} = \beta_0 + \beta_1 TAXE_{it} + \beta_2 LOGGDPPC_{it} + \beta_3 LOGLABOR_{it} + \beta_4 AGR_{it} + \beta_5 LOGPOP_{it} + \beta_6 TRADE_{it} + e_{it}$

**M3:** $SHADOW_{it} = \beta_0 + \beta_1 TAXE_{it} + \beta_2 LOGGDPPC_{it} + \beta_3 LOGLABOR_{it} + \beta_4 AGR_{it} + \beta_5 LOGPOP_{it} + \beta_6 TRADE_{it} + \beta_7 ECOFR_{it} + e_{it}$

where $SHADOW_{it}$ is the shadow economy as a percentage of official GDP, $TAXE_{it}$ is the tax evasion as a percentage of GDP, $LOGGDPPC_{it}$ is the log GDP per capita (constant 2005 US dollars), $LOGLABOR_{it}$ is the log of labor force participation rate as a percentage of total population within the age range of 15-64, $AGR_{it}$ is the agriculture value added as a percentage of GDP, $LOGPOP_{it}$ is the log of total population, $TRADE_{it}$ is the trade as a percentage of GDP and $ECOFR_{it}$ is the index of economic freedom.

## Data and Hypothetical Expectations about Coefficients of Variables

The data of GDPPC, LABOR, AGR, POP and TRADE is obtained from World Development Indicators 2014 database (WB, 2014). The data of SHADOW and TAXE is obtained from Schneider (2013). The data of ECOFR is obtained from the 2014 Index of Economic Freedom of Heritage Foundation. The index has four different components: rule of law, government size, regulatory efficiency and market openness[7].

The variable TAXE is expected to have an impact on shadow economy. The data is presented by Schneider (2013) accounts for indirect taxation and self employment. The increasing size of tax evasion may have a negative impact on people that work in the formal sector and may lead them into shadow economic activities. Moreover, statistical data and correlation diagrams have revealed a strong and positive relationship. Thus, the coefficient of TAXE is expected to be positive.

The per capita income level of countries is considered to have an impact on the size of the shadow economy. Low income levels tend people to search for new alternatives. Furthermore, since finding a job in the shadow economy is easier and people already suffer from having low incomes after high taxes, they often are inclined to engage in shadow economic activities. Thus, the coefficient of LOGGDPPC is expected to be positive.



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The other factors that may be effective on the size of shadow economy are the demographical factors. As the population increases, it becomes more difficult to sustain a certain standard of living. Moreover, as Bahl (2003, p. 13) suggests, tax systems may lag behind in the ability to capture new taxpayers in some fast growing populations and this may increase the incentives to work in the shadow economy. Thus, the coefficient of LOGPOP is expected to be positive.

The sectoral composition of the economy may have an impact on shadow economy, because the agricultural sector which is often based on self-employed activities is more appropriate to hide the actual income and evade taxes. In addition, if we assume that more agricultural share in GDP means lower income levels, then it will lead to the increase of shadow economy, as well. Thus, the coefficient of LOGGDPPC is expected to be negative.

Torgler and Schneider (2007a, p. 19) indicate that individuals with an occupation have less leisure time at their disposal and, thus, time acts as a restriction to being active in the shadow economy (Schneider & Enste, 2002). Thus, the coefficient of LOGLABOR is expected to be negative. In models (2) and (3), the effect of trade on the size of shadow economy is measured. As hiding activities in trade is more difficult, the coefficient of TRADE is expected to be negative.

Last, in model (3) the effect of the economic freedom on the size of shadow economy is tested. The detail about the index of economic freedom has been supplied previously. Higher economic freedom represented by the variable ECOFR is expected to have a negative impact on the size of shadow economy.

## EMPIRICAL RESULTS AND RECOMMENDATIONS

In this section panel data analysis is employed in order to test the relationship between shadow economy and various indicators in the EU-27 over the period 2003-2012. First, unit and/or time effects are tested using F and LR Tests in order to check the validity of the pooled regression which ignores the panel structure of the data and assumes that coefficient parameters are constant over time and for all units. The estimation results of the tests can be seen in Table 1.

*Table 1. The results of F and LR tests in order to test unit and/or time effects*

| **Model 1** | | **Test Value** | **d.f.** | **p-value** | **Result** |
|---|---|---|---|---|---|
| **LR TEST** | **Unit Effects** | 180.17 | 1 | 0.0000 | Unit effects exist. |
| | **Time Effects** | 0.00 | 1 | 1.0000 | No time effects |
| **F TEST** | **T/U Effects** | 21.20 | F(26,180) | 0.0000 | Time and/or unit effects exist. |
| **Model 2** | | **Test Value** | **d.f.** | **p-value** | **Result** |
| **LR TEST** | **Unit Effects** | 177.83 | 1 | 0.0000 | Unit effects exist. |
| | **Time Effects** | 0.00 | 1 | 1.0000 | No time effects |
| **F TEST** | **T/U Effects** | 20.42 | F(26,179) | 0.0000 | Time and/or unit effects exist. |
| **Model 3** | | **Test Value** | **d.f.** | **p-value** | **Result** |
| **LR TEST** | **Unit Effects** | 170.66 | 1 | 0.0000 | Unit effects exist. |
| | **Time Effects** | 0.00 | 1 | 1.0000 | No time effects |
| **F TEST** | **T/U Effects** | 19.36 | F(26,179) | 0.0000 | Time and/or unit effects exist. |

**Note:** Degrees of freedom in parenthesis.



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In all three models, the F tests suggest that pooled regression is not appropriate as coefficient parameters differ according to time/unit effects. Similarly, LR tests suggest that there are unit effects in all models. Thus, the models have to be estimated with fixed effects or random effects model instead of pooled regression.

In the second step, the Hausman Test (1978) is employed in order to decide whether fixed effects or random effects model is suitable. The estimation results are given in Table 2. The test statistics indicate that random effects model is preferable in all of the models.

After determining which regression model to employ, the models were estimated with random effects model. Table 3 presents the estimation results.

As can be seen from Table 3, the coefficients of variables mostly meet expectations; however, the models have to be tested against econometrical problems. Based on this purpose, two common econometrical problems of panel data method - heteroscedasticity and autocorrelation - which may lead to efficiency problems are considered.

*Table 2. Hausman specification tests*

| | **Model 1** | **Model 2** | **Model 3** |
|---|---|---|---|
| **$X^2$(n)** | $X^2(5)=6.01$ | $X^2(6)=4.23$ | $X^2(7)=4.96$ |
| **p-value** | 0.3049 | 0.6452 | 0.6651 |
| **Result** | REM is preferred. | REM is preferred. | REM is preferred. |

**Note:** Degrees of freedom in parenthesis.

*Table 3. Random effects estimation results*

| **Dependent Variable: SHADOW**<br>**Explanatory Variables** | **Model 1** | **Model 2** | **Model 3** |
|---|---|---|---|
| **TAXE** | 1.7640***<br>(4.74) | 1.5767***<br>(4.08) | 1.6186***<br>(4.08) |
| **LOGGDPPC** | -13.9593***<br>(-6.85) | -13.3609***<br>(-6.47) | -13.4894***<br>(-6.49) |
| **LOGLABOR** | -5.7740<br>(-0.97) | -7.1263<br>(-1.19) | -7.2383<br>(-1.21) |
| **AGR** | -0.1217<br>(-0.65) | -0.0705<br>(-0.7) | -0.0432<br>(-0.22) |
| **LOGPOP** | -0.8206**<br>(-2.04) | -1.2734***<br>(-2.65) | -1.2263**<br>(-2.51) |
| **TRADE** | | -0.0171*<br>(-1.72) | -0.0169*<br>(-1.70) |
| **ECOFR** | | | 0.0311<br>(0.50) |
| **Wald Statistic Value** | 220.37*** | 224.09*** | 224.31*** |
| **Wald Probability** | 0.0000 | 0.0000 | 0.0000 |
| **$R^2$** | 0.8339 | 0.8400 | 0.8426 |
| **Number of Observations** | 212 | 212 | 212 |

**Note:** z-statistics in parenthesis. Significance Levels: *0.05<p<0.10, **0.01<p<0.05, ***p<0.01.



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In order to test for heteroscedasticity, the test of Levene, Brown, and Forsythe is employed, as it is suitable for random effects regression. In addition, Bhargava, Franzini, and Narendranathan's Durbin-Watson and Baltagi-Wu's Locally Best Invariant (LBI) Tests were employed in order to test for autocorrelation. The related results are given in Table 4.

Table 4. shows that there is a heteroscedasticity problem in all the three models, but there is no autocorrelation problem. Thus, we re-estimate the models of Huber, Eicker and White Estimator which gives robust variances in the case of heteroscedasticity. The robust estimation results are given in Table 5.

Table 5. shows that the coefficient of tax evasion has a positive sign and it is statistically significant at the 0.01 level in all the three models. Thus, in line with our expectations, higher tax evasion is associated with the larger size of the shadow economy. As tax evasion increases tax burden and the dissatisfaction of individuals in the formal economy increases, more people prefer to operate in the shadow economy.

*Table 4. Heteroscedasticity and autocorrelation tests*

| Tests | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| **$W_0$ Test** | 3.9943*** | 4.0573*** | 4.0690*** |
| **DW Test** | 2.0106 | 2.0101 | 2.0081 |
| **BW-LBI Test** | 2.1135 | 2.1120 | 2.1101 |

**Note:** Significance Levels: *0.05<p<0.10, **0.01<p<0.05, ***p<0.01.

*Table 5. Random effects model robust estimation results*

| Dependent Variable: SHADOW<br>Explanatory Variables | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| **TAXE** | 1.7640***<br>(4.04) | 1.5767***<br>(3.48) | 1.6186***<br>(3.84) |
| **LOGGDPPC** | -13.9593***<br>(-6.55) | -13.3609***<br>(-6.33) | -13.4894***<br>(-6.04) |
| **LOGLABOR** | -5.7740<br>(-1.09) | -7.1263<br>(-1.34) | -7.2383<br>(-1.38) |
| **AGR** | -0.1217<br>(-0.96) | -0.0705<br>(-0.54) | -0.0432<br>(-0.26) |
| **LOGPOP** | -0.8206**<br>(-1.44) | -1.2734***<br>(-2.04) | -1.2263**<br>(-2.12) |
| **TRADE** | | -0.0171*<br>(-3.22) | -0.0169*<br>(-3.17) |
| **ECOFR** | | | 0.0311<br>(0.53) |
| **Wald Statistic Value** | 1015.84*** | 979.20*** | 975.75*** |
| **Wald Probability** | 0.0000 | 0.0000 | 0.0000 |
| **$R^2$** | 0.8339 | 0.8400 | 0.8426 |
| **Number of Observations** | 212 | 212 | 212 |

**Notes:** z-statistics in parenthesis. Significance Levels: *0.05<p<0.10, **0.01<p<0.05, ***p<0.01.



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The coefficient of LOGGDPPC is always significant and with an expected negative relationship. This relationship indicates that lower level of income meaning a low standard of living will promote shadow economic activities.

On the contrary to our expectations, the coefficients of LOGPOP always have a negative sign. As the sample constitutes of developed countries, the result is not so surprising. Most of the countries in the sample have already high national income and therefore high population may not mean low per capita incomes. In addition, the result is consistent with the finding of Torgler and Schneider (2007b).

The coefficients of LOGLABOR and AGR variables are found to be statistically insignificant thus, having no impact on the size of shadow economy. Similarly, ECOFR which represents economic freedom in Model (3) has no effect on shadow economy. Last, the higher TRADE is associated with lower shadow economy in all the three models and this result is consistent with our expectations.

In summary, the results of the three models suggest that tax evasion has a positive effect on shadow economy in EU-27 countries over the period of 2003-2012. Other determinants of the size of the shadow economy are per capita GDP, population and trade. Economic freedom category seems to have no effect on the size of the shadow economy. However, some of its components may be effective on the size of shadow economy as our statistical findings in previous sections suggests.

## FUTURE RESEARCH DIRECTIONS

The study tries to explore the determinants of shadow economy in the EU-27 and Turkey. As there are insufficient data, econometrical model cannot be estimated for Turkey. However, once the problem of data insufficiency is solved, econometrical analysis may be performed for Turkey. In addition, as the composition of taxation is quite different in Turkey as opposed to the EU-27, an econometrical model may be constituted considering different kinds of taxation such as taxes on income, taxes on wealth and taxes on consumption.

Statistical findings show that the quality of governance has a quite important effect on the size of shadow economy. The study employs economic freedom as an explanatory variable and not different components of governance are used in order to inhibit a decrease in degrees of freedom. However, having sufficient data, testing the effects of different governance related indicators may be worthwhile in future research.

## CONCLUSION

The shadow economy is one of the main economic problems of both developed and developing countries. However, there are difficulties in defining the shadow economy and its structure. Economists sometimes use different terms in literature without explaining what they really mean. OECD (2002) has a clear distinction about shadow economy and other non-observed economic activities. Accordingly, the non-observed economy consist of underground production, illegal production, informal sector production, household production for own final use, production missed due to deficiencies in data collection program, and the shadow economy is involved in the informal and underground economy.



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The shadow economy is heavily related with tax evasion, and sometimes they are perceived as similar. Nevertheless, distortion in tax revenues does not always take place in shadow economy. Some kind of tax evasion together with tax avoidance arises in the formal sector. However, statistical and empirical findings suggest they are closely related. The size of the shadow economy in EU-27 is nearly 20% of the official sector during the period 2003-2012, and can be perceived as high. Yet, the size of the shadow economy in Turkey is more than that of the EU-27. Failure to decrease the size of shadow economy necessitates the determination of causes of the shadow economy and their relative effectiveness.

As both statistical and empirical findings of this chapter suggest, there are a number of economic and governance related factors that cause shadow economy and their relative effectiveness varies. Governance related indicators statistically seem more effective on the size of shadow economy as compared to economic indicators such as taxes and spending. Governments have to relate with improving their indicators about governance in order to achieve a decrease in shadow economy. Government effectiveness, accountability, rule of law and control of corruption are critical indicators in particular. To sum up, policy makers have to discern main causes of shadow economy and consider them while struggling with shadow economy.

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## KEY TERMS AND DEFINITIONS

**Corruption:** An illegal and dishonest behavior displayed by public authority in order to get private gain.
**Efficiency:** Providing greatest amount of outputs with the lowest amount of inputs.
**Formal Sector:** Sector which generates income on which tax must be paid.
**Governance:** The action of governing.



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**Observable Consumption:** Consumption that is recorded officially by government and constitutes a tax base of the state.

**Observable Income:** Income that is recorded officially by government and constitutes a tax base of the state.

**Tax Evasion:** Illegal behaviors displayed by individuals (both in formal and informal sector) in order to get rid of tax responsibilities.

## ENDNOTES

1 For details see OECD (2002, pp. 37-41).

2 Ironmonger (1999, p.35) states that "Productive activities are those which result in the production of goods or the delivery of services, including goods and services that are not sold, and goods and services that are self-provided; includes preparation of meals, care of children and adults and time spent in educational activities."

3 According to Rosen and Gayer (2008) "Tax avoidance is altering behavior in order to reduce your legal tax liability, if contrast tax evasion is failing to pay legally due taxes" (pp. 370-372).

4 Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5 (WB, 2013).

5 For details see Kaufman, Kraay and Mastruzzi (2010).

6 More detailed information can be found in the web pages: http://www.kayitdisiekonomi.com/files/20061004-13-1.pdf and http://www.gib.gov.tr/index.php?id=1366.

7 For details see Appendix for 2011 Index of Economic Freedom (Heritage Foundation, 2011) found in http://www.heritage.org/Index/pdf/2011/Index2011_Full.pdf.

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# Chapter 83
# Nationalism and Patriotism in International Business

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## ABSTRACT

*This chapter explores nationalism and patriotism in international business, with attention to implications for diplomacy and geopolitics. Globalization increases economic interactions across national borders through exports, imports, foreign direct investments, and mergers or acquisitions. The World Trade Organization aims at making this global system of economic interactions more protection free. Nationalism is domestic emphasis placed on the country's economic, political, and strategic interests. Nationalism views international business as a zero-sum competition. Patriotism is pro-national behavior of consumers, producers, and other business stakeholders, and also calls for such pro-national behavior. Nationalism and patriotism are partly reactions – varying considerably by country – to domestic effects of this globalization, markedly exacerbated by the unexpected financial crisis and ensuing severe economic recession that emerged in 2008 and continued into 2016. The chapter draws on extant literature to develop a more systematic understanding of nationalism and patriotism.*

## INTRODUCTION

This introductory section explains the perspective and structure of the chapter. The unexpected financial crisis and severe economic recession that suddenly emerged in 2008 and has continued into 2016 has brought about a revival of state protectionism across the globe. Two key dimensions of this revival of state protectionism are nationalism and patriotism. Both phenomena appear to be increasingly important as globalization affects countries, consumers, and producers (Christiansen & Koeman, 2015). This chapter draws on extant literature to develop a more systematic understanding of the increasing roles of nationalism and patriotism in international business. Particular attention is paid to implications for public and business diplomacy and geopolitics.

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Nationalism suggests policies and practices that seek to strengthen the country in international business transactions. Nationalism does not automatically require "beggar thy neighbor" policies and practices, but it does tend to encourage exports, discourage imports, and encourage national control of natural resources. Patriotism tends to work in the same direction, by encouraging actions that support the home country and calls on individuals and businesses to act in the national interest.

There are some implications for corporate espionage or cybercrime, as has been suspected of some Chinese firms (Holslag, 2015) as well as of Iran, North Korea, and Russia (see Crosston, 2015; Lucas, 2015; Silver, 2015). These four countries are not members of the 2001 Council of Europe Convention concerning Cybercrime, effective July 1, 2004 (Lucas, 2015). The United States (US) has signed and ratified the convention. Both governments and firms under governmental influence may engage in espionage or cybercrime. Documenting such activity is difficult because of the secrecy involved (Kshetri, 2013; McDougal, 2015).

There are important implications for public diplomacy between countries and business diplomacy by enterprises (Ordeix-Rigo & Duarte, 2009, make this distinction). Geopolitics is the combined influence of demography, geography, and economy on national politics and a country's public diplomacy. Businesses more closely tied to a country or region's geopolitics is more influenced by the same factors. Business diplomacy concerns how enterprises manage interactions with foreign governments, multilateral institutions, and international social movements (see Ordeix-Rigo & Duarte, 2009; Saner & Yiu, 2005; Wolters, 2012). Businesses more closely tied to a country or region will tend to reflect greater nationalism, although there may not be the same relationship to patriotism.

The chapter has several objectives. One objective is to provide working definitions of nationalism and patriotism in international business. Another objective is to assemble a relevant literature, reflected in the set of references. Yet another objective is to develop categories of nationalism and patriotism and to identify available information, or sources of information, about those categories. A final objective is to develop possible solutions and recommendations for addressing nationalism and patriotism in a globalizing world economy.

The remainder of the chapter following this introduction is structured as follows. The Background section provides some broad defines for and places nationalism and patriotism in context. The subsequent main section titled Nationalism and Patriotism discusses some key examples: protectionist policies, resource nationalism, control of cross-border mergers and acquisitions, and corporate inversions and other devices for tax avoidance in violation of economic patriotism. The section ends with a discussion of globally footloose multinational enterprises (MNEs) that are extreme examples of international businesses that exhibit, as a matter of values and strategies, neither nationalism nor patriotism. The subsequent section addresses the political context for nationalism and patriotism in international business. The next section considers Solutions and Recommendations for the problems of nationalism and patriotism. The subsequent section then considers Future Research Directions for this topic. The Conclusion ends the chapter with discussion of the overall coverage of the chapter and concluding remarks.

## BACKGROUND

Some authors may use the terms economic nationalism and economic patriotism more or less interchangeably (see Callaghan & Lagneau-Ymonet, 2012, concerning the Paris Stock Exchange; and Nourry & Jung, 2012, concerning anti-takeover measures in the European Union). There is definitely some



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overlap. This chapter will use the two terms distinctively. Economic nationalism will mean an emphasis on government policies and practices. Economic patriotism will mean behavior of stakeholders favoring domestic producers, and calls by public officials and others for pro-national behavior by domestic producers and their stakeholders.

Economic nationalism emphasizes why and how a government and any organizations, such as businesses, that it can own, control, or influence should try to protect and guide a relatively open economy against perceived (and possibly objective) negative effects of globalization (Lee & Lee, 2015). Industrial policy and protectionism try to use various incentives, subsidies, and restrictions to protect jobs, firms, industries, government revenues, and stock exchanges (for example) against foreign competition, imports, and investments.

Such industrial policy is alive, if unwell, within the European Union (Lazzarini, 2015; Sokol, 2015; Wruuck, 2006). In the US, there was active Congressional skepticism concerning possible negative effects of the proposed 12-country Trans-Pacific Partnership (TPP) free trade agreement (or Pacific Rim trade deal), agreed in October, 2015. Globalization generates various policy tensions within each country. For instance, antitrust policy should promote consumer welfare, but industrial policy involves active government intervention to protect particular constituencies or industries. Reduction in foreign and domestic competition likely increases prices to consumers. The European Union has been very active in conducting antitrust investigations of some large US firms, and China of foreign firms in certain industries such as auto sales.

Economic nationalism becomes some set of public policies of various types aimed at increasing domestic control of the economy. The selection and implementation of the set of public policies is a matter for each government. Essentially, economic nationalism is imposition of constraints on globalization and/or freer trade. Typical policies may include trade restrictions, protection of domestic industries and firms, efforts at import substitution, and controls on capital flows. There is a wide range of possible policies, including currency valuation efforts.

Economic patriotism is a term that gained political currency after 2000 due to increasing globalization and the 2008 global financial crisis (Grant, 2012; Morgan, 2012; Shapiro, 2012). Patriotism generally has increasing influence (Wang & Jia, 2015); and may serve to reinforce nationalism (Dufy, 2015). The term can have two different meanings, the first substantively explaining why a government and the second rhetorically arguing why a corporation has a primary duty to its country's welfare rather than to global welfare or enterprise profit. The first interpretation is effectively synonymous with economic nationalism, defined as some combination of industrial policy and protectionist policy aimed at asserting partial governmental control of a nation's economy to offset negative effects of free trade in a global economy.

This first interpretation is associated particularly with Western Europe, China, India, and Russia – but exists elsewhere. The other interpretation is political rhetoric concerning the corporate social or citizenship responsibilities of a country's businesses, with particular attention to avoidance of fair taxation through corporate inversions or other maneuvers and to failure to create or protect jobs in the prolonged economic downturn following the 2008 financial crisis. This second interpretation asserts arguments for voluntary pro-social initiatives by companies to avoid adopting public policies of the kind associated with economic nationalism.

A significant feature of economic patriotism is what can be termed ethnocentricity or ethnocentrism in consumer behavior. "Made in America" is a widely embraced movement. There is a growing literature on pro-patriotic consumption occurring in various countries (Cheah & Phau, 2015a, 2015b; Dedeoglu, Savasci, & Ventura, 2005; Harcar & Kaynak, 2015; Lekakis, 2015; Stolle, Hooghe, & Micheletti, 2005).



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There is an increasing literature addressing nationalism and patriotism in their various forms as affecting international business. The reference set for this chapter assembles key items in that literature. The identified literature defines and documents evidence of nationalism and patriotism.

## NATIONALISM AND PATRIOTISM

### Issues, Controversies, Problems

Nationalism and patriotism in international business are disruptions of an idealized model of free trade – including exports, imports, capital flows, foreign direct investment (FDI), and business restructuring through mergers and acquisitions. The World Trade Organization (WTO) works toward this idealized model through member-state negotiations. Despite certain exceptions for temporary labor, there is no true global labor mobility due to national citizenship and immigration controls – which could be classified under nationalism and patriotism. Rather there is greater focus on global labor standards. There are still in place various protectionist policies throughout the action.

### Protectionist Policies

Protectionism in various forms has long shaped important public policies for centuries. Export-led growth was a key theory of economic development until quite recently (Palley, 2012). Adam Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776) is a criticism of mercantilism and an advocacy of a commercial system of freer markets. Mercantilism was the prevailing economic "theory" and policy in Western Europe during the 16th to 18th centuries, prior to Smith's exposition of a capitalist market economy emphasizing the benefits of unfettered international trade and domestic markets. The essence of mercantilism was to "beggar thy neighbor" by protectionism and export promotion, with specific emphasis on maximizing national possession of precious metals in the form of bullion (gold and silver). Crown monopolies were typically granted to friends of the monarch. One can think of imperial control of foreign colonies – such as India before full independence or Canada before dominion status – as in part a form of resource nationalism. The height of the laissez-faire mythology of the unregulated market economy at the end of the nineteenth century arguably corresponded with American imperialism and protectionism during the period 1890 to 1913 (Palen, 2015).

There have been many instances of protectionist approaches since the decline of mercantilism in favor of first laissez-faire market capitalism succeeded by increased regulation and increased state interventionism in other forms. Subsidies to particular companies or industries remain controversial. A key instance has been the long-term competition between Airbus (Europe) and Boeing (US) in the global aircraft market (Irwin & Pavcnik, 2001). The literature contains various examples of protectionism approaches including industrial policy, currency controls, devaluations, and tariffs.

Some of the freer trade actions and agreements occur regionally rather than through the WTO globally. For instance, cross-labor mobility is a principle of the European Union (EU). However, the immigration crisis of 2015-2016 is placing increased stress on that principle, with the United Kingdom recently signaling the possibility of withdrawal from the EU.



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In October 2015, twelve Pacific Rim countries including the United States agreed to a Trans-Pacific Partnership (TPP) trade agreement – to be ratified by each country. The other countries include Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam. The TPP includes provisions for trade barrier reductions and investor-state dispute settlement – with states permitted to opt out in the instance of tobacco-related matters. There is relatively serious opposition within Europe to a Transatlantic Trade and Investment Partnership (TTIP) between the United States and the EU, as well as to a proposed Comprehensive Economic and Trade Agreement (CETA) between Canada and the EU.

## Resource Nationalism

There can be overlap between protectionist measures and resource nationalism. A recent illustration concerns the issuance of U.S. regulations concerning offshore ocean fish farming (aquaculture) – which may be followed in due course by similar regulations for other U.S. waters. The information below comes from Burdeau (2016), who interviewed several knowledgeable individuals. New federal regulations permit such fish farming in federal waters in the Gulf of Mexico, despite criticism by fishermen (who predict loss of employment) and environmentalists (who predict harm to the marine environment through pollution and potential effects on wild fish stocks). The director of the U.S. National Oceanic and Atmospheric Administration (NOAA) explained the perceived benefits of expanded offshore fish farming in terms of improved balance of trade, improved food security and safety, new job creation, and supply to U.S. consumers. Presently, an estimated 90 percent of seafood consumed is the US is imported, and more than half of that quantity is farmed. The rationale for increased US aquaculture is partly one of substitution of domestic production for importation – accomplished through new federal regulations. This rationale can be thought of as a variant of resource nationalism, the resource being US waters.

Russia under Vladimir Putin has been asserting increased control over natural resource industries (Rutland, 2015). From 2003, Argentina began a program of renationalizing (in full or through majority ownership) privatized formerly state-owned firms including the water supply company for the capital city Buenos Aires, the Argentine airline Aerolíneas Argentinas, the energy company YPF, and the natural gas distributor Metrogas. Much of the Chinese economy comprises state-owned or state-influenced enterprises, despite increased but controlled privatization. National resources are important assets for various countries (Andreasson, 2015; Carrión, 2015; Wilson, 2015). The Organization of Petroleum Exporting Countries (OPEC) – to which not all oil producing countries belong – is a form of cartel for increasing the relative economic power of the members in international markets. Many oil production enterprises throughout the world remain state-owned or state-dominated.

## Control of Mergers and Acquisitions

There were various instances after 2000 of governments attempting to prevent foreign acquisitions of domestic firms (Babin, 2015; Nourry & Jung, 2012). In steel, France, Luxembourg, and Spain opposed a takeover of Arcelor by the Indian firm Mittal. In food, France classified Danone as a "strategic industry" that should not be acquired by the US firm PepsiCo. There are instances within the European Union itself of attempts to block cross-country acquisitions. A Spanish company Abertis attempted to acquire Autostrade, the Italian toll-road operator. There was a bidding war for Endesa (Spain) between E.ON (Germany) and Gas Natural (Spain); and a bidding war for Suez (France) between Enel (Italy) and Gaz



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de France (France). In the US, there was strong opposition to a Chinese takeover of Unocal, which was acquired ultimately by Chevron, and in 2006 to selling port management in six major seaports to a company DP World in the United Arab Emirates (UAE). New Zealand prevented the transfer of a majority stake in the Auckland Airport to the Canada Pension Plan Investment Board.

The approach can be indirect in the following sense. In the US, Halliburton plans to acquire Baker Hughes (Blum, 2016). American authorities were already studying the US$35 billion deal; and Halliburton had made various proposals to sell assets to satisfy any regulatory requirements. The regulatory issue is impact of the acquisition on competition in the global oil field services. Halliburton and Baker Hughes are the second and third largest companies in the world, after Schlumberger. In January, the European Union announced a full investigation separately of the proposed deal. All three companies are headquartered in Houston, Texas – although Halliburton moved its corporate headquarters to Dubai, in the United Arab Emirates, in 2007, maintaining dual headquarters locations as a US corporation.

## Corporate Inversions and Other Devices for Tax Avoidance

Patriotism has two meanings. One meaning is actual behavior by consumers and producers on the basis of patriotic sentiments, such as the "Buy American Network." During the Great Depression, the Buy American Act of 1933 (signed by President Herbert Hoover on March 3, 1933, in his last day in office) instructed the U.S. government to prefer US-made products. The Buy America Act, a provision of the Surface Transportation Assistance Act of 1982, applies to mass-transit procurements over US$100,000 and at least partly funded by federal grants. The other meaning is political rhetoric urging that corporate responsibility and citizenship include economic patriotism in the forms particularly of socially desirable job creation and fair share tax payments.

The most politically prominent challenge to calls for economic patriotism is the use of various devices for tax avoidance by privately owned MNEs, both nationally anchored and globally footloose. Tax avoidance is a legal action, to be distinguished from illegal tax evasion. The latter is more likely to occur with individuals, such as the recent set of investigations by the U.S. tax authorities concerning improper concealment of taxable funds in Swiss banks. In this instance, economic patriotism requires firms to make legally avoidable tax payments or face public condemnation. There are disputes within the European Union over whether some member-states are effectively tax havens. Germany and the UK organized a multi-country Global Forum to address tax coordination issues.

Governmental calls for corporate patriotism may reflect real concern about whether domestic businesses – including nationally anchored multinational enterprises – will reliably serve the national interest in cases of conflict with corporate interest (Yosifon, 2016). Key instances affecting US politics have been offshoring of employment, a negative balance of trade (imports exceeding exports) especially with China, and tax avoidance maneuvers. Environmental protection can take on a patriotic interpretation (Gabehart, 2015).

An interesting variation is the Aviation Directive of the European Union (EU). This information comes from Buenger (2013). On January 1, 2012, the EU extended its Emission Trading System (ETS), or carbon market approach, to virtually all commercial aircraft (with few exceptions) departing from or landing in any EU member-state. This extension was both unilateral – against some criticism, and extraterritorial in reach. The extension effectively drives up the financial costs of carbon generating behavior globally but arguably might encourage innovation in emissions reduction.



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Firms can be expected to seek profits (see Wilson, 1989), and the shareholder primacy norm strongly influences American corporate governance law and practices (Yosifon, 2016). Justice Strine, previously Chancellor of the Delaware Court of Chancery and now Chief Justice of the Delaware Supreme Court, makes three key points. First, firms are profit-seeking organizations, staffed by profit-oriented people: "Instead of recognizing that for-profit corporations will seek profit for their stockholders using all legal means available, we imbue these corporations with a personality and assume they are moral beings capable of being 'better' in the long-run than the lowest common denominator" (Strine, 2012, p. 136).

Second, the effectiveness of voluntary self-regulation is limited: "In the end, policy makers should not delude themselves about the corporation's ability to police itself; government still has a critical role in setting the rules of the game" (Strine, 2012, p. 136). Third, international cooperation – of the type needed to address regulatory havens – is difficult to achieve: "The coalition- and consensus-building required to develop an effective global (or at the least, OECD-wide) scheme of externality regulation will require enormous leadership and dedication. But it cannot even begin if we delude ourselves into believing that corporations will effectively regulate themselves" (Strine, 2012, p. 172).

The rhetoric of economic patriotism has appeared in both political and academic circles (Obama, 2012: Clift, 2013; Clift & Woll, 2012, 2013). US President Barack Obama used the term economic patriotism in the 2012 presidential campaign about job creation responsibility (Obama, 2012). In July 2014, President Obama emphasized economic patriotism in criticizing US multinational corporations practicing corporate inversion to reduce U.S. tax liability. He noted that "some people" called such firms "corporate deserters" for engaging in legal tax-reduction maneuvers arguably violating asserted ethical standards for corporate citizenship. President Obama stated in a speech at the Los Angles Trade –Technical College that "They're technically renouncing their US citizenship." This use of the term economic patriotism is political rhetoric, but tends to work against a competing notion of global or world citizenship (Croucher, 2015).

On September 22, 2014, in announcing new rules aimed against inversions, Treasury Secretary Jacob Lew stated: "These transactions may be legal, but they're wrong" (Davis, 2014, p. D1). On September 22, 2014, Treasury Secretary Jacob Lew announced rules intended to reduce or eliminate the economic incentives for inversions (Davis, 2014). Reported opinion among corporate advisers was that the effect would be to make inversion deals less lucrative rather than to halt deals (Advisers, 2014). In a letter to the US Congress which is available online for ready access (Lew, July 15, 2014), Lew wrote: "... these firms are attempting to avoid paying taxes here, notwithstanding the benefits they gain from being located in the United States." He characterized the attempt as "effectively renouncing their citizenship to get out of paying taxes" and articulated the notion of economic patriotism: "What we need as a nation is a new sense of economic patriotism, where we all rise or fall together."

Tax avoidance has become a hot topic in the United Kingdom and Europe, and seems particularly directed at US firms and certain tax havens within or near the European Union (Kay, 2013; Krugman, 2013). Preuss (2012) questions whether a tax avoiding firm can claim to be socially responsible (see Jenkins & Newell, 2013). Dowling (2014, p. 173) suggests that tax avoidance is a boundary condition for CSR; but Dowling ties law and CSR to a suggestion "that a company should pay its fair share of tax ..." Fairness of taxation is a controversial question (Aynsley, 2014; Chittenden & Foster, 2008; Mankiw, 2007; Weiss, 1993). One empirical study finds that tax sheltering devices do not on average affect firm value, but do have a positive effect in the presence of good governance of the particular firm (Desai & Dharmapala, 2009). Those authors conclude that tax sheltering is not simply a resource transfer from the state to shareholders.



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Starbucks has been a target of expressed concerns (Fairless, 2015). Apple has been another prominent company under public scrutiny (Lochhead, 2013a, 2013b). Chief Executive Officers assert two positions:

1. Tax law compliance (Bloomberg News, 2014a); or
2. Fair share payment, a moral argument (Lochhead, 2013b).

Within the European Union, while not alone Ireland and Luxembourg have been under particular pressure to reform tax policies attracting US companies (EU calls Dutch on carpet over Starbucks taxes, 2014; Ireland, Still Addicted to Tax Breaks, 2014; Luxembourg's tax deals cause global criticism, 2014). This chapter does not undertake to provide a systematic survey.

Corporate inversion is one form of tax avoidance. Other forms include for example "transfer-pricing, re-invoicing, offshore 'special purpose vehicles' ... dubious charitable trusts ..." (Christensen & Murphy, 2004, p. 37). One article by members of the tax justice network argues that many MNEs are structured in such a way as to "enable tax avoidance in every jurisdiction" (Christensen & Murphy, 2004, p. 37). The authors view elaborate and aggressive tax avoidance as tax abuse and a fundamental violation of private and corporate citizenship engagement (Christensen & Murphy, 2004, p. 37). The authors define CSR as publishing "all necessary accounting information" and refraining "from the use of profits-laundering vehicles created without substantial economic purpose" (Christensen & Murphy, 2004, p. 37).

Senator Charles Schumer (D-NY) called for Congressional legislation to stop "earnings stripping" in which a parent company loads a US subsidiary with tax-deductible debt (Davis, 2014, D6). The EU commission finds that low tax treatment for Apple in Ireland, where the firm "funnels the bulk of its international sales through subsidiaries" using "exaggerated transfer pricing" (Baetz, 2014), is state aid that may be illegal under EU law. Ireland prefers to attract foreign businesses to a low tax haven over maximizing tax revenues per business otherwise choosing to locate there. The transfer pricing problem lacks a widely-accepted theoretical solution and is a matter of proposed norm (Baistrocchi, 2006).

Problems in defining policy are that:

1. The arms-length standard (ALS) (Rectenwald, 2012, p. 426) must be estimated as there is no external transaction;
2. There is a cycle of offshore tax deferral while waiting for a repatriation holiday (Rectenwald, 2012, p. 449); and
3. There are disagreements (such as the Irish tax haven policy) hindering intergovernmental cooperation.

In a corporate inversion, a firm merges with a smaller firm in a different country and relocates its legal business address to the other country (Freedman, 2014). Recent inversions include pharmaceuticals AbbVie (Chicago) and Mylan (Pittsburgh) shifting to Europe (Freedman, 2014). Walgreen Co. decided not to invert (Freedman, 2014). It is not strictly established that tax breaks drive corporate inversions (Hall, 2014).

In September, 2014, five liberal US Senators (four Democrats and one Independent) sent a letter to the CEO of Burger King opposing move of its corporate headquarters to Canada from Miami. The letter reads in part: "We believe you will find that turning your back on your loyal US taxpaying customers by renouncing your corporate citizenship is not in the best interest of Burger King or its shareholders." The letter also accuses Burger King in the words of a news report "of trying to avoid paying its fair share for



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roads and other public services it receives in the United States" (Senators, 2014). The letter contains the following notions: loyalty, corporate citizenship, best interest, fair share, and corporate benefit ("roads and other public services").

In the period preceding the Scottish (referendum) vote on September 18, 2014, on independence from the UK, some important businesses expressed opposition to independence. Standard Life insurance stated it might shift operations and legal entities (Rankin, Carrell, & Monaghan, 2014). Royal Dutch Shell and British Petroleum warned against secession because reportedly concerned by the prospect of increased oil production taxes levied by Scotland (Eaton, 2014b). Two leading banks warned they would move corporate headquarters (Royal Bank of Scotland, which is majority owned by UK taxpayers following the 2008 government bailout) or legal entities (Lloyds Banking Group owner of Halifax and Bank of Scotland) to England (Hui & Kelbie, 2014).

There appear to be three kinds of corporate inversions:

1. To please host country regulators;
2. To reduce aggregate tax liability; and
3. To take advantage of regulation havens.

Burger King's shift to Canada appears to be an instance of pleasing Canadian regulators concerning acquisition of a Canadian firm rather than (2) or (3). There are individual inversions through change in citizenship or residence, or involvement in tax avoidance schemes that have operated through Switzerland for instance. There is an inquiry into so-called "dividend arbitrage" operating mostly through London as a scheme whereby banks temporarily transfer ownership of client shares to a lower-tax jurisdiction when a dividend is expected (Strasburg, 2014).

Accenture, once named Andersen Consulting, relocated to Bermuda in a 2001 inversion and is now incorporated in Ireland (Bump, 2014). Certain oil field services providers originally headquartered in Houston moved early (Freedman, 2014). Transocean moved to the Cayman Islands (1999), and then to Switzerland (2008). Noble Corp. moved to the Cayman Islands (2002), then to Switzerland (2009), and then finally to London (2013). Weatherford International moved to Bermuda (2002) and then to Switzerland (2008) (Eaton, 2014a). The three firms saved an estimated US$2.923 billion in taxes during 2002-2009 (Freedman, 2014). A corporate inversion both saves taxes and facilitates repatriation of foreign earnings to the US (Freedman, 2014). The Congressional Research Service (Marples & Gravelle, 2014) reported 75 firms had made inversions over the past two decades (Freedman, 2014).

The term economic patriotism traces to at least 1985 with William Safire concerning national defense spending (Bump, 2014). Obama used the term in the 2012 presidential campaign (Bump, 2014; Obama, 2012). The notion of "economic patriotism" or "corporate citizenship" as true citizen of a home country is in conflict with realities of global business opportunities (Foroohar, 2012). A rather different view of economic patriotism was expressed by a prominent US banking CEO: "Jamie Dimon, the chief executive of JPMorgan Chase, which last week put aside $1.1bn in fresh provisions for legal expenses, questioned whether it was 'American' to force banks to deal with a number of regulators and their fines" (quoted in Binham, 2015).

Medtronic acquired Covidien, Ireland, for US$43 billion to invert – completing the acquisition in January, 2016. In August, 2014, Medtronic disclosed intention to reimburse its CEO for a US$24.8 million inversion-generated tax bill. The 2004 law imposed a 15 percent tax on stock and option awards given to personnel of inverting companies (Capital Flight, 2014). While the new Treasury rules apparently



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halted a Salix Pharmaceuticals merger with an Italian drug firm's subsidiary, Medtronic disclosed in September, 2014 that it would borrow part of the funds for the Covidien acquisition (Overseas, 2014). In April, 2014, following issuance of new regulations by the US Department of the Treasury to reduce tax benefits, Pfizer scrapped its planned merger with Allergan.

Fair Tax Mark, launched in February, 2014, is a private certification that a firm complies with standards for fair tax compliance. SSE plc, the second largest UK energy supplier and a FTSE100 company, has Fair Tax accreditation (Fair Tax, n.d.). SSE was the first FTSE100 to earn accreditation (SSE trailblazes, 2014). A study using 217 tax-avoidant and 217 non-tax-avoidant firm-year observations for 2003-2009 from the Kinder, Lydenberg, and Domini database finds that more socially responsible firms display less tax avoidance (Lanis & Richardson, 2015). The CSR categories for community relations and diversity are particularly important in this relationship.

## GLOBALLY FOOTLOOSE MNEs

There is a scattered literature around the idea of globally footloose MNEs (Goerg & Strobl, 2002; Orts, 2002a, 2002b; Van Beveren, 2006) or born-global MNEs (Knight & Cavusgil, 2004; Trudgen & Freeman, 2014). A globally footloose MNE is one owing no loyalty to any particular sovereignty: "Where the corporate globalists seek a competitive global economy ruled by mega-corporations that owe no loyalty to place or person, citizen movements seek a planetary system of economies made up of locally owned enterprises accountable to all their stakeholders" (Cavanagh et al., 2002, p. 6). Decentering and also what the present author will term "wandering" (from location to location) suggest the likelihood of shared sovereignty actors in the middle of a distinction between sovereignty free and sovereignty bound actors (Rosenau, 1990). Fiat's then chief executive reportedly stated that the company is "Italian based but not an Italian company" (*Financial Times*, 2010). MNEs may have a natural tendency to "decenter" (or unbundle) for business purposes (Desai, 2009). Halliburton operates co-offices in Houston (headquarters) and Dubai (field operations).

Table 1 provides a proposed typology of enterprises relevant to the study of nationalism and patriotism in international business. The typology identifies five kinds of enterprises, aligned along the horizontal stub of the table. The five kinds of enterprises involve, as shown down the left-side vertical stub, variations in focus (domestic business versus international business) and ownership (private versus state). State ownership is combined with state domination of formally private enterprises, as in a country like China it is difficult to draw a definite line between what is state-owned and what is, despite formal private ownership, state influence and thus domination in reality.

These variations in focus and ownership define the five kinds of enterprises. The bottom row of the table explains the basic characteristics of each kind of enterprise. As an idealization, a country that has relatively little international business engagement may emphasize a "commercial republic" or a species of "command economy" or some combination of private and state enterprises. Globalization is reducing the likelihood of such isolated countries, although North Korea may be an illustration of the isolated "command economy" approach. Globalization places emphasis on international business activities. China is active in international business, but its economy – while being marketized and privatized – is still strongly state-owned or at least state-dominated. The "commercial republic" when entering international



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business involves privately-owned MNEs which remain typically nationally anchored in a particular home country. There is an emerging enterprise form which has been labeled in the literature as a globally footloose MNE, meaning effectively owing no real allegiance to a home country.

The "commercial republic" conception (Elkin, 1994, 2001) is illustrated by the following comment: "Google's tax avoidance is called 'capitalism', says Chairman Eric Schmidt" (Google's tax avoidance, 2012). The conception reflects partly the emphasis by the Obama Administration on middle class concerns (see Selznick, 1992).

## THE POLITICAL CONTEXT OF NATIONALISM AND PATRIOTISM

This section examines the political context of nationalism and patriotism, and the implications of that context for some important considerations such as corporate espionage or cybercrime, public diplomacy, and business diplomacy. The section will also address the relationship between the political context and certain aspects of public policy such as international trade effects, government fiscal policies, and the role of civil societies.

Nationalism and patriotism vary across countries, and thus involve varying effects for business corporations. Protectionism may simply vary by country, dependent on national economic conditions and the government in office. Corruption generally appears to be higher in developing and transition countries relative to developed countries. However, corruption by key officials – such as participation in the alleged Panama wealth concealment scheme recently reported by a media consortium – may also vary by country, Argentina, Iceland, China, India, Russia, and the UK having been named (The Panama Papers, 2016).

*Table 1. A basic typology of enterprises classified by type of business and type of ideology*

| **Type of Enterprise** | | | | | |
|---|---|---|---|---|---|
| **Focus** | **Domestic Business** | | **International Business** | | |
| Ownership | **Privately Owned** | **State-Owned or State-Dominated** | **State-Owned or State-Dominated** | **Privately Owned** | |
| Definition | Domestic Commercial Enterprise | Domestic State-Oriented Enterprise | State-Owned or State-Dominated Multinational Enterprise (SMNE) | Nationally Anchored Privately Owned Multinational Enterprise (MNE) | Globally Footloose Multinational Enterprises (MNE) |
| Characteristics | "commercial republic" if:<br>• Very limited state enterprise (typically utilities)<br>• Relatively limited governmental regulation<br>• "Citizenship" activities due to closeness to domestic stakeholders | State-directed economy when:<br>• Very extensive state enterprise going beyond typical utilities<br>• Governmental regulation tends to support state direction | | Political "rules of the game" with home and host countries:<br>• Lobbying governments for firm benefits<br>• Engaging in "citizenship" activities for reputation building | Pure economic self-interest:<br>• Firm may shift location of activities if regulated too closely<br>• Firm may engage in strategic "corporate social responsibility" activities out of prudence |



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A basic dividing line is between democratic societies and authoritarian societies. Democratic societies appear to be more concerned with control of mergers and acquisitions and control of tax avoidance schemes (Dowd, Landefeld, & Moore, 2016). The reason is that democratic societies tend to be participants in the global trading system and thus relatively open to changes in business ownership and mobility of capital. Authoritarian societies are more likely to emphasize state-owned enterprises and resource nationalism. China and Russia have been characterized as authoritarian capitalism systems: the two countries combine, in different patterns, authoritarian political regimes and market-oriented economies although the economies are still arguably dominated by state-owned and state-influenced enterprises (Krastev, 2012). The authoritarian regimes – China, Iran, North Korea, and Russia – are the ones more associated with officially sanctioned or encouraged hacking for both political and economic purposes. The authoritarian regimes generally do not permit foreign acquisitions, as distinct from foreign direct investments. Singapore has also been characterized as an authoritarian capitalism – of a very different stripe (Cassidy, 2015).

## Authoritarian Political Systems and Civil Societies

Knowledgeable readers will have a working understanding of democratic political systems. As noted above, those polities are more open economically, tend to be concerned with control of mergers and acquisitions and control of tax avoidance, and are largely defensive in guarding against foreign espionage – corporate and governmental – and cybercrime. It is the authoritarian political systems – especially those of China and Russia – that require more direct attention here.

The Russian Federation is officially a federal republic of regions and theoretically a parliamentary democracy, with a popularly elected president presently Vladimir Putin (formerly president and then prime minister under Medvedev) and an appointed prime minister (Chairman of the Government of the Russian Federation) presently Dmitry Medvedev (formerly president). Putin's majority ruling party United Russia, founded in 2001, is both conservative and nationalist in orientation. United Russia controls both the national government and the regional parliaments. Given this electoral dominance and nationalist policy orientation, the Putin regime is authoritarian if capitalist in economic approach (Gel'man, 2016; Gel'man & Starodubtsev, 2016; Gill, 2016; Motyl, 2016). There is an important process of internal financial transfers to regional governments to assure loyalty (Ermasova & Mikesell, 2016; Marques, Nazrullaeva, & Yakovlev, 2016; Sharafutdinova & Turovsky, 2016).

The People's Republic of China (PRC) is officially a one-party communist state with provinces and other subordinate entities (several autonomous regions, four direct-control large municipalities, and two special administrative areas). There is both a president presently Xi Jinping and a premier of the State Council presently Li Keqiang. Xi was previously vice president and is general secretary of the Chinese Communist Party (CCP). The National People's Congress elects the president and the premier (Chen, 2016). The premier is the second ranking member of the Politburo Standing Committee, after the president. The premier normally handles the economic affairs of the PRC. The Chinese provincial structure generates internal financial transfers to assure loyalty, similar to the process in Russia (Wang, 2016).

Civil society is generally robust in democratic polities with developed economies. One reasonably subdivides democratic polities into government, business, and civil society sectors. The situation is different in authoritarian regimes such as China and Russia (Poskitt, Shankland, & Taela, 2016). Although



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those two countries are marketizing and privatizing, state-owned and state-influenced enterprises remain important, political connections link business and state (and party), and civil society remains relatively underdeveloped (An, Chen, Luo, & Zhang, 2016; Chen & Cao, 2016; Yang, 2016).

There are strong ideological and political pressures for value consensus (Hao, 2016, drawing on three surveys of thousands of Chinese respondents). Wang (2016) concludes that prospects for democratization in China are weak; there is more discontent with the present political system, especially within the CCP, than democratic impulses. Veterans' organizations may be influential in Russia (Kulmala & Tarasenko, 2016); anti-corruption, environmental, and human rights organizations are not yet influential in China or Russia (Hawkesworth & Loudiyi, 2016).

## Connections to Corporate Espionage

Competitive intelligence efforts by any firm may slide into stigmatized practices, as found by a study of US firms (Reinmoeller & Ansari, 2016). However, China and Russia are reportedly key players in international espionage and hacking, including efforts to steal commercial as well as political secrets (Benson, 2011; Lewis, 2012). Iran and North Korea are also suspected in such efforts. Economic espionage is an important aspect of Chinese government activities as seen by available reports. There is a growing literature on economic espionage, with emphasis on China and Russia, although those two countries are not alone (P. L. Chen, 2016; Dreyfuss & Lobel, 2016; Rascoff, 2016; Waltz, 2016; Workneh, 2016). The linkage to Chinese and Russian multinationals is difficult to establish, but Chinese state-owned and state-influenced multinationals are an important aspect of international activities. It appears more likely that authoritarian regimes will influence their multinationals, at least indirectly, to engage in at least economic espionage in the national interest.

## Government Fiscal Policies and International Trade Effects

Literature connecting nationalism and patriotism, especially by businesses, to government fiscal policies and international trade effects is limited. The relationship is more direct in democratic polities with open economies; as noted above, these polities are the ones most concerned with mergers and acquisitions and tax avoidance. The worse the trade imbalance, presumably the greater the country's concern over mergers and acquisitions; and the worse the government fiscal deficit and debt, presumably the greater the concern over tax avoidance and corporate inversion. Russia has been particularly affected negatively by sanctions (over its annexation of Crimea in 2015) and falling oil prices, the latter arguably being good for China as an importer (Dreger, Kholodilin, Ulbricht, & Fidrmuc, 2016). Moons and van Bergeijk (2016) conduct a meta-analysis of 32 empirical studies (1986–2011) concerning trade and investment impact of economic diplomacy methods. They report a positive, significant effect (except for state visits) on international economic flows.

## Effects on Public Diplomacy and Business Diplomacy

The term diplomacy can mean public diplomacy – conducted by governments, or business diplomacy – conducted by or through commercial or state-owned enterprises (Poulsen, 2016; Saner, Yiu, & Søndergaard, 2000; Vanc & Fitzpatrick, 2016). The emphasis in this chapter is on economic diplomacy, meaning coordinated public and business diplomacy efforts aimed at international economic goals such



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as business opportunities in other countries. The most literature is available on China in this regard (Gu, Zhang, Vaz, & Mukwereza, 2016; Jakobson & Manuel, 2016; Strüver, 2016; Zhang, 2016). Fuchs (2016) reports evidence that Chinese diplomatic visits fall in the year of a visit by the Dalai Lama to a country and then rise in the following year.

## SOLUTIONS AND RECOMMENDATIONS

In weighing solutions and recommendations, it is important to consider two fundamental considerations. First, globalization does have negative as well as positive effects; and the balance of these effects can vary greatly by country. There is a marked economic inequality in the world, and this inequality can place strong pressures on national governments for protectionist, resource control, taxation of foreign enterprises, and similar measures (Garavini, 2015; Wilson, 2015). Second, there are profound geopolitical divisions in the world: China, Iran, North Korea, and Russia are not cooperative partners in the international system. Some countries behave extremely nationalistically – that is, beyond what we may typically expect of all countries.

Criticisms of corporate behavior are intended to influence outcomes for proposed policy reforms or to threaten businesses to refrain from maximizing gains out of risk aversion. Strictly legal actions are ethically neutral rather than ethically suspect, although certainly not ethically superior (i.e., virtuous, good, and just). A "loophole" is commonly defined as "A technicality that allows a person or business to avoid the scope of a law or restriction without directly violating the law" (Investopedia, n.d.).

Imperfect tax codes, riddled with loopholes or technicalities and varying globally by jurisdiction, permit persons or entities to minimize tax payments. A tax code is a set of detailed rules, rather than a set of guiding principles. Dworkin (1978) distinguishes among policy, principle, and rule. There is no economic, political, or strategic advantage for a person or an entity to pay any tax beyond legal liability – ignoring risk aversion and reputational considerations. While a person or privately-owned entity might view overpayment (or over-compliance) as a virtue, in a publicly traded entity the notion of fiduciary responsibility to shareholders (whatever its inherent defects) must arguably be strongest in tax decisions.

One solution is international cooperation, such that there is no location advantage with respect to tax liability or regulatory burden. There may be other location advantages, as reflected in Burger King's decision to relocate to Canada. Walgreen's decision not to relocate reflects some balance of considerations. A second solution is some form of domestic tax reform such that the problem of international cooperation does not arise. A third solution is virtuous or responsible management, but virtue or responsibility takes the form of overpayment in violation of fiduciary responsibility. Economic patriotism is meaningful for domestic firms, with no option or interest to operate trans-nationally. The appeal cannot have useful relevance for an MNE operating across multiple jurisdictions. Perfect regulation is unlikely, and virtue or responsibility assumes a peculiar meaning for an MNE. Public policy is open to influence efforts by the very MNEs to be regulated; and those MNEs may have opportunities to shift activities among jurisdictions in competition with one another. An appeal to superior virtue is not a demonstration that harm is occurring in legal compliance.

The most general approach to altering economic inversions would be to reduce corporate tax rates and go to residence-neutral taxation so that location is irrelevant. Mr. Lew's observation (quoted earlier) about benefits suggests benefit taxation (i.e., user charges) rather than ability-to-pay taxation (i.e., deep pockets). The US may have the highest corporate tax rate in the OECD (combining federal, state, and



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local taxes). Public policy solutions may tend to create new loopholes. A 2004 law attempted to reduce inversions by requiring a 20 percent threshold: former US shareholders must own less than 80 percent of the merged company (Freedman, 2014). Firms introverting prior to the law are not affected by the requirement (Freedman, 2014).

Another possibility to consider is that regulatory havens reflect defects in regulation and/or absence of international coordination. With respect to tax havens (see Ali Abbas et al., 2012; Krugman, 2013), Kay (2013) has recommended a number of possible reforms: "... removing interest deductibility, introducing an allowance for the cost of corporate equity or shifting the tax base towards cash flow rather than accounting profit. ... Opportunities for tax avoidance are everywhere and always the consequence of rules that treat economically similar transactions differently." Additionally, such rules as exist are rarely enforced, as authorities prefer to negotiate (Kay, 2013). Kay advocates taxing shareholders rather than companies, and if necessary for some reason to tax companies then to tax free cash flow or economic rent (i.e., earnings in excess of cost of capital).

The recent spate of corporate inversions in the pharmaceutical industry likely reflects high profitability such that there are significant tax advantages (Professor Mark V. Pauly, quoted in Capital Flight, 2014). One proposed policy option is to reduce the U.S. corporate tax rate and tax code complexity. The Obama administration proposes requiring shareholders to own 50 percent of the new entity, and a so-called "smell test" in which companies operating primarily in the US would be treated for tax purposes as US corporations (Freedman, 2014).

Another proposed policy option is international cooperation (Bank, 2013). OECD is working on plans for exchange of information concerning corporate tax-avoidance strategies (Bloomberg News, 2014b). The OECD Secretary-General stated that MNEs hold an estimated US$2 trillion in low-tax jurisdictions (Bloomberg News, 2014b). In late October, 2014, a total of 51 countries signed an accord to combat tax evasion through automatic exchange of tax information from 2017; however, Switzerland and the US were not signatories. Switzerland maintains marked banking system secrecy, and the US has opted to pursue its own strategy (Smale, 2014). The 51 signatories are members of the 123-country Global Forum organized by Germany and the UK to address tax evasion and fraud (Smale, 2014). The broader policy problem is to coordinate tax policy as distinct from tax enforcement through information exchange.

## FUTURE RESEARCH DIRECTIONS

Nationalism and patriotism are more likely to increase than to decrease in the future. China, Iran, North Korea, and Russia in particular are nationalistic in the classical meaning of that term. There are economic and political stresses between Canada or the US and the EU. Immigration pressures on the US and the EU are leading to increasing discourse about whether stronger barriers to population influxes should be adopted. The continuing economic difficulties since 2008 have, with other factors, increased stresses leading various governments to consider protectionism, industrial policy, and resource nationalism. There are also changes in political regimes toward increased aggressiveness internationally (China and Russia especially) and toward "illiberal democracy" as distinct from conventional dictatorship (Innes, 2015). Country and enterprise studies are particularly desirable.

Research should emphasize defining and illustrating varieties of nationalism and patriotism in international business. The conventional emphasis in literature has been on the advantages of freer trade on the one hand, and on the benefits of international cooperation on the other hand. We need much more



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inquiry into how causes and effects of nationalism and patriotism by country, the relationships to corporate espionage and cybercrime, and the consequences for public diplomacy and business diplomacy. While a significant literature is accumulating, on the whole nationalism and patriotism are understudied because the research emphasis has been on globalization (the World Trade Organization) and regional integration (the European Union). This emphasis is coming under reevaluation in light of the economic and political developments since 2008.

## CONCLUSION

This chapter has marshaled information and issues concerning nationalism and patriotism in international business. Nationalism is basically a set of policies and practices, most typically adopted by governments. Patriotism is basically a set of beliefs and behaviors by stakeholders of businesses (domestic and international), typically in support directly or indirectly of nationalism policies. The chapter defines nationalism and patriotism as different matters, although often linked or even interdependent.

There are implications for public diplomacy, business diplomacy, corporate espionage, and cybercrime. The three chief examples of nationalism addressed in this chapter are protectionism, resource nationalism, and control of mergers and acquisitions undertaken by foreign businesses – even within the EU. The chief example of proposed patriotism is taxation of enterprises, which frequently engage in legal but politically condemned tax avoidance devices. A recent form of such tax avoidance is corporate inversion, in which a larger firm merges with or acquires a smaller firm in another country for the purpose of shifting formal registration jurisdiction and thus escaping taxation in the home country.

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## KEY TERMS AND DEFINITIONS

**Beggar Thy Neighbor:** A protectionist policy typically using currency devaluations (increasing foreign demand for exports) and increased trade barriers (decreasing domestic demand for imports) to gain at the expense of trading partners. The idea occurs in Adam Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776), Book IV, Chapter III, Part II.

**Corporate Inversion:** A legally permissible action in which a business from one country merges with a smaller business in a different country and relocates its legal business address to the other country. The larger, inverting business is dominant. Inversions occur principally for purposes of tax liability reduction, but can sometimes occur to obtain business advantages in the other country.

**Corporate Espionage:** Espionage or spying conducted for commercial rather than national security purposes. Governments may conduct or instruct corporations to conduct such espionage for economic gains. Corporations may conduct such espionage for competitive advantages.

**Cybercrime:** Crime involving a computer and/or a communications network, in various forms. The computer and/or network may be an instrument or target of the crime. Hacking, spamming, and child pornography are instances.

**Ethnocentrism:** The ethnic or cultural bias of an individual in which that individual's group is the ideal benchmark against which any other ethnic group or culture is assessed.

**Nationalism:** Nationalism is domestic emphasis placed on the country's economic, political, and strategic interests. Nationalism views the international business system as a zero-sum competition.

**Patriotism:** Patriotism is the pro-national behavior of consumers, producers, and other business stakeholders, and also the calls for such pro-national behavior.

**Pollution Haven:** A country affording foreign businesses lower standards for pollution than they would face at home. The pollution haven jurisdiction derives other non-pollution advantages.

**Resource Nationalism:** Assertion of national (or community) control over natural resources. Pemex (Petróleos Mexicanos), the Mexican state-owned petroleum company, was established in 1938 through nationalization of all private petroleum companies (foreign or domestic) then operating in Mexico.

**Tax Avoidance:** Business decisions undertaken to minimize tax liability in a given country or other tax jurisdiction. Multinational enterprises may be structured to minimize taxes globally. Tax avoidance is legal, if unpopular politically, as distinct from illegal tax evasion.

**Tax Haven:** A country affording foreign individuals and/or businesses low or even zero tax liability without requiring actual residence. The tax haven jurisdiction derives other non-tax-revenue advantages.

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# Chapter 84
# Critical Analysis of the Influence of Transnational Capitalism on Institutions and Organizations

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## ABSTRACT

*This chapter aims to analyze the development of capitalism and its influences on institutions and organizations from its beginnings to reach the highest stage in the processes of neoliberal economic globalization and the New Economy version with supports of information and communication technologies. In raising this development from a critical analysis, it examines the impacts and effects on individuals, communities and the nation state. Subsequently it is questioned the scope of the imposed transnational neoliberal capitalism model. Finally, it is concluded that it needs a cultural transformation for not accepting the forms of domination, power and alignment of globalizing capitalism and to reconstruct the identity of communities through individual action and asserting collective self-determination, independence and self-management. To a certain extent, this analysis finds that evolution and globalization support divergence more than convergence.*

## THE EMERGENCE OF CAPITALISM

The term capitalism carries an old history of human exploitation, and for a long time, in general, has been omitted from the speeches, although it is accepted the existence of a system that in fact is valid and current with important variations (Jay and Jay, 1986; Tormey, 2012). Weber (1978) defines the spirit of capitalism as the set of elements that inspire ethical entrepreneurs on their shares in favor of capital accumulation. Beginning from this argument, capitalism has embodied entrepreneurial ethical values establishing a new moral relationship between people in their work settings.

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The phenomena of economic globalization, as any economic development have had an evolutionary process. Capitalism is an evolutionary process that is touted as an engine of economic progress and development. Economists such as Marx analyze the evolutionary process of capitalism using the dialectic method to describe the negative influences of the modern capitalist engine on labor relationships in industrial organizations created by the economic-based structures. The dialectic method in action used by Marx was used to explain economic relationships of methods of production. A thesis calls for the very opposite, the antithesis and from the struggle process between these two forces both are destroyed giving existence to a new synthesis.

Schumpeter analyzes the innovation and scientific advance supported by a continuous process of creative destruction as the result of technical and technological relationships among with institutional and organizational structures (Nelson, 1990). This continuous process of creative destruction is an in built in force of capitalism, representing the natural selection of institutions and organizations that is the survival of only those that are more fitted to the economic environment.

The evolutionary processes of capitalism have lasted several centuries and have been inherent in the processes of economic globalization, which in turn are the result of processes of capital accumulation. The two shock waves of capitalism inherent to imperialism, took place after the conquest of America and the Industrial Revolution (Amin, 2001). In this first phase of economic globalization a mercantilist system develops but it was opposed by the liberation forces of some colonies such as the British-American, and later the Spanish-Latin-American, the French-American and the Portuguese-Latin-American that defy the logic of production. Capitalism proclaiming freedom overcame unjust economic relations of feudalism but became the justification for the looting of the resources of the less developed peoples for the benefit of the colonial metropolis. The colonial legacy has marked the economic, political, social and cultural rights of colonized peoples giving rise to institutional and organizational relationships and sense of identity.

The Reformation represented a break in confusing ruling classes of their time with the feudal past that according to Weber laid the ideological foundation for the development of capitalism between the emerging bourgeoisie, large landowners and the monarchy that kept under control the threat represented by the poor farmers, the main victims of social transformations. The concurrent rise of capitalism with the phenomenon of modernity separates the political sphere from the economic one. From this alternative perspective, modernization was the wellspring of Western capitalism whose ideological forays into the world kept it in a constant delay.

However, the development of capitalism as an economic system has degraded social development, specifically among those who do not have capital and have to hire their work and also at macro level among colonial territories and less developed countries (Wallerstein, 2001; Thomas, 1980; Mooers, 1991; Grosfoguel & Cervantes-Rodríguez, 2002; Dietererich, 2002). The economic development of England was based on the thesis of classical political economy developed by the English Adam Smith, Thomas R. Malthus, David Ricardo and the Frenchman Jean Baptiste Say based savings, work and free trade. But the application of these theories is contradictory and incompatible with the systematic use of political, military and economic development in praxis of colonialism, exploitation of protectionism and barbarians (Dietererich, 2002).

The monarchy European feudalism in the eighteenth century is resisted and destroyed by capitalist production forms and illustrated movements of the nineteenth century (Wallerstein, 2001; Thomas, 1980; Mooers, 1991; Grosfoguel & Cervantes-Rodríguez, 2002 & Dietererich, 2002). The emergence of capitalism in the late eighteenth and early nineteenth century due to the use of new technologies such



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as the steam engine and new means of transport such as rail, accelerate the production and trade of the economy and generate enrichment for those who might benefit from these technical advances.

Since then, the capitalism become over time until these days in an increasingly oppressive system of capitalism legitimated by economic liberalism justifying mechanisms influencing institutions and organizations. These mechanisms deprive workers of their means of production. The new owners of means of production exploit their materials and intellectual energies in exchange of wage which is less than the actual values of the goods produced.

Friedrich List, creator of German state capitalism in the late eighteenth and early nineteenth centuries, criticizes the double standard of the English moral. This criticism is synthesized in the analysis of Dietererich (2002) because since the constitution of the modern English state in the developmental dictatorship of Oliver Cromwell as was manifested in the Navigation Act (1651) and the monopoly of the East India Company to the days of the charming Tony Blair, the only real economic growth policy was the protectionist state capitalism (Robinson & Harris, 2000, Mann, 2001-2002). Blair's New Labour government framed by the notion of Competition State adopted a centre-left political strategy to achieve its own economic, social and political objectives (Cemy & Evans, 2004; Cemy & Evans, 2000).

## OBJECTIVE

The objective of this study is to analyze how the development of capitalism had influenced institutions and organizations.

## EXPANSION AND CRISIS OF CAPITALIST IMPERIALISM

The second phase of the expansion of capitalist imperialism began with the industrial revolution, which deepens the polarization that has increased inequality and causes confrontations between the imperialist powers, socialist revolutions and national liberation revolutions that arise in the periphery. Marxism is a dialectical approach to the development of humanity. An approach from historical materialism mark the class struggle of capitalist development that evolves to a socialist society composed of a system of production, distribution and consumption consisting of equal individuals in a democratic State.

The logic of capitalism is the dominant ideology in the West since the Industrial Revolution (Lovins, Lovins & Hawken, 1999) and was promoted heavily in the nineteenth century, based on the accumulation of capital by maximizing profit. The period between 1860 and 1900 is often referred to as the Second Industrial Revolution due to the large number of technologies invented during that time. Those who do not benefit do form a new social class that requires a socialist ideology to oppose capitalism which has its peak in the nineteenth and twentieth century (Chase-Dunn, 2001).

Since the 1929 crisis, the greater challenges that the capitalist system has faced are attributed to liberalism for its confidence in the ability of market mechanisms to overcome economic crises and passive assistance of governments. Reactions to the crisis in confidence condemn the free market. Keynes challenged capitalism to be the best policy for capitalists when he said that full employment is necessary for capitalism to grow and can be achieved only if governments and central banks get more involved into the economic health to increase economic growth and economic distribution.



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Social welfare policy focuses on state responsibility for providing de commoditization of social benefits on the basis of principles of universality, equality and global coverage. This welfare model is incompatible with the urgent progress of unregulated capitalism, to which adaptive pressures, social welfare orientation of social democracy have redirected actively applying resources and services to young families.

Competitive capitalism became monopoly capitalism during the decolonization processes that occurred in the nineteenth century to strengthen global expansion after World War II through processes of capital accumulation and reproduction (Grosfoguel & Cervantes-Rodríguez, 2002). During the process of decolonization, the name of Third World countries was assumed by the "non-aligned" with the two large hegemonic blocks, socialism and capitalism, so that Latin America was not included. The national liberation movements after World War II end with a system of colonialism. However, the colonial legacy marked the economic, political, social and cultural rights of colonized peoples. These movements joined ethnic and religious communities against capitalism as a common enemy. When national popular movements are strong, they transcend in solidarity internationalism.

## NEOLIBERALISM AS AN IDEOLOGY OF CAPITALISM PULSE

Neoliberalism is imposed as the best alternative to the exhaustion of expansive growth period of greater global economy after World War II, between 1940 and 1970. The economic model based on industrialization by import substitution was exhausted in terms of supporting economic growth. This period was considered as the "golden age of capitalism" with a high global economic growth characterized by industrial expansion of capitalist periphery countries and the strengthening of the economies of the socialist countries.

Globalization processes intensified after World War II with the creation of global institutions as expressions of the transformations undergone production, information and communication systems. The WTO is the successor to the GATT which together with other institutions like the International Monetary Fund and the World Bank emerged after World War II seeking to establish a new world order in global turbulent transition times by the unilateral imposition of capitalism.

Most developed countries promoted these international organizations to ensure their economic interests, hegemonic-based in free trade by promoting a devourer mercantilism under globalization processes with imperialist vocation. These international organizations can grant subsidies and tariffs that benefit only the powerful against the dispossessed and leading to nationalism of the developed world. Thus, globalization represents the most advanced stage of capitalist development which benefits economic elites through global integration processes supported by the doctrine of neoliberalism as an economic and political ideology.

The concept of globalization is ambiguous and it tries always expressing the empirical evidence. The concept of globalization began to be used for academic purposes in the mid-eighties. In any case, the concept of globalization should be reviewed from the ground, as the content and processes that characterize the development of global capitalism and contemporary societies (Aguirre Rojas, 2000). The evolution of transnational capitalism or neo-capitalism has resulted in economic globalization, which in terms of Márquez Ayala (2001) is based on four pillars: first, the ideology that exalts the market; second, the brand is neoliberalism, three, the theoretical is monetarism and four, its slogan is the hope of the village collective access to global prosperity and welfare.



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The development in globalization has generally been capital-centered because it places capitalism in the center of the narrative development, thus tending to devalue or marginalize any possibility of non-capitalist development. The naturalness of capitalist identity as a template for all economic identity can be challenged (Gibson- Graham, 1996:146) for various economic development options proper of post development that value the same local models not necessarily complementary, neither opposing nor subordinated to capitalism. The term global village was coined in 1960. The neoliberal model of globalization that seeks to build a global village with global citizens, contradicts itself when it proclaims the opening of borders and the strengthening actually reinforce the essential role of national states.

Other historical interpretations (Reich, 1998) on the development of globalization processes dated to the end, more than half of the seventies and early eighties. These analysis point concurrent events such as the cumulative impact of the second oil crisis, a substantial decline in GDP, rising inflation rates, the traumatic event of the hostages in the U.S. embassy in Iran, the rise to power of Thatcher in Britain, Reagan's U.S. and Kohl in Germany. These events have resulted as part of the impacts of economic globalization processes.

From the eighties, the rise of the conservative right with Thatcher came to power in England, with Reagan and the Republican Party in the United States, and then fully assaulting power with Bush and the Falcons with their reactionary policies imposed unilaterally, dismantle the welfare state. This dismantle can lead to social disaster and jeopardizes not only the world order but the very survival of the capitalist system.

Neoliberalism is defined as the mode of governing through individual freedom that requires people to be free and self managing in different economic, social and political spheres of everyday life in health, education, bureaucracy, the professions (Ong, 2007).

Neoliberalism as hegemonic model of global capitalism was assumed and promoted by Thatcher in Britain and Reagan in the United States with the support of international financial institutions, the International Monetary Fund, the World Bank and the World Trade Organization, who promote policies economic and financial liberalization, deregulation, privatization, opening up of economies to the world market, precarious employment relationships and retraction of state presence in the economy. The manifestations of this development of emerging capitalism fall into the paradox which is that while focusing on self-regulatory role of market mechanisms, on the other hand triggers reactions to counter and offset the perverse effects of market mechanisms.

The processes of creative destruction of capitalism, according to Schumpeter (1994), more accurately explain the development of international capitalism in its highest stage, globalization. The neoliberal interpretation of Hayek (1975) that the employer, under its responsibility, decides which produces, what services offers and how it does it in business activities, it's totally free. Consumers, meanwhile, are free to choose, according to their income, between values and services offered by the employer.

The socialist system was not ready to compete with the creative destruction processes of global financial capitalism that promises prosperity for all. Financial crises are a sign that the capitalist system is in constant transformation and creative destruction, such as the case of the oil crisis of the late seventies, the crisis of globalization in the nineties and the crisis of 2007-2008, no matter where those who harm while benefiting big business. The ideology of neoliberalism was pushed around the globe condemning all public action coming from the nation-state, transferring ownership of public assets to private and employing military intervention to defend their interests. The economic-political elite and their agents are campaigning to legitimize neoliberal ideology of transnational capitalism that promotes free market.



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## GLOBALIZATION: THE HIGHEST STAGE OF CAPITALIST IMPERIALISM

Transnational capitalism builds a system of institutions that overcome the structures of the nation state, exceed their functions, facilitate networks of supranational integration between groups belonging to the same stratum, reconfigured global social forces and dominated groups and dominant groups deepening global divide between those who benefit from globalization processes and those without.

However, the globalization of economic activities is promoted by governments, business and other groups. Everyday life changes and makes new systems and transnational forces, transforming the institutions of the societies we live in and has to do with the rise of individualism (Tepoztlán Center, AC. 1999). The emergence of this individualism is due in part to competition extends to the same individuals and is worrisome because it can determine the level of latent authoritarianism inherent in capitalism. Capitalism emerged as the result of individual liberal freedoms to guarantee individual legal and political equality. However, advanced capitalism has become quite adaptable and compatible with authoritarianism with policies suppressing individualism and intellectual freedoms.

This competitive individualism is the foundation of economic crisis of the globalization system. Soros (2002) argues that by stating that the public interest benefits by allowing people to pursue their personal interests, market fundamentalists have blurred the distinction. Those who adhere to this ideology of convenience have no qualms about bending the rules to their advantage. The result is not perfect competition but a cheater capitalism, in which the rich and powerful feel justified in enjoying their privileged position. The mechanisms of competition as a motivation are driven by the imperial rival states and generally by the same imperial system. In the words of Petras (2013b) competition in capitalist terms is mediated, influenced and directed by the states.

To achieve rationality and market efficiency should be with values of democratic culture such as individual freedom, legal and political equality based on competition, under the reasoning that liberal democracy and capitalism are explained by economic reasons and the struggle for recognition. The relationship between the market and democracy is a tortuous relationship while the principles of political economy which underpin transnational capitalism contradict the principles of democratic theory when certain rights are privileged over others. Research shows that the theoretical models based on economic theories are linked to economic growth. Empirical research on the relationship between the market and democracy is very limited to some countries and regions. Rohrschneider (1999) found that the relationship between democratic and economic values as indicators is ($r = .51$). Grosjean and Senik (2007) found simple correlations supporting the relationship between democracy and market although the reverse relationship was not clear-cut.

This liberal democratic theory is founded on the principles of freedom and equality of individuals, where they become more relevant to the communities and their political identities. Thus, democracy has become the perfect tool to maintain the hegemonic power of globalizing capitalism. Around this principle of liberal democracy there is a debate between liberal multiculturalism positions, democratic socialists and communists. Liberal democracies became more advanced social democracies.

In the eighties and nineties it was used the term "informal economy" whose expansion is related to the structural conditions of transnational capitalism that result in increased poverty and marginalization in the global scope. The size of the informal sector is a good indicator of the quality of external institutions, taking into consideration the costs of structuring relationships with external institutions that are related to the proportion of interactions that ensure the design of domestic institutions.



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Long before the term globalization, proposed in 1983 by Theodore Levitt to designate a convergence of global markets, and to refer to an object that is elusive and unmanageable, it was a buzzword to mean economic connections, the world were economically and politically interrelated. The term globalization acquired mid-1990 a media attention in the new international order in 1991 that allowed new ideas to the negative image dragged by capitalism.

In the emerging new world order, the State does not disappear but is disaggregating into distinct parts, separated according to their functionality. A new status of nation states emerged in the stratified world political unipolarity. The State is well in captivity, caught in the web of the interests of the dominant national groups seeking trans-nationalization of capital accumulation by penetrating power structures of global capitalism.

The rise in the less developed countries of a new transnational capitalist class connected to international financial circuits, which under a neoliberal hegemonic project, have become the new economic elite that has been the rise to political power and promoted the interests of imperialist capitalism. The economic-political elite and their agents are campaigning to legitimize neoliberal ideology of transnational capitalism that promotes free market.

The rhetoric surrounding the consolidation of the Cold War divided the world according to the degree of development of their economies in those highly developed that made the first world, and those economies that agglutinated around socialism not integrated into the world economy forming the second world. Finally, all other not developed economies were known as the Third World. In the times of the Cold War, the world was divided into bipolar democratic nations with the United States at the front and communist nations aligned around the power of Russia.

The fall of the Berlin Wall and the disappointments that caused nationalist economic policies in many nation-states, it was believed that this represented the triumph of liberal democracy around the world. Similarly, the sharp fall of Soviet socialism and the countries of Eastern Europe, of which curiously, Gorbachov has argued that its essence was competition in the Hegelian-Marxist concept. The collapse of communism legitimized democracy as the political system more viable.

At the end of the eighties, the end of the Soviet bloc gave the final push towards consolidation of neoclassical theory as dominant as the only approach to national development increased with growth strategies focused on the state. Those growth strategies of communist states were discredited. The way was clear for the global expansion of capitalism and with it the hegemony of the theoretical school more market oriented.

Therefore, real socialism entered into a period of total decadence, in a crisis of no return. Against the excesses of capitalism, it is necessary to find explanations and teachings of this fall in order to redefine the new forms of organization. While it must be accepted that socialism did not fail completely because undertook significant contributions to the development of the people who experienced it. Moreover, however, the socialism could not resist the ideological attacks of globalizing capitalism.

With the disappearance of the economies around the real socialism and the opening of Communist China, the second world is made up of a set of economies that have a relevant role and form the periphery. The economies of the second world become more profitable for the first world. The development of capitalism globalization with a new geo-economics is expanded to all corners of the globe. These peripheral economies of the second world have competing interests in terms of negotiations for preferences for their economies.



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In the world order, two characters appear in capitalism today: first, the use of military power unfettered, and in the second instance the pre-eminence of speculative finance. The defining characteristics of capitalism today are: a) private ownership of the means of production, utilities and strategic natural resources, with a high concentration of multinational companies. b) oligopoly market and dependent on external hegemonic centers, c) extreme commoditization of capital-labor ratio, with the consequent growth of surplus value for the capitalist and the worker's inferiority (Wallerstein, 2001; Amin, 2001; Dietererich, 2002; Galeano, 2002).

The spatial reference of development has moved from the national with the weakening of the nation state to the supranational level and local blocks strengthening regional integration and decentralization of functions to local governments. Only now the phenomenon appears as a true paradigm mounted on several fallacies, myths and slogans that lead to democracy, to the welfare and progress of mankind. A global democratic proposal does not fit local situations and vice versa. Besides, there is a growing tendency to the rights of man and of the property and not to the construction and development of a public space (Laïdi, 2000).

Transnational capital has the ability to dissolve its commitment to the welfare of the working class, which regardless of territorial boundaries; it is a reserve for transnational capitalism. So, at this historical juncture, rather than as a characteristic, transnational capital has broad power over the masses. Financial expansion of capitalism which is based on periodic crises, accelerated mobility processes, concentration and financial performance and questioned the monetary policies of national institutions, leading to a restructuring of production systems on a global scale.

The establishment of blocs linked to free trade agreements (FTAs) ("one market, one currency") increases the risk of instability and international competition, until there is - by necessity - a global reference currency, the one of the country that becomes the leader. The crisis of Fordist capitalism found its own limitations and contradictions as a production system with the processes of capitalist accumulation, was the cause that triggered the scientific and technological revolution reorganizing the production system in multinational agencies that promote the globalization processes.

The technological monopoly of transnational corporations concentrates resources and excludes from the benefits to those without the skills to join the processes of scientific and technological revolution. Thus, without the skills are sentenced to a dependency and in the best of the cases, to be mere repeaters. Business and corporate mergers are a trend of the concentration and accumulation of monopoly capital to address the effect of recurring crises of capitalism. The release of capital of rigid Taylorist, Fordist and Keynesian processes facilitates the emergence of a transnational integration of interests and global movements of political economic elites.

However, they are not the only corporate America winners on the board of globalization as a product of the contradictions in the development of neo-capitalism, of the tensions generated in all areas of human activity, and the side effects of global markets. These large U.S. corporations increased their reliance on foreign subsidiaries to capture profits through export strategies, so they are the primary stakeholders in promoting the adoption of the principles of free market and neoliberal economics. Global corporations are motivated by establishing branches in all corners of the world where the rules of origin are applied to "local content" to meet the requirements of free trade and its major customers (Dietererich, 2002).

Of the 500 corporations more important in the world, 46% are from the United States and in less than a decade have increased their profits by 36 to 43%. Eleven of the 13 world's biggest financial houses are controlled by investors from United States, according to Petras (2013a). In the global economy dominate euroestadounidenses companies. 79% of the 500 largest multinationals are located in the U.S or Europe.



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If it is included Japanese corporations, the percentage increases to 91% (Petras, 2013c). International agreements that are perceived as negative for capturing profits of TNCs and MNCs are rejected, always looking for a justification to "humanitarian purposes."

The capitalist economic growth is linked to imperialist expansion. In the third phase of expansion of globalizing imperialism, its goals remain the control of world markets and the exploitation of the resources of the less developed countries (LDCs). These processes are linked to multi-secularly deployments in polarizing world capitalism. The processes are also compatible with the logic of imperialism for domination and appropriation of surplus (Saxe-Fernández, 1999). The transfer of this surplus is ensured by the design and implementation of policies in conjunction with global power structures. In this phase, the economic globalization equals to imperialist capitalism expansion of global markets.

## THE EMERGENCE OF THE NEW ECONOMY

In the last three decades of the last century (the twentieth century) globalization processes extended and deepened due to a number of factors, including: The technological revolution with its rapid development of telematics, communications, and rapid innovation science and technology base. The interaction of the revolution in information technology and communication, the crisis of the welfare state and capitalism, and the emergence of new social movements have led to the formation of a new hegemonic social structure that Castells (1998) calls the "society-network ", the new economy based on the informational / global and a new culture on the basis of real virtuality.

Economic globalization is a phenomenon that has resulted in the advancement of information and knowledge technologies (IKT) like telecommunications, through the integration of economic activities that occur mainly in the rapid increase of capital mobility. This increase in international capital mobility, along with the increase of strategic alliances, mergers and acquisitions is one of the characteristics of the economic globalization processes.

The so-called New Economy as a development strategy has largely failed in its expectations. Basically, those profitability criteria are the same as the traditional economy based on advanced industrial capitalism that generates goodwill in favor of capital and against the amount of work and information. In addition, the information tends to substitute capital which it is information itself and therefore also tends to replace the work. Creating virtual capital disappears in the digital world the notion of time as a factor for accumulation. Today, the world is witnessing the third great revolution supported by an expanding capitalist imperialist revolution of economic globalization, which is challenged by those promoting the democratic revolution and the transformation of capitalist appropriation forms of surplus value by other more collective forms.

It is at the local, national and regional levels where it is managed the dynamics of transnational deregulation of markets, so it is considered that capitalism as a system is promoted nationally. In part, national economic policies are adjusted to the pressures of national capitalist elites integrated to networks of transnational capitalism, rather than external pressures of global institutions. The expansion of capitalism took advantage that gave it advantage over the spoiled peripheral economies and their dysfunctions. As an example, the payment of the foreign debt of Latin American economies is a priority in their budgets for social spending on education, health, etc.., and infrastructure investments. The support to handle the debt crisis of the least developed countries took advantage of transnational capitalism to impose operating structures and enforce conditions. The strategy worked perfectly to take hostage



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to countries that refused to accept the implications of the new global development model. While debt relief is made on behalf of poor countries, they get worse if resources are not correctly applied based on programs that are aimed at achieving economic growth as an end in itself. The weakened culture of dependence of the poor is replaced by the impressive hegemonic project of capitalism expansion encouraged by the economic interests of large corporate groups. This program should give credibility to the economic policy implemented.

As a result, even though the upper classes and their servants in government incur in charging large debts in the seventies and eighties, the lower classes have been bearing the burden of debt repayment during the nineties. Since the mid-seventies a new stage in the history of world capitalism important layers of the population ever increasing in number observed and increasingly considered as their working and life conditions deteriorate (Bienefeld, 1991).

The capitalist power or hegemony has the resources and the power to impose such rules as the transnational hegemony of global capitalism development through supranational structures. The governments of the imperialist corporations and international financial institutions most influential share a concept of global development and poverty alleviation centered on unlimited economic expansion of open markets and trade liberalization. The nation state has become an instrument of development cooperation of transnational capitalism. If looking at the neoliberal state as a continuation of the welfare state, it means legitimizing the new correlation of social forces arising from the transformations of capitalism and establishes the framework and infrastructure for creating transnational state.

The transnational capitalist elite requires of regulatory processes to stabilize the capitalist system. The economic elites who rule in market democracies conduct intense campaigning to convince global citizenship in the myth of unprecedented power. The superstructure formed by transnational institutions design policies that nation states must implement. In global markets, the interactions between companies and consumers, cultures and capitalisms, transform to homogenize preferences, which causes people to react positively or negatively in the expressions of fundamentalism. For other, divergence and heterogeneity is a valid form of reaction to the marketization of social life and the trade and financial integration.

## IMPACT ON LATIN AMERICA

The formal implementation of this approach in the Latin American states was called structural adjustment and basically consisted of seven steps: the unilateral opening of foreign markets, extensive privatization of state enterprises, deregulation of goods, services and labor markets, capital market liberalization, with an extensive privatization of pension funds, fiscal adjustment based on a drastic reduction of public spending, restructuring and thinning of social programs supported by the state with a focus d compensatory schemes for the most needy and to industrial policy and any other form of state capitalism and concentration of macroeconomic management (Portes, 1997).

Countries undergoing structural adjustment program accepted institution building related to the interests of transnational capitalism. Structural reforms in labor and social policies encourage de-commoditization, while globalizing capitalism relegated to the role of state attention to sectors excluded by a more competitive labor market and flexible production systems through the hypothesis of inequality compensation levels. This legitimizes the economic and social inequality of capitalism under the guise of development (Thomas, 1989).



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The global economy has a tendency to increase productivity levels based on scientific and technological innovation, cheap and flexible labor has to adapt to the conditions of international competitiveness. The mobility of labor has not been liberalized, despite the potential benefits that would bring discipline to the domain of the free market. Since national and local companies lack the means to compete on equal terms with transnational capitalism, they have little choice other than to become the local junior partners.

Galeano (2002) recounts the realism of capitalism in Latin America as economic and political system of Iaocca when he argues in a conference that unemployment is a hard problem. Today we can do twice as many cars with the same number of people. When it comes to improving the educational level of the population, as a solution to the unemployment problem, he always says that he is worried about the memory of what happened in Germany: there education was advertised as a remedy to unemployment, and the result was frustration of hundreds of thousands of professionals who were pushed to socialism and rebellion. I find it hard to say, but I wonder if it would be better for the unemployed act with clarity and leave to find work directly to McDonald's.

Employment is the means of access to markets. Price controls appear to be problems of the past, but terrorism has resurfaced. Above all, the richest countries are also those with the best brands in the business.

## CRITICAL ANALYSIS OF THE EFFECTS OF CAPITALISM

A critical analysis of the effects of capitalism reveals that created extreme inequalities in the region and almost worldwide. Inequality as an inevitable product of postindustrial capitalism is increasing almost everywhere (Muller, 2013). According to the analysis of Piketty (2014) income inequality has grown because "the ratio of wealth to GDP declined in Europe from 6:1 or 7:1 around World War I to 2:1 in the 1960s. It has since rebounded to nearly 6:1. The United States experienced a smaller decline, since its factories were not destroyed by the two wars, but has also experienced a growing wealth-to-GDP ratio of late." Second, r or rate to return to capital or wealth has averaged around 5% over long periods of time in many different countries, while g or growth rate of the economy cannot be expected to grow by much more than 1%.

Those who earned more from the processes of globalization are those that changed their policies to be inserted, than those who did not, according to Lindert and Williamson (2001). Pritchett (1996) recommends forgetting convergence because the evidence suggests that the predominant theme of the modern economy is a massive divergence in per capita between rich and poor, a gap that continues to grow yet.

In other words, globalization is deepening dependency relations and development between the peoples of the world through processes that are of looting, plundering and devastation of natural, human and financial resources. In this regard, Gonzalez Casanova (1997) said that the current globalization reformulates and maintains dependence structures of colonial origin, the equally strong imperialism of the late twentieth century, and the central and peripheral capitalism that was organized between 1930 and 1980.

Moreover, the globalization of capitalism also globalizes misery, even though its aim is reducing the level and severity of poverty by taking advantage of this phenomenon. Clearly, not so much the amount of resources determines the level of poverty in a country but is uses of resources. Poverty has many dimensions, from which they are always hungry, to the lack of development opportunities and lack of access to basic infrastructure, such as lighting, water, etc., to psychological aspects such as impotence, humiliation and dependency. An estimated 40 million people die of hunger every year.



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In the capitalist system, democracy has serious problems of legitimacy. Covertly legitimate liberal democracy to capitalism in the domain of man by man through the process of developing legal rules to implement the economic policies formulated in the best interest of the structures of economic power of large corporations and transnational speculative financial capital that dominate the international market. They rely on the decisions of the technocrats of undemocratic international financial institutions to impose their guidelines to governments with the consequent loss of sovereignty.

The role of the democratic state conflicts with post industrial capitalism globalization between the processes of commoditization and de-commoditization of social policy. What we are witnessing is a radical change of industrial capitalism to a post industrial conception of economic relations. Nevertheless, as a result of the implementation of programs of economic liberalization, society is polarized reflecting the contradictions of industrial capitalism, to the point where it becomes a dual society in which few have access to the benefits of age information, while others are totally excluded. The processes of neoliberal globalization increases social inequalities that weaken the democratic system sharpen the contradictions and make it incompatible with capitalism.

In the latter part of the twentieth century that balance was broken in favor of markets and here is the result: the loss of public confidence, counterfeiting and fraud destroy capitalism and the free market, and in the long-term the foundations of our society. This has not been said by any dangerous leftist, but by the Federal Reserve former chairman, Alan Greenspan. Did also exaggerates Greenspan? The world systems theory focuses on the study of the social system and their interrelations with the advance of global capitalism as driving forces between the different countries, including the small.

Despite the hegemony of the capitalist system continues to grow, in the last two decades the global economy is constantly deflation threatening large investments from U.S. imperial and capitalist hegemonic interests. Already these interests are in tension and confrontation for a locus of power to maintain an advantageous position that allows them to accelerate capital accumulation. Of course, government can intervene to correct most of the financial crisis, although capitalist hegemonic interests leave small room for maneuvering. The U.S. imperial strategy to reverse the trend of decline of hegemonic capitalism has caused more instability to the global economy and thus some geopolitical arrangements that portend the imminent fall of the imperial hegemony of capitalism.

The crisis of the object capitalism falls more in the realm of use value rather than exchange value. Signs of exhaustion of neoliberalism were presented from regional financial crises started with Mexico in 1994 and the chaos caused by the dynamics of the new economy that tried to be the locomotive of the global economy entered in crisis in 2001. High levels of economic speculation determine vulnerability of the economic system.

It is enough that a national institution has financial difficulties to drag after it a broad sectors and beyond the frontiers, making the regional phenomenon. But the end of the economic crisis means the recovery of the beneficiaries of capitalism and a serious decline in living standards and social benefits of the working classes. The future of workers is very uncertain. The crisis of the object capitalism is presented more in the domain of their use value that in the domain of exchange value.

## QUESTIONS TO NEOLIBERAL ECONOMIC GLOBALIZATION PROCESSES

New social movements against neoliberal globalization, starting from Seattle, consolidate theoretical and practical exhaustion of neoliberalism and question both the effectiveness of these policies as its



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claim to be the only viable development path. The global justice movement has its roots in the past 20 years in the least developed countries, although there is strong rebellion since Seattle in 1999 in developed countries as a democratization movement that is opposed to the imposition of neoliberal policies. With the ideological crisis of neoliberalism that has implications for the economic and social crisis that weakens the political systems, questioning the free market principles, are promoted civil society actions and claimed the complementary roles of the state. The struggle against neoliberalism is also against the commoditization of the world.

Proponents of global capitalism argue that if the conditions of law and order are maintained, the economic welfare of society will increase, because it is more consistent with human nature, they argue. However, globalizing capitalism is inherently polarizing development of peoples, while being threatened by low economic growth. A critical analysis of the effects of capitalism reveals that it has created extreme inequalities in the region and worldwide. The economic and social inequalities among the world's advanced countries and many Third colonial and semi-colonial worlds are persistent.

The checks and balances are bonds, alternative experiences, establishing solidarity between people. The checks and balances are the many instances in which policy is developed. They are counter-posed fundamental questions about how the world is building capitalism. Forums become symbolic places that are manifested and expressed in the various counter movements in convergence or resistance, with joints from the same basis. The multiplicity of social movements is its strength and what most fear the project of hegemonic ideology of capitalism. Social movements have a role in the findings of a comprehensive response by establishing transnational networks that after mitigate imaginable ethnocentric inclinations; can provide a counterbalance to the globalization of neoliberal capitalism.

The activities of these organizations pose no danger or risk to the power structures of economic and political elites, for the nation state, to international financial institutions, to the imperialist states and transnational corporations. At the heart of the counter-powers develop new strengths, new demands, new political practices, new forms of struggle and life. The drive and creativity are vital in counter-powers (Proceso, 2001). Historically capitalism shows some contradictions that limit growth and threatening the mythology containment policy to enter an uncontrollable crisis of collective empire and to avoid it requires alternative models for a new world order in much will depend on the emerging forces in opposition to the new global colonialism that fits in a cynical, repressive and exclusionary political ideology.

Despite the emergence of a plurality of critical thinking processes in globalization that speak of alternative models, it has not materialized a social organization different from the one that the market-based capitalism promotes. Critical thinking has to consider in theory and experience the weaknesses of capitalism and the design of a new world order as an alternative analysis from the local to the global policy. It should be facilitated by adequate, new practices and strategies of social movements oriented towards the anti systemic design of a democratic and sovereign alternative.

## CONCLUSION

This analysis reaches the conclusion that the primary cause of the extreme social and economic divergence in terms of inequality in anywhere in the world, as it could be in Latin America, is the result of the expansion of capitalism in the world. Thus, contemporary Latin American economies have become an integral part of the new global economic system that is not dominated by nation-states but by large



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transnational corporations that are major global players in this system. In other words, transnational capitalism has influenced institutions and organizations.

Neoliberal ideology has been used to justify the strategy of restructuring policies and economic adjustment followed in most Latin American countries since the eighties. In fact, globalization processes stimulated by the global expansion of capitalism and development have consistently favored only a limited proportion of the Latin American population while the majority has to suffer the adverse effects of this process.

This political theoretical analysis leads to conclude that there is an increase trend of divergence. There is a tendency for inequality to diverge whenever the rate of return of capital is greater than the rate of economic growth. If the difference is positive and large, it leads to a divergence of wealth between the very rich and the rest of population. The fundamental inequality (p. 25) or the fundamental force of divergence (p. 351) as defined by Piketty (2014) is based on comparing the (real) interest rate of the economy to the growth rate. According to Piketty (2014) the "forces of divergence can at any point regain the upper hand, as seems to be happening now, at the beginning of the twenty-first century," and, "the consequences for the long-term dynamics of the wealth distribution are potentially terrifying."

In other words, it is the subsidiary state, properly a neo-liberal model dependent peripheral capitalism, the dominant ideology and practice in the last 33 years.

It is needed an organizational cultural transformation for not accepting the forms of domination, power and alignment of globalizing capitalism and to reconstruct the identity of communities, institutions and organizations through individual and collective action claiming self-determination, independence and self-management. Capitalism, by itself, has no ethical value. This does not mean that there are no moral capitalist. Morals and Ethics are not synonymous when applied to individuals in institutions and organizations. Its moral molded into human nature towards individualistic and naked singularities most harrowing miseries of men when its project of power has no ethical limits in institutions and organizations.

One solution to break America's dependency relationship is to develop a protectionist capitalism within a trading bloc that facilitates transnational formation of institutions and organizations under different ownership and new forms of governance and under a development strategy that Dietererich (2002) termed as creating research, production and global marketing complex (RPMC), which can be achieved by the union of holdings, part of the global surplus in its market segment.

Finally, some suggestions to eradicate or at least remove misery evolving convergence are:

Sustainable and social responsible business strategies addressing the needs of the bottom of the pyramid markets will help to eradicate, to a certain extent, the global misery evolving convergence.

The beneficiaries of targeted poverty-alleviation programs need more personal capabilities development and political empowerment in order to sustain and maintain the quality of the benefits and services received.

Local governments should design and implement antipoverty social policies targeted to alleviate misery most effectively making sure that support reach the real poor and involving more actions of people involved in poverty alleviation programs.

For real poverty removal and misery evolving convergence it is required to impose increasing fiscal policies and tax systems more tied and corresponding to the increasing levels of income.



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## KEY TERMS AND DEFINITIONS

**Capitalism:** It is the set of elements that inspire ethical entrepreneurs on their shares in favor of capital accumulation. Beginning from this argument, capitalism has embodied entrepreneurial ethical values establishing a new moral relationship between people in their work settings.

**Convergence:** It means coming closer over time in respect of any social, economic, political and natural variables.

**Divergence:** It means moving away from each other over time in respect of any social, economic, political and natural variables.

**Globalization:** It means the opening up of the domestic economy into the face of the global world. It enhances in the cross country flow of goods and services.

**Institutions:** It is an organization founded for a religious, educational, professional, or social purpose.

**Neoliberalism:** It is an approach to economics and social studies in which control of economic factors is shifted from the public sector to the private sector.

**Organizations:** An organization is an entity comprising multiple people, such as an institution or an association, that has a collective goal and is linked to an external environment.

**Transnational Capitalism:** The transnational capitalism in neo-Gramscian and other Marxian-influenced analyses of international political economy and globalization, is the global social stratum that controls supranational instruments of the global economy.

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# Chapter 85
# Integrated Sustainability Reports:
## Historical Survey, Theoretical Proposals and Best Practices

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## ABSTRACT

*Disclosure of corporate social and environmental sustainability, resumed in 'sustainability reports', have occupied most of the attention of accounting thought and practice over the last few decades. Evaluation of ecological footprint and social sensitiveness is becoming relevant also for the investors. The chapter presents institutional disclosure concerning social, environmental, and integrated (financial, social and environmental) issues in a threefold perspective. The first is a historical one: after some definitions the birth and development of sustainability reports are presented to the reader. The second is a theoretical one: a paradigm or framework is developed for including what various experiences and literature have supplied until nowadays. The third is an empirical one presenting the main sustainability scoring criteria mostly used today, and an empirical survey on the car industry. Some concluding notes follow from the comparison of the aforementioned perspectives.*

## INTRODUCTION[1]

For many decades the accounting has expanded its content, focusing beyond the narrow field of financial information and considering the social and environmental information. The increased focus on non-financial information is paradoxically started by big company, typically focused on creating shareholder value (Tinker, 1984).

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The need for information required by stakeholders (not only shareholders and equity investors) concerned the issue of sustainable development in the second half of the twentieth century. Initially, corporate sustainability has been interpreted as social sustainability against the unacceptable exploitation of workers and social disintegration. Then, corporate sustainability has also been considered as environmental sustainability, so as ecological sustainability for the production of goods and services, to preserve the rapid consumption of non-renewable resources and to reduce the impact of pollution caused by production processes (Mintz, 2014).

The reasons for this need for information are multiple and often conflicting, but they all stem from the opportunity to involve stakeholders in their business to converge corporate goals with stakeholder objectives. Therefore, the first academic studies on this subject were included in the field concerning the stakeholder theory (Freeman, 1984; Freeman & Evan, 1988). Specifically, the need to provide information to the stakeholders is derived from a new social sensitivity towards the issue of sustainability, which is interpreted as: strategy for creating sustainable value added (Figge & Hahn, 2004); social commitment of the company to safeguard the rights of the community (Vallance et al., 2011); request of ethics by the community (van Marrewijk, 2003; Di Giandomenico, 2008); a result of an expansion of the stakeholders (Dawkins, 2003); possibility to ensure human development (Anand & Sen, 2000). Today the communication of information reaches social and environmental objectives that coincide with the goals of investors and management, at least in the most advanced companies and in the advanced countries.

The social and environmental disclosure is traditionally divided into two parts. This distinction is derived from a difference between the two 'new' areas of reporting. Social accounting concerns the reporting of the impact of business on human and social aspects, which can be both economic and non-economic (e.g. value added distribution, employment, social well-being created), instead environmental accounting concerns the reporting of the consequences and any benefits of the business on the ecological environment (e.g. protection of environmental balance, environmental sustainability, use of energy resources) (Gray et al., 1996; Unerman, 2000; Adams, 2004). According to the most recent literature and best practices, the chapter also argue the issue of integrated reporting, which considers financial, social and environmental information, focusing corporate communication towards value creation over time (Busco et al., 2013). Recent literature (Guthrie & Yongvanich, 2006) also highlighted the need to coordinate the Balanced Scorecard, Intellectual Capital and social and environmental reporting to provide more complete account of the management and performance of a corporation.

The expansion of the disclosure from a traditional conception (financial accounting) to a social concept (social accounting) is not simply a generalization of the focus of reporting to other variables. This perspective considers only the formal aspects of the phenomenon. Material aspects depend instead by political and philosophical changes that have encouraged the diffusion of Corporate Social Responsibility (CSR). The principles and structure of CSR have been defined in previous decades, but the latest developments of the debate concerned the implementation of the CSR on corporate performance (Carroll, 1991, 1998, 2000). The empirical literature on CSR has studied many aspects of this issue: e.g. the market reaction to social responsibility disclosures (Patten, 1990) or correlations between CSR and financial performance (McWilliams & Siegel, 2000). Other contributions (Margolis & Walsh, 2001), criticizing the previous studies based on correlations between CSR and financial performance, supported redirecting the empirical analysis of the most useful aspects to guide corporate social initiatives.

CSR begins when the classical economic paradigm (liberalism) is abandoned. According to the liberal paradigm, social welfare is maximized when the selfishness of individuals and competition of businesses are greatest. This paradigm has greatly influenced the development of economics and accounting, thus



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summarize in a few elements that process of evolution is impossible. However, the most important elements are certainly the neoclassical economic assumptions about profit maximization and competitive markets for the best allocation of economic resources.

Scholars, governments and analysts did not consider the inconsistencies of the classical economic paradigm as abnormal. The assumptions remained valid, therefore the contradictions were considered 'corrections' of a model that was never disputed. Market failures were treated with empirical solutions, often conceived as ethical necessity for the benefit of the community. Alternatives to the individualist paradigm were proposed, some of them disputing any economic organization based on selfishness and market exchanges, such as the Marxist paradigm (the only real alternative to the predominant system).

Accounting followed the economic interests of the companies, thus maximizing the net worth or profit, considering only the perspective of the owners or the companies (conceived as institutions). In the debate of the nineteenth and twentieth centuries the economic postulate was never really criticized.

The egoistic postulate became the *only* economic postulate, designed as a certain and indisputable 'law'. The egoistic limits were seen only as 'constraints' to egoistic actions, established by an external body to protect public interests. The maximization of the utility function was the main objective of economic agents, companies and individuals. Opposite behaviours were considered 'subversive' (Friedman, 1962).

The assumption of this postulate is an economic growth without limits and contradictions of the capitalist system of production, but this assumption is inevitably falsified by logic, and then from history. Economic growth does not seem compatible with the unlimited exploitation of the economic, energy and human resources, because it will inevitably fail. Therefore, the attention of public interest to the community and the environment arose from the observation of the contradictions and inconsistencies of the capitalist system.

The social and environmental reporting stems from the opening of the company aims to altruism and solidarity (collective interests), not denying the egoistical characteristics of the companies related to the achievement of profits. This process is not linear because the 'social welfare' outside the exchange market and financial perspective loses the monetary assessment, which is the unit of measure and the conventional sign for comparing economic resources.

The social and environmental accounting concerns measurement problems of physical, quantitative and qualitative values, which cannot be expressed in a single unit of measurement. The 'quality' is certainly a subjective concept: assessing or measuring quality performance is a process of interpretation, certainly not objective. Therefore, the main problem of social and environmental reporting is not to define principles of objective and universal evaluation (Nicolò, 1997), but to explain and clarify the qualitative assumptions.

Corporate reporting is divided into two sections: (a) accounting and financial statements, which have systematic features; (b) non-accounting reporting (also called statistical reporting), which has fragmented characteristics. Non-accounting reporting is more flexible than financial reporting, therefore it handles better the complexity of qualitative and subjective assessments. It promotes processes of cooperation and expectations between the company and stakeholders, who are promoters of concrete projects for sustainable and socially responsible corporate policies.

Non-financial reporting has serious limitations: different methods, notions, classifications and units of measurement. Financial accounting may instead provide for the systematic integration of data and concepts. It shall be therefore regulated (ex ante) and revised (ex post) to ensure reliability and neutrality of accounting systems, although it is possible that companies intend the financial accounting as a



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fulfilment. For this reason, the chapter will discuss the social and environmental accounting following a systematic view.

The aim of this chapter is not to deal with the social and environmental aspects included in corporate purposes but to focus on reporting, also analysing the best practices of the companies. A brief diachronic synthesis will follow, also considering literature, historical development, laws, empirical observations, but without providing a comprehensive review.

The chapter aims to explain the historical origin of the social, environmental and integrated reporting, considering successively two points of view: the first one is an integrated reporting based on a systemic approach, while the second one is based on a non-systemic approach. Then, an empirical study will analyse the evaluation of sustainability performance of the companies based on integrated assessment of economic, social and environmental dimensions, according to the criteria of RobecoSAM and Dow Jones Sustainability Indices (DJSI). This study will also show the best practices of companies in the automobile industry. Finally, conclusions will compare theoretical deductions with empirical evidences.

The chapter does not explore some issues because there are space limitations, in particular: (a) a list of legal requirements for social and environmental reporting in the advanced countries, despite its importance; (b) national social and environmental accounting; (c) internal accounting (e.g. cost accounting and management accounting).

For this reason, after this Introduction and before Conclusions, the chapter is articulated into the following sections. Sections 1 and 2 are devoted, respectively, to the birth and diffusion of social reporting and to the following emerging of environmental reporting. They are mainly of historical nature. Sections 3 and 4 concern, respectively, the presentation of social/environmental reporting in corporations, and its strategic role. Section 5 concern the integration between financial, social and environmental reporting. They are mainly of descriptive and theoretical nature. Sections 6 and 7, finally, deal with the best practices, and, respectively, with the international practice of sustainability evaluation in general and with the automobile industry in particular. They are mainly of empirical nature.

## 1. HISTORICAL SURVEY OF SOCIAL REPORTING

The history of social reports is relatively recent: fifty years ago the first studies on this topic spread. The classical accounting developed its scientific theories when the first big companies were born during the second industrial revolution, while the big state administrations were spreading (Lipari & Costa, 2005).

At that time only the financial accounting was predominant. It considered two opposite points of view: the first one was the 'assets and liabilities view' (also called 'balance sheet view'), whose main contributions were proposed by Anthony, Moonitz, Kester, Solomons and Sprouse, instead the second one was the 'revenues and expenses view' (also called 'income statement view'), based on the theories of Brade, Dixon and Paton (Lionzo, 2012). This duality also existed in national variants: 'Statik Bilanz' vs. 'Dinamische Bilanz', in Germany, and 'Sistema del Patrimonio' vs. 'Sistema del Reddito', in Italy.

The social reports, and consequently the social accounting, is explicitly an extension of the traditional field of financial accounting. The spread of Corporate Social Responsibility has been the cause of this extension, therefore there is a strong connection between them. CSR has different definitions and notions, therefore it is impossible to summarize all the literature on this topic. Green Paper (2002) defined CSR as "a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis".



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However, this notion seems restrictive and narrow. Therefore, a wider notion could be the following: "a concept whereby companies integrate, among its institutional purposes, social and environmental goals, also considering financial and economic aspects, expanding its range of stakeholders, and adapting their strategies and actions, as well as its corporate communications towards these stakeholders".

In the light of this perspective, social reports express a wide corporate communication, including social information (communication in the strict sense) or social and environmental information (communication in the broad sense), which is a part of the larger CSR. Therefore, business communication and CSR are not the same thing, despite the solid connections between them.

Focusing the discussion on the history, an Italian record is recognized in the field of social reports when other countries did not feel sensitivity to social issues. The generalist approach of the Italian accounting shifted the attention of scholars to the third sector enterprises in the early years of the twentieth century. In those years, the only non-profit organizations were called 'Opere Pie', ie religious institutions of charity, in relation to which it was proposed a report that summarized the results of their mission and purpose. The 'mission report' had very limited impact in other areas different from the non-profit sector. There were no similar experiences outside of Italy, because until the end of World War II there were no conditions for the development of a social sensitiveness in the reporting field.

The Germany showed signs of sensibility on social issues like Italy, where AEG Company published the first Social Report in 1938. At that time there was a culture of corporatism in Italy and Germany, thus the first studies of social economy began to spread, where scholars theorized a 'third way' between socialism and capitalism and the active intervention of States over national economies. It is no coincidence that the first 'business administrations' were born in Germany and Italy, as evolution of the corporate administration and accounting. Both Italian 'Economia aziendale' and German 'Betriebswirtschaftslehre' proposed studies about intermediate economic systems, and their contribution to domestic production (GDP), seen as the predominant purpose with respect to the distribution of profit for shareholders. In this cultural climate the income theories of Gino Zappa (1937) spread, where income was seen as the result of a durable combination of factors of economic production, considering a social and holistic view of the company. As well as the 'Dinamische Bilanz' of Eugen Schmalenbach (1919), which proposed the income statement configured in value and cost of production obtained, indicating the company's social contribution to domestic production. But it would be wrong to attribute this sensibility only to the authoritarian regimes of the past, since similar theoretical and practical experiences are found in socialist countries of Northern Europe, like Sweden, or in countries with a long liberal tradition, like the Netherlands. This sensitivity - as mentioned - does not invest the entire theme of the social report but caused the first phase of the 'socialization' of the traditional report, incorporating indexes and values in it out of the traditional reporting aimed at investors. After World War II the first social democratic governments were born in Europe, therefore the studies about socialized reports continued to major developments (on the concept of 'socialized reports' and 'social reports', see Gabrovec Mei, 1990). The more invasive role in the economy by the states, the growing social sensitivity and trade unionists, strengthen the focus on social reports.

In this light, dirigiste orientations of France and Spain can be interpreted, where the government, through a mandatory accounting plan, proposed to guide the industrial policy of private companies and direct them to national and social purposes.

However, the issue of sustainability has appeared everywhere with social, political and economic movement of the sixties. 1968 is the year in which the cultural process achieved full maturity, it is the moment when the literature and practice on the social statement really began to develop. The Anglo-



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Saxon countries were a little back, only in the following decade they remained fully involved in the new cultural scene. The seventies are certainly those in which both the literature and the practice on the social report finally implement their scientific contents. In the United States, following the model of the traditional disclosure, the Survey on Social Responsibility Disclosure is published. Similarly, a White Paper is published in the UK. In Germany, the practice of publishing social reports spreads more, becoming widespread among big companies. In Italy there is a discussion of doctrine, but also the first publication of a social report, by Merloni in 1978. In France, a country of traditional legal regulation, a law on the social report is published.

In summary, the most advanced countries were opened to social reports, each one according to their cultural, economic and legal traditions. The theoretical models are, however, fragmented and undeveloped at that time. The most consistent theoretical model was proposed by Solomons (1974), but it was difficult its practical applicability. This model in fact adopted only the monetary unit of measurement, limiting the field to only those elements capable of economic assessment. In summary, the model can be summarized in the following formal expression:

Overall Value generated by the production process (*Added Value*)
+ External Benefits (for external subjects or for the community)
– External Costs (as before)
= 'Social' Profit/Loss

In the following decade, the scientific debate on the social budget is consolidated. It is important to remember IX International Congress of Strasbourg in 1983, when the first structure of the social report was proposed, based on the German experience. In contrast, there was a reaction of the scholars of the traditional report against all forms of socialization of the financial statements.

This reaction was in accordance with neoliberal environment in those years was consolidated, especially in Anglo-Saxon countries, but it was an opportunity for a complete emancipation of the debate on the social report against the themes of traditional accounting.

The debate on the environmental report was born in the nineties, reducing attention to the social report, which has become mature. The gradual broadening of the range of stakeholders also determined the consideration of 'future citizens', therefore sustainability became an intertemporal concept impacting on the reproduction ability of resources consumed in production processes. In this context, the social report had two meanings: as a broad meaning, the social report considered both social and environmental information; according to a narrow sense, it considered only the social dimension reporting, leaving further information to the environmental report. In the same years the researchers attempted to assess the 'quality' of corporate performance, using non-financial approaches. In this direction, a significant contribution is certainly the balanced scorecard (Kaplan and Norton, 1996). Literature and practice in the last fifteen years are not easily summarized, since the contributions and proposals are very numerous, but here highlighting at least a process of standardization of rules for the preparation of the social report (such as the EU Green Book, 2002).

European Union, which summarizes literatures and practice of European countries, is perhaps the most advanced in the world for attention to social issues. Directive 2003/51/EC regarding the 'Modernization' establishes the need to include financial and economic indicators for better understanding of the development or performance of the company, considering also non-financial indicators (employees and environment) when appropriate. However, all proposals for standardization and promotion of social



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disclosures have never been legislatively mandatory. The information society is now therefore purely voluntary. The international network of scholars of CSR has been consolidated in recent years. Among these it is important to remember the Encyclopedia of CSR (edited by S. Idowu, 2012) and other publishing initiatives in the same field, as well as the First World Congress on CSR (London, 2014), followed by other world conferences (Nanjing, 2015; Cologne, planned for 2016).

## 2. THE SPRING OF ENVIRONMENTAL REPORTING FROM SOCIAL REPORTING

Environmental Reporting is much shorter and more recent. As it was said before the environmental sensitivity found its way just in the '90s (Amendola, 2006). Scientific studies had already showed that a continuous development would imply a more and more intensive deployment of not renewable resources and a so deep consumption of renewable ones to make them will be not recovered in the future. According to authoritative studies already in 1985 global consumption of renewable resources exceeds the ability to reconstitute them, and since then such a ratio worsened rapidly year by year. Since '90s, then, the public opinion acknowledges the fact an unlimited growth is not sustainable. The same concept of 'sustainable development' was formulated in 1987 'Brundtland Report' (WCED, 1987) by the World Commission on Environment and Development. After some years one arrives to the signature of a joint document among various countries (the so called 'Agenda 21'), in the Rio de Janeiro Conference of 1992: for the first time principles, objectives and actions for a more equilibrated development are determined under an economic, social and environmental perspective. Rio de Janeiro 'Agenda 21' was still a transition document: the unlimited development was not still denied, but it is theorized a possibility for it is sustainable. The same environmental sensitivity is finally outlined, but beside to the more traditional social one, and then it was not still an autonomous field at all.

Anyway, since then a new literature is to be recorded, this time specific to environmental reporting (Harte & Owen, 1991; Roberts, 1991; Lehman, 1995; Gamble et al., 1996; Krut & Moretz, 2000; Wilmshurst & Frost, 2000) and parallel to the 'social' one. It enjoyed a relevant fortune and more rapid growth in attention. The first efforts, however, were driven toward 'environmental accounts' conceived as parallel to the traditional economic ones of the 'national accounting'. 'Environmental accounting' remains along as a branch of statistics, while corporate environmental accounting finds it hard to take on its own identity. Notwithstanding this, after two decades, a literature and a practice is spread so much to allow some comparative valuations respect to the wider literature on 'social accounting'.

A very relevant document, which resumes the actual sensitivity toward sustainability themes, even for its possible reference to every kind of organization is that one issued in 2011 by the FEE (Fédération des Expert Comptable Européens), which gives an introductive framework on integrated disclosure, by means of 'key indicators' on social and environmental issues, as well as on governance, meant as the qualitative side of information on management. In this document is very relevant the distinction between separated sustainability reporting and integrated sustainability reporting, where 'integration' is meant with reference to traditional financial reporting. The document does not want to choose between them, but indicates both as directed to different stakeholders, then indicating both as opportune in different contexts of reporting. One observes an apparent paradox in the not symmetric relationship between the two kinds of sustainability reporting, namely social and environmental, at least in literature. Literature on social reporting tends, in fact, to include environmental one, as one relevant chapter of the former, and, then, it loses its self-sufficiency in a strict 'social' discourse. Of course there are important excep-



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tions in some national traditions, as in the Italian case, where there is a self-sufficient and robust stream of studies on social reports (Vermiglio, 2000). On the contrary literature on environmental accounting indicates a stronger autonomy, tending to reject specifically social issues, even if it was born just from this previous literature. At a simple glance on scientific contributions on main international reviews it is evident a disproportion between the many articles on environmental accounting and the few on social accounting, these last ones often including the previous ones.

Another difference in comparison is the difference on the point of view. Social accounting and reporting is nearly always from a 'corporate' point of view, starting from firms and progressively expanding toward other kinds of organizations. Environmental one, on the contrary, finds hard to distinguish itself from 'national accounting'. The latter shows official documents (even at a UN level) that are absent in the former, but the 'corporate' dimension remains quite atrophic. What both share, anyway, is the inspiration for a systematic language, then by means of true accounts and not by means of statistic tables or rhetoric clauses. The same term 'reports' for both sustainability fields, reveals, more than a full balancing of stocks and flows as in financial reports, a theoretical trend toward integrated or systematic statements.

Inside specific contents of environmental reports (INTOSAI, 2010), willing to give a sort of systematic view, we find some general premises, largely common to social disclosure, but more agreed information, concerning mainly the following 4 fields of disclosure: (1) Flows of resources, energy and similar issues, external to the reporting entity, or between entity and its environment, expressed in non-monetary terms; (2) Distinction of the specific 'environmental' inside financial accounting (e.g. the costs for environmental recovery); (3) Measurement of stocks, or positions, of environmental resources, and of flows, or variations, in parallel physical and monetary terms; (4) Financial measurement for environmental outcome of economic activity, and in terms of not renewable resource consumption, and in terms of production/consumption residuals (solid, liquid, aeriform), and – more rarely – in terms of positive effects of environmental recovery (e.g. a reforestation action).

## 3. SUSTAINABILITY REPORTING IN CORPORATION: GENERAL ASPECTS

Sustainability reporting in practice has followed three different ways in correspondence with the three main groups of organizations: enterprises, public bodies, no profit organizations (Hinna, 2005). In enterprises, and particularly in the big corporations, sustainability disclosure belongs mainly to what is called as Corporate Social Responsibility (about reviews on CSR definition, see: Moir, 2001; Dahlsrud, 2008). It is, then, a tool integrating the more traditional financial disclosure to actual and potential investors, which keeps its core business and role. In a nutshell, sustainability disclosure is, for corporation, a projection of traditional disclosure on a broader scenario (Werther and Chandler, 2011). In our opinion, the full understanding of it need a recall of basic features of its historical precedent.

Classical financial disclosure is 'relevant for economic decisions' (*decision useful approach*), and, secondarily, for the 'discharge of manager responsibility' (*stewardship approach*). These two objectives are reached by a comprehensive disclosure on performance, both in terms of controlled financial stocks (resources, when positive, and claims, when negative), and in terms of cash and economic flows, where 'economic' means 'adjusted for competence' cash flows (income and owners contributions, when positive, and expenses and owners distributions, when negative).

Starting from this resumed framework, CSR imagines a sort of 'social contract' (Gray et al., 1988; Sacconi, 2004), similar but wider than corporation contracts, between corporation and a broad set of



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'investors' and 'stakeholders'. This time 'investment' is no longer only a capital investment, but also an investment in terms of 'job', 'consumption', and, generally speaking, an 'entrustment' respect to wider social ends. Now stakeholders are not only single persons or categories, but also the society as a whole, and even future generations, as when we account for the consumption of not renewable resources. Thus, accountability reporting, in order to address decisions, interests this set of actual and potential users, and who represents institutionally their interests (e.g. 'state' in the name also of future generations, as abstract titular of the 'common wealth'). Which kinds of decisions to address? Of course not only economic decisions, but the basic decision to renew the 'trust' toward the corporation, so allowing its life and development or not. And, furthermore, there is also an appraisal on management performance in sustainability issues, perhaps with rewards and punishments, even of virtual character, like social consensus or blame.

In the specific contents, respectively, of social and environmental statements, it is impossible – at the state of art – to present a generally agreed framework. Moreover, doctrine is not uniform in deciding if it is opportune to set a rigid and homogeneous structure, or, at the contrary, a flexible and heterogeneous one. We can just observe first recurring nuclei of contents among the various theoretical proposals and practical experiences. There is always a 'descriptive' part, where social and/or environmental phenomena are presented qualitatively, on its turn shared into two parts: one concerning what is 'inside' the corporation, the other what concerns 'outside', that is relationships with not directed involved in production stakeholders. There is, more, a quantitative part, on its turn shared according different criteria. A distinction is between the part of reports that is derived form or linked to financial reports, and the part where social/environmental variables and relations are autonomously disclosed. Another distinction, partially similar to the previous one, is the distinction between the monetary and non-monetary part. The former shows issues like the formation and distribution of the added value, the reclassification of expenses according social or environmental criteria, the monetary translation of positive and negative externalities. The latter affects not monetary variables, expressed in physical quantitative terms (like, e.g., in environmental statements, acquisition and consumption of energy) or in qualitative ones. Another distinction, this time inside the only quantitative part of the reports, is between the strict social/environmental statements and the various information, by means of ratios or other not systematic tools, which accounts for social/environmental performance. The lack of a unit of measurement that makes homogeneous and comparable the different variables seems, till now, to represent an obstacle for the affirmation of a systematic tool, which expresses in a 'bottom line' the environmental/social available value created or destroyed in an administrative period.

To give some examples, issues dealt by social reporting concern, typically: ethical codes, employment, distribution of added value by means of wages or other income, work conditions, life conditions inducted by the corporate, professional training activities, industrial relations, and generally speaking external relations, definitions of stakeholders and of specific activity directed to or for involving them, social investments, quality of good/service and related trade initiatives, contributions to consumers' health, and more.

To give other examples, issues dealt by environmental reporting concern, typically: even here themes related to health and security, environmental sustainability for what concerns consumption renewable and not renewable resources, quantification of pollution, environmental expenses or investments, environmental ratios for positions and variations of environmental variables, stocks and flows of employed resources, both in physical quantitative terms and in monetary terms, environmental impact of life cycle of products, and more. Environmental reporting, for its nature, shows a greater degree of structured information



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and quantitative languages than the social one, and, more, a more incisive intervention by the law, even if still relatively fragmented. When 'environmental costs' are presented, of course in monetary terms, they are classified into the following categories: costs of prevention and environmental protection, costs of environmental management, costs of recovery and reparation, depreciation of environmental assets.

## 4. SUSTAINABILITY REPORTING IN CORPORATION: THE ROLE OF STRATEGY

In recent years the international financial crisis is hampering the development of the real economy. Selfish behaviours of companies and financial organizations have guided their decision to short-term choices aimed at maximizing profits. These choices were guided by a partial view in decision-making, which were based exclusively on economic and financial considerations.

In light of the economic disasters caused by the crisis, companies today are changing their paradigm and points of view. Companies are realizing that the maximization of economic and financial objectives in a short-term perspective is counterproductive for themselves, but also for the ecological and socio-cultural environment. The behaviour of firms oriented only to the achievement of profits could compromise the survival of companies, while also reducing the quality of the ecological environment and the quality of life of the communities. The investment decisions of investors consider not only the economic and financial aspects, but also social and environmental ones. This happens not only for ethical reasons, but mainly because it guarantees more security in the investment risk, closely linked with the long-term durability of the company identified for investment (Krosinsky & Robins 2008; Fulton et al., 2012).

Therefore, the predominant concept of current times is 'sustainable development' (Gladwin et al. 1995; Bansal, 2005; Hopwood et al., 2005; Robert et al., 2005; Steurer et al., 2005; Crowther and Aras, 2009) which implies that in the future investors and shareholders will consider investment decision processes more oriented to a long-term and multidimensional perspective. The sensitivity towards sustainability seems to move with the need for a reporting that considers financial, social and economic parameters.

In addition to problems linked to the economic crisis, companies are competing in increasingly large and globalized markets and competitive sectors, where it is much more difficult to defend their competitive advantages and strengths. According to some authors (Nicolò, 2015), the survival of companies depends mainly on their reputation. Consequently, although economic and financial performance is important for the survival of companies, the importance of social and environmental issues is growing. Current and potential customers are increasingly sensitive to sustainability issues when implementing their purchasing processes: quality and safety of goods and services, conditions of workers and environmental protection are variables that customers consider to orient their purchasing decisions. The workers with excellent skills decide to work in companies that have a high reputation, because they are more reliable in meeting the needs expected from employees. Raw material suppliers, service providers and lenders may decide to lower their contractual claims if the corporate reputation is good and shared between stakeholders (e.g. companies can obtain lower costs or more time to fulfil their obligations). Finally, shareholders may choose to invest in companies with high reputation for two reasons: (a) investors want to reward companies that implement social and environmental objectives within their business strategy; (b) investors see safer companies that follow sustainable development strategies, because shareholder value is better guaranteed by financial risks, business failure risks or environmental and ethical scandals.

Companies must define corporate strategy by incorporating in it financial, social and environmental factors. In this way, the strategy of companies can enhance corporate reputation, creating long-term



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competitive advantages fully compatible with sustainable development. Therefore, companies have to increase corporate reputation, communicating it adequately to stakeholders.

To achieve these objectives, companies can use sustainability reports used not only to account for and report on financial, social and environmental data, but also as a strategic tool to support corporate communication to achieve an increase in reputation.

Managers should follow the steps below to use sustainability reports for effective corporate communication in support of the reputation of the company:

- Clearly define issues, aspects and objectives of corporate sustainable development;
- Involve internal and external stakeholders in defining the issues above (not only shareholders and investors);
- Explain how the strategy of sustainable development (social and environmental objectives) has a positive impact on financial and economic results;
- Communicate sustainability information to stakeholders;
- Make, year by year, the gap analysis between planned objectives of sustainability and actual results.

In the first step, managers identify the relevant issues regarding their sustainability strategy. Second, companies involve stakeholders in order to understand whether the issues identified are really important and shared by them. In the third step, companies intend to convey to stakeholders, especially investors, the link between sustainability objectives and financial aspects of corporate businesses. Then companies show the information on financial, social and environmental objectives to stakeholders, summarized in the corporate sustainability strategy. Finally, through gap analysis, managers give high credibility to the sustainability report, avoiding the risk of using it as a tool to disseminate news on the corporate objectives not actually pursued.

## 5. TOWARD AN INTEGRATED DISCLOSURE: A PROPOSED MODEL OF SYNTHESIS

All the aforesaid doctrine and practice, as for social accounting and reporting as for environmental accounting and reporting, shares an easily recognizable common denominator.

It is the belonging to all relations, be they internal or external to the entity, of 'not financial' character. In words we are speaking about 'non-financial' accounting. The other main feature is the widening of potential stakeholders, far beyond the classic providers of capital.

The same investors are not only passive subjects respect to sustainability reporting as an external bond, but they are really involved and interested in it, because this is perceived like a tool for evaluating the overall risk of business. Anyway, it is not deniable an evident progressive trend to the integration of various kind of disclosure, between social and environmental reporting for a unique sustainability reporting, and between this last one and traditional financial accounting.

Such an integration has not still got a recognized path. In this section, then, we will try a model of synthesis as a contribution toward a rational and compact synthesis of the three main fields of accountability.



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Of course the aim of this proposal is not the pretension to be the 'best way' to consolidation of reports along different sets of variables, but it is assumed as an eventual starting point, among other possible ones, to be criticized and overcome by other more mature approaches. In other words, it is time – in authors' opinion – to go beyond the recurrent vague claims for integration and to experiment concrete operational solutions, even though they could be risky under some methodological points of view.

The first choice we do is toward the privileged single corporate reference. Social reports and, more, environmental reports are to consider distinct from disclosure on a 'national' or 'regional' basis, in order it can be considered to have reached an adequate level of maturity. This means that we neglect flows that are totally external to the organization, because they do not belong to the entity. Flows can concern only either inside the entity or relations between inside and outside, not exclusively outside the entity. These last ones will be able to be considered by a parallel 'national' sustainability accounting, which can share methods and system with corporate accounting (as it happens between classic national accounting and corporate financial accounting). Only by this sharp distinction the corporate dimension could get an adequate methodological development for the required disclosure to stakeholders.

The second choice is the fact that social/environmental disclosure is founded upon some general principles: sustainability, accountability, transparency (Crowther & Aras, 2008). These principles define CSR before the same disclosure on it, and the same business ethics, meant as the discussion on the final ends of corporate. From those ends and from those principles the features of sustainability reporting derive for the benefice of stakeholders.

Every statement of this kind, whichever is its name, looks to have always the following two parts: (1) descriptive part; (2) systematic part.

The former, like in traditional financial statements includes generalities on reporting entity, an introductive part, a definition of entity's social identity, a definition of areas of disclosure and of subjects to whom the information is directed. A broad part of this will be devoted to the tools of implementation for social/environmental policies, to their coordination and finally to their representation and auditing. In it there will be a methodological section that will be the greater the more social and environmental variables communication will not have a generally agreed corpus of representation and communication methodologies.

The latter is made of input/output tables for defined classes of values in their relations between inside the entity and outside it. It is, then, a flow statement, whereas rarer will be the stock accounts, i.e. the accounts representing, in physical unit or in monetary terms, availability of social/environmental value in defined instants of time. This part represents the 'strict' financial statements; it can derive its values from financial accounting by means of satellites accounts, but also charging autonomously other classes of values. The reclassification of accounts from financial accounts is simply the same traditional method adopted by management accounting, on the UN Model of 2003, named IEEA (Integrated Economic and Environmental Accounting).

Social and environmental variables are, and are expressed, both in physical quantities and in monetary terms. The great challenge of the last years is to found a measure, which is both monetary, and then useful for comparisons, and conventional, for including every kind of complexity that is not possible to express in exchange values. Conventions might be the most various, let one thinks at least to the environmental recovery cost, and it is not possible to recall them here. Just for giving a very recognized example of translation of qualitative outcomes to economic proxies we can mention the birth and diffusion of SROI analysis (Social Return on Investments) in the last years.



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There are not so many attempts to summarize the three traditional domains, economic, social, and environmental, into a unique account or statement, notwithstanding the wide literature on integrated reporting. Until now, unfortunately, integration seems to be only the putting 'side-by-side' the three dimension, even without a common unit for the only social and environmental variables.

An innovative idea might be the one of pursuing a real systemic approach that combines the three dimension each other. Thus, corporate integrated statements should be ideally shared into three parts, each for a class of values. However, all variables, by means of an opportune convention, would be translated in monetary terms.

Let us look, then, at the following proposal:

**Financial Section**
Income
Expenses
= Net Profit or Loss
+ Other Income from Primary Factors of Productions (Earnings not included in Net Profit, Interests, Wages, Rents, Taxes)
= Added Value (AV)

**Social-Ethical Section**
AV
+ Social Benefits in Money Terms

Social Costs in Money Terms
= Social-economic Added Value (SEAV)
**Environmental-Energetic Section**
SEAV
+ Environmental Recovery Actions in Money Terms

Net Consumption of Natural Resources in Money Terms
= Integrated Environmental-Social-Economic Added Value (ISEAV).

The above model deserves some explicative notes.

First of all, this is 'monetary' disclosure, where 'money' is the unit of size selected for measuring well-being. Thus, it has two explicit boundaries. The former is that it does not take into account what does not belong to the domain of 'translatable' to money. The descriptive part of integrated reports serves for such duties. The systematic part, instead, could only concern what is liable to be systemized. The latter is that 'money' is here only a proxy for measuring net benefits; while it measures 'economic dimensions', it does not represent an 'exchange value' as it does in the traditional domain of financial accounting. Its weakness could be the need for a generally agreed convention in defining criteria of translation to monetary proxies; its strength the power allowed by monetary comparisons in space and time.

Secondly, the label adopted try to cover the most general field liable to disclosure. Out of the financial section, one can give information about a potentially unlimited set of variables and indicators. The model tries to gather them into two main classes. The *former* concerns whatever is linked to manhood and society as a whole. It has been named 'social/ethical' because part of literature assesses social variables



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for what they simply are or seem to be, without no reference to peculiar ideological or cultural points of view, while others assume a defined set of 'value judgments' and evaluates ethically what is being disclosed. The *latter* concerns whatever is linked to physical and natural contexts. It has been named 'environmental/energetic' to stress, in the second term, the recurrent 'input/output' reporting in terms of energy consumed and produced, while in the first term, position and variations in environmental 'net assets' is underlined.

Third, and finally, some criticism about the sum is possible, considered the heterogeneous spring of the different sources. But the comparability of 'money value' deriving from different sources is necessarily to be entrusted to further research, considered that neither financial accounting, nor non-financial one could ever only deal with strictly homogeneous values. In the same traditional financial accounting, in fact, doctrine and practitioners sum each other cash values, exchange values, historical costs and conventional amounts. A strict choice for homogeneous accounting could make accounting regress toward an archaic cash accounting. There is no reason, then, for not undertaking new roads including new fields of disclosure.

It is possible to affirm that today research has not still invested along this direction. We have no available data, but it would be possible that an implementation of the proposed model could lead to unpleasant results, like that ISEAV could be always, in a societal aggregation, negative and then this model gives the analytical proof that unlimited capitalistic development does not belong to the realm of possible and then that it is condemned to a historical failure. Sustainability accounting could give times and costs of this historical failure.

An alternative model of integrated reporting could be a 'non-systemic' one. In this approach the economic domain, even inserted in a broad social reporting, keeps its own autonomy.

The 'not economic', in this model, results shared into the social and environmental fields of reporting.

The 'social' one should concern the following areas of disclosure: distribution of income, acquisition and/or variations in availability for corporation of 'not financial' resources, like, e.g. organization culture or know-how, creation or destruction of job opportunities and professional growth in the social context of relation, creation or destruction of social security, spreading of the corporation culture outside the boundaries of the organization, civic sense or legality promotion, fight against social exclusion, discrimination, marginalization, and similar things. A focus on basic research funding or culture funding or other similar activities of social impact, could be opened; or, otherwise on infrastructure investments, tangible or intangible be they, which are permanent and of social fruition, then distinguished from contingent entity's investments; or, finally, on 'societal influences', that is social and cultural resources absorbed by the organization from its social context.

The 'environmental' one should concern, more, the following areas of disclosure: physical flows of materials, services and energy, inside the corporation and between inside and outside it, reclassification of financial flows (economic or cash) under an environmental point of view, economic measurement of resources withdrawals from environment, renewable or not be they, economic measurement of solid, liquid and gas waste, economic measurement of environmental recovery.



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## 6. INTEGRATED ASSESSMENT OF CORPORATE SUSTAINABILITY PERFORMANCE: BEST PRACTICES USED BY INTERNATIONAL RATING AGENCIES AND PERFORMANCE ANALYSIS COMPANIES

The previous sections have shown the historical development of sustainability reports. At first, the accounting considered only financial information, because the reporting was exclusively addressed to the owners of the company (shareholders and investors). Then, social information began to be important, therefore reporting was also addressed to a wider group of stakeholders through social reports (community, employees, trade unions, customers, public bodies, etc.). Finally, environmental information assumed great importance with business increasingly impacts on the ecological environment, therefore reporting was addressed to a group of stakeholders interested in the conditions of the environment (employees, customers, environmental groups, animal rights organizations, non-profit organization, public bodies, etc.). Now, as mentioned, companies are focused on integrated reporting, which jointly considers economic, social and environmental information under the concept of 'sustainability' or 'sustainable development'.

In this section, an empirical study is proposed to analyse approaches and techniques used by international rating agencies and performance analysis companies about the assessment of corporate sustainability. This empirical study allows to identify the best practices used in integrated assessment of sustainability, in order to understand whether the techniques followed are aligned with the theoretical approach proposed in paragraphs (see section 5).

Standard & Poor's prepares the listing of sustainable enterprises by the Dow Jones Sustainability Index (DJSI). Literature has focused on the framework used by the Dow Jones Sustainability Group Index (DJSGI) for identifying and ranking companies according to their corporate sustainability performance (Knoepfel, 2001), while other scholars have proposed different empirical studies on the DJSI (Cerin & Dobers, 2001; López et al., 2007; Robinson et al., 2011). Therefore, one of the best known and highly regarded Socially Responsible Investing (SRI) indexes is the Dow Jones Sustainability World Index (Sariannidis et al., 1999).

The quotations of the sustainability performance consider both global indices (World Index World Enlarged Index, World Developed Index) and area indices (Australia Index, Chile Index, Emerging Markets Index, Europe Index, Eurozone Index, Korea Index, Nordic Index, North America Index, United States Index). In this way, S & P highlights the corporate sustainability performance of sustainable enterprises, including both global perspective and limited geographical areas.

The oscillations of DJS indices measure the performance of sustainability based on an integrated evaluation approach, which considers jointly: (a) economic and financial results; (b) social results; (c) environmental results. Consequently, positive oscillations of DJS indices show an increase of the sustainability performance of listed companies in terms of economic, social and environmental results. Conversely, negative oscillations represent lower integrated sustainability performance.

The listing of the companies and their sustainability performance within 'integrated markets' enables investors, and stakeholders in general, to guide their decision-making process more consciously, giving the company the ability to create reputation and enhance its corporate image.

The 'integrated rating' provides reliable information for the choices of the stakeholders, as the sustainability of companies listed on the DJSI market is subjected to an external evaluation by RobecoSAM. In fact, S&P cooperates with RobecoSAM, company that has the task of developing the criteria for integrated assessment of the sustainability of companies ('Corporate Sustainability Assessment' – CSA).



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The techniques used by S & P and RobecoSAM represent international best practices for performance evaluation of corporate sustainability, because the evaluation of sustainability performance is based on the criteria proposed by GRI (Global Reporting Initiative[2]), the international leader in the preparation of the sustainability reporting standards. For this reason, they are generally accepted as international best practices. The literature has highlighted the importance of best practices promoted by the GRI, considering both theoretical and empirical contributions (Hussey et al., 2001; Hedberg & von Malmborg, 2003; Willis, 2003; Brown et al., 2009; Levy et al., 2010; Skouloudis, 2010; Brown, 2011; Marimon et al., 2012; Milne & Gray, 2013). In addition, all the biggest and best-known multinational companies adopt these criteria for the preparation of their sustainability reporting (e.g. 3M Co, Adidas AG, AXA SA, Bayer AG, Bombardier Inc, Bridgestone Corp, Cisco System Inc, Danone, Electrolux AB, Eni SpA, Finmeccanica SpA, Henkel AG & Co KGaA, Hewlett-Packard Co, Intel Corp, Johnson & Johnson, LG Electronics Inc, Panasonic Corp, Pirelli & C. SpA, Samsung Electronics Co Ltd, Sony Corp, Unilever NV).

According to the principles adopted by RobecoSAM in official documents (Measuring Intangibles 2015), sustainability performance of companies are assessed using a 'comprehensive approach' (or 'integrated approach') that considers the overall results that affect corporate sustainable development. In particular, valuation practices adopted are based on:

- Economic, social and environmental results;
- Long-term perspective.

Techniques used by S & P and RobecoSAM are based on an integrated assessment approach that is not restricted only to economic and financial factors, but also extends to social and environmental aspects. In addition to this, performance evaluation involves not only shareholders and investors, but certainly a wider audience of stakeholders, such as customers, employees, communities, institutions and associations that are related to the companies evaluated.

The importance of three different evaluative dimensions (economic, social and environmental) is needed because the only financial factors are not useful in evaluating corporate performance excluding non-financial factors. Only if companies define their competitive strategy according to an integrated vision of sustainability can improve their ability to create shareholder value in the long term (Greenwald, 2015).

Companies subject to integrated assessment of sustainability are those that can identify and exploit business opportunities related to the field of sustainability, taking advantage of the emerging chances within the dynamic of industries and markets in which they operate. Rating is based on 'a truly integrated approach to analysing sustainability performance', since specific scores obtained from the assessment in relation to economic, social and environmental dimensions are summarized in an overall score, called 'Total Sustainability Score'. Companies are classified in a ranking; this allows identification of the the leading companies of sustainability in the international context. Through this assessment, companies can highlight and focus on the sustainability factors associated with their business success and value creation. Companies with a higher Total Sustainability Score have a greater chance of high performance resulting from the adoption of best practices of integrated sustainability.

RobecoSAM identifies 59 economic sectors ('industries'), in which companies listed on S&P's DJSI are classified. Economic, social and environmental aspects of businesses are measured using specific parameters. These parameters are 'general', then valid for all the industries, or 'specific', then only valid



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for a particular industry (to reflect specific sector characteristics). The parameters are weighted with a specific 'weight' based on the parameter importance within the industry.

Assessment methodology is based on questionnaires in relation to which companies respond to questions. Each answer has to be accompanied by a specific documentation to show proof that supports the veracity of the answers. If the issues are relevant or critical, RobecoSAM also requires that such documents are public, then spread among stakeholders.

Parameters for integrated assessment of sustainability are identified with reference to the G4 Sustainability Reporting Guidelines (2015) issued by GRI. A list given by the GRI organization includes parameters that measure dimensions of the Corporate Sustainability Assessment for all industries. The following list does not include all the parameters, but it is useful to provide an overview of the economic, environmental and social measurements of corporate sustainable development:

- **Economic Dimension:** Antitrust policy; brand management; codes of conduct/compliance/corruption & bribery; corporate governance; customer relationship management; financial stability & systemic risk; health & nutrition; independence of content; IT security & system availability; payment transparency; principles of sustainable insurance; privacy protection; product quality and recall management; risk & crisis management; supply chain management; tax strategy.
- **Environmental Dimension:** Biodiversity; climate strategy; environmental policy/management system; environmental reporting; genetically modified organisms; low carbon strategy; operational eco-efficiency; product stewardship; releases to the environment; resource conservation and resource efficiency; water related risks.
- **Social Dimension:** Bioethics; controversial issues, dilemmas in lending/financing; corporate citizenship and philanthropy; human capital development; Labor Practice Indicators and Human Rights; Local Impact of Business Operations; Occupational Health and Safety; Promoting Responsible Gaming; Responsibility for Alcoholic Products; Responsibility of Content; Responsible Marketing Policies; Social Impacts on Communities; Social Reporting; Stakeholder Engagement; Talent Attraction & Retention.

As mentioned above, some parameters are only used for specific industries. For example, the following fundamental parameters ('highlighted criteria') are considered in relation to the automobile sector (see RobecoSAM Sustainability Yearbook 2015):

- **Economic Dimension:** Health & Nutrition; Innovation Management; Strategy for Emerging Markets.
- **Environmental Dimension:** Climate Strategy; Operational Eco-Efficiency; Water Related Risks.
- **Social Dimension:** Human Capital Development; Labor Practice Indicators and Human Rights; Talent Attraction & Retention.



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## 7. PERFORMANCE ASSESSMENT OF INTEGRATED CORPORATE SUSTAINABILITY: INTERNATIONAL REPORTING PRACTICES FROM AUTOMOBILE COMPANIES

This section shows the results from an analysis of the sustainability reports of automobile companies that have achieved the best sustainable development goals. The decision to study automobile industry is justified by the importance of this economic sector for international economies and for the social and environmental impacts on society and territories. Specifically:

- Automobile companies are faced with many challenges, including the need to define and implement a clear strategy of market positioning in a competitive environment with over-capacity, intense competition and the need for large investments in research and development (R & D). These aspects are certainly critical to economic and financial dimensions of corporate sustainable development.
- Increasingly strict regulations on greenhouse gases emissions and air pollutants, as well as dependence on oil, cause management problems for automobile company, which need to improve energy efficiency and reduce the intensity of carbon emissions (the recent scandal involving Volkswagen group is particularly representative). These aspects are important for environmental dimension of corporate sustainability.
- The impact on society of automobile companies activities is remarkable, considering the number of workers, institutions, trade unions, government agencies and associations involved. These factors are relevant for social dimension of sustainable businesses.

Therefore, accounting practices adopted by carmakers are a particularly representative field of investigation to identify international best practices for the preparation of integrated sustainability reports. In this way, the most recent sustainability reports published by companies that have obtained the best results in RobecoSAM evaluations were analysed in their statements, values and parameters. The sustainability reports analyzed are:

- BMW – Bayerische Motoren Werke AG (Germany) – Gold Class [Sustainable Value Report 2014];
- FCA – Fiat Chrysler Automobile NV (United Kingdom) – Silver Class [Sustainability Report 2014];
- Nissan Motor Co Ltd (Japan) – Silver Class [Sustainability Report 2015];
- Peugeot SA (France) – Bronze Class [CSR Report 2014];
- Renault SA (France) – Bronze Class [Registration Document 2014; CSR Report 2013].

All sustainability reports adopt a comprehensive/integrated approach to reporting. The tables below list the economic, environmental and social parameters used in all integrated reports. In this way, best practices of integrated reporting were identified. The terminology used for the parameters were taken from the 'G4 Sustainability Reporting Guidelines'.



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*Table 1. Economic aspects and parameters of integrated reporting (best practices)*

| CATEGORY: ECONOMIC |
|---|
| **Aspect: Economic Performance** |
| Direct economic value generated and distributed |
| Financial implications and other risks and opportunities for the organization's activities due to climate change |
| Coverage of the organization's defined benefit plan obligations |
| **Aspect: Indirect Economic Impacts** |
| Development and impact of infrastructure investments and services supported |
| Significant indirect economic impacts, including the extent of impacts |

Besides the parameters shown in the table, some sustainability reports consider additional aspects and parameters. Referring to the economic dimension, some companies also consider the following aspects: market presence (e.g. Proportion of senior management hired from the local community at significant locations of operation); procurement practices (e.g. Proportion of spending on local suppliers at significant locations of operation). Referring to the environmental dimension, additional aspects are considered: overall (e.g. Total environmental protection expenditures and investments by type); Supplier Environmental Assessment (e.g. Percentage of new suppliers that were screened using environmental criteria; Environmental Grievance Mechanisms (e.g. Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms). With reference to the social dimension, additional aspects are: Equal Remuneration for Women and Men (e.g. Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation); Supplier Assessment for Labor Practices (e.g. Percentage of new suppliers that were screened using labor practices criteria); Non-discrimination (e.g. Total number of incidents of discrimination and corrective actions taken); Child Labor (e.g. Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor); Forced or Compulsory Labor (e.g. Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor); Indigenous Rights (e.g. Total number of incidents of violations involving rights of indigenous peoples and actions taken); Local Communities (e.g. Percentage of operations with implemented local community engagement, impact assessments, and development programs); Anti-competitive Behaviour (e.g. Total number of legal actions for anti-competitive behaviour, anti-trust, and monopoly practices and their outcomes); Customer Privacy (e.g. Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data).

Empirical analysis highlights the best international practices, which consider the sustainability performance reporting in accordance with a global vision, measured through multi-dimensional parameters. The *common* aspects and parameters of the five companies observed belonging to automobile industry have identified integrated reporting best practices in this specific industrial sector. Additional parameters identified in some sustainability reports indicate that the integrated reporting practices are still developing, which tend toward expansion of the range of aspects and parameters for measuring corporate sustainability results.



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*Table 2. Environmental aspects and parameters of integrated reporting (best practices)*

| CATEGORY: ENVIRONMENTAL |
|---|
| **Aspect: Materials** |
| Materials used by weight or volume |
| Percentage of materials used that are recycled input materials |
| **Aspect: Energy** |
| Energy consumption within the organization |
| Energy consumption outside of the organization |
| Energy intensity |
| Reduction of energy consumption |
| Reductions in energy requirements of products and services |
| **Aspect: Water** |
| Total water withdrawal by source |
| **Aspect: Biodiversity** |
| Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas |
| **Aspect: Emissions** |
| Direct greenhouse gas (GHG) emissions (Scope 1) |
| Energy indirect greenhouse gas (GHG) emissions (Scope 2) |
| Other indirect greenhouse gas (GHG) emissions (Scope 3) |
| Greenhouse gas (GHG) emissions intensity |
| Reduction of greenhouse gas (GHG) emissions |
| NOX, SOX, and other significant air emissions |
| **Aspect: Effluents and Waste** |
| Total water discharge by quality and destination |
| Total weight of waste by type and disposal method |
| Total number and volume of significant spills |
| **Aspect: Products and Services** |
| Extent of impact mitigation of environmental impacts of products and services |
| **Aspect: Compliance** |
| Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations |
| **Aspect: Transport** |
| Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce |

The results of the empirical analysis of sustainability reports are summarized in the following key points:

- The sustainability reports adopt a holistic approach, according to which sustainability performance is measured by analysing the economic, social and environmental results jointly achieved.



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*Table 3. Social aspects and parameters of integrated reporting (best practices)*

| **CATEGORY: SOCIAL** |
|---|
| **SUB-CATEGORY: LABOR PRACTICES AND DECENT WORK** |
| **Aspect: Employment** |
| Total number and rates of new employee hires and employee turnover by age group, gender, and region |
| Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation |
| **Aspect: Occupational Health and Safety** |
| Percentage of total workforce represented in formal joint management–worker health and safety committees that help monitor and advise on occupational health and safety programs |
| Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of workrelated fatalities, by region and by gender |
| Health and safety topics covered in formal agreements with trade unions |
| **Aspect: Training and Education** |
| Average hours of training per year per employee by gender, and by employee category |
| Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings |
| **Aspect: Diversity and Equal Opportunity** |
| Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity |
| **SUB-CATEGORY: HUMAN RIGHTS** |
| **Aspect: Investment** |
| Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained |
| **SUB-CATEGORY: SOCIETY** |
| **Aspect: Anti-corruption** |
| Communication and training on anti-corruption policies and procedures |
| **Aspect: Supplier Assessment for Impacts on Society** |
| Significant actual and potential negative impacts on society in the supply chain and actions taken |
| **SUB-CATEGORY: PRODUCT RESPONSIBILITY** |
| **Aspect: Customer Health and Safety** |
| Percentage of significant product and service categories for which health and safety impacts are assessed for improvement |
| **Aspect: Product and Service Labeling** |
| Results of surveys measuring customer satisfaction |

- The sustainability reports analysed contain various types of information: qualitative information (e.g. Descriptions of management approaches and future lines of action); quantitative-monetary information (e.g. investment to ensure safety at workplaces and environmental security); quantitative-technical information (e.g. consumption of energy and natural resources).
- The sustainability reports have two different perspectives: the first one is an 'ex-post reporting' (closing perspective), used by companies to highlight corporate sustainability results achieved; the second one is an 'ex-ante reporting' (preventive perspective), used to program the future goals of corporate sustainable development.



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- The sustainability reports are aimed at a wide range of stakeholders: not only shareholders, but also employees, customers, suppliers, communities, territories, associations, non-profit organizations, trade unions, non-governmental organizations, public bodies, states and governments.
- The sustainability reports adopt information representation criteria that are also designed for non-expert users, therefore 'user-friendly' information to facilitate their understanding of the content (e.g. digital interaction on the reports contents, summary tables with the most important data, photos, images, graphics, summary and interpretation schemes, description of approaches used to simplify the learning data, interviews, appendices with more detailed information).
- The sustainability reports have characteristics that enable them to support the communication strategy of companies to spread, increase and maintain their corporate reputation.
- The sustainability reports analysed adopt an integrated, but not systemic, approach because there is no single measure that summarizes and expresses economic, social and environmental results achieved.

## CONCLUSION

In this chapter we presented the theme of sustainability reports for as concerns the social dimension, the environmental one, the integrated one (financial-social-environmental). The chapter, then, deals with the corporate institutional communication in a broader sense than the traditional financial disclosure.

The chapter, after having presented and defined its object, shows the historical progress toward the sustainability reports in its different dimensions in the last decades, proposes a theoretical basis for the integrated reports, verifies a correspondence of this last one with general agreed criteria for evaluating the sustainability performance, and, particularly, endeavors an empirical survey on the car production sector, considered one of the most environment sensitive industry of the world.

It is time, now, for some conclusive clauses about the main results of this reconstruction.

Management and accounting literature, in these last years, gave a pressure for broadening disclosure on the social impact of corporate activity.

This broadening, before limited to strict social issues, after to environmental ones, is now generally conceived in a more integrated shape. But the attitude of disclosure is not so different from the traditional one, at least in a logical sense. We observe information useful for decisions (not only and no longer only economic decisions) and we observe information useful for a discharge of responsibility (not only and no longer only toward ownership of corporate). As well as investors entrust their capital to management, so society, in a wider sense, entrusts a role to single corporate.

The set of stakeholders is now greater than in the past, and includes also generic 'subjects' like 'public opinion' or the 'future generations', but social issues matter also for traditional stakeholders, even the same investors who could be very interested on the sustainability of their investment.

Sustainability reports as the main tangible outcome of CSR on one hand discovers a new field for corporate ends, i.e. the business ethics, giving substance and verifiability to it, and, on the other hand, strengthens the traditional ends of value creation, with a long-sighted vision.

Corporations realize, just in the years of the great crisis (after 2007) that a short-sighted perspective can endanger the same long-time survival of themselves. In a more and more integrated and globalized arena, environmental and social reputation becomes a core strategic issue, to which customers (and not



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only them) are more and more sensitive. The same value of shares looks influenced by the risk of environmental scandals and investing on a social-environmental sustainable corporation is not only a fact of ethics but simply a rational attitude.

Of course sustainability reports may not be kept separated from financial ones. Integration looks the natural outcome for a clear disclosure toward stakeholders.

Focus of disclosure, then, is on the risk it can become a propaganda exercise, not verifiable by an independent auditing.

This risk could be avoided, exactly as happened since '30 years in U.S.A. after the Great Depression in traditional accounting, by a regulation; regulation that now is moving just its first steps.

In any case, regulation needs a doctrinal effort for designing a framework, an ideal model for this integrated reports. Our contribution could be read in this perspective. In this paper we propose two models of integration. A first one – non-systemic – gives a regulation on single items of disclosure but does not integrate the three dimensions into a unique value. A second one – systemic – tries to integrate the three dimensions, expressing in money terms externalities, i.e. benefits and costs for society in the widest sense, financial, social or environmental could they be.

The two theoretical solutions show vantages and disadvantages because the strength of one single bottom line (in the second approach) could face the risk of over-simplification for externalities that, by their nature, cannot be translated in money terms, even by the help of proxies.

Analysis of praxis seems to corroborate our general suggestions. Integration of disclosure is now real, and all three are resumed in a general discourse on sustainability. Scoring of Dow Jones and RobecoSAM seem to enforce the idea that success in competition is due to a harmonic and systematic combination of financial success inside corporation and financial-social-environmental success outside it.

Comparison between theory and law, by one side, and empirical analysis, by the other side, looks a progressive reduction of the gap between what corporations do and what they should. What it is still weak, perhaps, seems the relationship between a defined and clear ex ante perspective (programming, forecasting about social-environmental impact of business activity) and the ex post one (the sustainability reports, in words).

Empirical observation confirms theoretical intuition of the need for a really integrated reporting. Financial, Social and Environmental Reports are generally now parts of integrated 'sustainability' reports. What it is not confirmed, however, is the trend toward what we called the 'systemic approach'. Translation of social and environmental benefits and costs in terms of money or economic proxies is moving just its first steps, being generally preferred what we called the 'non systemic approach'.

Another feature emerging from the survey is the great variance in structure, recognition, evaluation, presentation, disclosure from one corporation to another.

These two main results may suggest two practical indications for research and regulation in this field.

First one is the theoretical investment on the 'systemic approach'. Lack of a unique unit of measurement, in fact, is a weakness for sustainability reporting.

Second one is the need for a compulsory regulation on sustainability reporting, not necessarily only on a global basis, because of the importance of 'national' or 'sector' classes of stakeholders (but here regulation could intervene by means of G.A.A.P.).

The challenge of the next years seems to be the enhancement along these two dimension, in order disclosure in environment and social issues can establish really a link between corporation and stakeholders and not only is an unreliable rhetoric mean of corporation propaganda.



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## ENDNOTES

1 Massimo Costa is the author of the Introduction, section 1, 2, 3, 5, and the Conclusion. Giuseppe Valenza is the author of sections 4, 6, 7.

2 As reported in the official website, 'GRI is an international independent organization that helps businesses, governments and other organizations understand and communicate the impact of business on critical sustainability issues such as climate change, human rights, corruption and many others'. See: https://www.globalreporting.org.

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# Chapter 86
# Transnational Acceleration of Local Startups: Portugal's Building Global Innovators (BGI) Model

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## ABSTRACT

*This chapter explores the tenets and the practice of a transnational initiative to promote local entrepreneurial growth: the Building Global Innovators (BGI) model, a startup accelerator based in Lisbon (Portugal) and in Cambridge (Massachusetts, USA). We examine the pathways through which BGI's process and global network of experts helped two successful Portuguese technology startups grow and scale very quickly – Movvo and Veniam. We combine literatures from strategic management, marketing and economic geography to explore BGI's transnational acceleration model, which taps into global "pipelines" and distant entrepreneurial ecosystems, namely as a way to access the expertise, market opportunities and venture capital that is often unavailable in emergent and policy-sheltered local clusters. We discuss the relevance of such a transnational acceleration model for high-tech startups in peripheral economies.*

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## INTRODUCTION

Over the last decade and a half, fostering local entrepreneurial growth has been a major policy objective in Europe. Scholars and policy makers alike agree that technology and knowledge-intensive startups are a key pillar of sustainable economic growth. Given this agreement, it is not surprising that the European Union, in its Entrepreneurship 2020 Action Plan, pushes for "decisive action to unleash Europe's entrepreneurial potential, to remove existing obstacles and to revolutionise the culture of entrepreneurship in Europe". This focus on promoting entrepreneurial growth by promoting knowledge-based and high-technology ventures may seem obvious, but represents a sizable departure from traditional strategies focused on the discovery and funding of large corporations capable of undertaking ambitious research and development projects and the attraction of foreign direct investment (Acs et al., 2008). In recent years, however, several policy makers and think tanks have increasingly recognized early stage high-technology ventures as the key to unlock innovation and economic growth (Audretsch, Keilbach, & Lehmann, 2006; Samila & Sorenson, 2011).

The debate surrounding the relationship between firm size and innovation dates back to the classic work of Schumpeter (1942). Scholars have found mixed evidence regarding the effect of firm size on innovation (Acs & Audretsch, 1987; Cohen & Levin, 1989). While startups typically suffer less from bureaucratic bottlenecks and are thus quick and agile, they often lack the capital and customer access resources of larger corporations. Therefore, there is a growing recognition that successful startups cannot rely solely on internal-to-the-firm capabilities but also need to rely on their external environment (Feldman & Kogler, 2011; Getler, 2003). Consequently, location emerges as a key driver of startup success, a relationship epitomized by the concentration of successful startups in places such as Silicon Valley.

Startups located in high-performing hubs like Silicon Valley benefit from these places' entrepreneurial spirit and from several localized features associated with "being there" (Gertler, 2003), such as access to specialized skills, infrastructure, potential clients, competitors and networks (e.g. Feldman & Kogler, 2011). The success of the "Silicon Valley model" and Michael Porter´s influential book on *The Competitive Advantage of Nations* (1990) sparked an influential stream of entrepreneurship policy focused on embedding startups in "clusters" and local networks of companies and other organizations, as well as on the development of incubators and technology parks. Yet, there is very little evidence that such a recipe actually works across different countries, regions and industries (Martin & Sunley, 2003; Burfitt & McNeill, 2008). In fact, most if not all of the attempts to replicate "Silicon Valley everywhere" have been failing dramatically (Hospers, 2009). In this chapter, we explore the drivers of success (and failure) of startup acceleration models in regions that lack the access to market knowledge and capital that exists in central hubs like Silicon Valley. In particular, our goal is to discuss an emerging model for high-technology entrepreneurship in peripheral European regions.

In peripheral European regions, high-tech entrepreneurship is often very incipient due to lack of sophisticated entrepreneurial ecosystems. For this reason, many authors suggest that an over-localized approach to entrepreneurship support can do more harm than good (e.g. Rodriguez-Pose & Fitjar, 2013; Vale & Carvalho, 2013). Even when local talent is available, such places typically lack access to customers and to market knowledge, and to the resources and institutions that knowledge-based ventures need to start and scale their businesses. Specifically, these regions are distant from advanced customers, business intelligence, and well-functioning innovation and venture capital institutions. Lack of access to these drivers of startup success can render localized networking ineffective in the early stages of the



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development of new companies and industries in peripheral regions (Todtling & Trippl, 2005). During these stages, more transnational models of business incubation, acceleration and networking are required (Gibson & Naquin 2011).

This chapter explores the experience of a particularly innovative, and successful, transnational model to foster local entrepreneurial growth: the *Building Global Innovators* (BGI) model. BGI is technology transfer accelerator initiative based in Lisbon (Portugal) and in Cambridge (Massachusetts, USA). It started in 2010 as a venture competition integrated in the *MIT Portugal* program, a formal 10 year partnership between the Portuguese government and the Massachusetts Institute of Technology (MIT) with the aim to promote research on technology-based innovation and application of such knowledge, for instance through university spinouts. Instead of supporting sub-optimal and locally sheltered environments for startups, BGI aims at rapidly creating links and networks to locations across the globe where complementary expertise can provide the technology-based startups accelerated by BGI with access to customers, market knowledge, relevant startup experience and venture capital.

The guiding principle of BGI's model is to increase competition awareness and promote growth of the new ventures in multiple places and ecosystems, rather than keeping the newly created startups geographically isolated from more central high-performing growth clusters. Thus, the BGI model shows how a global networking model can improve and sustain growth prospects of local startups by helping them to access and bridge to resources that are hardly available in their local ecosystems. To illustrate the functioning of such a model, the chapter presents two case studies of BGI "alumni" companies: *Movvo,* a startup that created a technology that can measure the flow of people in physical spaces, and *Veniam*, a startup that turns vehicles into Wi-Fi hotspots in order to connect infrastructure, people and moving things to each other and to the Internet. The cases are used to exemplify BGI's methods, its achievements and limitations.

The case evidence presented is based on data from the BGI initiative and grounded on two of the authors (Gonçalo Amorim and José Paulo Esperança) experience in developing and managing the initiative since its inception. Methodologically, our analysis follows some of the general principles of the *participatory action research* paradigm (Herr & Anderson, 2005; Miller & Tsang 2010; Ozanne & Saatcioglu, 2008; Reason & Bradbury, 2001; Vermeulen, 2005). Participatory action research is widely accepted as a robust approach to understand complex problems and tap into knowledge and expertise that would be difficult to access with other methodological approaches (Ozanne & Saatcioglu, 2008). An important concern in participatory action research is to ensure an adequate and fair balance between insider and outsider knowledge (Herr & Anderson, 2005)[1].

We selected *Movvo* and *Veniam* for two reasons. First, these were two startups that adhered very closely to BGI's transnational acceleration model philosophy. Based on past experience, it is sometimes easy for first time entrepreneurs to deviate from BGI's philosophy, for instance because their founders may have a tendency to underestimate advice provided by mentors and by BGI. Second, these two startups already have products on the market and have generated sufficient data and history to allow us to examine the outcomes and impacts of the acceleration process. Moreover, focusing on two in-depth cases is typically considered more robust than focusing on a single case (Yin, 1994), providing for more points of comparison and a better illustration of the acceleration processes under study.

The chapter is structured as follows. The next section presents a conceptual background, primarily based on literature from strategic management, marketing and economic geography. It juxtaposes the tenets of localized entrepreneurship and innovation with the relevance for startups to tap into global "pipelines" for accessing multiple resources to grow, such as customer access, market knowledge, tech-



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nology, business networks and (venture) capital. We suggest that the access to such resources through global networks is particularly vital for startups in peripheral countries and regions. Subsequently, the chapter explores the nuts and bolts of the BGI model, and presents the two case studies (Movvo and Veniam). The chapter concludes with suggestions for further research and lessons for entrepreneurship and innovation policy in European peripheral regions.

## BACKGROUND: FROM LOCAL CLUSTERS TO GLOBAL PIPELINES

### Agglomeration, Clusters and Localized Innovation

Firms are basic venues to organize economic activity. Their internal capabilities – e.g. embedded in the entrepreneurs and staff´s knowledge and routines – are widely recognized as key determinants of a firm´s performance and their ability to adapt to new contexts (Grant, 1996; Teece & Pisano, 1994). Knowledge-based startups are important conduits of new knowledge and innovation and are thus crucial for the economic renewal of countries and regions (Stam, 2010). Particularly relevant in this respect are spin-off companies, which re-combine newly available knowledge with inherited competences of "parent" organizations – such as larger/older firms and research institutes – making them particularly apt to tackle new market opportunities (Klepper, 2002).

However, the role of internal capabilities in entrepreneurial success is only a part of the story – the external environment plays an important role as well (Conner & Prahalad, 1996; Lee et al., 2001). Some authors speak about "regional systems of entrepreneurship" to highlight the relevance played by several city and regional level factors that influence "the creation, discovery and exploitation of entrepreneurial activities" (Qian et al., 2013, p. 560). In fact, entrepreneurship rates are highly heterogeneous across space, and some places keep spinning off new high-tech ventures and attracting talent much more than others. Beyond an entrepreneur's personal traits and firms' routines, this phenomenon reflects different places' economic structures and human capital but also, importantly, different institutions and entrepreneurship cultures (e.g. Stam, 2010), as epitomized by the entrepreneurial success and economic renewal of Silicon Valley over the last decades.

According to Michael Porter, this is so because entrepreneurs and new ventures may benefit from being embedded in local "clusters", that is "geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (e.g., universities, standards agencies, trade associations) in a particular field that compete but also cooperate" (Porter, 2000, p. 16). Porter and several other scholars inspired by Marshall´s (1920) seminal work on the benefits of agglomeration (e.g., Moulaert & Sekia, 2003) suggest that this is the case due to three types of externalities. First, co-located firms can share a number of production factors; the chief example is specialized labour pooling, as being in clusters increases the chances of good matches and eases the access to related competences. Second, new firms can benefit from being close to specialized suppliers and advanced customers, which facilitates input sharing, competition monitoring and access to market intelligence (Lilien et al., 2002; Santos, Doz & Williamson, 2004; von Hippel, 1986). Third, physical proximity facilitates the access to informal (and often unintended) knowledge spillovers, rumours about the industry and "buzz", which require little specific investments apart from "being there" (Gertler, 2003).

Porter´s (1990; 2000) cluster theory and the literature on localized innovation emphasizes two important dimensions of local entrepreneurial growth. First, they stress the importance for startup suc-



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cess of complementing a firm´s internal capabilities with a more system-like perspective. Second, they highlight the relevance of accessing and monitoring sophisticated and demanding customers. Despite all their impact in our current knowledge, these literature streams also suffer from two major limitations and misconceptions. First, the relevance of Porter´s cluster externalities for startups has been questioned and seems to vary according with the industry´s life cycle. According with Neffke et al. (2011), being part of specialized clusters is more relevant for mature industries. In more dynamic and turbulent sectors, in which designs and products are not stable yet, access to diversified types of skills, partners and customers is more important; moreover, in those cases, a too strong local orientation can lead to employee poaching, knowledge leakage, predatory competition and higher costs for startups. Second, prior research on clusters tends to over-emphasise the role of physical proximity for learning and innovation, overlooking the relevance of long-distance interactions and contact with other "clusters" and ecosystems. In a context of heightened knowledge mobility and international business, the access to knowledge and innovation resources in other geographies can hardly be ignored (Lagendijk & Oinas, 2005; Crevoisier & Jeannerat, 2009; Vale & Caldeira, 2007).

## Global Networks, Pipelines and Local Entrepreneurial Growth

Beyond the local "cluster" approach to understand innovation and entrepreneurial success, a number of recent approaches in economic geography and innovation studies emphasise the role of global networks and "pipelines", defined as channels and conduits through which firms access relevant knowledge and resources to innovate and grow outside clusters (Bathelt et al., 2004; Owen-smith & Powell, 2004). Bathelt et al. (2004) suggest that clusters and pipelines are rather different – yet complementary – ways to access knowledge and resources. Contrarily to just "being there", knowledge and resource access through pipelines is often a much more planned, conscious and structured effort; it requires additional investments, identification of counterparts, and more targeted objectives.

For startups moving from emergence to early growth stages (Hite & Hesterly, 2001), pipelines are important to diversify relationships and facilitate the access to new technology, business and capital networks. It is not reasonable to assume that startups can find such networks and resources locally, within single clusters. Yet, pipelines are also not the only way to access remote knowledge. According with Maskell (2014), pipelines are particular useful when a company knows the type of resources it needs, and *where* they can be found. When that is not the case, pipelines can be complemented – or preceded – by other modes of distant knowledge and resource access, such as the participation in trade fairs, the establishment of "listening posts" or technology scouting units, and even "crowdsourcing" or online problem solving. All these knowledge access models are increasingly relevant for knowledge-based startups, and underpin open-innovation strategies of fast growing companies (Chesbrough, 2003).

For instance, Santos, Doz and Williamson (2004) discuss the case of SAP, a German multinational software company that is, nowadays, the world's largest business software company. In order to grow, SAP proficiently accessed its international network of customers, irrespectively of their location, to gather vital customer and market knowledge. Specifically, SAP "leveraged market knowledge drawn from a far flung group of early, foreign customers – including Britain's ICI and US Chevron Oil – to shape products capable of coping with national differences in accounting conventions and the urgent needs of its multinational customers for cross-border integration of financial data" (Santos, Doz & Williamson, 2004, p. 32). Business-to-consumer firms are also increasingly tapping into the knowledge and expertise of geographically dispersed customers (e.g. Dell's IdeaStorm community, which crowdsources new



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product ideas from customers, see Bayus, 2013), employees (e.g. Merck KGaA's Innospire, a grassroots innovation process which, in its first edition, gathered ideas from 550 employees from all divisions and from 32 countries all over the world, see Betz et al., 2014) and other experts (e.g. Procter & Gamble's Connect & Develop initiative, see Huston & Sakkab, 2006).

Knowledge accessed through pipelines is perhaps even more important for startups than to established firms, namely when it is related – yet not too similar – to the startup´s internal capabilities. In this sense, pipelines can bring the variety of knowledge that allows companies to identify new business opportunities, develop new products and catalyse their internal resources in novel ways. The innovation literature demonstrates that a company's innovation potential is maximized when they mobilize related but not too similar portfolios of knowledge (Cohen & Levinthal, 1990; Nooteboom, 2000; Wuyts, Dutta, & Stremersch, 2004). More recent studies suggest that innovation requires combinations of dissonant pieces of knowledge, substantially distant from a company´s knowledge repertoire (Stark, 2011). In this sense, too much cognitive and relational proximity between companies and knowledge pieces – as frequently happens in many clusters – can limit innovation potentials (Boschma, 2005).

## Local Entrepreneurial Growth in Peripheral Regions

The limitations of clusters to support local entrepreneurial growth are heightened in peripheral regions. Those places – e.g. in many regions of Southern and Eastern Europe – have relatively weak economies and underdeveloped entrepreneurial innovation systems (Toddling & Trippl, 2005). Obviously, this does not mean that talent does not exist in these regions. However, even if some knowledge-based startups in the periphery may be at the forefront of technological knowledge, their regions lack the markets, advanced users, industrial partners and well-developed venture capital players necessary to innovate and grow (e.g. Vale & Carvalho, 2013). In other words, they lack access to crucial customer and market knowledge and, equally important, to entrepreneurial experience and accessible smart (venture) capital. This is particularly problematic in nascent industries, in which there are no experienced entrepreneurs locally that can play a mentoring role for newcomers and connect them with the networks they need to succeed. As a consequence, an over reliance on local networks may hamper, rather than help, the development of startups, and ultimately, the local formation of new industries.

Under these conditions, facilitating the access to global knowledge networks and advanced users is deemed essential for local entrepreneurial growth (Fontes & Combes, 2001; Vale & Carvalho, 2013). For example, when studying the networking behaviour of biotech startups in Portugal and Southern Italy, Capaldo et al. (2015) concluded that "…the local environment is a lesser determinant for a substantial proportion of firms than would be expected in startups. A distinctive feature of these firms is an extensive reliance on foreign sources, for different purposes and from the very early stages" (p. 1381). Carvalho et al. (2014) reach similar conclusions based on the in-depth study of a leading, born-global startup in "smart-city" technology (Living PlanIT), based in the North of Portugal. Using data for Norwegian firms, Fitjar & Huber (2015) show that more radically innovative firms are more involved in international networks (formal and personal) than non-innovative and incremental innovation companies. Thus, from a policy perspective, Fitjar & Huber (2015) suggest that in smaller and peripheral countries innovation and entrepreneurship policy should facilitate global connections rather than national and regional networking.

In her seminal study on the new "argonauts", Saxenian (2007) shows that the recent growth in the number of successful high-tech and information and telecommunication startups in Taiwan, India or Israel is closely linked with global networks established between its entrepreneurs and places like Silicon



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Valley, in which they gained experience, studied and worked before. These networks have been pivotal to access technology, but equally essential to facilitate access to market exposure, contact with advanced users, entrepreneurship culture and access to venture capital. Yet, questions remain whether such a global network model can be applied everywhere, namely for countries with less social affinity with innovation powerhouses such as Silicon Valley and the United States (Frenken, 2009), and if plugging entrepreneurs in global networks is amenable to policy intervention – and, if yes, how such a model could look like.

In this chapter, we propose that in an increasingly globalized economy, it is not only possible but essential to rapidly promote and establish bridges between the talent and technical knowledge of local entrepreneurs with distant networks capable of unlocking, first, the customer and market knowledge they need to build strong value propositions and, second, the (venture) capital they will need to scale their business. In the next section we describe the transnational acceleration model used by the BGI (Building Global Innovators) network which, from its headquarters in Lisbon, Portugal, aspires to create a new generation of startups with the ambition to become global leaders in the markets they target.

## THE BGI ("BUILDING GLOBAL INNOVATORS") TECHNOLOGY TRANSFER ACCELERATOR (TTA)

### The Roots of BGI: From an Experiment to a Full Blown Accelerator

Building Global Innovators (also known by its shorter acronym BGI) is a global startup technology transfer accelerator (TTA) based in Lisbon (Portugal) and Cambridge (MA-Cambridge/USA). The goal of BGI is to identify aspiring tech entrepreneurs and innovators (high-technology startups and university spin-outs under five years old) and help them scale and prepare a global-oriented market launch. BGI focuses on four domains, or market verticals: (i) medical technologies & health IT, (ii) smart cities & industrial tech, (iii) enterprise IT & smart data and (iv) ocean economy.

Even though BGI was officially founded in March 2010 as the innovation and entrepreneurship arm of the MIT Portugal program (MPP), its roots date back to 2006, when MPP was launched. MIT Portugal was one of five strategic international research programs launched by the Portuguese Government in collaboration with the Massachusetts Institute of Technology (MIT), Harvard University, Carnegie Mellon University, University of Texas at Austin and Fraunhofer Institute (Germany). The goal of these initiatives was to streamline the basic and applied research in the top research and academic institutions in Portugal and foster collaboration with world-class institutions. These international research programs will represent an investment of nearly €300 million over a decade (2006-17).

The MIT Portugal program is an initiative led by the Portuguese Foundation for Science and Technology (FCT) and anchored in a strategic partnership between several Portuguese Universities and Research Centres of the Engineering school of MIT and key partners from industry and government. One of the key goals of the MIT Portugal program is to promote economic growth through selective investment in top-notch science, technology and higher education. Promoting innovation and entrepreneurship was a natural extension of the core MIT Portugal program and, thus, the *Innovation and Entrepreneurship Initiative* within the *MIT Portugal program* (so called MPP-IEI) was born in 2010.

In its first editions, BGI was called "*ISCTE-IUL MIT Portugal Venture Competition,*" an experimental "*beyond the business plan*" competition run at *ISCTE-IUL*[2], one of Portugal's top business schools and the one with the strongest focus on the promotion of innovation and entrepreneurial talent. The pro-



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gram was designed as a hybrid model with elements of two successful innovation and entrepreneurship initiatives at MIT: the *Deshpande's Centre for Technological Innovation grants*[3] (i.e. science grants for de-risking and commercialization activities) and *MIT's 100K*[4] (i.e. a business plan competition run at Sloan's MBA[5]). Since then, the BGI model has continuously evolved to better fit both its mission and the needs of the entrepreneurial ecosystems it supports. Eventually, in early 2013, BGI was incorporated as an independent entity and established its own identity globally.

Nowadays, BGI is strongly anchored in the top eight science and engineering universities in Portugal (all of which are integral partners of the MIT Portugal program) and keeps the ambition of strengthening Portugal's startup community. However, since 2010, BGI's network quickly expanded beyond the borders of ISCTE-IUL. Today, BGI counts with key strategic partnerships with *MIT*[6] but also since its inceptions with key local players such as *Caixa Capital* (the venture capital arm of Portugal's state owned bank *Caixa Geral de Depósitos,* with € 650 million in assets under management). The partnership with Caixa Capital allows BGI to offer financial support, in the form of seed capital, to four ventures per year, originally with up to €1 million per edition.

To date BGI counts 80 alumni companies which resulted in the launch of over 30 new ventures, raising close to €30 million in risk financing and creating over 300 highly qualified jobs. These numbers place BGI among the top accelerators in Europe, right after London-based Seedcamp, which has 110 alumni companies and raised close to €60 million in follow-on funding and significantly larger than the Startupbootcamp network, which operates with 10 accelerator programs in 9 locations (Amsterdam, Barcelona, Berlin, Copenhagen, Eindhoven, Israel, Istanbul, London and Singapore) and which has 88 alumni companies but, so far, has raised only about €10 million in follow-on funding (Economist, 2014).

## BGI's Governance Model and Global Network

A key challenge faced by BGI, and by many accelerators located in peripheral regions, is the need to provide globally-oriented support to incubated startups (which is often expensive) while ensuring a lean and financially sustainable operational model. BGI developed an innovative and efficient governance structure to deal with these challenges. Specifically, BGI today consists of a small organisation team with seven full-time equivalent (FTE) employees, which ensure the day-to-day operations and the delivery of the objectives of the MPP-IEI mission. BGI's core activities include:

- Budgeting and reporting to the board as well as other stakeholders including *FCT*, the Portuguese Foundation for Science and Technology;
- Public relations, building a vetted network of experts and dealing with investors;
- Organizing networking & fundraising events for BGI alumni;
- Managing an international yearly call for submissions (innovative startups and spinouts) in the four verticals of the MIT Portugal program (see above);
- Venture acceleration activities and startup training (provided via unique syllabi designed and delivered by ISCTE-IUL & MIT faculty);
- Portfolio management (most active in those where BGI holds an equity stake);
- Management of IT and data platforms;
- Maintaining an Alumni network of companies.

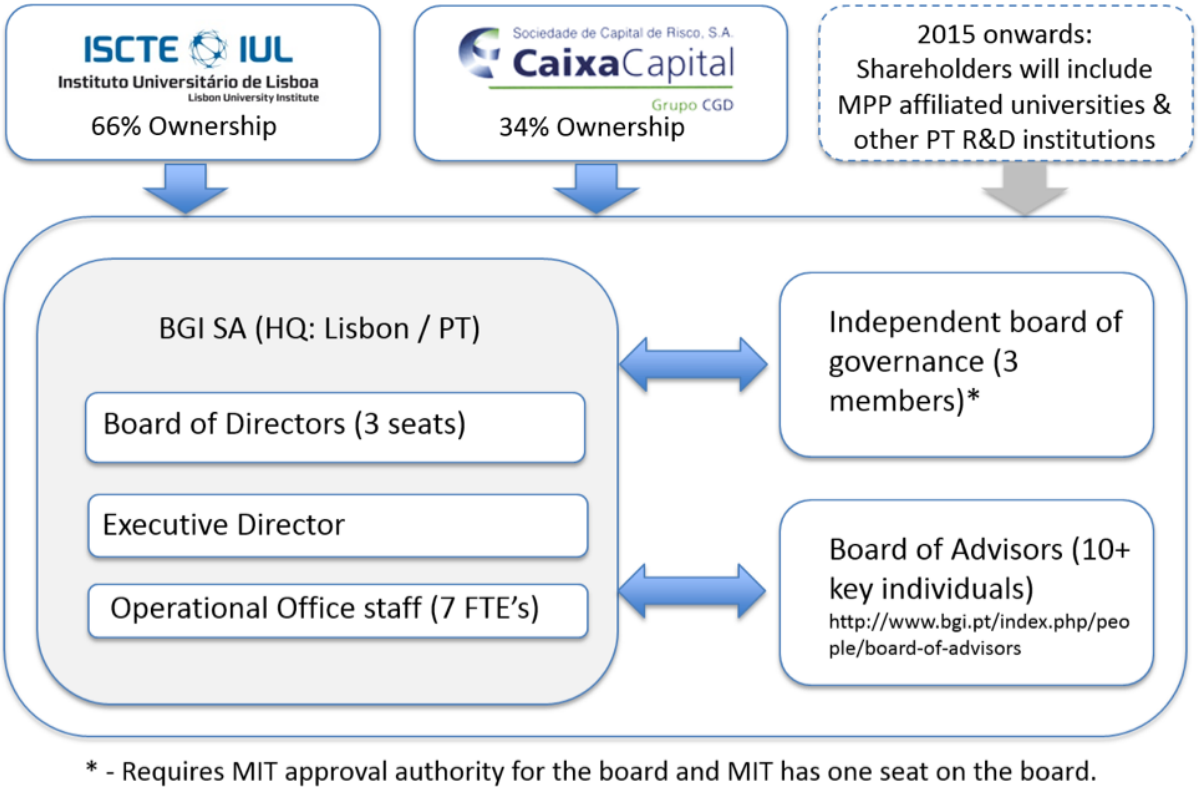


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To date, BGI has built a network of over 12,000 stakeholders, including technologists, researchers, entrepreneurs, vetting experts, marketers, legal and financial professionals, mentors, investors and general ecosystem members. The board and board of advisors of BGI counts with the active participation of key people including from the Deshpande Center for Technological Innovation (http://deshpande.mit.edu/), ISCTE-IUL (http://www.iscte-iul.pt/en/), Martin Trust Center for MIT Entrepreneurship (https://entrepreneurship.mit.edu/), Massachusetts Institute of Technology (MIT: http://web.mit.edu/), MIT Portugal (http://www.mitportugal.org/), MIT Sloan School of Management (http://mitsloan.mit.edu/) and UTEN Portugal (University Technology Enterprise Network: http://utenportugal.org/) and Portuguese diaspora representatives. BGI counts, also, with key strategic partners such as Caixa Geral de Depósitos (Portugal's state-owned and largest bank: https://www.cgd.pt/), Caixa Capital (http://caixacapital.pt/), the law firm Cerqueira Gomes & Associados (http://www.cerqueiragomes.pt/pt/) and e+i (Portugal's Strategic Program for Entrepreneurship and Innovation: http://www.ei.gov.pt/index/), and other key stakeholders such as Portuguese Foundation for Science and Technology (FCT: http://www.fct.pt/), to name just a few.

In order to ensure the financial sustainability of its model, again BGI had to create an innovative model (see Figure 1). Unlike the reality in the US, philanthropy is very much underdeveloped in Europe in general, and in peripheral countries, in particular. Besides, alternative sources of funding efforts by private sponsors, originally thought as a good source of funding, have yielded limited success, especially in a context of tough economic environment that Portugal has been undergoing. Such limitations have sparked the need for the operational team to creatively look for and design alternative forms of funding.

*Figure 1. BGI's governance model*






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In its first years, the funding of BGI was almost exclusively secured from ISCTE-IUL own sources. This situation, however, is not sustainable in the long term. Therefore, to ensure adequate governance and financial sustainability of its model, in early 2013 BGI span out of ISCTE-IUL and was incorporated as an independent company (BGI) with two founding shareholders, ISCTE-IUL and Caixa Capital (see Figure 1), a structure encouraged by several public stakeholders including MIT Portugal and the Portuguese Foundation for Science and Technology (FCT). Such governance model was designed to guarantee governing stability even when tough structural environment – such as the one that the Portuguese economy is undergoing – pressure the budget of public universities such as ISCTE-IUL.

In 2013, at the launch of the 4th Edition, BGI implemented an innovative equity-sharing model in an effort to seek for the long-term financial sustainability of its model. Specifically, through the current model BGI takes a maximum of 5% post money equity on a valuation of at least €1 million (trigger event) on BGI accelerated companies to which Caixa Capital provided financial support. As off the launch of 5th edition, in 2014, what was before an award (up to 10 year venture loan) similar to a grant, was adapted to a combination of an award (50% of the total in the same terms of the previous 10 year loan) and a convertible debt (the remainder 50%). Unlike the common accelerator model, BGI does not grant the participating companies any stipend monies during the acceleration period nor does the equity right apply to those ventures which are not supported by Caixa Capital. BGI does not charge any of the participating teams any type of fees, overheads or otherwise. However, selected teams have to find their own financial means to support their travel and accommodation.

The 5th edition of BGI marked a major turning point for the national innovation landscape in Portugal, in terms of the maturity of the ecosystem agents (i.e., accelerators). In an effort to position Portugal in the world map of high-technology entrepreneurship and innovation, BGI, Caixa Capital and Caixa Geral de Depósitos (CGD) agreed to adjust the format of BGI's acceleration program in place until the 4th edition, to allow greater specialization of the incubated startups. Specifically, in this new model, the €1 Million financial award previously assigned solely to BGI's top 4 ventures, from 5th ed. onwards was "shared" by other two Portuguese high-tech accelerators, the *Lisbon Challenge* (http://www.lisbonchallenge.com/) - focused on digital and mobile startups (sponsored by Beta–i) - and the *ACT* (https://www.actbycotec.com/en/) - focused on Biotech and sponsored by COTEC Portugal (http://www.cotec.pt/). As such, *BGI*, *Lisbon Challenge* and *ACT* now work in cooperation,, proactively contributing to the consolidation of the field of innovation and technology transfer in Portugal. Consequently, BGI's awards will gradually reduce from up to €1 million to €300,000 (i.e., €500,000 in the 5th ed. and €300,000 in the 6th ed.) in seed investment in the four-most promising ventures per edition. In the new model, duplication of the award is no longer possible and what was a 10-year venture loan at a negligible interest rate, now becomes a convertible note aligned with standard investor terms.

## BGI's Transnational Acceleration Model: Local Talent, Global Ambition

In 2010, when BGI was still giving its first steps, the Portuguese startup "ecosystem" was very incipient. Existing startups faced extreme difficulties and rarely left existing incubators who also struggled for survival or were highly dependent on state subsidies. The limitations of the Portuguese startup "ecosystem" combined with the small market size of the Portuguese economy, made local access to customer and market knowledge and to capital extremely difficult. Israel and Scandinavian countries had faced similar challenges in the past but were able to overcome such challenges by building strong transnational support networks. BGI followed these best practices and adopted, since the beginning, a model that tries



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to identify entrepreneurial talent but, immediately afterwards, relies on high quality international collaborative partnerships and networks to promote rapid and profitable growth of the accelerated startups.

In order to infuse the transnational philosophy in its structure and organization, BGI's team is based in Lisbon, at ISCTE-IUL, but also in Cambridge (USA) at MIT. Moreover, BGI constantly evaluates and strengthens its network of mentors, advisors and investors in order to offer top-notch support to local entrepreneurial talent. BGI's valuable network of partners and "stakeholders" - which includes top Portuguese and international engineering and science universities and technology incubators, science parks, angel groups and other venture capital and institutional investors - was built, over the years, through a bottom up logic based on the needs of incubated startups (i.e., a user centric perspective). Today, this vast network of partners and "stakeholders" is one of the critical differentiating factors of BGI. BGI leverages this network to achieve four goals which are aligned with its mission finding and supporting local entrepreneurial talent: (i) clarify startups' (unique) value proposition, (ii) translate market and customer knowledge into promising and viable go-to-market plans, (iii) raise the necessary capital to finance the growth of incubated startups, (iv) identify and address major risks facing their technology and market entry strategy and, ultimately, (v) consider and plan successful *exit* scenarios, right from the moment of company inception.

The BGI program runs once a year, and scouting and recruiting entrepreneurial talent starts with an international road show running from March to May, which is the period in which applications are open. Selection takes place during June. From over 100 applications (over 35% of which are international), approximately 50 startup teams are invited for a 25 min. interview by a panel of three to five experts and up to a maximum of 21 startups get accepted in the accelerator. Upon acceptance, participating teams agree that they have to find their own financial means for travel and accommodation in Lisbon and Cambridge. The process is managed through BGI's custom built online platform (called BGI-Hub), an IT platform that BGI uses to keep all data regarding participating startups, including their scores and interview comments. Startup acceleration, in turn, starts in late July and graduation occurs in May/June of the following year. The whole cycle takes then approximately one year, from sending the online application to graduation.

## Clarifying the Business Idea

The philosophy of BGI is to infuse an execution mindset in participating venture teams before they approach potential investors, avoiding premature scaling of startups with a non-validated market fit. Hence, each venture selected to join the BGI accelerator benefits from more than 1,150 hours of expert mentoring aimed at clarifying their unique value proposition. Among other initiatives, BGI's acceleration process includes three intensive training periods (two in Lisbon at ISCTE-IUL's premises in July and November, and one in Cambridge at MIT's premises in May). Selected ventures are requested to attend together with a highly vetted group of mentors these intensive training initiatives, which help focus ventures on the critical steps in successful go-to-market and de-risking strategies. These "intensive training periods," so called *bootcamps*, serve also to educate entrepreneurs and founders on company creation, key decision-making processes and effective communication (e.g., pitching their idea to potential investors). As ventures progress in the acceleration process, BGI gradually introduces founders to the international networks they need to gather (i) customer and market knowledge and (ii) access key (angel) investors and eventually, if appropriate, venture capitalists capable of financing scaling.



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Each "intensive training period" takes one to two weeks and is extremely intensive for participants (12+ hours a day). In between these training periods, teams work on specific (weekly) deliverables or activities. Upon graduation (end May), BGI concentrates/limits its support to the most promising and committed teams, 8 to 12 (out of the 21 batch per edition) teams are selected for an extended mentoring period which can extend for a period of up to 5 years, offered in the first 9 to 12 months via a semi-structured catalyst program and continuous coaching over the following years until companies *exit* or *fail* (Table 1 shows the list of selected startups in the first five editions of BGI and their corresponding fate).

*Table 1. Graduated ventures in five editions of BGI*

| 1st Ed. Alumni | 2nd Ed. Alumni | 3rd Ed. Alumni | 4th Ed. Alumni | 5th Ed. Alumni |
|---|---|---|---|---|
| **Active (66)** | | | | |
| **Subtotal 8** | **13** | **13** | **13** | **19** |
| 1. Cell2B (PT) | 21. AlphaSIP (ES) | 41. BSIM2 (PT) | 61. Avalingua (ES) | 81. Bio Image Diagnostics (PT) |
| 2. Ecoticket [Nano'nox] (PT) | 22. Blueworks (PT) | 42. BePetly (ES) | 62. Bike Emotion (PT) | 82. HydrUStent (PT) |
| 3. Movvo [BIPS] (PT) | 23. eu-PA (PT) | 43. Cardiocare (BR) | 63. eSolidar (PT) | 83. nuRISE (PT) |
| 4. Plux (PT) | 24. Hole 19 (PT) | 44. D-Orbit (IT) | 64. Endeavour Lab (PT) | 84. Smart Separations (UK) |
| 5. Regenear (US) | 25. IsGreen II (PT) | 45. faces.in (PT) | 65. Glucowise (UK) | 85. Scale Therapeutics (PT) |
| 6. SDSIL [PV Solutions] (PT) | 26. Law4All (PT) | 46. Fidesys (RU) | 66. Meshapp (PT) | 86. Casas em Movimento (PT) |
| 7. TreatU (PT) | 27. MediaOmics (PT) | 47. HybPAT (PT) | 67. Moviq (IT) | 87. Displr (PT) |
| 8. Weadapt (PT) | 28. Metablue (PT) | 48. i2d (PT) | 68. Octodon (RU) | 88. Lokkup (SE) |
| | 29. Musikki (PT) | 49. LikeHack (RU) | 69. Sensefinity (PT) | 89. ParkSmart (IT) |
| | 30. Selftech (PT) | 50. Perceive3D (PT) | 70. RoplaVac (PT) | 90. Atooma (IT) |
| | 31. SunOK (PT) | 51. Unplugg (PT) | 71. Smarfreez (PT) | 91. Ingen.io (SK) |
| | 32. Watt IS (PT) | 52. Veniam (US) | 72. SWE (PT) | 92. MyiArts (PT) |
| | 33. wi-GO [Follow Inspiration] (PT) | 53. LikeMinds [Blastboard] (UK) | 73. Watgrid (PT) | 93. Promoclick (PT) |
| | | | | 94. Samebug (CZ) |
| | | | | 95. DoDoc (US) |
| | | | | 96. Aequor (US) |
| | | | | 97. CorPower Ocean (SE) |
| | | | | 98. iTravey (PT) |
| | | | | 99. XMetrics (IT) |
| **Defunct (11)** | | | | |
| **Subtotal 3** | **2** | **2** | **3** | **1** |
| 9. Acellera Therapeutics (PT) | 34. Actual Sun (PT) | 54. Scootzz (PT) | 74. Cucco (BR) | 100.Surfstoke [CrowdSurf] (PT) |
| 10. Emove (PT) | 35. All-Desk (PT) | 55. Educed (PT) | 75. Paymel (PT) | |
| 11. Waydip [Waynergy] (PT) | | | 76. Expertus (PT) | |
| **Not Incorporated (11)** | | | | |
| **Subtotal 5** | **3** | **2** | **1** | **-** |
| 12. iFood Tech (PT) | 36. Cyclotech (PT) | 56. GoClapp (PT) | 77. 2lzzy (PT) | |

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*Table 1. Continued*

| 1st Ed. Alumni | 2nd Ed. Alumni | 3rd Ed. Alumni | 4th Ed. Alumni | 5th Ed. Alumni |
|---|---|---|---|---|
| 13. Aromase (PT) | 37. Eunoia (PT) | 57. TradeDare (PT) | | |
| 14. Mumu.fm (PT) | 38. Strato Power (PT) | | | |
| 15. Aires (PT) | | | | |
| 16. Eunoia (PT) | | | | |
| **Zombie (9)** | | | | |
| **Subtotal 3** | **2** | **3** | **1** | |
| 17. AbbanLabs (PT) | 39. One Care (PT) | 58. Cerebro-AP (PT) | 78. The Smart Tongue (PT) | |
| 18. Fytozimus (PT) | 40. NetMust (PT) | 59. RetroSim (PT) | | |
| 19. Move Mile [Critical Move] (PT) | | 60. YouBeQ (PT) | | |
| **Dropout (4)** | | | | |
| **Subtotal 1** | **-** | **-** | **2** | **1** |
| 20. Feedzai (PT) | | | 79. Connect (PT) | 101. Letzgo (IT) |
| | | | 80. Muzzley (PT) | |

## Translating Market and Customer Knowledge into a Go-to-Market Plan

A key feature of BGI's transnational accelerator model is the rapid exposure of selected startups to a global network of mentors and advisors that can help shape and improve the commercial prospects of the incubated startups. In the first week after being accepted in the accelerator (July), the BGI team connects selected startups with different sorts of experts (technology, market, regulatory, legal, IP, potential partners) capable of bringing the entrepreneurial expertise and, importantly, the market and customer knowledge firms need to refine their value propositions and de-risk their business.

In the interim periods (August to October and January to June), teams work on a weekly basis and hold 10 structured (Aug-Oct) and non-structured meetings (Jan-Jun) with their assigned mentors, advisors (all teams) and catalysts (selected pool of 8 to 12 teams), depending on stage of development and acceleration phase. Throughout these periods each startup designs and then executes an 18 to 24 month go-to-market plan, which embodies the ideas of transnational acceleration discussed in previous sections of this chapter. It is during this process of writing a go-to-market plan (Aug-Oct) that the benefits, for startups, of BGI's rich network of 200 unique experts become apparent. These experts help startups to rapidly validate their business model and prepare for scaling operations with global aspirations. These experts have been carefully recruited over five years with the help and lobbying support of all involved parties, namely MIT and Portuguese government (FCT). Today, these experts constitute the backbone of BGI's successful model. All experts work with teams on a voluntary, but regular basis[7].

A key delivery for startups, related to the gathering of market and customer knowledge is *BGI's go-to-market plan*. BGI's go-to-market plan, a process that has been improved over the years, is designed to help technology-based venture teams transition from a technology-centric proposition to a commercially viable businesses proposition that can be ready for investment based on each venture's Technology Readiness Level (TRL[8]). Startups accelerated by BGI typically have TRL's ranging from 3 to 6. One of



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the key goals of BGI, while guiding teams in the write-up of their go-to-market plans, is to take each team through a process of defining their unique value proposition (quantifiable in terms of monetary savings or value added to a specific target customer segment) and conduct market validation (assessing need strength and awareness, willingness to pay, switching costs, industry/sector dynamics, current and future competition among several other non-obvious factors. The goal is that the execution of such a go-to-market plan (which includes an investor's deck presentation) supports the team in attracting mentors, recruiting top talent (including an advisory board) and eventually in becoming investment ready and attracting the right investors.

## Startup Financing Model

Having clarified their business idea and business model and developed an investor's presentation in their go-to-market plans, each incubated startup needs to be able to raise capital (initially from local investors) to finance the execution of its plan. BGI connects promising local startups with business angels and early stage VC's around the globe, but with a special focus on the US, in order to rapidly mature and validate their value propositions, increasing their odds of becoming a viable business. Each startup's ultimate goal is to identify a profitable exit strategy. Each startup has a limited time (10 weeks) to work with mentors and advisors and gather sufficient customer and market knowledge to develop a clear and convincing business proposition. Very few get presented term sheets by US investors at this stage. Afterwards, each startup is invited to participate in an investor-only event, in Lisbon, where it pitches its business proposition to a panel of international investors. This is the first "formal" opportunity startups have to articulate their value propositions and uniqueness to a professional audience of experts and mostly, local investors.

The process of raising capital, however, typically takes significantly more time and effort (due diligence). Therefore, unlike any other accelerator in the world, BGI supports (pro bono) its alumni for a period after graduation up to five years. This support includes invitation-only events with key ecosystem players, including advisors, customers, partners and investors, among other. Unlike the models in which BGI was inspired (Deshpande's grants and MIT's 100k) - which exist with the sole purpose of supporting teams which are part of the MIT university ecosystem (i.e. technology spinouts where it already holds some IP rights) - BGI was originally conceived as an open model in order to achieve critical mass in its four verticals (i.e. the four domains or tracks introduced earlier). Driven by a management school with little technology focus, BGI concentrates primarily on providing the adequate tools to prove market fit and provide support to fragile new ventures built on technology-based value propositions.

## BGI's Exit Strategy

About 11 out of the 20 accelerated ventures per edition attract some form of venture financing (76.8% non-dilutive and 23.2% risk capital sources). The median venture financing per batch (i.e. BGI graduated companies) is €480,011. To date, 42.2% of BGI batch ventures get funded. The largest cumulative round(s) to date is set at €4.5 million[*3] whereas the smallest is set at €40,000. In Table 2, we summarize the funding raised by startups graduated from BGI (as 31st July, 2015). Of a total of 101 (100%) ventures (incorporated or not) that graduated in five complete editions of BGI (6th Ed. batch will be selected in July 2016), 66 are active companies (65.3%), 11 have failed and were shut down (10.9%), 11 were never incorporated (10.9%) and 9 are considered "zombie" companies (8.9%). The remainder 4 companies (3.9%) correspond to dropouts.



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*Table 2. Funding raised by finalist BGI startups from different sources*

| Funding Sources*2 | First Edition (2010/11)*3 | Second Edition (2011/12) | Third Edition (2012/13) | Fourth Edition (2013/14) | Fifth Edition (2014/15) | All Editions |
|---|---|---|---|---|---|---|
| Dilutive[9] | 7.5 M EUR | 2.7 M EUR | 29.9 M EUR | 980 K EUR | 2.9 M EUR | 21.2 M EUR |
| Non - Dilutive | 4.1 M EUR | 2.7 M EUR | 1.3 M EUR | 3.1 M EUR | 2.0 M EUR | 13.1 M EUR |
| **Subtotal** | **11.6 M EUR** | **5.4 M EUR** | **31.2 M EUR** | **4.1 M EUR** | **4.9 M EUR** | **34.3 M EUR** |
| Condit. Funding*1 | 336 K EUR | 300 K EUR | 100 K EUR | 400 K EUR | 0 EUR | 1.1 M EUR |
| **Total** | **11.9 M EUR** | **5.7 M EUR** | **31.3 M EUR** | **4.5 M EUR** | **4.9 M EUR** | **35.4 M EUR** |

*1 Funding conditional on achievement of certain milestones

*2 As of 31/07/2015

*3 Data excludes Feedzai series B round of US$17.5 million (May, 2015).

In five editions, BGI has received 515 applications, 35.0% of which were outside Portugal from 36 countries (see Table 3 for the number of submissions per area in BGI's first five editions). Nearly half of the applicants (46.4%) were from Enterprise IT & Smart data, 21.7% from Ocean economy, 17.5% from Medical devices and Health IT and 14.4% from Smart cities and industrial technologies.

In terms of exit strategy, BGI defines an *exit* as an event when any of the following situations takes place: (1) any awarded startup pays back or reimburses Caixa Capital Awards; (2) a startup reaches an accumulated venture financing of at least US$5M (€4 million), in equity and/or convertible debt or venture loans; (3) in the event of an IPO and/or M&A on any of the startups supported by BGI; or (4) a startup reaches a turnover of at least €2.5 million per financial year. Thus far, BGI has had two exits as per the above definition.

## Future Challenges of the BGI Transnational Acceleration Model

Provided the huge effort and commitment to core mentors, considerable attention has been devoted to making such a process replicable and scalable with limited internal resources. In spite of such efforts, further improvements were required in BGI's Mentoring Process. Applicant teams had consistently reported the need for more mentoring activities that could enable them to develop their ventures in a faster and more efficient manner. Also, it has been acknowledged by BGI internal management that further front loading activities need to precede e-teams III in Cambridge final boot camp (May/June) and that mentoring has been too "loosely done". More and better mentoring activities were then needed in BGI and for that reason an improved mentoring process was introduced during BGI's fourth edition (in 2013).

The improved BGI's Mentoring Process (or BMP) launched with the 4th Edition, is a structured process designed to be more efficient, scalable than the previous mentoring process. The BMP lasts 10 weeks with a predefined calendar aimed at "frontloading" teams' work and increasing their chances of successfully proceeding to the next steps. Among other initiatives, the BMP teams and mentors meet once per week for one hour and, two days prior to each meeting, teams need to submit specific weekly deliverables (typically 3 to 5 pages of written material). The BMP builds upon a powerful online, custom built platform (BGI Hub), where teams and mentors, respectively share deliverables and comments. The platform will soon aggregate business (as well as other) intelligence based on a combination of open source and proprietary (artificial) algorithms.



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*Table 3. Applications per edition and domain tracks*

| **Ed. 1 submissions distribution across tracks** | **Ed.1** | **%** | **International** | **% International** |
|---|---|---|---|---|
| ***1. Health Technologies*** | 17 | 17,9% | 1 | 1,1% |
| ***2. IT & web*** | 36 | 37,9% | 1 | 0,0% |
| ***3. Sustainable energy & transport. systems*** | 14 | 14,7% | 0 | 0,0% |
| ***4. Products & Services*** | 28 | 29,5% | 1 | 1,1% |
| **Total** | **95** | **100%** | **3** | **2,1%** |
| **Ed. 2 submissions distribution across tracks** | **Ed. 2** | **%** | **International** | **% International** |
| ***1. Health Technologies*** | 11 | 18,3% | 3 | 5,0% |
| ***2. IT & web*** | 29 | 48,3% | 2 | 3,3% |
| ***3. Sustainable energy & transport. systems*** | 8 | 13,3% | 1 | 1,7% |
| ***4. Products & Services*** | 12 | 20,0% | 2 | 3,3% |
| **Total** | **60** | **100,0%** | **8** | **13,3%** |
| **Ed. 3 submissions distribution across tracks** | **Ed. 3** | **%** | **International** | **% international** |
| ***1. Health Technologies*** | 18 | 13,6% | 10 | 7,6% |
| ***2. IT & web*** | 69 | 52,3% | 30 | 22,7% |
| ***3. Sustainable energy & transport. systems*** | 13 | 9,8% | 3 | 2,3% |
| ***4. Products & Services*** | 32 | 24,2% | 12 | 9,1% |
| **Total** | **132** | **100,0%** | **55** | **32,6%** |
| **Ed. 4 submissions distribution across tracks** | **Ed. 4** | **%** | **International** | **% international** |
| ***1. Health Technologies*** | 16 | 16,5% | 3 | 3,1% |
| ***2. IT, Web & Mobile*** | 47 | 48,5% | 22 | 22,7% |
| ***3. Sustainable energy & transport. systems*** | 11 | 11,3% | 3 | 3,1% |
| ***4. Consumer Products & Services*** | 23 | 23,7% | 8 | 8,2% |
| **Total** | **97** | **100,0%** | **36** | **37,1%** |
| **Ed. 5 submissions distribution across tracks** | **Ed. 5** | **%** | **International** | **% international** |
| ***1. Medical Technologies & Health IT*** | 28 | 21,4% | 13 | 9,9% |
| ***2. Enterprise IT & Smart Data*** | 58 | 44,3% | 36 | 27,5% |
| ***3. Smart Cities & Industrial Technologies*** | 28 | 21,4% | 18 | 13,7% |
| ***4. Ocean Economy*** | 17 | 13,0% | 11 | 8,4% |
| **Total** | **131** | **100,0%** | **78** | **59,5%** |
| **All Eds. submissions distribution across tracks** | **All Eds. (1 to 5)** | **%** | **International** | **% International** |
| ***1. Medical Technologies & Health IT*** | 90 | 17,5% | 30 | 5,8% |
| ***2. Enterprise IT & Smart Data*** | 239 | 46,4% | 73 | 14,2% |
| ***3. Smart Cities & Industrial Technologies*** | 74 | 14,4% | 43 | 8,3% |
| ***4. Ocean Economy**** | 112 | 21,7% | 34 | 6,6% |
| **Total** | **515** | **100%** | **180** | **35,0%** |
| **** Products and services track in Eds. 1 to 4.*** | | | | |



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We now turn to the two case studies we use to examine whether our theoretically derived mechanisms work and how BGI's transnational acceleration model just discussed precisely operate in a real setting, controlling for many complex confounding effects and contextual influences (Miller and Tsang 2010).

## CASE STUDIES: MOVVO AND VENIAM

### Case Study 1: Movvo[10]

*Movvo* is a fast-growing technology company, dealing with hardware and software solutions to measure the flow of people in physical spaces (such as large retail shops and malls). Movvo was founded in 2009 in Porto, Portugal's second largest city. Part of the idea to develop a technology to capture people's path in physical spaces emerged following a project in which some of the founding team's members had been working on for a corporate client, as interns at INESCTEC, an R&D Centre at the University of Porto (http://www.inesctec.pt/). The project consisted in developing Machine-to-Machine (M2M) solutions for home coffee appliances. The goal of the corporate customer was to incorporate a Bluetooth or 3G enabled device in coffee appliances which could automatically communicate consumer needs to a central database (e.g. to order new coffee capsules).

The project was quite ahead of its time, which may have hampered growth. The team successfully developed a number of prototypes, but the project eventually reached a standstill. Nonetheless their experience in the M2M space convinced them that this was a space ripe for disruption with the advent of the Internet of Things (IoT)[11]. At the same time, other team members who studied at Porto´s School of Sciences were exploring new possibilities in the field of indoor micro-location technologies. As explained by Roberto Ugo, Movvo's CTO and one of the company´s founders:

*we had a professor who disliked shopping very much, so we created an algorithm to help him spend less time in the retail store; but then we started thinking that if people spend less time in shops they would also buy less (…), this was when we became interested in following paths of people in retail shops [through signals in mobile phones] and started working on a Bluetooth prototype.*

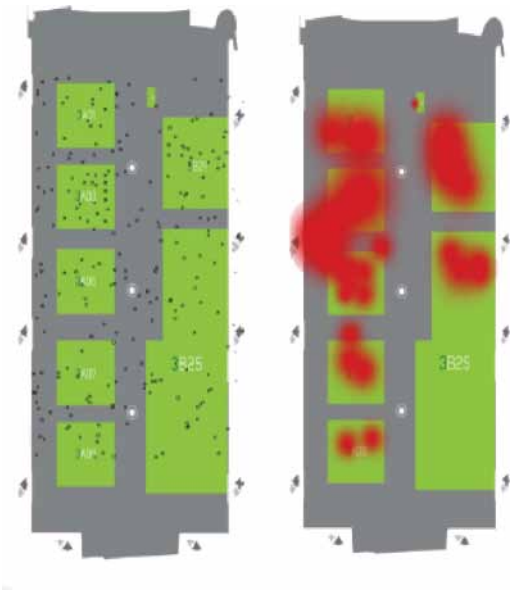
Roberto soon started looking at the existing intellectual property in this space. After countless hours searching patent documents, Roberto realized that he and his colleagues had the skills and drive to improve existing technologies in terms of location accuracy. Competing indoor location solutions relied on slow, less accurate, or manual technologies (such as RFID). GPS-based solutions could not be used in very small places or indoor, due to lack of signal and granularity. Movvo's idea was powerful. To use wireless protocols and emissions - like GSM, Bluetooth or Wi-Fi - to anonymously capture the real-time location of mobile phone owners. Moreover, they could do it in a cost effective way, as they knew how to use standard, off-the-shelf technologies and beacons to improve the signal information using trilateration algorithms. This is where the Science background skills of the remainder of the founders, Suzy Vasconcelos and Diana Almeida, also played a key role.

Together, the founding team had the skills and technological knowledge needed to excel in the development of new solutions in this space. Figure 2 shows is an early *heat map* of customer paths in a retail space. It illustrates the type of output that Movvo was able to create with its state-of-the-art indoor mapping technology. However, at this stage (Spring of 2010), despite all their technical talent, the team



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*Figure 2. Example output of Movvo's original tagless real-time location technology*




felt overwhelmed by the huge number of potential applications and markets they could potentially focus on. In addition, a number of organizational issues, such as how to finance growth and streamline business development were major obstacles to the successful growth and scaling of their startup.

## Clarifying the Business Idea and Gathering Customer and Market Knowledge

Conscious of these obstacles, as soon as they heard about "ISCTE-IUL MIT Portugal Venture Competition" (now BGI), the team decided to apply (May 2010) and was selected to go through the first edition of BGI's acceleration program, described in previous sections. Movvo considers that this was a turning point in their growth trajectory. They benefitted immensely from intensive mentoring, networking and pitching as well as their hard work during the boot camps in Lisbon and Cambridge. In particular, mentors and advisors helped Movvo choose clear target customers - retailers and malls, understand unmet needs of these customers that could be solved with their technology (customer intelligence, purchasing patterns, optimizing retail space and promotional offers, etc). Movvo's business model, as well as the concrete steps they needed to take to launch their business, became much clear during the process of preparing their international go-to-market plan. Such valuable entrepreneurial lessons and customer and market knowledge that would be hard, if not impossible, to find locally:

*Mentors can choose to cooperate with companies to mentor based on their portfolio.(...) Our mentor was from the MIT and his company was specialized in real time management software for the railway industry, which was very relevant to our field and thus very insightful. This is a very specific type of knowledge. Moreover, he helped us dealing not only with the business plan and other doubts, but also introduced us to people and clients.*



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Movvo recognizes and praises the value they were able to extract from BGI´s network of mentors and advisors. Moreover, they understood that the incentives for these mentors and advisors were, most of the time, non-monetary, which helped them feel part of a unique group of entrepreneurs who are passionate about their ideas and about changing the world. This was the kind of motivation that made them work hard, but also becoming keen on helping other local entrepreneurs follow their dreams:

*It works like a professor telling their own personal stories. (…). And they do it for free. Of course if there is business in-between the better, and they may become involved in the company in the future as staff or investors, but that's not a major condition. In the US there is a virtuous cycle of entrepreneurs helping each other and giving back to the institutions that helped them out to start their ventures [e.g. MIT], as a sort of philanthropy which is not developed here [in Portugal]. I can imagine that in the future something similar may happen with BGI, with alumni companies helping newcomers.*

## Raising Capital to Grow

Movvo's hard work paid off. In October 2010, Movvo became one of the track awardees of BGI and, one month later, it became a Grand winner which allowed it to raise 200,000 € in a first round investment by Caixa Capital, an investment which nowadays totals 400,000 €, in non-dilutive financing. This process contributed to considerable learning on how to how to approach and deal with new and advanced markets, how to streamline operations, work with lead clients and develop a strong network with potential investors and advisors.

It is interesting to compare Movvo's experience with BGI´s transnational acceleration model and their prior experience in a more locally-oriented incubator. As explained by Roberto Ugo, BGI's transnational philosophy helped the company succeed and overcome challenges in ways that their previous incubator was unable to do:

*[our first] local incubator [in Porto] gave us great support; we were launching our first company and besides the space, they helped us with contracts, local networking and all sorts of daily issues that we didn't know how to deal with. [Yet], BGI linked us up with all their international contacts and potential investors (...). They [BGI] are catalysers for growth, investments and new business opportunities; it is totally different. In their events we get in touch with American investors, investors from Spain, the UK (…). They help us to look to the rest of the world. (…) BGI was also very helpful when we wanted to file in a global patent, linking us to specialized layers in Cambridge.*

## The Long-Term Value of being a BGI Alumni

The support of BGI is not a one-off event. There is a close involvement and follow-up after the venture competition. For example, after winning the competition in mid-2011, Movvo still faced many challenges and uncertainties. Their technology had a high number of applications, ranging from market intelligence (data) for retailers or malls, to safety applications or solutions for transportation companies. The team had to decide where to start, which customer or customers to target first, how to position their offering and how to improve their business and pricing models. Even in the technology front, the team had to



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work on server integration issues, to ensure a smooth coupling of Movvo's solution with the client's IT systems, and to deal with data privacy issues. These obstacles posed considerable hurdles and delays. BGI tried to facilitate the process by coaching the founders further.

For example, Movvo had applied for a provisional patent during the summer of 2010 but was, at the same time, engaging in important negotiations with key customers, such as large retail corporations both in Portugal and abroad. All these different demands on the team's time and energy required a lot of dedication and rigorous planning. In their customers' interactions, communication would focus primarily on potential applications, and not on the technology itself. At the same time, the team needed to be prepared to answer any questions regarding their technology, patents and complex issues such as their 'hot topics' concerning server integration and privacy issues. In order to avoid any pitfalls, Movvo prepared each meeting very carefully, always considering different scenarios and having contingency plans ready. BGI supported these negotiation processes that required developing specific dashboards according to the company needs. Ultimately, a leading Portuguese retail corporation decided to adopt their solution and to invest in the company, becoming a key shareholder of Movvo.

During 2012-13, Movvo attracted different rounds of angel investment in Portugal and North America, and BGI was, again, instrumental in the process of capturing capital and financing Movvo's scale-up. One of these investors was a Boston-based angel investor, who had an interest to invest and support the team. Another key investor, identified by BGI, consisted of former *Novabase intrapreneurs* (a pioneer Portuguese IT company). One of the latter investors was, one year later, invited to become an interim CEO. The first angel round was also accompanied by the duplication of the 200,000 € award by Caixa Capital resulting in a 600,000 € round which came on top of the 200,000 € already awarded as the Grand winner of the competition.

During this period, Movvo started selling technology overseas and grew from 4 to 32 highly qualified employees, based in Porto – where the company locates and envisions expanding its R&D capacity. Movvo is also present in Cambridge (Cambridge Incubator Centre), right at the heart of MIT, in order to fuel its transnational network of contacts and facilitate networking with Boston's and MIT's entrepreneurial community (the first year was also supported by BGI). These international networks are particularly important to help the company raising further capital and financing and, importantly, gather customer and market know-how and reach potential customers. In the words of Movvo´s CTO, "there are many brains in Portugal, it would make no economic sense to hire them in other places. (…) [However], we [Portugal] are not very good selling our own products".

To this effect, Movvo is planning to establish a global sales and commercial unit in Boston/Cambridge. As Roberto Ugo explained, it is also about marketing and sales acumen: *"it is not only about the credibility, Americans can sell the impossible."* Currently, Movvo also informally supports new local companies starting up their business, and cooperates with local Universities for student´s research projects. This contributes to grow new mentoring and business support ecosystems locally, indirectly influenced by BGI´s experience.

All in all, the case of Movvo shows that a good idea can emerge everywhere, and that top-notch talent and technology does exist in peripheral European economies. However, the right knowledge, mentoring, cultural features and the resources necessary to scale it up and turn it into a viable businesses are much more selective. Thus, the relevance to link promising startups in these places to world class ecosystems through global "pipelines."



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## Case Study 2: Veniam

Veniam, which stands for *VEhicles Networking In A Mesh (VENIAM),* was founded in 2012 by two academic researchers, following their participation in the third edition of Building Global Innovators. João Barros, at the time Associate Professor of Electrical and Computer Engineering at the University of Porto and national director of the Carnegie Mellon University Portugal program (CMU), together with Susana Sargento, a post-doc researcher at the Telecommunications Institute in Aveiro (a city 75 km to the South of Porto), had been working together for several years when they had the breakthrough idea behind Veniam. Together, João and Susana made important scholarly contributions to the field of vehicular networks, namely to the area of self-adjusting nodes and algorithms capable of optimally managing such networks. Consequently, given its roots in academic research, Veniam is formally a spinout resulting from licensing a technology that both founders developed at their academic institutions.

The idea behind Veniam is to commercialize an aftermarket device that turns cars into mobile hotspots. Compared with existing solutions, Veniam leverages vehicle-to-vehicle communication to form a city-scale vehicular mesh network that offers a 10x increase in the range of the WiFi backhaul, a 10x lower cost per megabyte and a unique and simple platform for thousands of new vehicle apps. When they first joined BGI, João and Susana were confident that they were into a huge opportunity. They knew that the megatrend known as the Internet of Things (IoT) would push all kinds of devices - beyond computers, smartphones and other digital communication devices - to be connected to the Internet. They also knew existing solutions were not good enough and were confident their technology was superior to existing alternatives. Yet, they struggled about how to actually turn their idea into a commercially viable offering. What customers to target? How to position and market their product? How do set up distribution channels? And importantly, how to finance such move from the lab to the market?

## Discovering Local Talent with Global Ambition

One may wonder how could such a breakthrough technology originate from research in a peripheral region like Portugal, instead of Silicon Valley or Boston? Two factors were determinant in the case of Veniam: the thought leadership and international network of João Barros and the supportive role of Carnegie Mellon University, through its Portugal Program (CMU).

As a promising "start-scientist" with a degree from the University of Porto, João Barros soon felt the need to collaborate with other prime knowledge centres around the globe, first in Germany and later in the United States. For instance, during his academic studies João studied also at Universitaet Karlsruhe, Germany and then completed a Ph.D. degree at the Technische Universitaet Muenchen (TUM). In 2010, he received the prestigious IEEE Communications Society Young Researcher Award for the Europe, Middle East and Africa region, as well as other distinctive scholarships which allowed him to spend time conducting research at Cornell University and at MIT. Yet, João Barros knew that it would take more than his own talent to bring Veniam to life. Fortunately for Veniam, Portugal does not have a shortage of engineering talent. It has, however, a shortage of marketing and sales expertise for high-technology ventures, or in the words of João Barros:



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*Portugal is a great place to have your engineering, because the salaries are 3.5x lower than Silicon Valley and the quality is excellent. [However], it is a terrible place to have your sales, marketing and product management, because there are very few people who know how to address global markets in a high-growth tech startup.*

## The Partnership with Carnegie Mellon University's Portugal Program

The idea of a vehicular mesh networking technology had been pursued by scientists and entrepreneurs worldwide for quite some time but which never materialized. The inexistence of a testbed large enough to take on the challenge of understanding the real-world conditions and the achievable performance of a city-scale vehicular mesh network made it very hard to develop and test such technology. The CMU-Portugal Program (a five-year international partnership between Carnegie Mellon University and 12 Portuguese Universities, headed since 2009 by João Barros), was pivotal in the successful development of such technology. Hence, João Barros' thought leadership, combined with the support of Carnegie Mellon University Portugal Program and the right timing (given the rapid trend towards an Internet of Things) made it possible for Veniam to pioneer the development and pilot the largest test bed in the world based on this technology.

Under the auspices of the CMU program, a number of proprietary technologies were developed with the support of several multi-million euro grants provided by the Portuguese science and technology foundation (*FCT*). The solution Veniam is currently commercializing resulted from five years of R&D efforts and more than 2M EUR of R&D investment. This included the *Drive-In* project, funded by FCT through the Carnegie Mellon Portugal program, which resulted in a large-scale testbed with 465 taxis in Porto, Portugal. The project led to significant advancements in vehicular networking simulation, algorithms and protocols, the backbone of Veniam's technology. Another key project was *MISC*, funded by FCT through the MIT Portugal program, which explored how city buses can be used to gather large quantities of data in a city. CMU Portugal program enabled the development of the largest vehicular network in the world, connecting taxis and buses wirelessly using their uniquely developed IEEE 802.11p compliant driver. Across all these projects, the support of the CMU program was pivotal in allowing João Barros to develop a fast setup for vehicular communications, ensuring reliable and efficient routing of data packets among vehicles, and extending the reach of WiFi hotspots by an order of magnitude. These technological achievements constitute the backbone of Veniam's value proposition.

## BGI: Helping Veniam Clarify its Value proposition

When Veniam entered BGI acceleration program, back in July 2012, it consisted of a typical academic team, with a strong emphasis on academic research and a potentially interesting technology. João Barros, the company's founder and CEO, acknowledges that while Veniam had ample access to engineering and scientific talent, customer and market knowledge was more of an issue:

*Veniam is a tech company that builds on 10 years of R&D in connected vehicles and intelligent transportation systems. We recruited our best MSc and PhD students so access to the right technical knowledge was not an issue. The main challenge was customer and market knowledge.*



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This view is corroborated by BGI's leadership and mentors. Everyone who came in contact with Veniam agreed that their scientific know-how, experimental data and the intellectual property were important strengths. Yet, a number of important components in their business idea were still missing. Veniam's pitch missed, for instance, clear information on their choice of target customers and strategy to reach them, the cost of transmitting data over cellular networks, capacity usages, business model and other implementation and operational challenges. BGI and its network of mentors knew this and, therefore, asked Veniam's leadership to roll up their sleeves and start seeing the company from the customer's standpoint. According to João Barros, this customer - and market-focused approach to technology commercialization was very beneficial for Veniam, as "the BGI mentors encouraged us to talk to customers as much as possible and showed us the right questions to ask. This was crucial to the development of our business strategy."

For instance, mentors helped Veniam clarify its competitive landscape and positioning. As Veniam operates in an extremely competitive environment (with large players, including corporate automotive players, each one trying to implement its own proprietary standard to the industry), these aspects needed to be sharpened rapidly. This was not an easy task. With the help of BGI, Veniam was able to connect with key people that brought in the marketing and entrepreneurial skills their high-tech team missed. Specifically, Robin Chase - co-founder and former CEO of Zipcar (sold to Avis for US$491 million) - joined the team as a cofounder and Maria João Souto, a prolific Portuguese high-tech entrepreneur, joined as general manager and director of operations. These were valuable additions to the team, in the words of João Barros:

*Our co-founder Robin Chase was vital, as chairman and strategist. She joined from day one. Our general manager Maria João Souto brought decades of experience in managing the day-to-day activities of startups and growing SMEs.*

BGI's mentors advised the team to map out the competitive landscape to better understand the differentiation potential and the added value of their solutions. The team quickly discovered that companies currently competing in the emerging connected vehicle market can be divided into four different categories: (1) chipset manufacturers, (2) telematics vendors, (3) OEMs and (4) telecom operators. Although some companies already offered a few of the necessary components for vehicular communications, none of the competitors offered a turnkey solution for vehicular mesh networking like the one proposed by Veniam. Moreover, unlike its competitors, Veniam developed its own IEEE 802.11p compliant driver, meaning that the company was able to manufacture its devices at a fraction of the cost using easy-to-access and inexpensive components, such as commodity radios, and leveraging on the existing Wi-Fi infrastructure.

Beyond customer choice and competitive landscaping, BGI also helped Veniam clarifying its go-to-market strategy, as well as ensuring a sense of urgency and focus on the right issues at the right time, which in the words of João Barros were among the crucial advantages of joining the BGI network:

*We benefited a lot from interaction with other entrepreneurs, mostly to boost our confidence and learn from their experience (...) in terms of how they were addressing their markets and going through the process of figuring out what their products could be and how they would sell them. (...) [And], at the end of the day, the biggest benefit of BGI was to impose a timeline and force us to focus on the right issues. It is very easy to get distracted as an entrepreneur, but BGI helped us set the right priorities.*



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## BGI: Helping Veniam Raise Money to Grow

Veniam came out of the BGI accelerator as the Grand finalist for the third edition. As already discussed, at this stage the company had two new co-founders, Robin Chase and Roy Russell, ex-founders of Zipcar. Furthermore, as winners of BGI's third edition, the company received prize money of €200,000 in the form of a 10 year venture risk loan, award which could be doubled if, in the subsequent 5 years, Veniam would be able to meet a set of pre agreed technical and commercial milestones, which it indeed met in the spring of 2014. This was an important seed capital for Veniam, according to João Barros:

*The capital that came with the grand prize was helpful in that it bought us some runway and allowed us to close Series A at a higher valuation.*

Veniam also took advantage of BGI's network of investors and was able to pitch its idea to 74 investors in just six months, an impressive count. Yet, Veniam wanted to grow in a capital-intensive space, which meant that they needed access to large venture capitalists in Silicon Valley. Those types of investors are more difficult to find than standard angel investors, even in a network like BGI. João Barros felt that that, indeed, many investors in BGI's network were *"mostly small investors with limited reach"* which made it challenging for the company to find the right ones to finance its growth. Consequently, according to João Barros, for Veniam there was actually no need for so much emphasis on fundraising and connecting with (small) investors within BGI network - it was more important to develop the quality of the business idea:

*My experience is that when you have an amazing opportunity, the right product, a good market understanding, strong team and initial paying customers, the investors will show interest. Therefore, the emphasis should be on checking all the right boxes and building a solid business.*

Despite these challenges, Veniam was able to grow successfully from a four-people team in 2012 to more than 20 employees in three countries by 2014. We now explore Veniam's scaling and go-to-market.

## BGI: Increasing the Chances of Commercial Success of Veniam's Technology

Besides enabling helping Veniam raise capital to scale and coaching the team, BGI also played an important role in streamlining Veniam's market access and commercial success, allocating key resources to business development and gathering customer and market knowledge. Over of the course of just three months (July to November 2012), Veniam conducted extensive customer interviews with major telecommunications operators in Portugal and abroad. At this stage, Veniam was able to quantify exactly customers' unmet needs in different verticals[12]. Such realization gave the team the confidence it needed to leave its comfort zone as established and successful researchers and focus on developing a high risk venture which required them to invest countless hours in a tireless mission to change the way users connect to the network.

With two seasoned entrepreneurs on board as co-founders, a large demonstration pilot and as a BGI grand winner (€400,000 in non-dilutive financing), Veniam was able to quickly gain an international reputation. Such reputation was important to persuade, in a first instance, angel investors based in New York and Silicon Valley to engage in the venture. True ventures and Union Square Ventures along with



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its angel investors made a series A amounting to US$4.9 million, closed on the 9th August 2014. This would be the turning point for a local company based in peripheral city of Porto to establish itself as an emerging and ambitious global player in telematics.

With its R&D office located in Porto at the University of Porto incubator (UPTEC), Veniam was able to keep its burn rate at fraction of the cost (estimated at 1/5th) compared with what its competitors would be able to located in the West or East coast of the USA. This co-location strategy is a model that BGI strongly and actively supports since a company's inception, whereby co-locating a company's management near a large, vibrant but extremely competitive market - for instance Silicon Valley or Boston in the US. This enabled Veniam to grow quickly. While in 2012 the company had two founders in Portugal and two in the U.S., in 2013 the numbers were 5-9 in Portugal and still two in the U.S. Finally, in 2014 the company doubled its staff in Portugal (to 10-18) and in Silicon Valley (now with four people, including the CEO), and added one more salesperson in Asia.

In sum, Veniam's case is paradigmatic in the sense that the actual deployment of BGI´s transnational acceleration model helped to accelerate its success. Veniam's success also meant that BGI would now be able to showcase Portugal as a reputable and credible hub for efficient R&D, and persuade more international investors to look into Portugal as an origination geography capable of producing strong deal flow at discounted prices when compared, for instance, to the US.

## FUTURE RESEARCH DIRECTIONS

The case of BGI opens new avenues to understand the ways through which startups from small and peripheral economies (like Portugal) benefit from being plugged in different innovation ecosystems, and which types of organizations, business models and policies can be more effective supporting these connections.

In this chapter, in order to explore BGI´s model, we focused only on two very successful "grand winner" startups of BGI´s venture competition, Movvo and Veniam. These two startups operate in very dynamic industrial segments (linked with the "Big Data" and the "Internet of Things"). Thus, it would be important to analyse how the BGI model (and other similar initiatives) work across different sectors and industries, namely as the types of knowledge and resources required to innovate and grow may vary, as well as their sensitivity to geographical location.

In addition, we need large scale empirical studies to better single out the impact of transnational accelerator models, such as BGI, in entrepreneurial success (e.g. access to new markets and networks, capital acquisition and overall growth). For example, more systematic, quantitative analyses that control for firms' internal characteristics (such as the company and entrepreneur´s skills) and for key external factors would be very welcome. Such analyses would allow us to better understand the impacts of transnational accelerator models, such as the BGI process, in different types of startups. Large-scale survey research combined with secondary data, for instance, would allow researchers to flesh out the relevance of entrepreneurs' traits and skills, but also of group dynamics influencing the acceleration program. This type of questions open up several interesting research avenues at the intersection of entrepreneurship studies, economic geography, marketing and even behavioural economics.

From the perspective of local entrepreneurial ecosystems, another issue that would require attention concerns the ways through which knowledge and resources accessed in distant ecosystems becomes "anchored" in the local economy over time. In other words, is it possible that the access to global "pipe-



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lines" dynamically reinforces companies' "out-cluster" orientation, hollowing out local economies (e.g. through early takeovers and transfer of operations to other locations)? The evidence from the case studies suggests complementarity effects and, on the contrary, benefits for local economies - e.g. through the expansion of local R&D staff and the development of new mentoring ecosystems locally (e.g. inspired by the culture and institutions of far away locations). Yet, more research is necessary to fully understand how distant knowledge becomes anchored (or not) in local clusters and how does it vary across places, and what can be the role of transnational networks such as BGI in this respect.

## CONCLUSION

This chapter explored the tenets and the practice of a transnational model for startup acceleration that relies on a global network of experts and investors to promote local entrepreneurial growth in the European periphery: the *Building Global Innovators* (BGI) model. BGI is a Technology Transfer startup accelerator based in Lisbon (Portugal) and in Cambridge (Cambridge, USA) that has successfully incubated several technology-based ventures. In this chapter we discussed the tenets of BGI's model and the pathways through which BGI's global network of experts helped two IP intensive, promising Portuguese-originated startups grow and scale very quickly.

Our findings resonate with recent theses of local entrepreneurial growth in peripheral countries (Fontes & Combes, 2001; Fitjar & Huber, 2015; Vale & Carvalho, 2013). In these contexts, more than struggling to foster local interactions and nurture weak "clusters" (Porter, 1990), it is essential to establish bridges and connectivity between the talent and technical knowledge of local entrepreneurs with global networks capable of unlocking, first, the customer and market knowledge startups need to build convincing business cases and, second, the (venture) capital they will need to scale their businesses. This configures an important lesson for innovation policies in peripheral regions.

Complementarily to previous empirical studies that show how global entrepreneurial linkages emerge in an organic way (Saxenian, 2007), we explored how startup accelerators can deliberately harness such networks to help startups grow rapidly. Today, BGI operates through a partnership between one of Portugal's top business schools (ISCTE-IUL) and a state-owned bank (Caixa Geral de Depósitos). Yet, it started as an entrepreneurship initiative sponsored the Portuguese government and supported by the Massachusetts Institute of Technology (MIT), all within the MIT Portugal program which played a pivotal role in the formation of BGI's vast and high-level network of mentors. Moreover, the startups we explored (namely Veniam) rely on technologies which development strongly benefits from heavy public investments from the Portuguese government in science and innovation, with the aim to support and internationalize top-notch research in Portuguese universities. All in all, this shows that plugging startups in global "pipelines" is amenable to – and may even require – direct policy intervention, but also demand very active, professional and long-term approaches, as shown by the BGI model. The success of such an approach relies on fostering structured learning processes for companies, as well as on the establishment of serious commitments and long-term relations between an accelerator (such as BGI), the startups and the networks of mentors.

The evidence from BGI and the two in-depth case studies we examined show that place matters for entrepreneurship policies. In particular, a well-connected transnational accelerator like BGI can have a very important impact in a startup's internal capabilities and growth prospects. As a matter of fact, the whole international-oriented *modus operandi* of BGI is grounded on the assumption that the geographies



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in which startups are active are an important driver behind its success. Yet, for entrepreneurship policies and startup accelerators, geography and places should not be understood as points in space, but rather as rich repertoires of actors and networks bind together by culture, routines and institutions, which altogether strongly influence the dynamics of local entrepreneurial systems. In this broader sense of "place", being at the right "place" (e.g. the right accelerator) is a crucial determinant of startup success.

Finally, a transnational model such as the one used by BGI seems to contribute to the formation of new local entrepreneurial and mentoring ecosystems in the periphery. Although testing this proposition would require further research, the evidence from our in-depth case studies show that BGI is not only able to help IP-intensive startups reach clearer business ideas, global networks and capital from distant locations, but also reach new ways of working and entrepreneurial culture. Absence of these factors are among the main hurdles in starting up new high-tech ventures in peripheral economies. Instead of trying to replicate the ecosystem and success factors of startup accelerators in regions like Silicon Valley, peripheral countries should invest in accelerators capable of connecting local startups to more advanced ecosystems is probably one of the most effective ways to support the emergence of "true" clusters and entrepreneurial dynamics in the periphery.

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## KEY TERMS AND DEFINITIONS

**BGI - Building Global Innovators:** Technology transfer accelerator initiative based in Lisbon (Portugal) and in Cambridge, Massachusetts (USA). BGI aims at rapidly creating links and networks to locations across the globe, providing startups with access to customers, market knowledge, experienced mentors and venture capital.

**BGI's Go-to-Market Plan:** Process designed to guide startups to evolve from a technology-centric to a commercially viable businesses proposition.

**Clusters:** "Geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (e.g., universities, standards agencies, trade associations) in a particular field that compete but also cooperate" (Porter, 2000, p. 16).

**MIT Portugal Programme:** Formal partnership between the Portuguese government and the Massachusetts Institute of Technology (MIT) with the aim to promote innovation and university spinouts. It is led by the Portuguese Foundation for Science and Technology (FCT), and anchored in a strategic partnership between several Portuguese Universities, the MIT and key partners from industry and government.

**Pipelines:** Channels and conduits through which firms access relevant knowledge and resources to innovate and grow outside clusters (Bathelt, Malmberg, & Maskell, 2004).

## ENDNOTES

1 In this article, the first author had no prior knowledge about any of the two startups analysed and the second author had worked with *Movvo* on topics unrelated to startup acceleration (e.g. utilization of their path-level data to understand consumer behaviour and marketing topics), thereby ensuring the independence of their views.

2 ISCTE-IUL is the abbreviation of the school's original name, which was Instituto Superior de Ciências do Trabalho e da Empresa (Higher Institute of Business and Labor Sciences), with the addition of 'Instituto Universitário de Lisboa' (University Institute of Lisbon) added in 2009, to reflect the fact that ISCTE-IUL became one of the three Portuguese universities (along with the University of Porto and the University of Aveiro) which adopted a 'Foundation Regime', which prescribes management according to private law.

3 http://deshpande.mit.edu



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[4] http://mit100k.org

[5] http://mitsloan.mit.edu/mba/

[6] Deshpande Center for technological innovation and the Martin Trust for entrepreneurship.

[7] Mentors volunteer their time for two reasons. First, with the help of MIT Portugal and the Martin Trust Center for MIT Entrepreneurship, BGI was able to tap into MIT's network of successful entrepreneurs. Unlike the case in Portugal and, perhaps even Europe, these entrepreneurs have a strong philanthropic culture and altruistically offer their time and expertise to help other entrepreneurs grow. Second, some of these advisors make capital investments in the incubated startups, which gives them a stake in their success.

[8] The technology readiness level (TRL) is a method used by institutions such as the U.S. Department of Defense, NASA or the European Spatial Agency, to estimate the maturity of a certain technology. TRL levels ranges from 1 (basic research) to 9 (mature technology, ready for operational testing and market launch).

[9] Dilutive sources include Angel and VC-funding that involves convertible notes, equity or quasi-equity deals.

[10] Formerly known as *Around Knowledge,* the company decided to change its corporate brand in 2014 to *Movvo* to better reflect its value proposition and the way its platform works. See: http://www.movvo.com/.

[11] The Internet of Things is a general term that refers to technological developments that allow building networks of physical objects, i.e. to use electronic sensors, devices and software to connect all kinds of physical objects and appliances to the existing Internet infrastructure. Not only startups but also large companies such as Alcatel-Lucent, Cisco, Ericsson and Google, to name just a few, are leading this revolution.

[12] For instance, Veniam found that an important unmet need of telecommunications operators' private end customers was the cost per MB of their cellular data plans, which varied between €0.02 and €0.08 (e.g. AT&T charges 100 USD for 5GB), whereas over Wi-Fi hotspots the cost is about €0.003 per MB (e.g. ZON FON hotspots, which charge 3 EUR per hour for a 2Mbit/s connection). This meant that offloading traffic from cellular to Wi-Fi hotspots to a vehicular network like the one proposed by Veniam would result in a 5x to 20x cost reduction for end consumers, a major benefit for customers.

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# Section 8
# Emerging Trends

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# Chapter 87
# Diffusion of Technology via FDI and Convergence of Per Capita Incomes:
## Comparative Analysis on Europe and the MENA Region

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## ABSTRACT

*This chapter analyzes the convergence of incomes towards the FDI home country in Europe and in the MENA region, separately; and the prerequisites to derive benefit from FDI in a comparative manner. The per capita income convergence towards the major FDI home country, US, is estimated higher for Europe compared to the MENA region. However, the differences in the convergence values are not so wide between some sub-groups of these two regions. The absorptive capacity hypothesis, together with the investment capacity explains the discrepancies between not only the two regions as a whole, but also sub-groups within each region. The strong complementary effects between FDI and both absorptive and investment capacity suggest that economic policy aimed at fostering growth should try to benefit more from FDI by increasing the absorptive capacity-enhancing own R&D activities and promoting human capital- as well as by improving investment environment to attract more of it.*

## INTRODUCTION

According to the new growth theory, technological improvement is the main source of economic growth and diffusion of technology is the basic mechanism of per capita income convergence among countries. Therefore, the growth rate of a country depends on the state of domestic technology relative to that of the rest of the world. In this setting, if technology diffusion were national in character, there would be no possibility for convergence of incomes. Each country would grow at a rate determined by its own

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research effort. However, in reality research in one country benefits from knowledge created in others, providing a mechanism by which a laggard country would tend to catch up, formulated by the diffusion of technology models of endogenous growth theory.

Strong diffusion is the only force towards convergence because it equalizes differences in technology across countries (Keller, 2001). The reason is that almost the entire Research & Development (R&D) activity in the global economy is concentrated in a small number of industrial countries and, yet, not all of the other countries stagnate relative to the frontier. In a typical model of technology diffusion, the rate of economic growth of a backward country depends on the extent of the adoption and implementation of new technologies that are already in use in leading countries. Therefore, measuring the convergence of per capita incomes is important in order to assess whether comparatively less advanced countries manage to decrease the technological gap with more advanced ones.

The new growth literature underlines international trade and foreign direct investment (FDI) as transmission mechanisms that link a country's growth rate to economic developments in its partners (Grossman & Helpman, 1994). In general, empirical studies on international technology diffusion find evidence that there is significant cross-country technology diffusion via international trade channels. However, evidence related to FDI as a technology diffusion mechanism is ambiguous. On one hand, the results of empirical studies on developed countries show that FDI is a channel through which technology is internationally diffused (Lichtenberg & van Pottelsberghe de la Potterie, 1996; Barrel & Pain, 1997; Barrel & Pain, 1999; Choia, 2004). On the other hand, results of research on relatively less developed countries find no evidence supporting the existence of technology spillovers from foreign firms to domestically owned firms, as shown by Haddad and Harrison (1993) for Morocco or Aitken and Harrison (1999) for Venezuela.

These results imply that only developed countries can benefit from technological spillovers stemming from FDI, leaving no room for developing countries to catch-up. However, Borensztein, de Gregorio, and Lee (1995) empirically examine the role of FDI in the process of technology diffusion and economic growth in developing countries, suggesting that FDI is an important vehicle for the transfer of technology, contributing to growth in larger measure than domestic investment only when the host country has a minimum threshold stock of human capital. Xu (2000) also links the different outcomes obtained for developed and developing countries to the fact that most developing countries fail to reach the minimum human capital threshold level in order to benefit from the technology transfer. Bijsterbosch and Kolasa (2009) affirm the importance of human capital on the effect of FDI on convergence of productivity in the Central and Eastern Europe towards that of the euro area. Similarly, Neto and Veiga (2013) also find a positive effect of FDI on productivity growth and on GDP growth once the initial level of human capital is considered.

Recent studies based on firm-level data confirm that what matters is the absorptive capacity – not only human capital level, but also own R&D activities as implied by the theoretical models of technology diffusion- to benefit from positive spillovers, both for developed and developing countries. Regarding the former, e.g. Ben Hamida (2013) concludes that only local firms which have largely invested in absorptive capacity in Switzerland gain benefit from spillovers, stemming mainly from technology transfer. Similarly, the results of Chen et al. (2010) indicate a general pattern where industries with high absorptive capacity in China are better than low-end industries in absorbing spillovers from foreign-owned firms.

In summary, empirical studies on diffusion of technology confirm that human capital plays an important role in order for a country to benefit from foreign spillovers. Furthermore, they suggest that countries themselves must also engage in R&D activities so that they derive benefit from foreign knowledge. Ac-



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cordingly, human capital and own R&D activities are considered as the two components of the *absorptive capacity*. Apart from the own R&D and human capital, the determinants highlighted by empirical research based on new growth theory as affecting the rate of growth, such as government consumption, price stability and political stability can be considered as comprising a second category that can be called as *investment capacity*, in the sense that they determine the general investment environment of a country.

This chapter hypothesizes that technology diffusion measured by the convergence of per capita incomes depends not only on the absorptive capacity, but also on the investment capacity. To test this hypothesis, the convergence of incomes towards the FDI home countries in Europe and in the Middle East and North Africa (MENA) region are estimated separately and the results are analyzed taking into account the absorptive and investment capacity of these countries in a comparative manner. Therefore, the sections of this chapter are organized as follows. Following the Background Section which surveys the literature on international technology diffusion, the main focus of the chapter is presented. First, the empirical methodology that is used to capture the per capita income convergence towards the FDI home country is discussed. Then, the results of the convergence analysis for the MENA region and Europe are given separately. Finally, the results are scrutinized taking into account the absorptive and investment capacity in both regions comparatively. Conclusions and policy recommendations are presented in the last section.

## BACKGROUND

The extant literature on international technology diffusion mainly investigates international technology spillovers and their effects either on growth directly or on total factor productivity (TFP) – the component of output growth that is not attributable to the accumulation of factor inputs. There are different approaches to study empirically the effect of international technology diffusion. In some of them there is no reliance on any one specific transmission channel. Bloom, Canning, and Sevilla (2002), for example, develop a model which accounts for economic growth by the growth of factor inputs, technological innovation and technological diffusion. The novelty of their approach is the introduction of the effect of technological diffusion on economic growth, which until then, has been decomposed into two components: increases in factor inputs and improvements in TFP.

Their model allows for cross-country differences in the level of TFP and expects that these differences close over time as technology diffuses to the extent that differences in TFP reflect differences in technology. Using cross-country panel data on income growth over the period 1970-1990, they find evidence of conditional convergence in the growth data. The rationale for conditional convergence in their approach is the diffusion of technology between countries unlike that of the neoclassical extension, in which catch-up occurs due to a high rate of investment as the capital stock grows towards its postulated steady-state for countries whose capital stock and output are lower than their steady-state levels. Another example, in which there is no reliance on any one specific transmission channel, is Bernstein and Mohnen (1998). They investigate how a country's R&D capital accumulation affects factor intensities and productivity growth in another – in their case, the USA and Japan, respectively – and conclude that international spillovers exist from the USA to Japan, but not vice versa.

The majority of the empirical studies on international technology diffusion though rely on a specific transmission channel. In general, the weighted sum of foreign R&D is used to reveal the effect of foreign R&D on a country's TFP. The weights vary from study to study to a great extent, because countries are



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linked through different channels such as foreign trade and foreign direct investment (Mohnen, 2001). International trade is the most preferred one, where each of the foreign country's R&D is weighted with the import share of that country (Coe & Helpman, 1995; Coe, Helpman, & Hoffmaister, 1997; Nadiri & Kim, 1996; Gera, Gu, & Lee, 1999). According to this specification the more a country imports from a foreign country, the more R&D spillover benefits accrue to that country.

In general, empirical studies on international technology diffusion, which rely on a specific transmission channel, find evidence that there is significant cross-country technology diffusion in embodied form. Specifically empirical evidence supporting the international trade channel is rather strong. For example, Coe and Helpman (1995) study whether a country's productivity is increasing in the extent to which it imports from high knowledge countries. They also investigate, for a given composition of imports whether a country's productivity is higher the higher is its overall import share. Their regression results suggest that there is support for both predictions. The authors conclude that not only does a country's total factor productivity depend on its own R&D capital stock, but also depends on the R&D capital stocks of its trade partners. Furthermore, the rate of return on R&D capital is found to be very high both in terms of domestic output and in terms of international spillovers.

Nadiri and Kim (1996) use foreign country's R&D weighted with the import share of that country in order to estimate the effects of international R&D spillovers on TFP growth of the seven largest industrialized (G-7) countries by 1991. They conclude that international R&D spillovers have contributed to narrowing the productivity gap between the US and the other G-7 countries. Coe, Helpman, and Hoffmaister (1997) find evidence that R&D spillovers from developed to developing countries are also substantial. They provide quantitative estimates of spillover effects for a group of 77 developing countries from Africa, Asia, Latin America, and the Middle East. They conclude that R&D spillovers from the industrial countries in the North to the less developed countries in the South are substantial. Their results imply that a developing country's TFP is larger the larger is its foreign R&D capital stock; the more open it is to machinery and equipment imports from the industrial countries; and the more educated is its labor force. In their preferred specification, the foreign R&D capital stock only affects the developing country productivity through its interaction with imports of machinery and equipment, which is consistent with the technology diffusion models.

In general, per capita income convergence fails for broad sample of countries, but there is per capita income convergence among, for example, the OECD countries. This evidence motivated researchers to focus on groups of countries comprising major trade partners with the aim of finding a relationship between per capita income convergence and international trade. An example to this approach is Ben-David (1996). He compares convergence in groups of countries that trade mutually more with different country groupings that are selected randomly and checks whether the former exhibit more income convergence than do the latter. Indeed, if trade plays a role in the convergence process, it should probably be evident among countries that are the principal trade partners of one another. The results indicate that most of the individual trade groups exhibited income convergence. Convergence of his magnitude is not a common outcome among these countries when they are grouped randomly instead of by their trade partners. Ben-David and Kimhi (2000) generalized the findings of Ben-David (1996) by including poorer countries in the analysis. The results indicate that changes in the extent of trade appear to have an effect on the degree of income disparity among countries and increases in intra-group trade intensify the speed of convergence among the group members.



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Contrary to the robustness of empirical evidence supporting the international trade channel, the result of empirical studies on foreign direct investment as a technology diffusion mechanism among countries is ambiguous. Suggesting that not only international trade, but also inward and outward FDI might be channels through which technology disseminates across countries, Lichtenberg and van Pottelsberghe de la Potterie (1996) extend Coe and Helpman's (1995) analysis on international trade to include FDI for a sample comprised by the 13 OECD countries, which have the relevant FDI data over the period 1971-90. Their empirical results show that outward FDI flows and import flows are the two simultaneous channels through which technology is internationally diffused. Branstetter (2000) introduces a framework based on patent documents for measuring international spillovers at the firm level and tests the hypothesis that FDI is a channel of knowledge spillovers for Japanese multinationals undertaking direct investments in the USA. He finds evidence that FDI is a significant channel of knowledge spillovers, both from investing firms to indigenous firms and from indigenous firms to investing firms. This evidence emphasizes the potential importance of multinational corporations as channels of knowledge spillovers between advanced economies.

Barrel and Pain (1997) investigate the role of FDI in the diffusion and assimilation of technologies and ideas across borders in Europe. Their main interest lies in the extent to which technology transfers and other spillovers from foreign-owned firms affect the pace of technical change and hence economic growth. Therefore, they assume that technical progress is dependent on the aggregate level of foreign-owned assets together with an exogenous element proxied by a linear time trend. This assumption implies that technical progress will grow at a constant rate if direct investment grows at a constant rate.

Assuming further that the FDI stock enters with a four quarter lag they obtain significant effects from inward FDI for the United Kingdom and Germany. Extending the model in Barrel and Pain (1997) to obtain a panel data analysis of the impact of the economy-wide inward investment on technical change in four European countries – the United Kingdom, Germany, France, and the Netherlands – Barrel and Pain (1999) present empirical evidence of significant spillovers on technical progress, thus important effects on the economic performance of host economies. Expanding the scope of the analysis on interactions between FDI and income convergence to the OECD countries, Choia (2004) finds that income level and growth gaps between source and host countries decrease as bilateral FDI between them increases by using FDI data from 1982 to 1997.

In other words, the level and growth of per capita income converge as bilateral FDI flow increases between any two OECD countries. These findings show that there is empirical evidence related to positive spillovers of foreign investment by transferring technology between developed countries. In contrast, evidence for such spillovers from developed to developing countries is not robust. Haddad and Harrison (1993), for example, employ a unique firm-level dataset to test for such spillovers in the Moroccan manufacturing sector and reject the hypothesis that foreign presence accelerated productivity growth in domestic firms during the second half of the 1980s. Similarly, Aitken and Harrison (1999) find no evidence supporting the existence of technology spillovers from foreign firms to domestically owned firms using a panel of more than 4,000 Venezuelan plants between 1976 and 1989.

These results imply that only developed countries can benefit from technological spillovers stemming from inward FDI, leaving no room for developing countries to catch-up. However, the research covering both developed and developing countries links the different outcomes to the fact that most developing countries lack the necessary human capital level to benefit from the technology transfer. For example, Borensztein, de Gregorio, and Lee (1995) examine empirically the role of FDI in the process of technology diffusion and economic growth in developing countries. They test the effect of FDI on economic



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growth in a framework of cross-country regressions utilizing data on FDI flows from industrial countries to 69 developing countries from 1970 to 1989. Their results suggest that FDI is an important vehicle for the transfer of technology, contributing to growth in larger measure than domestic investment. However, FDI is more productive than domestic investment only when the host country has a minimum threshold stock of human capital.

Xu (2000) examines the technology diffusion effect of multinational corporations (MNCs) in a multi-country framework, where technology transfer intensity of MNC affiliates is measured by their spending on royalties and license fees as a share of their value added assuming that higher spending by the affiliates on technology transfer corresponds to greater technology diffusion to the host country. The data contain majority-owned affiliates of US MNCs in the manufacturing sector in 40 countries, half of which is comprised of developing countries. Not surprisingly, there is strong evidence of technology diffusion towards developed countries, but weak evidence of that towards developing ones. The reason is that most developing countries fail to reach the minimum human capital threshold level in order to benefit from the technology transfer of US MNCs (Xu, 2000).

Bijsterbosch and Kolasa (2009) also affirm the importance of human capital on the effect of FDI on convergence of productivity in the Central and Eastern Europe (CEE) towards that of the Eurozone. The empirical results point that FDI inflows play an important role in accounting for productivity growth in the CEE region and that the impact of FDI on productivity critically depends on the absorptive capacity of host countries such that the effect of FDI on productivity increases as the productivity differential vis-a-vis the euro area declines. In a recent paper, Neto and Veiga (2013) empirically investigate the role of foreign direct investment on growth through diffusion of technology and innovation using a panel data set covering 139 countries over the period of 1970 - 2009. Utilizing an otherwise standard growth regression and regressions on productivity growth, they introduce a direct effect of foreign direct investment and an indirect effect to capture the role of technological catch-up.

The results show that these two mechanisms have a positive effect on productivity growth and on GDP growth once the initial level of human capital is taken into account. The recent within-country studies based on firm-level data also confirm that what matters is the absorptive capacity -a broader definition covering both human capital and own R&D activities as suggested by the theoretical models- to benefit from technology diffusion. For example, the results of Chen et al. (2010) indicate a general pattern where industries with high absorptive capacity and/or high efficiency in China are better than low-end industries -with low absorptive capacity and/or low degree of efficiency- in absorbing spillovers from foreign-owned firms. Similarly, in a recent paper on Switzerland, Ben Hamida (2013) concludes that only local firms which have largely invested in absorptive capacity gain benefit from spillovers, stemming mainly from technology transfer.

Therefore empirical studies on diffusion of technology confirm that human capital plays an important role in order for a country to benefit from foreign spillovers. As suggested by the diffusion of technology models, countries themselves must engage in R&D activities to implement and adapt foreign technologies so that they derive benefits from them. Accordingly, human capital and own R&D activities are considered as the two components of the *absorptive capacity*. Beyond R&D and human capital, the determinants highlighted by empirical research based on new growth theory as affecting the rate of growth, such as government consumption, price stability and political stability can be considered as comprising a second category that can be called as *investment capacity*, in the sense that they determine the general investment environment of a country.



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This chapter hypothesizes that technology diffusion measured by the convergence of per capita incomes, depends not only on the absorptive capacity, but also on the investment capacity of countries. To test this hypothesis in the context of the countries in Europe and in the MENA Region, this chapter first estimates the convergence of incomes towards the FDI home country in both regions separately, and then analyzes the results with respect to absorptive capacity and investment capacity of all countries in these regions in a comparative manner.

## CONVERGENCE TOWARDS THE FDI HOME COUNTRY IN EUROPE AND IN THE MENA REGION

Whether there is a per capita income convergence or divergence among countries has been a major area of dispute in the empirical growth literature. Empirical research using panel data regressions encouraged by the availability of Summers-Heston data set, which allows making cross-country growth comparisons, is based on two theoretical models of growth. The first one is the neoclassical growth theory developed by Solow (1956) which identifies three sources of growth in the short-run (i.e., during the transitional phase towards steady-state): capital accumulation and growth in labor force which can be combined to give the ratio of capital per worker, and technological progress which is considered exogenous. However, in the long-run it is the effectiveness of labor, in other words exogenous technological progress, which determines growth in output per worker.

The second strand of theoretical models of growth used as a base for empirical research is the endogenous or new growth theory which fills the gap in neoclassical theory by opening up technological progress and innovation to systematic analysis, and studies their effects on growth. Indeed, the endogenous growth theory provides the tools to handle endogenous technological change and innovation within a dynamic general equilibrium setting allowing for the development of tractable models. While the neoclassical theory of growth treats technological progress as an exogenous process and focuses instead on capital accumulation as the main source of output expansion, the new growth theory focuses on technical progress. The studies on the latter, pioneered by Romer (1990), view commercially oriented innovation efforts that respond to economic incentives as the major engine of technological progress and growth. In this view, innovation feeds on knowledge that results from cumulative R&D experience on the one hand, and it contributes to this stock of knowledge on the other.

Consequently an economy's growth depends on its cumulative R&D effort and on its effective stock of knowledge, with the two being interrelated such that the pace of technological progress, thus growth in that economy is determined endogenously. Both strands of theoretical growth models imply that either exogenous or endogenous; technology is the main driving force behind the long-run economic growth. The difference in their approach is that neoclassical models hold that technology is available everywhere to everyone at no cost, while at the other extreme, the endogenous growth theory, as it is first put forward, relates a country's technical advances only to its own innovations (Eaton & Kortum, 1999).

Therefore, the former implies absolute convergence of per capita incomes of countries regardless of their respective characteristics, while the latter has no convergence implications at all. The rationale behind the neoclassical growth model that predicts absolute income convergence among countries (i.e., poorer countries grow faster than richer ones), is the diminishing returns to capital. The evidence for this prediction is not robust though. On one hand, income divergence, or at best, non-convergence, appears



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to characterize the behavior of most cross-country income differentials, but on the other hand there is evidence of considerable convergence among wealthier countries (e.g., among 20 relatively advanced OECD countries), especially during the postwar period.

When the analysis is broadened to include a wider spectrum of countries, the convergence evidence seems to disappear entirely, even a divergence is observed. However, once determinants of growth, such as human capital, government policies, and other variables put forward by the endogenous growth literature are considered, there appears to be strong evidence of convergence among countries, which is termed as conditional convergence. Within the neoclassical model with exogenously determined identical level of technology among countries, this finding can be interpreted as evidence of diminishing returns to physical or human capital. As Romer (2001) states, running a regression conditioned on these variables and finding that countries with lower initial income grow more rapidly can also be interpreted such that the technology level is lower in a country that starts at a lower level of development which grows faster as better technology diffuses there.

In the endogenous growth framework, if technology diffusion were national in character, there would be no possibility for convergence because each country would grow at a rate determined by its own research effort. But in reality, research in one country benefits from knowledge created in others, providing a mechanism by which a laggard country would tend to catch up, formulated by the diffusion of technology models of endogenous growth theory. Strong diffusion has become the only force towards convergence, because it equalizes differences in technology across countries. In a typical model of technology diffusion, the rate of economic growth of a backward country depends on the extent of the adoption and implementation of new technologies that are already in use in leading countries since almost the entire R&D activity in the world economy is concentrated in a small number of industrial countries and, yet, not all of the other countries stagnated relative to the frontier.

Therefore, the new theory of economic growth underlines international economic relations as transmission mechanisms that link a country's growth rate to economic developments in its trade partners (Grossman & Helpman, 1994). Convergence implications of diffusion of technology models is more convincing theoretically considering that per capita income of countries converge each other as technology diffuses from a technologically more advanced country to a comparatively less advanced one.

In the extant literature on international technology diffusion, technological knowledge is typically the design of a new intermediate product. According to this mechanism, technology diffuses internationally through foreign intermediate goods. The idea is that employing the foreign intermediate good involves the implicit usage of the design knowledge that was created with the R&D investment of the foreign inventor. In this case, the technological knowledge of the design is embodied in the intermediate good. As long as the intermediate good costs less than its opportunity costs – including the R&D costs of product development – there is a gain from having access to foreign intermediate goods. Therefore, improvements in technology have been the main source behind the economic growth, thus diffusion of technology is the basic mechanism of per capita income convergence among countries.

As the survey in the previous section shows, the empirical studies on diffusion of technology confirm that the technology transfer via FDI is not straightforward. The flow of advanced technology brought along by FDI can increase the growth rate of the host economy, hence allow for income convergence between FDI partners only by interacting with that country's absorptive capability. However, there is another prerequisite of deriving benefits from technological spillovers: to attract considerable amount of FDI that involves latest technological improvements. In this respect, the investment environment of



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a country matters as well. Besides the two components of absorptive capacity, the empirical research on growth highlights lower government consumption, price stability, and better governance as affecting the rate of growth of a country.

Accordingly, before analyzing the importance of the investment capacity comprising of these three determinants and the absorptive capacity in accruing benefits from technology transfer via FDI in Europe and in the MENA region comparatively, this section aims to reveal the per capita income convergence dynamics in the two regions towards the FDI home country.

## Measuring Convergence

### Convergence Based on the Neo-classical Growth Model: β-convergence

In the neoclassical growth framework, the average growth rate of per capita output, y, over an initial time 0 to any future time T is derived in Barro and Sala-i-Martin (1995) as

$$(1/T)\bullet\log[y(T)/y(0)] = g + [(1 - e^{-\beta T})/T]\bullet\log[y^*/y(0)]. \quad (1)$$

Equation (1) implies that the average per capita growth rate of output depends negatively on the ratio of y(0) to y* once the steady-state growth rate, g, the convergence speed, β, and the averaging interval, T, are held constant. In other words, the effect of initial position, y(0), is conditioned on the steady state position, y*, implying conditional convergence.

Alternatively, the average growth rate of per capita output of country i, $y_i$, between any time t and a previous time t-T, where T is a time interval, e.g. in years, can be written as

$$(1/T)\bullet\log(y_{i,t}/y_{i,t-T}) = a - [(1 - e^{-\beta T})/T]\bullet[\log(y_{i,t-T})], \quad (2)$$

where $a \equiv g + [(1 - e^{-\beta T})/T]\bullet\log(y_i^*)$, and yi,t-T is per capita income in country i at the beginning of the interval. Similarly, yi,t is per capita income in country i at the end of the interval, T is the length of the interval, and β is the speed of β-convergence, i.e. the catch up speed of the relatively poorer economy to the rich one in terms of the level of per capita income.

Considering that the number of countries in each group is at most 20, the results of the econometric analysis would be hardly reliable if the econometric specification (2) were directly used in regressions. In order to increment the number of observations, this specification is converted to panel data framework following the procedure proposed in Lall and Yilmaz (2001). Assigning value 1 to the time period T in Equation (2) in order to have a panel data framework and rearranging, we end up with the following basic econometric specification, which is used to test β-convergence based on neoclassical growth model.

$$\log(y_{i,t}) = a + b \log(y_{i,t-1}), \quad (3)$$

where the estimated b needs to be translated into speed of β-convergence using the formula

$$\beta = -\log(b). \quad (4)$$



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## Convergence in the Diffusion of Technology Models

The first method used to detect per capita income convergence among FDI partners (i.e., β-convergence), is based on the neoclassical growth model, which has no foresight related to the effect of FDI on convergence. It can only signal a form of conditional convergence in a group of countries, where FDI partnership is used to homogenize them. In accordance with the focus of this chapter, which analyzes the convergence implications of foreign direct investment as an international technology diffusion channel, the second convergence method used in this chapter is based on the diffusion of technology model of endogenous growth theory.

Technology diffusion mechanism from developed to less developed countries, which, has less, if not none at all, R&D activity, is modeled in Barro and Sala-i-Martin (1995). The main idea behind the model, referred to as the leader-follower model, is that if the diffusion of technology occurs gradually through international trade, then the follower countries tend to catch up to the leaders because imitation and implementation of discoveries are cheaper than innovation. This model of indirect technology diffusion implies convergence even when diminishing returns do not apply, but requires a form of diminishing returns in imitation such that the cost of imitation rises as the number of goods already adapted increases.

It is straightforward to deduct convergence implications of indirect technology diffusion via the FDI model from Barro and Sala-i-Martin (1995) model of indirect technology diffusion via trade considering that the cost of imitation in the latter model can be replaced by the cost of adaptation in the former since cost of adapting is smaller for the original inventors who are more familiar with the invention. In other words, the form of conditional convergence implied by the technology diffusion via FDI model is based on the assumption that the cost of adaptation is lower than that of innovation when very little has yet been adapted and rises as they are getting adapted. Therefore, relationship between the growth rates of the follower and the leader countries derived in Chapter 8 of Barro and Sala-i-Martin (1995) also applies in case of indirect technology diffusion via FDI, such that

$$\gamma_i \approx \gamma_1 - \mu \bullet \log [(y_i/y_1)/(y_i/y_1)^*], \tag{5}$$

where $\gamma_i$ and $\gamma_1$ are per capita growth rates in follower countries and the leader country, respectively, $\mu$ is the speed of convergence in the diffusion of technology model framework, $y_i$ and $y_1$ are per capita incomes of follower countries and the leader country, respectively, and finally $(y_i/y_1)^*$ is the steady-state ratio of per capita incomes in follower countries and the leader country.

Since the role of FDI as a technology diffusion mechanism is focused in this study, the leader country is considered as the FDI home, whereas the follower ones as the FDI host countries in the MENA region and in Europe. The convergence obtained in this framework is called as μ-convergence (Öz, 2014).

Following the relationship between the growth rates of the follower countries and the leader country in the diffusion of technology framework given in Equation (5), the average growth rate of the FDI host country i between initial time t-T and time t can be written as

$$(1/T)\bullet\log(y_{i,t}/y_{i,t-T}) = (1/T)\bullet\log(y_{1,t}/y_{1,t-T}) - \mu\bullet[\log(y_{i,t}/y_{1,t})] + \mu\bullet[\log(y_i/y_1)^*], \tag{6}$$

where $y_{i,t-T}$ and $y_{1,t-T}$ are per capita income in each of the FDI host country i and that in the FDI home, respectively, at the beginning of the interval. Similarly, $y_{i,t}$ and $y_{1,t}$ are per capita incomes at the end of the interval, T is the length of the interval, and μ is the speed of convergence (i.e., the catch up speed) of



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the relatively poorer economy the rich one in terms of the level of per capita income in the diffusion of technology framework of endogenous growth theory. Since the steady-state ratio of per capita incomes in the FDI host and home countries (i.e., $\log(y_i/y_1)^*$)is constant, the Equation (6) can be written as,

$$(1/T)\bullet\log(y_{i,t}/y_{i,t-T}) = a' + (1/T)\bullet\log(y_{1,t}/y_{1,t-T}) - \mu\bullet[\log(y_{i,t}/y_{1,t})] \quad (7)$$

where $a' = \mu\bullet[\log(y_i/y_1)^*]$.

Similar to the procedure followed for the econometric specification (2) based on the neoclassical growth model, Equation (7) can be converted to panel data framework by assigning value 1 to the time period T.

$$\log(y_{i,t}/y_{i,t-1}) = a' + \log(y_{1,t}/y_{1,t-1}) - \mu\bullet[\log(y_{i,t}/y_{1,t})], \quad (8)$$

Rearranging gives,

$$\log(y_{i,t}/y_{1,t}) = a' + b'\bullet\log(y_{i,t-1}/y_{1,t-1}), \quad (9)$$

where the estimated $b'$ needs to be translated into speed of $\mu$-convergence using the formula:

$$\mu = (1/b') - 1. \quad (10)$$

In specification (9), the dependent variable is obtained by taking the log of what is obtained after dividing the per capita income of the FDI host countries by that of the home country 1. The $\mu$-convergence obtained by regressing the log of the lagged value of the ratio of the per capita income of host to home countries on log of its current value shows the host countries' speed of converge towards the FDI home country.

## Convergence in Europe and in the MENA Region

### Data and Methodology

The Foreign Direct Investment (FDI) data are taken from "International Direct Investment Statistics" database of OECD iLibrary. In order to determine the countries that have the highest amount of direct investment in countries in Europe and the MENA region, "Foreign direct investment: positions by partner country" data is used. This data contains the whole outward FDI stock of each OECD member by the end of year 2010. According to this dataset, the USA accounts for the highest FDI not only in European but also in MENA countries. Therefore, the USA is taken as the home country in the convergence analysis below.

Per capita income data of the countries are taken from the "PennWorld Table Version 7.1" (PWT 7.1) by Alan Heston, Robert Summers and Bettina Aten from "Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania" issued in November 2012. The data cover the years 1950-2010, so the empirical analysis is done for this time period. Among the various data presented in PWT 7.1, real GDP per capita (RGDPC) in constant price (Laspeyres) for each country is used in this chapter.



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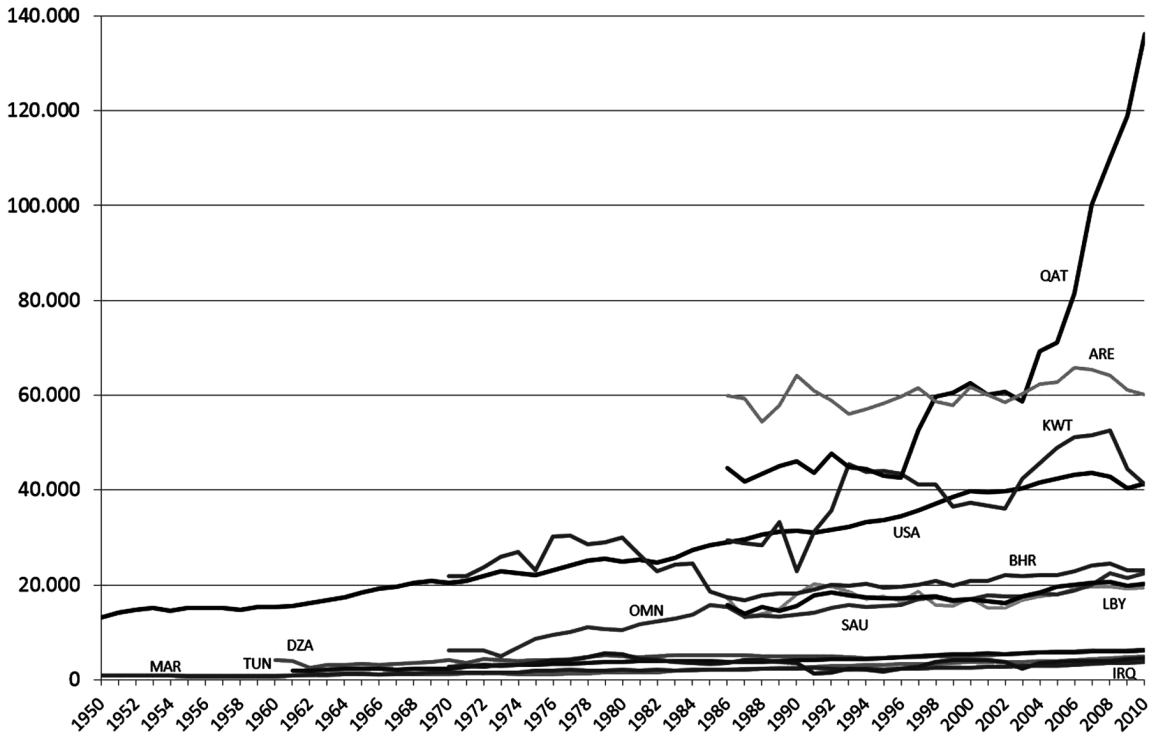
In order to answer the question whether there has been a per capita income convergence between the FDI home and the countries both in the MENA region and in Europe, they are grouped to form a panel data set, separately. The group for each region consists of the countries in the region and the country that has the highest FDI in the region.

## Results of the Convergence Analysis for the MENA Region

The Gross Domestic Product (GDP) per capita data of all countries in the MENA region are shown in Figure 1 for the period 1950-2010. Qatar turns out to be an apparent outlier in this Figure, thus the regression should be repeated excluding this country in order to avoid bias in the regression analysis.

Figure 1 also shows there are considerable differences in per capita income values of the countries in the MENA region. There is an apparent distinction between the oil producing countries in the Gulf region and the North African countries. Table 1 shows the estimated β- and μ-convergence values for the whole MENA region, as well as for the North African countries and the countries in the Gulf region, separately, towards the main FDI home countries in these regions.

*Figure 1. Real GDP per capita (RGDPC) in constant price in the MENA Region*
*Source: PWT (2012)*
*(*)Though considered as a MENA country geographically, Israel is excluded from the analysis since it differs to a large extent from the other countries in many aspects, including human capital, institutions, culture, etc. Malta and Turkey are also excluded from the analysis for MENA region since they are included in the analysis for the Europe as being an EU member, and a candidate country, respectively.*






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In case of the convergence analysis for the MENA region, not only the USA but also France and Great Britain, which have the second and third direct investment stock in the region, are taken as the FDI home country. However, as Table 1 shows, the estimated β-convergence values do not change to a large extent with respect to the choice of the FDI home country within each group. Once all the countries in the MENA region are included in the analysis, the β-convergence is estimated at around 0.17 per cent per year. The estimated β-convergence increases to almost 0.5 per cent when Qatar is excluded. However, the estimated μ-convergence values are not robust to the choice of FDI home country and vary between 0.34 and 0.63 per cent for France and Great Britain, respectively.

The β-convergence in North African countries, estimated at around 0.5 per cent per year, is almost the same as the β-convergence obtained for the whole group excluding Qatar. The μ-convergence, especially towards the USA and Great Britain are much higher, reaching almost 1 per cent in case of the former and 1.23 per cent in case of the latter. The negative convergence values obtained for the Gulf region imply divergence of per capita incomes. But this result should be interpreted with caution since including Qatar data may bias the regression analysis, as mentioned before. Indeed, the Gulf region excluding Qatar is the group where the convergence is highest with respect to both measures. The estimated β-convergence towards the USA is 1.39 per cent per year while that towards France and Great Britain is around 1.5 per cent. The results for μ-convergence are similar to those of β-convergence in the Gulf region excluding Qatar.

*Table 1. Convergence in the MENA Region (1950-2010)*

| | **β-Convergence** | **μ-Convergence** |
|---|---|---|
| **Convergence in MENA Region** | | |
| MENA_ALL_USA | 0.18 | 0.11 |
| MENA_ALL_FRA | 0.17 | -0.06 |
| MENA_ALL_GBR | 0.17 | 0.24 |
| **Convergence in MENA Region Excluding Qatar** | | |
| MENA_ALL_USA | 0.49 | 0.50 |
| MENA_ALL_FRA | 0.49 | 0.34 |
| MENA_ALL_GBR | 0.50 | 0.63 |
| **Convergence in Gulf Region** | | |
| MENA_Gulf_USA | -0.10 | -0.26 |
| MENA_Gulf_FRA | 0.03 | -0.32 |
| MENA_Gulf_GBR | -0.01 | -0.16 |
| **Convergence in Gulf Region Excluding Qatar** | | |
| MENA_Gulf_USA | 1.39 | 1.37 |
| MENA_Gulf_FRA | 1.52 | 1.28 |
| MENA_Gulf_GBR | 1.48 | 1.51 |
| **Convergence in North Africa** | | |
| MENA_NA_USA | 0.53 | 0.98 |
| MENA_NA_FRA | 0.49 | 0.61 |
| MENA_NA_GBR | 0.56 | 1.23 |



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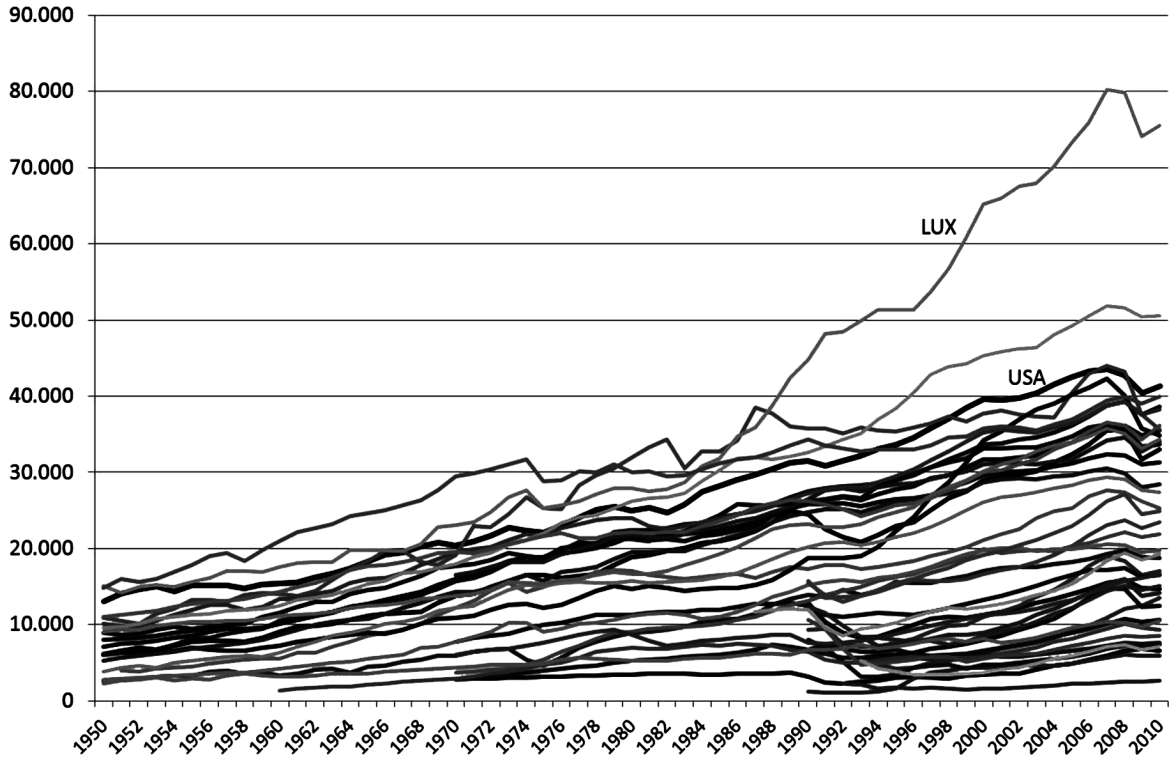
## Results of the Convergence Analysis for Europe

Considering that there is an ongoing integration process in Europe under the European Union (EU) framework, the convergence analysis is performed in four different groupings to account for the different integration levels among countries. The first group covers non-EU developing countries of Europe; the second group consists of developing EU member states that join EU after 2004, while the third and fourth groups comprise the first fifteen and the six founding EU members, respectively.

The GDP per capita data of all countries in Europe and the USA are shown in Figure 2 for the period 1950-2010. Luxembourg turns out to be an apparent outlier. To consider the risk of bias in regressions stemming from this country, the convergence analysis for industrialized EU members is repeated excluding Luxembourg. The estimated convergence values of the four different groups towards the GDP per capita of the USA are shown in Table 2.

In line with expectations, both β- and μ-convergence values increase as the level of integration in EU increases. This evidence is stronger when Luxembourg is excluded from EU groups that consist of industrialized countries. The estimated β-convergence reaches 2.17 per cent per year for the five founding members of EU while it is 1.73 per cent for EU-15. In case of developing countries of Europe, β-convergence is estimated as 1.36 per cent for EU members and 0.63 for non-EU members.

*Figure 2. Real GDP per capita (RGDPC) in constant price in Europe and in the USA*
*Source: PWT (2012)*






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The μ-convergence obtained based on the diffusion of technology model of endogenous growth theory is estimated as 2.69 per cent for the five founding EU members. The estimated μ-convergence value is 1.76 per cent for the first 15 members of the EU, while it is 1.37 per cent for the developing countries of Europe which joined EU after 2004. Finally, for the group comprised of developing non-EU European countries, the μ-convergence is estimated as 1.1 per cent. Therefore, high per capita income convergence seems to be a prevailing feature, especially among EU members.

Comparing estimated μ-convergence values of European countries with those for the MENA region, leads to the conclusion that per capita income convergence of EU members towards the FDI home country is higher. Even the lowest μ-convergence value obtained in Europe (for the developing non-EU European countries estimated as 1.1 per cent) is higher than the 0.5 per cent estimated for the whole MENA region excluding Qatar. However, once the sub groups in the MENA region are taken into account, the difference in the convergence values between the two regions diminish. For example, the μ-convergence value towards US estimated for North African countries (0.98 per cent) is close to the value obtained the for the developing non-EU European countries (1.1 per cent). Similarly, 1.37 per cent of μ-convergence prevailing for the Gulf region is close to that of the European countries that joined EU after 2004. These results are deemed eligible for further investigation, which is the concern of the following section.

## Absorptive Capacity and Investment Capacity

Endogenous growth theory stresses R&D and human capital as the major determinants of long-run rate of growth by providing technological progress within a country. These two determinants are also considered as the *absorptive capacity* of a country in the sense that countries themselves must have a certain level of human capital stock and engage in R&D activities in order to be able to absorb technology created in other countries. The empirical studies on diffusion of technology confirm absorption hypothesis that countries themselves must engage in R&D activities to be able to adopt and imitate new technologies. Apart from the own R&D prerequisite, stock of and investment in human capital seem to play an important role in order for a country benefit from foreign spillovers as detailed in the background section.

*Table 2. Convergence in Europe towards USA (1950-2010)*

| | **β-Convergence** | **μ-Convergence** |
|---|---|---|
| **Europe Developing** | | |
| EUR_NON-EU_USA | 0.63 | 1.10 |
| EUR_EU_USA | 1.36 | 1.37 |
| **Europe Industrialized** | | |
| EUR_EU15_USA | 1.23 | 1.11 |
| EUR_EU6_USA | 0.60 | -0.02 |
| **Europe Industrialized Excluding Luxembourg:** | | |
| EUR_EU15_USA | 1.73 | 1.76 |
| EUR_EU6_USA | 2.17 | 2.69 |

Note: Both β- and μ-convergence values are estimated using the between regression (see Öz, 2014 for details).



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Borensztein, de Gregorio, and Lee (1995), for example, conclude that FDI has a positive effect on per capita income growth only when the host country has a minimum threshold stock of human capital. Indeed, inclusion of an interaction term between FDI and human capital (the product of these two variables) improves the overall performance of the regression implying that there is a strong complementary effect between FDI and human capital (i.e., the contribution of FDI to economic growth) is enhanced by its interaction with the level of human capital in the host country. The regression coefficients indicate that all countries with secondary school attainment (for male population older than 25) above the range 0.45 will benefit positively from FDI. The human capital threshold value found by the regression results of Xu (2000) is even higher than that of Borensztein, de Gregorio, and Lee (1995).

The male secondary school attainment is estimated to be somewhere between 1.4 and 2.4 years so that the technology transfer of US MNCs enhances the host country productivity. These findings show strong complementary effects between FDI and human capital on the growth rate of income justifying the theory that the flow of advanced technology brought along by FDI can increase the growth rate of the host economy only if the country has enough absorptive capability. Apart from R&D and human capital, the determinants highlighted by empirical research as affecting the rate of growth such as government consumption, price stability and all governance indicators including the political stability comprise the second category that can be called as *investment capacity*, in the sense that they determine the general investment environment of a country.

As Crafts (1995) summarizes, anything which enhances the attractiveness of investment is potentially growth promoting. Investment capacity can be thought to affect the growth rate of a country by affecting the physical capital accumulation through either domestic or foreign investment. This line of thought concurs with Barro (1996), who states that high life-expectancy, high rule-of-law index, low government consumption ratio, and low inflation rate encourage economic growth partly by stimulating investment. The political-stability may also increase the growth rate through its positive effect on incentives to invest (Barro & Sala-i-Martin, 1995).

Furthermore, Benhabib and Spiegel (1994) find that human capital stocks are positively correlated with physical capital accumulation stressing the role of human capital in attracting physical capital besides enhancing the absorptive capacity. Therefore, investment capacity and absorptive capacity determine the rate of per capita income growth to a large extent not only individually, but also by interacting with each other.

## Comparative Analysis Based on Absorptive Capacity

Comparative analysis of absorptive capacity between the countries in Europe and in the MENA region is based on two components: human capital and R&D. The appropriate proxy to represent these components can be drawn from the empirical studies on economic growth. Following the theoretical emphasis related to the role of human capital on growth rate, most cross-country empirical studies of economic growth include some proxy for human capital. The proxies vary to a great extent, including average years of attainment in primary, secondary, or higher schooling at the beginning of each period; contemporaneous changes in schooling; as well as secondary and higher school-enrollment ratios.

The extant literature on growth reveals that three issues should be considered when selecting and using a proxy for human capital. First, it should not be treated as a factor of production like labor and physical capital, because straightforward insertion of some index of educational attainment in the production function might constitute a gross misspecification of the relation between education and the dynamics



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of production (Nelson & Phelps, 1966). Following the theoretical insights of endogenous growth, human capital should be viewed as affecting growth rate indirectly through technological progress since educated labor force is necessary for innovation, adoption, and imitation of new technologies.

Indeed, Benhabib and Spiegel (1994) find that human capital affects the growth of total factor productivity first by influencing the rate of domestically produced technological innovation, and second, by affecting the speed of adoption of technology from abroad. Eaton and Tamura (1996) approve the conclusion that human capital contributes to productivity of countries by facilitating the adoption of new technology rather than by serving as a standard factor of production. The second issue mentioned also by Nelson and Phelps (1966) is that the progressiveness of technology has implications for the optimal capital structure, particularly, the society may have to build more human capital relative to tangible capital the more dynamic is the technology.

The idea is supported by the model developed in Keller (1996), in which the long-run benefit from technology diffusion depends on whether the rate of human capital formation is increased relative to the increase in the amount of spillovers (e.g., caused by trade liberalization). The reason is that further accumulation of human capital is necessary to implement the newer technologies. If a country fails to increase the rate of human capital formation in accordance with the rate of knowledge spillovers, the new technology cannot be fully absorbed, and the relative lack of human capital forces the growth rate of the economy back to its former level. The findings of Barro (1996) support theories that stress the positive effect of education on an economy's ability to absorb new technologies.

Finally, the proxies used by the cross-country empirical studies of economic growth ignore quality issues, implicitly assuming that any variation in quality of human capital are small relative to the importance and variation in pure quantity of human capital (Hanushek & Kimko, 2000). Once this assumption is relaxed by using labor force quality in regressions, there is evidence that labor force quality has a consistent, stable, and strong relationship with economic growth. Considering further the level of technology attained globally in the 21st century, labor force with tertiary education data in World Development Indicators used in this section is the appropriate proxy for human capital while searching for the reasons of the differences in estimated convergence values for various groupings in the MENA region and Europe.

Patents, R&D expenditures, and number of scientists and engineers are among the proxies used to test the effect of R&D activities on growth. Most of the empirical studies on diffusion of technology, which analyze the total factor productivity differences among countries employ variables related to R&D (e.g., Nadiri & Kim, 1996); Howitt, 2000). In small, high income samples, R&D variables are shown to contribute positively to the explanation of differences in growth across countries. These studies also reveal that the spillovers require some expertise in order to be assimilated. Foreign R&D as well as other sources of technology such as FDI and foreign technology payments can be considered as complementary to own R&D. Therefore, the data for R&D expenditures as percentage of GDP, which is the main proxy to detect R&D activity of a country, is used in this chapter.

In summary, absorptive capacity is the combination of human capital stock and R&D activities performed within a country in order to be able to assimilate foreign technology brought about by FDI. In Table 3 and 4, the share of labor force with tertiary education data in World Development Indicators is used to show human capital stock of the countries in the MENA region and in Europe, respectively. This data allows to take into account not only labor force quantity, but also quality to some extent. These two tables also show the R&D expenditures as percentage of GDP as a proxy for R&D activity in each country involved in the analysis.



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Table 3 shows 2000-2010 average of R&D expenditures as a percentage of GDP and labor force with tertiary education as percentage of total for the MENA region. The average of labor force with tertiary education does not differ to a large extent among different groups in the MENA region. This indicator is 13.1, 14.7, and 15.5 percent of total labor force for North Africa, the Gulf area, and the rest of the countries in the region, respectively. In spite of having much higher incomes, Gulf countries spend less on R&D compared to North African countries as well as to Iran and Jordan. Morocco, Tunisia, UAE, Iran, and Jordan have higher R&D activity compared to the rest of the countries in the region.

Table 4 shows the data for absorptive capacity of European countries. The average of labor force with tertiary education is around 26 per cent of total labor force in founding EU members and in the first 15 members of the EU. This indicator falls to 21 per cent for developing EU member countries and drops further to 19 for non-EU developing countries of Europe. On average, it is approximately five percentage points higher in developing countries of Europe compared to the countries in the MENA region. In comparison to the European countries, the R&D expenditures are lower in all three different groupings of the MENA region as well, with 0.48, 0.19, and 0.37, for North Africa, Gulf, and the rest of the countries in the region, respectively. Among the first 15 members of the EU, only Italy, Greece, Portugal and

*Table 3. Absorptive capacity in the MENA region*

| | **R&D Expenditures (% of GDP) (2000-2010 Average)** | **Labor Force with Tertiary Education (% of Total) (2000-2010 Average)** |
|---|---|---|
| Algeria | 0.20 | 10.0 |
| Egypt, Arab Rep. | 0.27 | 17.9 |
| Libya | … | … |
| Morocco | 0.64 | 8.2 |
| Tunisia | 0.80 | 16.2 |
| **NA-Average** | **0.48** | **13.1** |
| Bahrain | … | 9.8 |
| Kuwait | 0.12 | 14.4 |
| Oman | 0.13* | 13.8 |
| Qatar | … | … |
| Saudi Arabia | 0.05 | 18.9 |
| United Arab Emirates | 0.47* | 16.6 |
| **Gulf-Average** | **0.19** | **14.7** |
| Iraq | 0.07 | … |
| Iran, Islamic Rep. | 0.65 | 16.9 |
| Jordan | 0.39 | 21.4 |
| Lebanon | … | 24.1 |
| Syrian Arab Republic | … | 7.0 |
| Yemen, Rep. | … | 8.3 |
| **Other-Average** | **0.37** | **15.5** |

Source: World Development Indicators
(*) Only 2011 value is available.



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*Table 4. Absorptive capacity of European countries*

| | R&D Expenditures (as % of GDP) (2000-2010 average) | Labor force with tertiary education (% of total) (2000-2010 average) |
|---|---|---|
| Belgium | 1.94 | 35.1 |
| France | 2.17 | 27.9 |
| Germany | 2.58 | 24.3 |
| Italy | 1.14 | 14.3 |
| Luxembourg | 1.62 | 26.9 |
| Netherlands | 1.88 | 28.3 |
| **EU-6 Average** | **1.89** | **26.1** |
| Denmark | 2.66 | 29.2 |
| United Kingdom | 1.77 | 30.1 |
| Ireland | 1.31 | 31.2 |
| Greece | 0.59 | 23.1 |
| Portugal | 1.03 | 12.9 |
| Spain | 1.15 | 30.3 |
| Austria | 2.28 | 17.7 |
| Finland | 3.54 | 33.6 |
| Sweden | 3.65 | 28.7 |
| **EU-15 Average** | **1.95** | **26.2** |
| Cyprus | 0.38 | 33.2 |
| Czech Republic | 1.33 | 13.9 |
| Estonia | 1.01 | 32.6 |
| Hungary | 0.98 | 19.6 |
| Latvia | 0.51 | 22.5 |
| Lithuania | 0.74 | 30.6 |
| Malta | 0.51 | 14.7 |
| Poland | 0.60 | 18.7 |
| Slovak Republic | 0.54 | 13.9 |
| Slovenia | 1.55 | 20.4 |
| Bulgaria | 0.49 | 23.8 |
| Croatia | 0.90 | 18.4 |
| Romania | 0.44 | 12.1 |
| **EU Developing Average** | **0.77** | **21.1** |
| Iceland | 2.81 | 24.0 |
| Norway | 1.62 | 33.1 |
| Switzerland | 2.72 | 28.0 |
| **Non-EU Industrialized Average** | **2.38** | **28.4** |
| Albania | 0.12 | 8.0 |
| Belarus | 0.70 | 24.3 |

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*Table 4. Continued*

| | R&D Expenditures (as % of GDP) (2000-2010 average) | Labor force with tertiary education (% of total) (2000-2010 average) |
|---|---|---|
| Bosnia Herzegovina | 0.02 | 11.7 |
| Macedonia, FYR | 0.26 | 16.6 |
| Moldova | 0.44 | 17.4 |
| Montenegro | 1.03 | 18.5 |
| Russian Federation | 1.15 | 44.1 |
| Serbia | 0.57 | 18.3 |
| Turkey | 0.62 | 12.4 |
| Ukraine | 0.97 | … |
| **Non-EU Developing Average** | **0.59** | **19.0** |

Source: World Development Indicators

Spain have considerably lower R&D activity compared to the European average. The same is valid for the other indicator of absorptive capacity for Italy and Portugal. Among the European countries, Bosnia Herzegovina and Albania have minimum R&D expenditure level.

In line with the implications of the diffusion of technology model, as average R&D expenditure increases the convergence speed for different country groups within Europe given in Table 2 increases. The finding that the lowest speed of convergence prevails for the group that contains non-EU developing countries of Europe is supported by the absorptive capacity hypothesis, which expects weaker increase in technological level in countries with lower R&D expenditures. The average R&D expenditure as percentage of GDP is lowest in this group with 0.59, which is not much higher than the value obtained for the North African countries (0.48). In fact, the μ-convergence value towards US estimated for the developing non-EU European countries (1.1 per cent) is also not much higher than the value obtained for North African countries (0.98 per cent).

The results for the average of labor force with tertiary education are also in line with the implications of the diffusion of technology model. As the share of labor force with tertiary education increases, the convergence speed for different country groups within Europe given in Table 2 also increases. Although non-EU developing countries' average is 5 percentage points above the MENA average, there are large differences in the indicator among the countries of this group: While Russia's labor force with tertiary education is 44 per cent of its total, the share drops approximately to 12 in Turkey and Bosnia, and further to 8 per cent in Albania.

## Comparative Analysis of Based on Investment Capacity

Comparative analysis of investment capacity between the countries in Europe and in the MENA region is based on three components: Government consumption, price stability, and Worldwide Governance Indicators (WGI). First, a greater volume of nonproductive government spending and the associated taxation is supposed to reduce the growth rate for a given initial value of GDP. Barro (1996) finds a significantly negative effect on growth from the ratio of government consumption. Barro and Sala-i-Martin (1995)



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also estimate a significantly negative and high coefficient for the ratio of government consumption to GDP. The strong evidence is linked to the political corruption or other aspects of bad government, as well as to direct effects of nonproductive public expenditures and taxation.

Secondly, it has long been found that a higher average rate of inflation accompany a higher volatility in inflation, which – by leading to an unstable economic environment – is detrimental for investment and growth. When Barro (1996) includes inflation rate over each period as an explanatory variable along with other growth determinants, the estimated coefficient of inflation is found as significantly negative. However, once the other growth determinants are held constant, the relation between growth and inflation is found to be statistically insignificant for inflation rates below 20% per year.

This result is robust to the inclusion of instrumental variables such as central bank independence, lagged inflation, and prior colonial status, which are significantly related to inflation and reasonably exogenous. Similarly, Yılmaz and Akçay (2002) find the threshold level of inflation rate below which the negative relationship between inflation and growth becomes insignificant as 13% per year for 29 developing countries. The results do not necessarily mean that this negative effect is small at low rates of inflation.

Besides low government consumption ratio and low inflation rate, *political-stability* is considered to encourage economic growth through its positive effect on incentives to invest since it lowers the probability of threats to property rights through political turmoil. Another growth enhancing factor found in cross-country regressions is the *rule-of-law* index, which gives the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts.

The Worldwide Governance Indicators (WGI) based on Kaufmann et al. (2010) cover not only these two determinants, but also four other factors. *Government effectiveness* reflects perceptions of the quality of public services and civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. *Regulatory quality* is related to perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. *Control of corruption* combines perceptions of the extent to which public power is exercised for private gain, including corruption, and "capture" of the state by elites and private interests. Finally, WGI provides *voice and accountability* index, which reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. These six dimensions of governance are reported in the range from -2.5 (weak) to 2.5 (strong) for 215 economies over the period 1996–2012.

The 2000-2010 average of general government final consumption expenditure as percentage of GDP, inflation rate, and the average of the estimates for six dimensions of WGI as proxies for investment capacity of the countries in the MENA region and in Europe are given in Table 5 and 6, respectively. All country groups in the MENA region have similar government expenditure levels with 15-16% of GDP. Inflation rate is around 3% in North African and Gulf countries, while it is over 9% for the other countries of the MENA region. Average of WGI estimates takes positive value only for the Gulf countries excluding Saudi Arabia. This finding supports investment capacity hypothesis, considering that convergence in Gulf Region (excluding Qatar) is highest in this region.

General government final consumption expenditures in EU members are 21% of GDP, inflation is around 2% on average, and the average of WGI estimates is around 1.5 for EU-15 and 6 founding members of EU. The estimated μ-convergence value is lower for developing countries of EU although



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general government final consumption expenditure is lower. Therefore, this indicator does not seem to explain differences in convergence values, due probably to the fact that government spending is not non-productive in EU as opposed to the findings of Barro (1996) for a wider spectrum of countries, where political corruption or other aspects of bad government may prevail. On the other hand, WGI estimates seems to explain convergence values in case of EU members, since as the average of WGI estimates fall from 1.5 to 0.8, estimated μ-convergence value falls as well, from 1.76 for industrialized to 1.37 for developing countries of EU. For non-EU developing countries of Europe the average WGI falls further to -0.4 and the μ-convergence is estimated at 1.1. This tendency is valid for inflation rate as well.

Comparing Table 5 and 6 yields the conclusion that the investment capacity explains the differences in μ-convergence values estimated for the countries in the MENA region and in Europe quite plausibly. The lower investment capacity of the countries in the MENA region depicts itself in lower FDI inflows to the region in comparison to those towards the European countries, as well. Indeed, as percentage of GDP, yearly FDI inflows to MENA region is 3.5 per cent while European countries attract FDI that amount to 6.5 per cent on average during 2000-2010. Yearly FDI inflows towards the six founding members of EU reach 8.7 per cent of their GDP in the same period.

*Table 5. Investment capacity in the MENA region*

| | **General Government Final Consumption Expenditure (% of GDP) (2000-2010 Average)** | **Inflation, Consumer Prices (Annual %) (2000-2010 Average)** | **Average of WGI Estimates (2000-2010 Average)** |
|---|---|---|---|
| Algeria | 13.9 | 3.3 | -0.7 |
| Egypt, Arab Rep. | 11.8 | 7.9 | -0.4 |
| Libya | 14.4 | 0.0 | -0.9 |
| Morocco | 18.3 | 1.8 | -0.2 |
| Tunisia | 16.7 | 3.3 | 0.0 |
| **NA-Average** | **15.0** | **3.3** | **-0.4** |
| Bahrain | 14.6 | 1.6 | 0.2 |
| Kuwait | 18.7 | 3.5 | 0.3 |
| Oman | 20.2 | 3.0 | 0.4 |
| Qatar | 14.7 | 5.0 | 0.5 |
| Saudi Arabia | 22.8 | 2.4 | -0.3 |
| United Arab Emirates | 7.6 | 4.9 | 0.5 |
| **Gulf-Average** | **16.5** | **3.4** | **0.3** |
| Iraq | 17.7 | 18.5 | -1.6 |
| Iran, Islamic Rep. | 12.8 | 14.8 | -0.9 |
| Jordan | 21.7 | 4.0 | 0.1 |
| Lebanon | 15.0 | 2.6 | -0.5 |
| Syrian Arab Rep. | 13.0 | 4.9 | -0.8 |
| Yemen, Rep. | 13.6 | 10.7 | -1.0 |
| **Other-Average** | **15.6** | **9.3** | **-0.8** |

Source: World Development Indicators (World Bank national accounts data, and OECD National Accounts data files and International Monetary Fund, International Financial Statistics) and Worldwide Governance Indicators



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*Table 6. Investment capacity in European countries*

| | General Government Final Consumption (% of GDP) (2000-2010 Average) | Inflation, Consumer Prices (Annual %) (2000-2010 Average) | Average of WGI Estimates (2000-2010 Average) |
|---|---|---|---|
| Belgium | 22.8 | 2.1 | 1.4 |
| France | 23.6 | 1.7 | 1.3 |
| Germany | 18.9 | 1.5 | 1.5 |
| Italy | 19.8 | 2.2 | 0.7 |
| Luxembourg | 16.2 | 2.3 | 1.7 |
| Netherlands | 24.9 | 2.0 | 1.7 |
| **EU-6 Average** | **21.0** | **2.0** | **1.4** |
| Denmark | 26.7 | 2.1 | 1.9 |
| United Kingdom | 20.7 | 2.0 | 1.5 |
| Ireland | 17.0 | 2.8 | 1.6 |
| Greece | 18.5 | 3.3 | 0.7 |
| Portugal | 20.3 | 2.5 | 1.2 |
| Spain | 18.5 | 2.9 | 1.1 |
| Austria | 18.7 | 2.0 | 1.7 |
| Finland | 22.3 | 1.7 | 2.0 |
| Sweden | 26.4 | 1.5 | 1.8 |
| **EU-15 Average** | **21.0** | **2.2** | **1.5** |
| Cyprus | 18.2 | 2.7 | 1.1 |
| Czech Republic | 21.0 | 2.7 | 0.9 |
| Estonia | 18.6 | 4.2 | 1.1 |
| Hungary | 22.2 | 6.0 | 1.0 |
| Latvia | 19.2 | 5.2 | 0.7 |
| Lithuania | 20.1 | 2.9 | 0.8 |
| Malta | 20.0 | 2.4 | 1.2 |
| Poland | 18.1 | 3.5 | 0.7 |
| Slovak Republic | 19.3 | 5.1 | 0.8 |
| Slovenia | 19.0 | 4.6 | 1.1 |
| Bulgaria | 18.0 | 6.4 | 0.3 |
| Croatia | 19.7 | 3.0 | 0.4 |
| Romania | 8.0 | 15.4 | 0.1 |
| **EU Developing Av.** | **18.6** | **4.9** | **0.8** |
| Iceland | 24.9 | 6.2 | 1.8 |
| Norway | 20.6 | 2.1 | 1.7 |
| Switzerland | 11.3 | 0.9 | 1.8 |
| **Non-EU Ind. Av.** | **18.9** | **3.1** | **1.8** |
| Albania | 9.8 | 2.8 | -0.3 |
| Belarus | 19.3 | 34.6 | -0.9 |

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*Table 6. Continued*

| | General Government Final Consumption (% of GDP) (2000-2010 Average) | Inflation, Consumer Prices (Annual %) (2000-2010 Average) | Average of WGI Estimates (2000-2010 Average) |
|---|---|---|---|
| Bosnia | 21.6 | 3.4 | -0.3 |
| Macedonia, FYR | 19.6 | 2.8 | -0.2 |
| Moldova | 18.3 | 11.6 | -0.4 |
| Montenegro | 24.6 | 4.0 | 0.0 |
| Russian Fed. | 17.6 | 13.3 | -0.6 |
| Serbia | 20.3 | 24.3 | -0.4 |
| Turkey | 12.7 | 22.2 | 0.0 |
| Ukraine | 19.0 | 12.8 | -0.4 |
| **Non-EU Dev. Av.** | **18.3** | **13.2** | **-0.4** |

Source: World Development Indicators (World Bank national accounts data, and OECD National Accounts data files and International Monetary Fund, International Financial Statistics) and Worldwide Governance Indicators

## CONCLUSION

As the endogenous growth literature highlights the dependence of growth rates on the state of domestic technology relative to that of the rest of the world, one way for the developing countries to catch up is benefiting as much as possible from technology diffusion. In a typical model of technology diffusion, the rate of economic growth of a backward country depends on the extent of the adoption and implementation of new technologies that are already in use in leading industrial countries. Therefore, measuring the convergence of per capita incomes is important in order to assess whether comparatively less advanced countries manage to decrease the technological gap with more advanced ones through time.

Theoretically, international trade and FDI are considered as technology transmission mechanisms from leader countries to followers. Empirical studies on international technology diffusion confirm that there is significant cross-country technology diffusion via international trade channel, but evidence on FDI channel is ambiguous. The reason is that while empirical studies on developed countries find positive spillovers stemming from FDI, there is no evidence of such spillovers in research on developing countries. This implies that only developed countries can benefit from technological spillovers stemming from inward FDI, leaving no room for developing countries to catch-up.

However, further research which covers both developed and developing countries reveals that these different outcomes are due to the fact that most developing countries lack the absorptive capacity to benefit from the technology transfer. Besides absorptive capacity, a combination of other determinants highlighted by the empirical research based on the new growth theory as affecting the rate of growth, which is termed as investment capacity, should be taken into account when analyzing the convergence process.

This chapter analyzes the validity of the hypothesis that technology diffusion measured by the convergence of per capita incomes, depends not only on the absorptive capacity, but also on the investment capacity in the context of the countries in Europe and in the MENA region. Accordingly, this chapter first estimates the convergence of incomes towards the FDI home country in the MENA region and in Europe separately before analyzing the results with respect to prerequisites to derive benefit from FDI



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in a comparative manner. In order to detect the per capita income convergence implications of FDI, each region is analyzed using two different measures of convergence, namely β-convergence based on neoclassical growth model and the convergence based on technology diffusion model of endogenous growth theory, which is termed as μ-convergence.

For the MENA region, the countries that have the highest FDI stock in the region as of 2010, the USA, France and Great Britain, are established as the FDI home countries. However, the estimated β-convergence values do not differ to a large extent with respect to the choice of the FDI home country. Once Qatar is excluded from the analysis as being an apparent outlier, both β-convergence and μ-convergence towards the USA are estimated at 0.5 per cent per year. Since there are considerable differences in per capita incomes between oil producing countries in the Gulf area and the North African countries, convergence analysis is repeated for these two sub-groups of the MENA region. The β-convergence value estimated for North African countries is almost the same as that obtained for the whole group, while the μ-convergence towards the USA reaches 1 per cent. The Gulf region excluding Qatar is the sub-group where the convergence is higher with respect to both measures with around 1.4 per cent.

In case of the convergence analysis for Europe, different sub-groups are used as well to account for the ongoing integration process under EU. Plausibly, both β- and μ-convergence values increase as the level of integration in EU increases. This evidence is stronger when the outlier (in this case Luxembourg) is excluded from sub-groups that are composed of industrialized countries of Europe. The estimated β-convergence reaches 2.2 per cent per year for the five founding members of EU while it is 1.7 per cent for the first 15 members of EU. This result is consistent with the conventional speed of conditional convergence of 2 percent obtained in cross sectional studies surveyed in Hauk and Wacziarg (2004).

In the case of developing countries of Europe, β-convergence is estimated as 1.4 per cent for EU members and 0.6 for non-EU ones. The μ-convergence is estimated as 2.7 per cent for the five founding EU members. The estimated μ-convergence value is 1.8 per cent for the first 15 members of the EU, while it is 1.4 per cent for the developing countries of Europe, which joined EU after 2004. Finally, for the group comprised of non-EU developing countries of Europe, the μ-convergence is estimated as 1.1 per cent. Therefore, high per capita income convergence seems to be a prevailing feature, especially among EU members.

The comparison of convergence values between the MENA region and European countries is based on the μ-convergence derived from the diffusion of technology model of endogenous growth theory, since it is more appropriate for this chapter, which analyzes interactions between convergence of per capita incomes and FDI considering the latter as an international technology diffusion channel. Comparing estimated μ-convergence for European countries with those for the MENA region, leads to the conclusion that per capita income convergence of EU members towards the FDI home country (US) is higher. Even the lowest μ-convergence value obtained for subgroups in Europe (for the developing non-EU European countries estimated as 1.1 per cent) is higher than the 0.5 per cent estimated for the whole MENA region excluding Qatar.

However, once the sub groups in the MENA region are taken into account, the discrepancy in the convergence values between the two regions becomes narrower. For example, the μ-convergence value towards US estimated for North African countries (around 1 per cent) is close to the value obtained for the developing non-EU European countries (1.1 per cent). Similarly, 1.4 per cent of μ-convergence prevailing for the Gulf region is close to that of the European countries that joined EU after 2004. These results support the hypothesis that technology diffusion depends not only on the absorptive, but also on the investment capacity of countries as explained below.



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First, in line with the findings of empirical studies on the diffusion of technology model, as average R&D expenditure increases the convergence speed for different country groups within Europe increases. The results for the average of labor force with tertiary education are also in line with the evidence obtained using diffusion of technology models: As the share of labor force with tertiary education increases the convergence speed for different country groups within Europe increases. Second, comparing the absorptive capacity of European countries with that of the MENA region implies that industrialized EU members surpass the MENA average in both components. This fact justifies the absorptive capacity hypothesis considering the high convergence values estimated for EU-6 and EU-15. However, the average R&D expenditures as percentage of GDP in non-EU developing countries of Europe (0.6) is not much higher than the value obtained for the North African countries (0.5). Similarly, the average of labor force with tertiary education is only 6 percentage points lower in North Africa compared to non-EU developing countries of Europe. The similarity in the absorptive capacity of these two regions explains the similarity of the μ-convergence values towards US estimated as 1.1 per cent for the developing non-EU European countries and as one per cent for North African countries.

These findings confirm that technology diffusion measured by the convergence of per capita incomes depends on the absorptive capacity in the context of the countries in Europe and in the MENA Region. However, the similarity of μ-convergence values prevailing for the Gulf region and for the European countries that joined EU after 2004, which is 1.4 per cent for both, cannot be explained by absorptive capacity. The average of labor force with tertiary education is 6 percentage points lower in the Gulf States compared to developing countries of EU and the average R&D expenditures as percentage of GDP in the Gulf States (0.2) is quite lower than the value obtained for developing countries of EU (0.8). In order to explain this fact, investment capacity which covers the determinants of growth other than the ones that comprise absorptive capacity can be used. Especially, the average of WGI estimates component of investment capacity, which is 0.8 for developing countries of EU, is calculated as 0.3 for Gulf States. This indicator is around -0.4 for North African and non-EU developing European countries.

The average of WGI estimates seems to explain differences in convergence values of EU members as well. As the average of WGI estimates falls from 1.5 for industrialized to 0.8 for developing countries of EU, the estimated μ-convergence value falls from 1.8 to 1.4, respectively. Taken together, these findings confirm the validity of the hypothesis that technology diffusion measured by the convergence of per capita incomes, depends not only on the absorptive capacity, but also on the investment capacity.

In summary, both absorptive and investment capacity matter in explaining the differences in convergence speeds estimated not only for countries in the MENA region and in Europe, but also for subgroups within each region. There is evidence that sub-groups including countries with poor absorptive capacity, such as developing non-EU European and North African countries mark the lowest income convergence towards the FDI home country. Therefore, in line with the empirical studies on the diffusion of technology surveyed in the Background section, the technology transfer brought about by FDI, hence the income convergence between FDI partners is not straightforward. This justifies the theory that the flow of advanced technology brought along by FDI can increase the growth rate of the host economy only by interacting with that country's absorptive capability.

Furthermore, the investment environment of the country also matters. The main policy recommendation to the policy makers of the developing countries based on these results is that the economic policy aimed at fostering growth should consider inward FDI not only as a more stable form of capital inflows, but also as a medium of technology transfer and try to benefit as much as possible by enhancing the absorptive capacity of the country. This can be realized by supporting R&D activities, facilitating tech-



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nological implementation, and promoting human capital as well as improving investment environment to attract more FDI. With respect to the latter, avoiding nonproductive government consumption, trying to maintain price stability and ensuring improvement in all aspects of governance indicators are among the main policy recommendations.

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## KEY TERMS AND DEFINITIONS

**Absolute Convergence:** Poorer economies tend to grow faster than rich ones without conditioning on any other characteristics of economies.

**Conditional Convergence:** Taking account of the determinants of the long-run per capita income, poorer countries tend to grow faster than richer countries.

**EU:** European Union.

**FDI:** Foreign Direct Investment.

**MNC:** Multi-national Corporation.

**R&D:** Research and Development.

**TFP:** Total Factor Productivity– the component of output growth that is not attributable to the accumulation of factor inputs, such as labor and capital.

**WGI:** Worldwide Governance Indicators.

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# Chapter 88
# The Need for News Forms of Financial Intermediation

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## ABSTRACT

*This chapter deals with intermediaries in the financial sector such as banks and institutional investors. These actors are expected to play a central role in economic growth via the funding of investment because they are supposed to match creditors' desires (households) with borrowers' needs (firms) at a macroeconomic level. It aims to reassess the theoretical role of financial intermediation related to the allocation of savings in a context of a structural decline in overall investment for thirty years. To achieve this goal, it studies the evolution of financial intermediaries' behaviour in their capacity to finance investment and identifies the weaknesses of our current financial system which does not allocate optimally savings to firms' productive projects. Then it suggests some policy implications defining new forms of financial intermediation in which public financial intermediaries would have to play a greater role.*

## 1. INTRODUCTION

Intermediaries are at the core of economic and social dynamics. When some actors strive for financing and others offer funds, it could be imagined that lenders and borrowers could meet directly. But creditors' desires rarely match borrowers' needs. This is the reason why a third part intrudes in the middle of these relationships: that's what financial intermediation is about. Indeed, borrowers aim to minimize expenses and take on debts in the medium and long term while lenders are concerned with having high yields, minimizing risk and maintaining liquidity by focusing on short-term investments. If, at the microeco-

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nomic level, the non-financial agents may have sufficient resources or not to fund their spending plans at a given horizon, at the macroeconomic level, households are agents with funding capacity (potential lenders) and the companies and States, are agents who need funding (potential borrowers). Therefore, this imbalance and diversity of economic agents' financing needs require to put in place a range of institutions and market mechanisms to not only organise the transfer of funds from the agents who save to those who wish to borrow, but also to make compatible their conflicting motivations in terms of price, maturities, yields or liquidity. Among these institutions, there are financial intermediaries which are predominantly banks and institutional investors (pension funds, insurance companies, mutual funds). This transaction mutually proves advantageous in so far as it allows the lifting of the budget constraint[1] from non-financial agents by allowing them a more satisfactory temporal scale of their spending.

By facilitating money transfer between borrowers and lenders, financial system and financial intermediaries in particular are considered to play a positive role in the economy via the funding of productive projects or investment. Financial system is supposed to allow an optimal allocation of savings to firms' productive projects. Indeed, at the macroeconomic level, there is a consensus among economists that investments[2], both private and public, are the driving force of the economy, through the investment multiplier: a rise in investment will increase national income more than proportionally thanks to the operation of a virtuous circle. When firms' investment expenditure increases, there is both an increase in demand for investment goods, and an increase in production of investment goods. Companies will therefore employ and pay income in order to produce. This income will then be spent by households. This will bring a new demand for companies, and companies will have to meet this demand by further increasing the production, that is to say by employing even more and paying more income... Conversely, we would get a vicious circle in case of initial investment decline. Thus investment appears to be the condition which revives strong growth and sustainable job creation.

Such a mechanism had worked well during the post-war boom. During this period, the macroeconomic dynamic was based on the traditional drivers of household consumption and business investment. Household consumption could be dynamic because it was based on the Fordist compromise aligning wage increases with the rate of productivity gains. On the investment side, the dynamics were embodied by business leaders primarily seeking growth. The dynamics of consumption also strengthened investment: businesses accumulate more productive equipment when they are able to increase their sales thanks to consumers whose incomes climb regularly. On the public expenditure side, the contribution was also positive: firstly, because we observe the rise of public expenditure to cover new needs which develop with the general enrichment (health and higher education in particular); secondly, because the constraints on public spending are weak thanks to a funding facilitated by strong economic growth. Externally, competition is low enough for the West, because the newly industrialized Asian countries (South Korea, Hong Kong, Singapore, and Taiwan) are not yet sufficiently developed, with the notable exception of Japan whose rise seemed inexorable at that time.

But from the late 1970s, the post-war boom that had gradually helped to establish a partly socialized economic system in Europe begins to slowdown. Thanks to these apparent limitations of the previous growth regime, radical changes are legitimized and implemented: limiting public spending, the conduct of a tight monetary policy, public finance through market mechanisms that would discipline the State, suppression of wage indexation, individualization of wage negotiations, strengthening control in the distribution of social benefits while exonerating companies, as much as possible, from the weight of social security "contributions"... Economic policies change priority from full-employment to the fight against inflation. The neoliberal revolution is not limited to public policies: corporations are also ordered



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to change. The capitalist image of management position is no longer the manager who ran the company in the Fordist era, trying to build corporate empires, be it at the expense of returns to shareholders. Now, the manager appears in a new context: with financialization, he has to promote shareholder value, be it with the withdrawal of profitable investment that do not deliver the profitability required by shareholders. Financialization may be defined as a process whereby finance gradually imposes its domination of the real economy (Krippner, 2005), both at the macro-economic level where finance is likely to slow growth and employment, or at the micro-economic level where finance constrains companies to pursue shareholder value, sacrificing investment in favour of dividend distribution.

From 1980, deregulation policies profoundly change the area of possibilities in terms of economic growth. The combination of wage disinflation policies (dis-indexation of wages from price evolution, attacks against trade unions...) and the introduction of competition by globalization held wages in check. This sharp decline in the share of wages in added value was observed around the developed world. If the overall share of wages declines, this does not prevent the highest earners to experience very dynamic growth (particularly in the United States). With wages driven down, the engine of consumption based on income from employment becomes less effective. But the second driver of economic growth, investment, will also experience a significant drop. The slowdown in consumer spending is not conducive to investment spending by businesses.

For thirty years, a structural decline in overall investment is observed. A report by Mc Kinsey (2010) shows that the investment rate decreased from 26.1% in 1974 to 21.8% of GDP in 2009, a loss of about 20 trillion dollars. This decrease which concerns essentially the developed countries has accelerated since the 2007 crisis. See Figure 1. The largest decreases particularly touch the traditional sectors of industry, agriculture, mining and infrastructure from 1980 to 2008. This structural decline in investment is detrimental to economic growth. In the 2000-2008 period, the GDP growth rate of developed countries was 2% against 5.3% over the 1960-1970 period.

As seen in Figure 2, in emerging countries, the development is reversed and more variable with an investment boom in the 2000s. If this rate increases from 28.8% to 48.7% from 1970 to 2009 for China and 14.6% to 37.9% for India, it goes from 19.3% to 24.1% between 2001 and 2008 in Africa, from 21.4% to 26.4% in Central and Eastern Europe as well as in other Asian countries. This boom mainly concern industry, infrastructure (transport, energy, telecommunications) and residential real estate. This trend is expected to continue with the rural exodus that will result in significant infrastructure needs.

In Europe in particular, the issue of lack of investment is a major challenge today, not only for European growth but also for employment. The OECD and the IMF have in fact denounced, during the recent months, the delay in the recovery of investment in Europe compared to the United States. The European Commission (EC) has recently looked into the problem by proposing the implementation of the Juncker plan intended to lead to a 315 billion euro stimulus, over three years, of investment in Europe.

If the decline in investment is damaging to growth, it is all the more so because the world economy has considerable financing requirements, to finance long term investments. In developed countries, structural investment requirements are linked to the necessary adaptation of the productive apparatus to an ageing population and to climate change through projects related to different areas: energy, innovation and growth of SME, universities and research... This is to fund new infrastructures but also to renew existing ones that have become obsolete and unsuited to the climate change. In emerging regions, long-term investments are linked to their pattern of growth. These investments, which are essential in order to catch up with Western living standards, were already important but they are expected to intensify. The progressive ageing of their population should lead to the implementation of social policies and the



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*Figure 1. Accumulation rate (%) in developed countries (1980-2014)*
*Source: IMF, World Economic Outlook.*

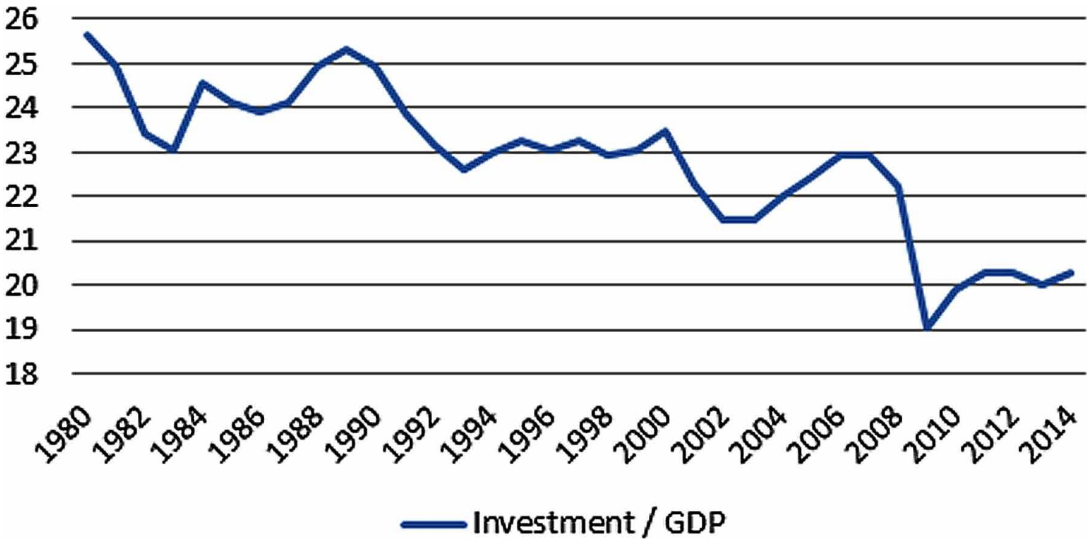
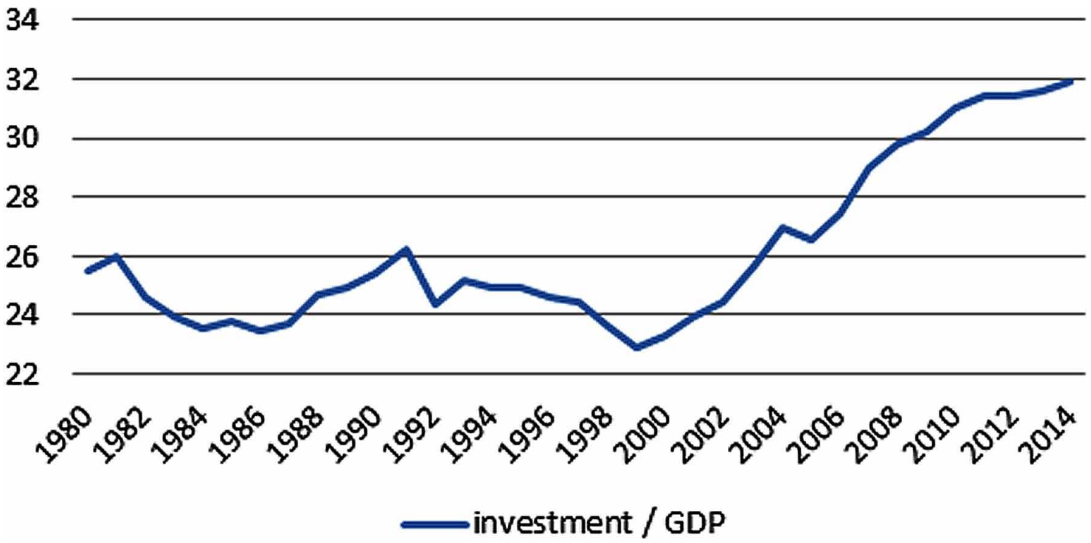



*Figure 2. Accumulation rate (%) in emerging countries (1980-2014)*
*Source: IMF, World Economic Outlook.*




introduction of compulsory pension schemes[3]. Indeed, ageing populations imply a profound transformation of their financial systems in the sense of long-term investment, because the role of institutional investors precisely lies in this socialization of risk inherent to public and private social protection systems.

At European level, the Commission considers that investment needs are about 1.6 trillion euro by 2020 for cross-border transport infrastructures of goods and people and energies. Energy transition has a cost: it will take 2 to 3% of GDP per year for ten years, so in the case of Europe, about 3 trillion over a decade. This transition is by nature a long-term investment project with a low financial return: 3% over



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10 years on average (Giraud, 2012). Thus, we see that the economies that experienced a financialization of their economy do not invest as much as before, even if the needs are great and if savings are abundant in Europe and also in the world thanks to higher Asian savings. Yet an economy that no longer invests is an economy that is no longer preparing for the future, that no longer sees its productivity increase. In short, an economy on the brink of a stagnation that would be secular. Therefore, the study of the causes of this structural decline in investment is crucial.

Several reasons can explain this decrease in investment. First, there are circumstantial factors related to the crisis and differences in economic policy in the developed countries[4]; then there are causes related to financing requests and financing offers that combine with one another. Indeed, investment cannot be decreed, it depends on both the supply of funding and corporate decisions. On the demand side, the decline in investment in Europe would simply be related to the lack of a new Eldorado which inhibits investors/entrepreneurs. On the supply side, it is the financial system and its actors which are at stake. The latter has evolved and the major financial intermediaries which are the banks have had to adapt to a world which is becoming increasingly finance orientated. The banks have participated in this movement by diversifying their traditional activities towards market activities to the detriment of their traditional role of financial intermediary[5] (transformation of deposits into loans). But this decline is also rooted in the organization of the corporate finance system because shareholder power has transformed the strategies of non-financial companies at the expense of productive investment (Auvray et al., 2016) as well as those of financial institutions.

This chapter focuses in particular on the second reason related to the financing supply problem by identifying on the one hand, the weaknesses of our current financial system which does not allocate optimally savings to firms' productive projects and which generates systemic financial crises; and on the other hand, financial mechanisms related to shareholder governance that discourages long term investment projects of listed companies. First, we reassess the theoretical role of financial intermediation related to the allocation of savings and then the funding of investment, and its evolution throughout history. Second, we define and explain the two main mechanisms at work in the current financial intermediation architecture leading to depress investment and employment. Third, we suggest some policy implications defining new forms of financial intermediation in which public financial intermediaries would have to play a greater role in financing the economy.

## 2. BACKGROUND

### 2.1. Role and Evolution of the Financial System

Financial intermediation aims at organizing the transfer of funds between borrowers and lenders. According to Gurley and Shaw (1960), this transfer and this adjustment can be provided in two different ways originating from a key distinction between direct and indirect finance and referring to two complementary financing systems. The first takes place on the financial markets directly between the two types of agents with requirements and with financing capacity via the issuing[6] and subscription of financial assets. In the second case, the transfer passes through a third party, a financial intermediary (including banks, insurance companies, pension funds) *via* the issuance of separate securities, thus juxtaposing two contractual relationships. An essential function of financial intermediaries is to make two types of transformations[7] of debt characteristics: a maturity transformation by offering households short term



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assets, and businesses long-term financing and a transformation thereof by substituting their own debt to that of non-financial agents in deficit. Households within the framework of indirect finance do not hold the corporate debt but the intermediaries' debt. In Europe, funding is mainly done through bank intermediaries. Banks are specific financial intermediaries to the extent that they collect savings (deposits) and provide financing in the form of loans; but above all, they are the only ones to manage the system of means of payment and to create money (loans create deposits).

The purpose of these intermediaries is to be found in the market's imperfection and incompleteness and information asymmetries. Indeed, the existence of financial intermediaries meets a set of imperfections in the field of information distribution, risk allocation or liquidity attributes. If we were in an economic sphere based on pure and perfect competition[8], financial intermediaries would have no reason to exist. It would be simpler and cheaper for primary lenders to acquire directly from an infinite number of final borrowers the securities that match their preferences in terms of yield, maturity risks, liquidity (Leland, Pyle, 1976; Diamond, 1984; Diamond, Dybvig, 1984). The agents in need of financing, who would find themselves in a symmetrical situation, would be certain to find investors who consider their own debt requirements and investment potential attractive.

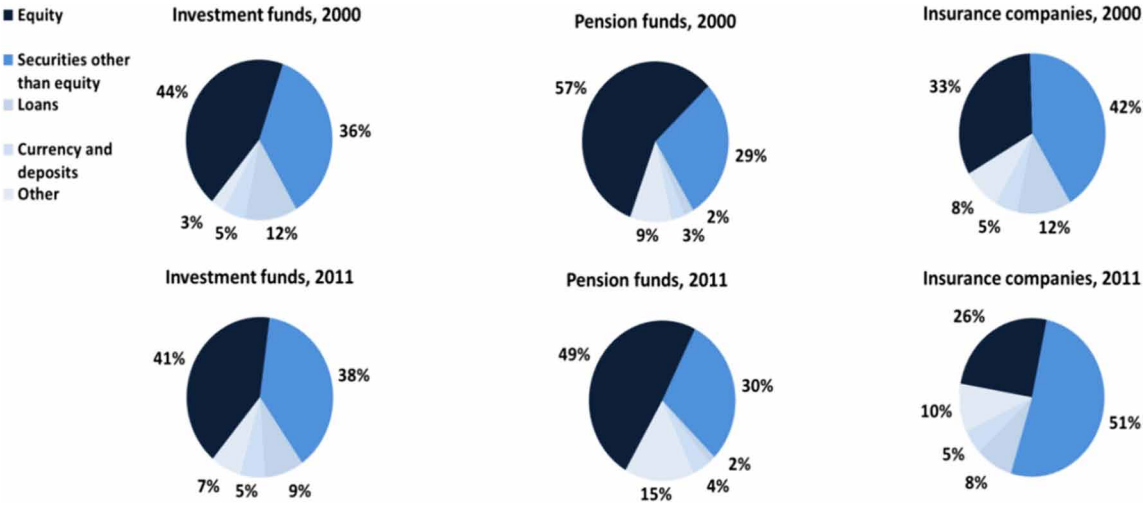
But economic reality is different and much more complex. In producing information services relating to the selection of borrowers, by specializing in the purchase and sale of financial assets, by treating very high financial volumes coming from or going to large numbers of customers, financial intermediaries access unit costs of collection or loans (operating costs, trading costs or information research costs...) lower than those which apply to individual agents (either lenders or borrowers) in bilateral contracts tied on markets, and therefore achieve benefit. They also develop expertise to manage more effectively the asymmetry of information in the long term. Finally, thanks to their size, financial intermediaries can more easily diversify their portfolios and therefore better allocate all the risks inherent to financial activity. However, far from eliminating market imperfections, they only reduce them. Meanwhile, guaranteeing savings income in a context of uncertainty and in the long term, they set about a socialization of risk. That is why in all developed economies, individuals, naturally more adverse to risk, entrust them with large sums. Thus, investors are expected to play a positive role in the economy by facilitating the distribution of risks and reducing transaction costs and information asymmetries.

To distinguish these financial intermediaries, it is possible to use several criteria of classification: actors can be grouped by institution or profession. If one trusts institutions, monetary financial intermediaries (MFI) must be distinguished from non-monetary ones (NMFI). On the MFI side, one would find mainly banks, whereas on the NMFI side we find the regrouping of insurance companies, pension funds, mutual funds, assets managers... The MFIs and NMFIs do the job of collecting savings and providing funding. But only MFIs can collect deposits and manage means of payment and are able to create money without prior savings. In addition to this capacity of money creation, it is often considered that the opposition between MFIs and NMFIs can be found in the composition of these institutions balance sheet: while MFIs are expected to have liquid liabilities (savings deposits) and assets composed of non-marketable debts (loans), the NMFI tend to have illiquid liabilities (insurance contracts) and an asset based on marketable securities (shares). In this vision, banks would ensure a liquidity provision service whereas NMFI would guarantee a more or less long-term placement of savings. A second level of distinction is often mobilized to organise the different NMFI: it separates institutional investors (insurance companies, pension funds, mutual funds[9]) from other investment funds (in particular hedge funds). The basis for this distinction is regulatory: the "other" investment funds are more recent, and therefore less regulated than institutional investors.



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*Figure 3. Detention of equities by institutional investors in 2000 and 2011*
*Source: OECD, Institutional Investors database.*




Concretely, the theoretical role in the allocation of savings of financial intermediaries and especially asset managers (also called investment funds) consists of buying financial assets. This is what is shown by Figure 3, that outstanding assets are invested in shares and mainly bonds. It is especially the pension funds and investment funds (mutual funds) that invest in shares, the insurers focus more particularly on public debt securities.

Through their shareholding/ownership, financial intermediaries or investment funds have become major shareholders of listed companies. They represent today, in the United States, 40% of the market capitalization whereas in 1960, 84% of shares were held by individuals. This trend is even more pronounced in the UK where the proportion of shares directly held by individuals decreased from 54% to 11% (Çelik, Isaksson, 2013). Thus, in nearly 50 years, a substantial change is observed in the nature of shareholding/ownership: the main shareholders are now institutional investors rather than individuals. The link between these funds and the companies in which they invest being even more uncertain, these funds allow for the delegation of asset management. Because of the many delegations of asset management (with deposit of funds), we do not really know who is the final beneficiary of a shareholding/ownership. This new shareholder structure will affect the company.

## 2.2. Evolution of the Financial System: Opportunities for Different Economic Actors

More generally, this shift towards an increasingly financialized financial system was reflected differently according to the function of economic agents. Regarding the States, this occurred primarily by the marketisation of public finance, only this could ensure a sufficient depth to attract savings. The States supplied the markets with assets (deemed safe) by placing their debts on the sovereign bond markets. Most countries have seen the ratio of government debts to GDP climb.[10] Thus, for France, the ratio public debt to GDP increased from 20% in 1980 to 95% in 2014, according to figures from the IMF



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*World Economic Outlook*. In the UK, the trend is also upward in the same period: from 47% to 91%. The opening of international financial markets was aimed at enabling the States to finance themselves more economically by wagering on savings that are no longer reduced to only national savings.

From the household perspective, this resulted in a substantial increase of their financial wealth thus benefiting from a growing sophistication of the financial sphere. They invested in financial markets to place their savings, and secure investment incomes. Directly (in the form of individual savings) or indirectly (as mutual funds), households (domestic or foreign) became shareholders of companies. In the French case, households bought massively into shares and life insurance securities. They headed towards riskier and less liquid investments than before, hoping to gain better returns than traditional savings deposits. According to Plihon (2008), while equities and life insurance accounted only for 8.6% and 13.3% of the financial wealth of French households in 1990, they accounted for 23.7% and 34.5% respectively of financial assets in 2007. This growth is notwithstanding highly unequal because only 28.9% of French households hold life insurance products in 1998, and 36.5% in 2015 (INSEE, 2015).

As for firms, they turned towards capital markets to issue financial assets (stocks, bonds, commercial paper) and pay investment income to the holders of these assets (dividends, interest). Recourse to market funding could seem even more profitable to them than the interest rates of bank loans which were high in the 1980s. The initial idea was that financial markets would be more effective than banks to allocate capital to the most innovative companies, companies for whom banks may be cautious at the prospect of higher risk.

For banks, this financialization has resulted in their increasing involvement in the financial markets, which has led to a marketization of their balance sheet. In other words, the balance sheet is becoming more dependent on financial markets on the asset side but also on the passive side. According to Plihon (2013), in France the proportion of loans to customers (households, businesses, and governments) decreased from 84%, to 38% of banks' assets, from 1980 to 2010. Similarly, the proportion of customer deposits in bank liabilities evolved from 73% to 34% between the same dates. The role of banks is no longer primarily to take deposits and make loans. They do more and more intervention in the financial markets by issuing or subscribing securities. The share of securities held in bank assets has thus evolved from 5% in 1980 to 37%, in 2010. Similarly, banks' liabilities resources now come at 42% of shares issued in 2010 against only 6% in 1980. With the movement of financial deregulation, the banks, which saw their role as privileged financier endangered by competition from direct financing, invested in the field of financial markets to re-intermediate the funding via a market intermediation.

In this way, from a neoclassical perspective, the evolution of financial system for thirty years has allowed different economic actors to benefit from financialization. At a global scale, it means that higher savings would lead to higher investment and growth. Thus, a more market oriented financial system should become a necessity in order to stimulate business investment. We think these benefits claimed by this theory deserve to be questioned in particular for corporates. The current architecture of financial system has considerably changed the rules of corporate governance with the rise of new types of shareholders.

## 3. MAIN FOCUS

In the process of financialization, listed companies are ruled from now on by shareholders like pension funds, insurance companies and mutual funds. These financial intermediaries have progressively replaced individual shareholders and they both do not want to be immobilized in a stock and require high yield.



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Consequently, firms' investments are suffering from financial pressures with financial intermediaries no longer playing the part of the shock absorber between savers' desire for liquidity and firms' need for stability to carry out its productive project. This part aims at explaining how financialization may damage investment. More precisely, it explains two mechanisms at work: corporate governance, on the one hand and the liquidity of the financial markets, on the other.

## 3.1. Corporate Governance and Liquidity as Disciplining Devices for Managers

One of the fundamental rules of capitalism is the principle of one share - one vote. If shareholders put pressure on companies, it is because they can exercise the voting rights associated with their shares that enable them, in a general meeting, to vote on the amount of dividends and to appoint directors who will in turn vote for CEOs of the companies. Such a mechanism has long been used in corporations all around the world. Nevertheless, since the early 1980s in the United States and in the 2000s in continental Europe, non-financial companies began to bring into their capital large numbers of institutional investors or hedge funds that exert these voting rights. They do so through standardized proxy voting companies on the one hand or directly with the aim to extract rents at the detriments of creditors and employees on the other hand (Coffee, Palia, 2014). In addition to voting in the general meeting, shareholders may leave the capital of a company at any time, if they feel, for example, that a quarterly profit is not high enough. This ability to withdraw from capital is the second channel that oppresses companies and allows shareholders to make increasing demands. Such a mechanism is that of liquidity which Keynes presented as the rationale of the financial markets.

Indeed, liquidity is defined as a capacity which can be converted into currency without delay, cost or risk in losing capital. In this way we establish that an asset will be qualified as liquid if it has two attributes: firstly, an asset is liquid if it is of negotiable character, that is to say the facility to be able to resell the considered assets quickly and free of charge; secondly, an asset is liquid if it has a certain predictability of its future resale value, with a reduced risk of capital loss. Thus, liquidity is at the centre of a specific dialectic. If the financial markets are organized so as to allow everyone to sell their shares at any time, this in fact creates a secondary market where securities are traded continuously, that is to say, an institution (the stock Exchange) is created which reassesses the price of the asset on a daily basis: this consequently creates the risk of seeing the stock prices decline. For shareholders, this means that the existence of stocks markets prompts them to seek to protect themselves against price declines. They do this by getting high dividend payments and by pushing companies to buy back their own shares[11]. Such practices induce an increase in the price of shares that is often well received by the markets. Managers generally respond favourably to this payment of liquidity request, because they benefit from compensation indexed to the share price (as stock options). Conversely, when the price of a listed share declines, this causes not only financing difficulties but also takeover threats. As for the managers, they risk their jobs because a new control system means new shareholders, and consequently new directors who will choose the top management.

Moreover, these dividend payments should not just be important: they should be higher than those of competing companies. For advocates of shareholder value, there would only be creation of the shareholder value when the company did better than the market average. Therefore shareholder value is a powerful tool of profit mobilization for dividend distribution, any company not participating in this race forward would see a disaffection of its stock prices, which would harm both its shareholders (capital losses) and its managers (risk of takeover and replacement by a new team).



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Thanks to the continuous trading of stock markets, shareholders constantly threaten to leave a company that does not meet with their new requirements. This threat has grown stronger during the past 30 years. The liquidity of financial markets has indeed experienced strong growth since the 1980s and 1990s by extending to various markets (corporate finance, financing of public debt, foreign exchange markets across the world with financial centres interconnected with each other), multiplying the fall-back possibilities, and consequently capital outflow opportunities. With frontiers across different countries' financial markets removed, there is no more obstacle to the free movement of capital, and consequently the liquidity pressure is all the more intense for corporations and workers[12]. While corporate governance rules have not strongly evolved through the ages (one share still is equal to one vote in many cases), capital mobility has really undergone a huge shift since the 1970s and the demise of the Bretton Woods international monetary system.

This structural change is problematic because it has pushed non-financial corporations to overlook profitable investment opportunities in order to pursue shareholder value on financial markets organized for liquidity. The macroeconomic consequence of this shift in focus of companies at the expense of productive investment is a slowing of economic growth and rising unemployment which can only be temporarily dammed, with difficulty, by the establishment of expedients (private and public debts, wealth effect, and trade surpluses) to support the activity. Studies show indeed that American non-financial companies spent an increasingly important share of their profits to buy back their own shares by making cash payments to shareholders (Lazonick, O'Sullivan, 2000; Hecht, 2014). We have now strong evidence that stock markets and impatient institutional investors destroy real investments of non-financial corporations, both in US (Asker et al. 2015) and in Europe (Brossard et al., 2013).

## 3.2. Financial Institutions/Intermediaries: From the Theoretical Shock Absorber to the Practical Shock Amplifier

Financial listed companies are also subjected to the pressure of this new type of shareholder. The effect is even greater because they play a role of financial intermediaries participating in the financing of the economy. By demanding high returns compared with other competitors, shareholders push them to select riskier and more profitable short-term strategies[13] at the expense of less profitable long-term investment projects. One form of investors / shareholders short-termism is revealed in the sharp decline in the holding period of financial assets ownership, an increase in purchase/sale of short-term stocks... For example, on the New York Stock Exchange (NYSE), the average holding period went from five years in 1980 to five months in 2010 (Della Croce et al., 2011). One of the reasons given to explain this short-termism is the many asset delegations to external assets managers who, being in competition, are encouraged to take account of the short-term returns rather than the long term ones. This development of asset managers, by lengthening the investment chain and making it more complex, has not only participated in the lowering of investor involvement in the company but has also induced an increase in costs for agents in need of funding and an dissymmetry in risk taking. The already mentioned proxy advisors represent another type of delegation which institutional investors are fond of. These Proxy advisors outsource the governance of their voting rights in general meetings of companies in which they are shareholders. This demonstrates to what extent institutional investors are no longer involved in the companies.



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## 3.3. Liquidity and Short-Termism against Investment

If the liquidity of secondary markets[14] is essential to attract investors, it constitutes a strong constraint and establishes incentives for short-termism. It distorts the way of understanding the real economy. By creating a financial market where companies are listed, we have created the fiction of liquidity of productive investment itself. If we can understand the rationality of investors seeking liquidity for their investments, this liquidity research conflicts with the necessity of their own commitment to productive investment. Indeed, the action of productive investment is often irreversible. It is a way of planning for the future, a time commitment that is not reconcilable with the ongoing search for liquidity inherent to financial markets. Consequently, the company, which is a viscous corporate purpose intended to reproduce itself over time, is influenced by the instability of the financial actors' state of mind. Financial markets often soar, upwards or downwards, for a company, a sector of activity or a particular country. These impulses influence stock prices... but they also change corporate investment behaviour. If the stock market valuation is particularly well oriented, why not agree to a capital increase that would bring new money and enable an investment increase? Conversely, in the case of a pronounced disaffection on the stock exchange, the company and its management team can blame the coup and think, in a pessimistic trend, that it's better to invest less. The opinion of the financial markets reflects on productive business investment and it amplifies the movement, causing episodes of over-accumulation and moments of under-accumulation. The instability of financial agreement contaminates the real economy.

This is even more damaging in that financial opinions are based on conventions, and not on any theoretical value, the fundamental value, as defined in the theory of efficient markets. The hypothesis of informational efficiency postulates that the market price of a security reflects its fundamental value, given the available information (Fama, 1970). In other words, the security would possess an intrinsic value, defined as the future income flow to which it is entitled. In the case of shares, the basic value is equal to the present-day value of the income flow of dividends distributed by the company. Indeed, one share gives the holder a right to future profits. This formula reveals the profound logic of capitalism: capital value is determined by its ability to generate profits over time. The share price should consequently, in this logic, be determined by the future flow of dividends that will define the fundamental value. Thus, the efficient market theory suggests that stock prices represent the intrinsic value of companies, excluding market fluctuations. This intrinsic value is in itself objective in the sense that it is based on the company's characteristics (productivity, production capacity etc.) thus reflecting a fundamentalist logic.

However, calculating the fundamental value is not easy to achieve because future dividends are unknown. They represent a fraction of the profits, which are themselves uncertain because they depend on strategic choices of the company or even macroeconomic developments. Consequently, investors should anticipate such dividends based on the information provided. Thus, informational efficiency is inextricably linked to the formation of expectations on the future developments of variables likely to influence asset prices in the market. What governs the financial agreement is the phenomena of crowd psychology, mimetic behaviour where everyone is watching everyone else in order to form their opinion (Orlean, 1999). On the eve of the sub-prime crisis, all of the rating agencies, supposed to speak the "truth" on the financial markets, thought that the sub-prime products were of high quality. The next day, they had all changed their minds. Similarly, the financial markets myopia had long held the view in the 2000s that it was no more risky to lend to the Greek State than to lend to the German State: the interest rate gap between the two public debts was practically non-existent. There are countless examples where financial markets



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have been grossly mistaken in their assessments. Therefore, it is really difficult to entrust them with the task of guiding the long-term investment prospects that shape tomorrow's economy... The markets are not inherently good assessment guides.

Since the 1980s, numerous studies have evaluated the negative influence of liquidity and the presence of impatient institutional investors in companies' capital. This influence is most often characterized by the expression "short-termism": companies think at short-term when they pay the shareholders whereas they could use the funds to make a long term investment that would ensure their future prosperity. On this point, there has been, for some time, a certain consensus in academic literature[15] but also awareness on the part of professionals. This is the case of BlackRock's CEO, Larry Fink, one of the leading asset managers in the world, who, in 2014, 2015 and 2016 sent a letter to the largest US companies (S & P 500) to warn them: "giving cash back to shareholders should be part of a balanced strategy; however, when done for the wrong reasons at the expense of productive investment, this can endanger the ability of the company to generate long-term returns." Beyond this warning, many observers perceived these financial excesses since the crisis started in 2007-2008. Some regulators such as Paul Volcker[16] (Former Fed governor) and Lord Adair Turner[17] (Chairman of the Financial Services Authority) called into question in 2009, the economic value of some financial innovations (CDS, CDO...) (Zingales, 2015); while international institutions and academics questioned, using numerous empirical studies, the positive relationship between the size of the financial sector and economic growth (IMF[18], 2014; European Commission[19], 2013; Coeuré, 2014; Philippon and Reshef, 2012; ...). This assessment invites us to reconsider the current financial intermediation forms.

## 4. FUTURE RESEARCH DIRECTIONS

After observation of more than 30 years of financialization during which finance has gradually been emancipated from the real economy and explained the main mechanisms which have led non-financial listed companies to making less productive investment, the issue of guiding principles is raised, for a new financial structure dedicated to serving the economy. Such a reform implies an extension of financial commitment to support productive investment or corporates' productive projects. This part aims to present some policy implications defining new forms of financial intermediation. Two main avenues can be examined related to governance and the control of the financial markets' liquidity, which may be subject of further researches.

### 4.1. Change the Governance

This path of reform concerns the governance of funds and the corporate governance. In the first case, the goal is to encourage institutional investors to adopt long term return oriented strategies more compatible with the investment horizon of the companies they fund. In the second case, it would reduce shareholder pressure on the company by sharing power more equally within the company.

In terms of governance of funds, a solution to financial excesses would be to rely on the virtues of a certain type of investors: long-term investors. These investors, who are generally defined as investors with illiquid resources, have theoretically a strategic advantage over other financial intermediaries such as banks, in that they are less exposed to liquidity risk. Accordingly, they should be less compelled to seek short-term returns. These are for example, pension funds, life insurance companies, sovereign wealth



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funds... This theoretical category of investor is supposed to represent the good shareholders, that is to say those who do not seek the highest dividends, share buybacks or short-term capital gains because they know that growth opportunities are the key to long-term profits. But the problem associated with this reform strategy by long-term investors is that their behaviour is not always conforming to the theory. In fact, in practice, we observe that their behaviour is no different from short-term investors seeking highest returns in the short term. A study of OECD (Della Croce et al., 2011) shows a long decreasing trend of financial assets holding by institutional investors from 1991 to 2009. Another OECD study (2010) about defined benefit pension funds reveals that US pension funds tended to follow market movements (momentum investment strategies). For example, during the financial crisis in 2008 and 2009, they were net sellers (buyers) of equities (bonds) when market was bear. Such a strategy consequently tends to amplify market trends and is against what we can expect from a long term investor. This last one should rather have a countercyclical strategy.

Another complementary way would be to modify the current corporate governance rules that let shareholders dominate the company. The objective is to reduce the primacy of shareholders on profit reallocation decisions. Three main paths can be considered. The first aims to transform the board of directors into a time supervisory board which allocates profit following arbitration between remunerations of the past (sum payable to shareholders), of the present (to employees) and of the future (to investment financing). According to Morin (2013), no party should therefore impose its views. Another solution would be to grant preferential dividends when the stock holding period lengthens: if you are shareholders of a company for less than a year, you are not entitled to any dividend but after presence in capital of over a year, you start getting a regular dividend. Finally, another path refers to double voting rights: this time it is a question of giving a bonus for seniority, not in terms of income (dividends), but in terms of power in corporate governance. Mayer (2013) proposes to create decreasing voting rights when a shareholder is closed to the exit. This solution is ground on an ex ante agreement which binds the owner to stay in the corporation during a defined time. Otherwise, a more radical solution would be to give the vote only to subscribers of shares on the primary market (the only one that finances the company), and no longer allocate votes to buyers in the secondary market.

## 4.2. Control the Financial Markets' Liquidity

The change in the governance of funds and corporate governance is one of the conditions to ensure that entrepreneurs invest again. But this company reform can only take place in a new financial system involving greater intervention of State. Such objectives include a reduction in the liquidity of financial markets and reconsideration of self-regulation and its underlying foundation: the efficient market theory. Here again we suggest several proposals which would deserve to be dealt in depth.

Behind the fight against liquidity, is the defence of a certain conception of the company. Indeed, for now on, we apply to the company the same imperative that we have towards a financial security, it has to be liquid. Yet, the company cannot be liquid because it aims to reproduce over time. If today's market liquidity allows owners of capital to impose their will on companies and states, it is this liquidity that must be constrained first. This constraint can only be authoritarian. Keynes proposed a solution: the taxation of financial transactions that would put a grain of sand in the cogs of market finance. We support this proposal which is applicable to all financial assets while adjusting the rate in relation to the assets' holding period.



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Furthermore, this liquidity control may involve stricter regulation of financial intermediaries. It has to be noted that since financial institutions are self-regulating, financial stability is undermined (Borio, 2009). In banking sector, this evolution toward self-regulation has begun by the end of the 70's at international level through the intermediary of the Basel Committee which has given to banks more and more leeway to monitor themselves their activities' risks. For example, with the Basel 3 banking prudential requirements (2010), it takes €3 of capital for €100 of activities, but in the 1960s, British banks needed to have €20 of capital for €100 of activities. Self-regulation has mainly allowed financial institutions to increase the leverage effect to have a debt representing 97% of their liabilities, whereas it usually represents only half the liabilities of a non-financial company[20]. We advocate imposing minimum holding periods for long-term institutional investors and / or obliging them to primarily invest on the primary financial markets which are the only ones that offer real financing to the company (Auvray et al., 2016).

To reduce the intermediation chain and their related costs, another solution that we support the most is to create a Stakeholder Bank of Investment and Financing (SBIF). Such a European or national institution could then act as an intermediary[21] between institutional savings (those of pension funds and insurance companies) and granted loan to firms. It would select company investment projects and essentially finance them with savings collected from other institutional investors. The local subsidiaries of such a public financial intermediary could not only ensure a function of traditional loans, but also structure itself in venture capital activity, that is to say a jurisdiction of funding for innovative but risky activities in collaboration with local investors. Institutional investors, in return, would hold the securities issued by the SBIF, which could compensate the different segments of risk. To make them attractive, these securities could have less regulatory capital requirements for banks, insurers and pension funds and could be guaranteed by the European Central Bank (ECB).

A public financial intermediation and the explicit guarantee of the Central Bank are fully justified today. First of all, public authorities already provide a massive implicit subsidy of a systemic nature to banks, which, nevertheless, no longer carry out their role of financing the economy. This implicit subsidy takes place with a much less expensive debt capacity for these banks than for any other non-systemic bank. For banks in the euro zone, for example, it is estimated that this implicit subsidy would save them between 0.6% and 0.9% on the interest rate. In that context, there is no reason that the public authority does not give its explicit support to the development of a bond market by positioning itself as a central intermediary in such markets. An explicit return of the State in financing long-term investments would, moreover, only be the recognition of the reality of risk taking in innovation in the late twentieth and early twenty-first century. Indeed Mazzucato (2013) reminds us of just how much State funding in the United States and the United Kingdom, is the source of many radical innovations in the pharmaceutical and biotechnology industries, defence industry, computers or Internet industry, or even the nuclear industry.

Making reference to support by the Central Bank is all the more justified today in that Central Banks now act as key purchasers on private debt securities markets, so much so, that some call them last resort buyers (Mehrling, 2010). Most central banks, except the ECB, provide this intermediary function. A guarantee of the SBIF by the Central Bank would be sufficient to attract investors and make a liquid market from the shares of this partnership institution. Obviously the securities would then be risk-free, but necessarily less profitable, the fruits of innovation being shared between the public funder, the risk taker, and private savings. This is in fact the primary reason for remuneration of a financial intermediary, this function of assuming the risk of transforming short-term liability maturities into long-term assets, as previously seen in part 2. It seems today that insurers and pension funds that have long-term potential do not wish to assume this function, favouring the liquidity of their assets despite long-term



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commitments to their liabilities. Since these financial intermediaries don't invest in the long term, it is possible to compel them to do so by making a delegation of asset management, the savings they collect being redirected to finance a SBIF that would take care to invest these savings. The public intermediary would then do what financial intermediaries are no longer doing spontaneously: finance productive investment and make long term commitments.

Here we see that the purpose of SBIF is not merely to stimulate an initial expenditure and generate overall income and private spending, upstream (private investment) and downstream (consumer spending). Its role is to redirect investment on the basis of a policy-making decision, i.e. to establish long-term planning, that of innovation time which amounts to decades. Ensuring this long-term funding consequently goes beyond the policy-making cycle and necessarily implies a multi-party governance including unions, majority and opposition, as is the case for example for the French Caisse des Dépots et Consignation. Such an institution could rely on asset managers with industrial skills. The governance of such a SBIF is quite clear: partnership composition, resources from the subscription of bonds by institutional investors, investment rules favouring the primary market, long-term holding, a moderate dividends policy, targeting of certain sectors such as energy transition, etc. The aim is to protect companies from financial market pressures by the increased power of long-term committed players and to compel institutional investors to be genuinely long-term investors through a forced loan. The SBIF could also give some leeway to public industrial policy (the strategist State), since its investments do not weigh on public deficit. Ultimately, it is only a question of re-slotting finance into the economy (to ensure that finance finances investments in the real economy) and in society (revert to political deliberation on projects to be financed).

## 5. CONCLUSION

This chapter deals with intermediaries in the financial sector such as banks and institutional investors. These actors are expected to play a central role in economic growth via the funding of investment because they are supposed to match creditors' desires (households) with borrowers' needs (firms) at a macroeconomic level. It aims to reassess the theoretical role of financial intermediation related to the allocation of savings in a context of a structural decline in overall investment for thirty years.

The analysis of the evolution of financial intermediaries' behaviours in their capacity to finance productive projects allows us to identify two main mechanisms leading to depress investment and employment. Corporate governance and the liquidity of the financial markets have become disciplining devices for managers. Indeed, listed companies are ruled from now on by shareholders who do not want to be immobilized in a stock and require high yield (dividends, interest). Consequently, corporations are pushed to overlook profitable investment opportunities in order to pursue shareholder value on financial markets organized for liquidity. The macroeconomic consequence of this shift in focus of companies at the expense of productive investment is a slowing of economic growth and rising unemployment.

This analysis raises the issue of guiding principles for new forms of financial intermediation dedicated to serving the economy. Such a reform implies an extension of financial commitment to support corporates' productive projects. Among the several paths of reform, there is a change in current corporate governance rules in order to reduce the primacy of shareholders on profit reallocation decisions to favour investment. Another complementary way would be to reconsider the self-regulation and impose a stricter regulation and supervision of financial intermediaries. At last, to reduce the intermediation chain and their related costs, another solution that we support the most is to create a Stakeholder Bank of Invest-



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ment and Financing (SBIF). Such a European or national institution could then act as an intermediary between institutional savings (those of pension funds and insurance companies) and granted loan to firms. It should not be under the financial markets' pressure and would select company investment projects and essentially finance them with savings collected from other institutional investors.

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## ENDNOTES

1 This budgetary constraint is temporarily lifted because it concerns a credit which should be repaid.

2 Within the meaning of formation of fixed capital formation. It is therefore a question of productive capital.

3 Funding for these pensions should mostly happen by capitalisation. Also, institutional investors will be expected to develop, notably through the creation of pension funds, by this potential accumulation of substantial amounts of mutual savings.

4 Since 2010, the euro zone is locked into austerity logic: the contraction of public budgets has affected the macroeconomic demand and hence investment. ; on the other hand, the United States and the United Kingdom have opened the floodgates of real estate credit and the wealth effect on financial markets, both engines allowing to support the demand, and therefore investment.

5 In the euro zone, it is South Europe which also suffers from a problem of supply of funding, in particular from the banks, with credit rationing.

6 Borrowers (lenders) will issue (purchase) shares.

7 This activity will generate an intermediation margin that depends on interest rates between lent funds and borrowed funds. Yet, these rates are not fixed but change with the macroeconomic conditions.

8 Perfect information, homogeneous goods, atomistic market, free entry and exit, free movement of factors of production.

9 Mutual funds are mere instruments than actors. Most often the time they are investment vehicles build by asset managers, insurance companies or banks.

10 There are of course many other reasons for the rise in public debt. Besides widespread tax competition that has stripped the states of their tax base, states have also experienced a significant rise in public spending to meet social demand for public services. States also had to bear a significant increase in real interest rates in the 1980s, following the change of monetary policy to fight inflation. Another reason is the slowdown in economic growth.

11 When a company buys back its own shares, it thus increases the share of income that will soon be distributed to them.

12 The ability to sell shares on financial markets becomes an ability to relocate corporations around the world, with offshoring also destroying jobs.



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[13] Between 2002 and 2014, ROE of US and European industries ranged between 10% and 13% while that of universal banks was 10% and 20% from 2002 to 2005 and then fluctuated between 20% and 30% from 2004 to 2007 to decrease drastically after. The crisis showed the unsustainability of these levels of ROE (Villeroy de Galhau, 2015).

[14] The creation of a secondary market is necessary for the existence of the primary market to attract investors. However, it is important to remember that only the primary market really provides additional financing for the company.

[15] In the US, the phenomenon was identified by scholars during the first wave of hostile takeovers on the US stock markets in the eighties (Narayanan 1985; Miller et Rock, 1985; Stein, 1988, 1989). In France, since the late nineties, when US institutional shareholders bought share of Fench corporations, we note the work of Morin (1998), Baudru and Kechidi (1998), Orlean (1999) Baudru and Lavigne (2001), Lordon (2002), Aglietta and Rebérioux (2004).

[16] *Wall Street Journal,* December 14, 2009

[17] *Financial Times,* September 23, 2009

[18] The IMF report on global financial stability (2014) was concerned that the banks had increased their financial risk-taking (acquisition of financial assets) at the expense of taking economic risk (financing of productive investment by financial intermediation.

[19] In its preamble of the green paper on the funding of long-term investments (2013), the Commission speaks of inefficiencies in the intermediation chain relying on the Kay report (2012), which proposes in particular to assess the efficiency of the financial system, not on the liquidity and market price, but on the usefulness that the financing capacity agents bring to the agents in need of financing.

[20] See Online newspaper, *AlterEco* + May 28, 2015.

[21] See Aglietta and Brand (2013)

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# Chapter 89
# Trends of FDI and Production in Service Sectors:
## A Dynamic Panel Exercise with Indian Data

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## ABSTRACT

*The chapter investigates the role of foreign direct investment (FDI) on performances of Indian services at sector level. Service sector is marked as one of the fastest growing sectors in India, contributing more than 65 percent of GDP. The maximum share of FDI inflows in India is also captured by service sectors. So FDI inflows can have significant impacts on services. We collect quarterly data of components of services from GDP estimates of Central Statistical Office (CSO) and monthly data of sector wise FDI inflows from DIPP over the period January 2009 to March 2016 in India. After matching the data series, we form a balanced panel for four basic service sectors as classified by CSO. The stochastic properties are looked into by carrying out LLC and IPS panel unit root tests. Empirical results from the estimate of Generalised Method of Moments (GMM) suggest that FDI Inflows enhance performances of Indian services.*

## INTRODUCTION

Service has been emerged as one of the largest and fastest growing sectors in the global economy, contributing more than 60 percent of global output, even larger share of employment in many countries (Hoekman & Mattoo, 2008) since last two and half decades. The growing share of services in global transactions has also accompanied the growth in service sectors. It is a fact that during the same time period trade in services has grown as fast as trade in goods is the cause of rise in international supply

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of services. The ratio of global trade in services to goods has increased to 27 percent in 2010 from 20 percent in 1980 (WDI, 2011). Service sector has also attracted huge amount of inflow of foreign direct investment (FDI). Sector wise data of FDI stock provided by UNCTAD (2015) highlighted that the prominent role of services in global FDI. The services has accounted for 63 percent of global FDI stock, more than twice of the share of manufacturing, at 26 percent in 2012. There is a shift of ongoing sector level composition of FDI from manufacturing to services because the share of services in global FDI stock has gained 14 percent with a corresponding decrease in manufacturing to 26 percent from 41 percent since 1990.

Like global economy, India has also experienced a major improvement in services led economic growth since economic reform. Indian services sector assumed a central role in its remarkable growth story and grew at an average annual rate of 8 percent during 1990s. According to Economic Survey 2014-15 published by government of India, service sector is contributing nearly 65 percent to the overall economic growth since 2010. There has been satisfactory growth in Indian service sectors like Information Technology, Business Process Outsourcing and Knowledge Based Activities. Further, productivity growth in India, unlike other regions of the world, has been the strongest in services (IMF, 2006; Bosworth & Collins, 2007). A common phenomenon in economic growth theory is service-led growth (Kuznets, 1957; Chenery, 1960). Traditionally a major part of demand for services comes from the secondary phase of growth in manufacturing sector. But the growth of Indian service sector is having an altogether different story, largely independent of manufacturing sector.

Along with a large-scale expansion of output and employment in the services sector, India's trade in services has also been an outstanding during the post-reform period. Due to various measures of economic reform, India's service trade has been growing rapidly since the early 1990s. Banga (2005) and Dash and Parida (2011) found that high growth in Indian service sector in 1990s relates to higher growth of trade in services. India's services trade has registered a remarkable growth of 19.7 percent, which was fairly higher than the rate of growth of goods trade (13 percent) during 1990-2010. According to Handbook of Statistics on Indian Economy published by RBI, there has been a rapid growth of India's trade in services in the past two decades. It reached to US$ 240 billion in 2010 from US$ 6 billion in 1980s. India's service export has not only grown more rapidly than its merchandise export, but also it has grown faster than global service exports. Contribution of India's trade in services to total trade has increased from 20 percent in 1980s to 30.4 percent in 2010. A substantial part of the growth of service export (21.7 percent) was in the post-reform period. India was having a negative balance of trade in services in 1980s and 1990s, but from 2004 it has been positive. Share of India's trade in services to world has increased to more than 3 percent in 2010 from less than 1 percent in 1980, while the same in goods trade has remained constant at around 1 percent.

During the period of post liberalization, India has not witnessed only higher growth of aggregate FDI inflow but also the sector wise composition of FDI has changed considerably. Services sector has absorbed a very little portion of FDI during the first decade of post reform period. According to narrow definition of DIPP, government of India, only 7 percent of total FDI inflow came into this sector. But the broad definition of service sector, includes telecommunications, construction, computer software, trading, transports, information and broadcasting, hotel and tourism, consultancy services, health services and education, has described the share of total FDI inflows has gone up to 44 percent during this period. In the second decade of the period of post economic reforms this share increased even further to 60 percent. Financial, construction, communications, power, computer software and trade services have attracted larger part of FDI inflows as compared to other sectors within services.



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So India has experienced a remarkable contribution of services in it due to attracting larger share of FDI inflow since liberalization. The above discussion also argues that both services performance and FDI inflow have played important roles in remarkable economic growth during the post reforms period. In spite of the widening extensive FDI-services linkages, there is very few empirical works investigating the impact of FDI inflow in services on performances of services at sector level. On another side, the role of inflow of FDI on the production at aggregate level has been extensively documented in theoretical and empirical studies. Most of the studies relating to this paper have used annual data over an insignificant period. But we know FDI inflow in India has structurally changed from 2008-09. In this context our objective of the study is an attempt to investigate the role of FDI inflow specifically in service sectors on production of services by using data as available from 2009 to 2015, a remarkable period of post liberalization in India. We structure our chapter as follows. Existing theoretical and empirical evidences on inflow of FDI and production in services with Indian scenario have been documented in next section followed by the discussion of hypothesis and data source. After describing the methodology used in this study, we discuss our empirical findings. Final section concludes our chapter.

## FDI INFLOW AND SERVICE PRODUCTION: EXISTING EVIDENCES AND INDIAN SCENARIO

Nowadays the focus on the analysis of FDI inflow and its impact at aggregate level has been shifting towards the analysis at sector level. From different theoretical studies like Lipsey (2001), Mirodout (2006), Fernandes and Paunov (2008) etc., it can be argued that FDI in services can be benefitted to host countries in various ways like knowledge and technology spillovers, change in price, increase in varieties, improvement in quality and employment generation etc. Some studies showed that impact of FDI in manufacturing is higher than the impact of FDI in services (Alfaro 2003; Aykut and Sayek 2007). Inflows of FDI into different service sectors like financial, transport, communication and power, which are the key intermediate inputs of production of all sectors, enhance the overall productivity as well as economic growth in long run as observed by Francois (1990), Markusen (1989), Lipsey (2001), Fernandes and Paunov (2008).

Arguably the third mode of services is the most critical in facilitating inflow of FDI and also underpins many activities associated with other 'modes' (Fillat-Castejón et al., 2008; Francois & Hoekman, 2010). Different empirical evidence suggested that four modes service trade are complementary in nature (WTO, 2004; Lennon, 2008). That is why we expect that FDI inflow and trade in services are likely to be complementary to each other.

In the context Indian economy, a very few empirical studies have tried to investigate the linkage between trends and patters of FDI and production in service sectors. Banga (2005) found that high growth in services was related to higher growth trade in services in India. Agrawal (2005) and Pradhan (2002) failed to find any significant positive growth effects of FDI inflow. Sharma (2000) suggested that inflow of FDI has appeared to have insignificant impact on Indian export performances although its coefficient is having a positive sign. A unidirectional causality from FDI inflow to services export, which revealed that inflow of FDI inflows in services influence services export, has been observed by Bhattacharya and Bhattacharyya (2009). Dash and Parida (2011) has supported the India's services export-led growth during the post liberalization period. We have found the vast literature on FDI and economic growth unlike the lack of literature on services trade and economic growth in India and their results are mixed.



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We have also found that most of the existing studies have looked into the role of FDI inflow on aggregate growth of the economy. But Chakraborty and Nunnenkamp (2008) analysed the sector specific hypothesis and found only transitory effects of inflow of FDI on output in services sector. However the study emphasized that FDI in services may be growth promoting in the manufacturing through cross sector spillovers. There is a limitation of empirical literature on inflow of FDI and trade in services in general and particularly in India. Productivity improvement in certain sectors such as distribution of services is due to large inflow of FDI has been observed by Kim and Kim (2000) in case of Korean economy. The presence of short run unidirectional causality from FDI inflow to services export has been confirmed by Srivastava (2006). But Feng (2009) identified that FDI inflow is not having any significant impact on productivity and export of services in India.

We find that there has been significant inflow of FDI in India since the mid-1990s. The cumulative amount of inflow of FDI was Rs. 1,495,860 crore for the period of April, 2000 to March, 2016. Table 1 displays inflows of FDI into different sectors in India during the recent period. It is revealed that nearly 18 percent of total FDI inflow was captured by the services sector during 2015-16, while the construction sector got around 8 percent. Computer, software and hardware, telecommunications, and automobile industry sector have received around 7 percent, 6 percent and 5 percent respectively. Inflows of FDI to drugs and pharmaceuticals, chemicals (other than fertilizers), trading, power and Hotel and Tourism were near about 5 percent, 4 percent, 4 percent, 4 percent and 3 percent respectively. During the same period out these top ten sectors FDI inflows to rest of the sectors accounted for around thirty six percent.

The policy of economic reforms has facilitated the country to record a high growth in general as well as particularly in service sector in India. Emerging situation in India as a fastest growing country in the world since early 1990s is mainly due to rapid growth in service sector in a large extent. During the post

*Table 1. Sector wise FDI inflows in India (Rupees Crore)*

| Sector | 2013-14 (April-March) | 2014-15 (April-March) | 2015-16 (April-March) | Cumulative Inflows (April, 2000 - March, 2016) | % of Total Inflows |
|---|---|---|---|---|---|
| Services Sector* | 13294 | 27369 | 45415 | 258354 | 18 |
| Construction Development | 7508 | 4652 | 727 | 113936 | 8 |
| Computer Software & Hardware | 6896 | 14162 | 38351 | 112184 | 7 |
| Telecommunications | 7987 | 17372 | 8637 | 92729 | 6 |
| Automobile Industry | 9027 | 16760 | 16437 | 81394 | 5 |
| Drugs & Pharmaceuticals | 7191 | 9052 | 4975 | 70097 | 5 |
| Chemicals (Other Than Fertilizers) | 4738 | 4658 | 9664 | 59555 | 4 |
| Trading | 8191 | 16755 | 25244 | 68837 | 4 |
| Power | 6519 | 4296 | 5662 | 52613 | 4 |
| Hotel & Tourism | 2949 | 4740 | 8761 | 49710 | 3 |
| Others | 73217 | 69291 | 98449 | 536449 | 36 |
| Grand Total | 147517 | 189107 | 262322 | 1495860 | 100 |

*Services sector includes Financial, Banking, Insurance, Non-Financial / Business, Outsourcing, R&D, Courier, Tech. Testing Analysis
*Source:* FDI Statistics, DIPP, Government of India



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*Table 2. Components of GDP of Service Sector in India (Rupees Billion)*

| Year | Construction | Trade, Hotels, Transport & Communication | Financing, Insurance, Real Estate & Business Services | Community, Social & Personal Services | Total Production of Services | Percentage (%) of GDP |
|---|---|---|---|---|---|---|
| 1952 | 141.21 | 326.41 | 248.63 | 299.34 | 1015.59 | 35% |
| 1961 | 272.19 | 552.59 | 325.96 | 426.56 | 1577.3 | 37% |
| 1971 | 452.93 | 861.21 | 459.89 | 712.64 | 2486.67 | 42% |
| 1981 | 640.84 | 1420.57 | 703.26 | 1038.42 | 3803.09 | 45% |
| 1991 | 971.44 | 2431.78 | 1719.56 | 1852.32 | 6975.1 | 51% |
| 1995 | 1129.11 | 3425.36 | 2263.48 | 2251.57 | 9069.51 | 52% |
| 2001 | 1615.74 | 5503.83 | 3527.92 | 3579.84 | 14227.32 | 57% |
| 2005 | 2581.29 | 8154.07 | 4923.4 | 4404.26 | 20063.02 | 62% |
| 2006 | 2848.06 | 9100.84 | 5610.63 | 4528.23 | 22087.76 | 62% |
| 2007 | 3154.95 | 10095.2 | 6281.24 | 4839.17 | 24370.56 | 63% |
| 2008 | 3323.29 | 10851.25 | 7036.29 | 5444.97 | 26655.8 | 64% |
| 2009 | 3544.36 | 11978.91 | 7719.05 | 6083.69 | 29326.01 | 65% |
| 2010 | 3747.08 | 13440.24 | 8491.89 | 6341.67 | 32020.88 | 65% |
| 2011 | 4151.87 | 14022.61 | 9455.34 | 6652.47 | 34282.29 | 65% |
| 2012 | 4197.95 | 14733.53 | 10487.48 | 7005.79 | 36424.75 | 66% |
| 2013 | 4266.64 | 15178.26 | 11837.13 | 7394.77 | 38676.8 | 67% |

*Source:* Various issues of Handbook of Statistics on Indian Economy, RBI

reform period, output growth in Indian services has been much higher than the growth in agriculture and industry. Contribution of services to GDP in India during present period is more than 65 percent. Trends of sector wise production of services have been tabulated as following in details.

So the above discussions are suggesting that the theoretical as well as empirical literature do not underline any clear-cut conclusion on the relationship between FDI inflow and international service trade in terms of export. Against this background, our study is an attempt to examine specifically the causal linkage between specific inflow of FDI in services sector and export of services in Indian economy during the period of post reform.

## HYPOTHESIS AND DATA

The contributions within theoretical and literature show the ambiguity of the relationship between inward FDI specifically in the services sector and international trade in services. The conclusions of models have been shared between substitutability and complementarity. In this context the basic hypothesis to be examined for achieving the above mentioned objective of the study are categorized as following:

- Inflows of FDI in services do not have any impact on production of services.



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In this study we have used sector wise quarterly data of GDP in services provided by the Central Statistical Office (CSO), Government of India on monthly basis and monthly data on sector specific FDI inflows for services in India from DIPP, Govt. of India over the period January, 2009 to March, 2016. We have converted and compiled the sector wise monthly FDI data to quarterly data to match with data of sector wise GDP of services. DIPP provides the monthly cumulative data of FDI inflow for sixty three sectors in India, from which we have obtained the individual monthly data for each sector by subtracting the cumulative of last month from present. To structure a balance panel by using four basic sectors like (i) Construction; (ii) Trade, Hotels, Transport and Communication; (iii) Financing, Insurance, Real Estate and Business Services; and (iv) Community, Social and Personal Services of Indian services as classified by CSO we have accumulated the FDI data with corresponding to four basic service sectors. So we treat sector wise GDP of services and FDI inflow as the variables in our study.

## METHODOLOGY

The relationship between FDI inflow and service production in India is estimated by applying the Generalized Method of Moment (GMM) approach in a dynamic panel frame to control for endogeneity in our regression model. Use of panel data to estimate the common relationships across sectors is particularly appropriate because it allows the identification of sector-specific effects which control for unobserved or missing variables. Panel models make more information available due to more efficiency and degrees of freedom. The models also allow to control the individual heterogeneity and to identify the effects which cannot be identified in time series and cross section data.

Panel data unit root tests have become very popular recently for solving the problem of low power of the tests for a single time series. Panel unit root tests developed by Levin-Lin and Chu [LLC] in 2002 and Im-Pesaran-Shin [IPS] in 2003 are used to explore the panel time series properties of the variables. Panel unit root tests, although similar, are not identical to unit root tests carried out on a single series. In testing panel unit roots, the basic ADF specification is:

$$\Delta y_{it} = \rho y_{i,t-1} + \sum_{j=1}^{p_i} \eta_{ij} \Delta y_{i,t-1} + X'_{it}\delta + \varepsilon_{it} \qquad (1)$$

The LLC test allows the intercepts, the time trends, the variances of residual and the autocorrelation order to vary freely across the cross section units. But it will require the time series of independently generated with a common sample size and all individual AR(1) series have a common autocorrelation coefficient. The lag order $p_i$ is permitted to vary across individual states. The appropriate lag order is chosen by allowing the maximum lag order and then by using the t-statistics for $\eta_{ij}$. The estimate of the autocorrelation coefficient, $\rho$, is not obtained directly from the estimation of equation (1). By using proxies for $\Delta y_{it}$ and $y_{it}$ that are standardised and free of deterministic components and autocorrelations.

The most commonly used estimator for dynamic panels with fixed effects in the literature is the GMM estimator by Arellano and Bond (1991). In this approach, the fixed effects are first eliminated using first differences instead of actual level of variables and then an instrumental variable estimation of the differenced equation is performed. As the instruments for the lagged differences of the endogenous variable or other variables which are correlated with the error term in differenced term – all lagged levels of the



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variables in question are used, starting with lag two and potentially going back to the beginning of the sample. The overall validity of instruments can be checked by a Sargan test of over-identifying restrictions.

The simple model of dynamic panel, with one period lag can usually be expressed as:

$$y_{it} = \alpha_i + \theta_t + \beta y_{i,t-t} + x'_{it}\eta + \varepsilon_{it} \tag{2}$$

$\alpha_i$ represents fixed effect, $\theta_t$ is time dummy, $x_{it}$ is a (k-1)×1 vector of exogenous repressors and $\varepsilon_{it} \sim N(0, \sigma^2)$ is a random disturbance.

In our study, sector wise GDP of Indian Services as dependent variables and inflows of FDI in services at specific sector level compare to GDP Series as independent variable. A fixed effect model is more suitable than a random effect model in panel frame because macro panel contains most of the sectors under consideration and it is less likely to be a random sample.

The basic GMM panel estimators, $\delta = \left(z'x\right)^{-1} z'y$ , are based on moments of the form,

$$g\left(\delta\right) = \sum_{i=1}^{N} g_i\left(\delta\right) = \sum_{i=1}^{N} z'_i \varepsilon_i\left(\delta\right) \tag{3}$$

Where, $z_i$ is a $T_i$×p matrix of instruments for cross-section, *i*, and,

$$\varepsilon_i\left(\delta\right) = \left(y_i - f\left(x_{it}, \delta\right)\right) \tag{4}$$

GMM estimation minimizes the quadratic form:

$$S\left(\delta\right) = \left(\sum_{i=1}^{N} z'_i \varepsilon\left(\delta\right)\right)' H \left(\sum_{i=1}^{N} z'_i \varepsilon\left(\delta\right)\right) \tag{5}$$

with respect to δ for a suitable chosen weighting matrix H.

Thus the basics of GMM estimation involve to specify the instruments Z and to choose the weighting matrix H, and (3) determining an estimator.

## EMPIRICAL FINDINGS

Our panel data consists of sector wise monthly data for production in Indian service sectors for the period 2009 to 2016. In order to perform dynamic panel estimation of the impact of FDI inflow on level of production in service sectors, we have to verify the order of integration of all variables used in the analysis. We have carried out panel unit root tests by the methodology developed by Levin Lin and Chu (2002) and Im-Pesaran-Shin (2003). Test statistics of panel unit root are calculated for all underlying panels for all major service sectors in India. The lag lengths have been selected by following minimum AIC rule to estimate the test statistics. We have incorporated individual effects and individual linear



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*Table 3. Estimated Statistics of Unit Root Tests*

| Series | LLC | | IPS | |
|---|---|---|---|---|
| | Level | First Difference | Level | First Difference |
| FDI | -2.71 | -12.41* | -2.18 | -14.35* |
| PRODUCTION | 1.92 | -11.72* | -1.72 | -13.43* |
| *** Significant as probability of acceptance of null hypothesis of unit root is 0** | | | | |

*Source:* Authors' own estimation by using data from DIPP and CSO

trends as exogenous variables in the estimated equations. The test statistics are shown in Table 3. We have failed to reject the null hypothesis that the series contains unit roots both in terms of LLC test, but IPS test suggests that the series are stationary. However, the first differences are stationary in terms of LLC statistics.

We have used the first difference GMM developed in Arellano and Bond (1991) to control the unobserved heterogeneity involved in the estimated relationship. The value of GDP of service sectors is used as the dependent variable and FDI as independent variable in dynamic equation. The presence of lagged dependent variable in the estimated equation captures the dynamics of service productivity in terms of index. This dynamics can account for the differences in the capability of investments in different service sectors. The Table 4 shows the estimated coefficients of the relationship between production of service sectors and inflow of FDI in India in a dynamic panel frame. Land based activities are dominating in the countryside. We have incorporated some relevant variables as instrument to capture their effects on the relationship between sector wise service production and FDI inflow.

The lower portion of Table 4 displays additional information about the specification of the model. Since the reported J-statistic is simply the Sargan statistic (value of the objective function of GMM at estimated parameters), and the instrument rank is greater than the number of estimated coefficients, we may use it to construct the Sargan test of over identifying restrictions. It is worth noting here that the difference in J-statistic as reported by a panel equation from that reported by an ordinary regression equation by a factor equal to the number of observations.

The effect of FDI inflow on service sectors' productivity is significantly positive. Thus the inflow of foreign capital enhances growth service sector in India by the process of integration of the domestic economy into the global economy with foreign capital and modern technology. We know if liberalisation

*Table 4. GMM Estimation of the Relationship between FDI and Service Production*

| Dependent Variable: PRODUCTION (1, it) | | | |
|---|---|---|---|
| Method: Panel Generalized Method of Moments | | | |
| Total panel (balanced) observations: 116 | | | |
| **Variable** | **Coefficient** | **t-Statistics** | **Probability** |
| PRODUCTION (1, it-1) | 0.34 | 23.341 | 0.00000 |
| FDI (it) | 0.11 | 5.918 | 0.00001 |
| **J-Statistics** | 11.29 | **Instrument Rank** | 15 |

*Source:* Authors' own estimation by using data from DIPP and CSO

*Note:* PRODUCTION (1, it) and FDI (it) represent production of Indian services and FDI inflow for time t.



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is reflected by the significant inflow of FDI, technological know-how and skilled management, openness is supposed to be growth enhancing through the improvement of service productivity in a competitive manner. However in India, foreign capital in the form of FDI flow has stimulated mainly the output of Trade, Hotels, Transport and Communication with slow progress in other service sectors as well as in industry as general with in imports in merchandise trade due to inflows of foreign financial capital, and higher proportional increase.

Our empirical results support the predictions put forward by the different theoretical models showing the relationship between FDI inflow and production performance of an open economy. The liberalization the Indian economy by allowing FDI in service sectors enjoying comparative advantage in labour intensive products in the world market has not been beneficial to labour engaged in the production of such goods but makes the demand for labour more elastic leading to employment enhancing and wage shocking arise from shocks to productivity or to output demand.

## CONCLUSION

The chapter empirically investigated the causality between rising capital inflow in the form of FDI and trade in services in terms of both export and import in India during 2009 to 2015. The broad area of our chapter is relating to international trade and economic development with special emphasis on inflow of foreign capital and its effectiveness on FDI attracting and fastest growing sectors in developing countries like India, where we get some traditional views suggesting some positive as well as negative impacts of FDI inflows in different situations. Our empirical findings highlight that the increase in both FDI inflow as well as its one period lag value are the significant factors of remarkable improvements of trade in services in terms of service export in India. The study also shows that the inflow of FDI is insignificant to promote Indian service import and FDI inflows are not influenced by Indian foreign trade in services.

Our findings may be explained by the way that present inflow of FDI is important but insufficiently and appropriately used in the export promoting service sectors as well as growth enhancing sectors in India. Thus, it may be imperative for the policy makers in India to make a policy for attracting more FDI in such a way that it could significantly enhance growth of service export. The liberal and competitive investment climates create the basis for FDI to enter and raise the potential for output growth in host economy, but improvements occur if the domestic service sectors are capable of responding to new incentives. The key policy measures are thus to improve the infrastructure and education so as to rise the absorptive capacity of the fruits of FDI domestically.

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## KEY TERMS AND DEFINITIONS

**Dynamic Panel Model:** In the context of panel data, we usually must deal with unobserved heterogeneity by applying the within transformation, as in one-way fixed effects models, or by taking first differences if the second dimension of the panel is a proper time series.

**Economic Reform:** It is a major change in the structure of Indian economy initiated in the early nineties of the twentieth century.

**Foreign Direct Investment:** It is an investment made by any individual or a company in one country in business interests in another country, in the form of either establishing business operations or acquiring business assets in the other country.

**GMM Estimation:** In econometrics, the generalized method of moments is a generic method for estimating parameters in statistical models. It is a general estimation principle. Estimators are derived from so-called moment conditions.

**India:** It is the second largest populated country in the world after China situated in the South Asian zone.

**Panel Unit Root Test:** Individual unit root tests have limited power. The power of a test is the probability of rejecting the null when it is false and the null hypothesis is unit root. Sometimes, a mix of cross section and time series data are considered and then the unit root test of this panel is termed as panel data unit root test.

**Production of Services:** It is a sector of an economy that is responsible for maintaining different factors that are responsible for manufacturing and agricultural products.

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# Chapter 90
# Rising Economic Powers among Economies in Transition:
## Is There Enough Space on the Global Market?

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## ABSTRACT

*The chapter covers contemporary global developments, particularly international trade and economic integration, with involvement of the economies in transition, BRICS countries, and new rising powers of Latin America and Asia. The issues, addressed in the chapter, are related to the concept of globalization in general; specific challenges of globalization for the economies in transition, and application of those general challenges in selected countries (China, Russia, Brazil, etc.). Chapter is concluded with investigations of regional trade integration as a response to threats of globalization and expectations of a new global order with growing involvement of economies in transition (particularly, BRICS, the CIS, the EAEU, and other countries of Latin America and Asia).*

## INTRODUCTION

Economies in transition have their own way of development. Most of them are highly dependent on global market, particularly global demand on natural resources and primary products. In addition, most of the economies in transition are not very much diversified; they are not able to spread risks of lower global demand in particular industries on the entire domestic economy. The common challenge for the economies in transition is to broaden and diversify their growth base. In their efforts to do this, these countries need to improve market access through trade policies and accession to the World Trade Organization (WTO), to introduce active industrial and other production sector policies, to develop infrastructure and attract investment and new technologies.

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"Economy in transition" is a rather general definition. It is commonly accepted, that it is associated with the countries of the Former Soviet Union (FSU) (currently consolidated into the Commonwealth of Independent States (CIS)) and some countries of the Central and Eastern Europe, which experienced the Soviet-type model of development and underwent large economic and political transitions in the early 1990s, from centrally-planned communist regimes to democratic market economies (Khandelwal & Roitman, 2013). According to the Department of Economic and Social Affairs of the United Nations Secretariat (UN/DESA) (2015), economies in transition are twelve countries of the FSU (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan) and five countries of the South-Eastern Europe (Albania, Bosnia and Herzegovina, Macedonia, Montenegro, and Republic of Serbia). In the beginning of the 2000s, the International Monetary Fund (2000) also considered four Asian (Cambodia, China, Laos, and Vietnam) and seven Central European economies (Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovak Republic, and Slovenia) as transition ones.

Another definition ("emerging economies") has been widely used in relation to such economies in transition, as China and Russia. Goldman Sachs report (Wilson & Purushothaman, 2003) forecast that the economies of China and Russia along with another two giants, India and Brazil (the so-called "BRIC" in the 2000s, and "BRICS" after 2010, when South Africa joined the group), could grow to be collectively larger than the top world economies (the EU, the USA, and Japan) before 2050.

All those economies in transition (or "emerging economies") have followed various pathways to economic growth, and have both common features and differences. Countries of the Central and Eastern Europe progressed into well-functioning market economies and have become members of the EU. Asian economies adopted gradual transition mode and even emerged into the key market players (China). For most of the CIS countries, including Russia, process of market reforms is still incomplete.

The chapter consists of three parts. First part is related to the investigation of globalization and contemporary challenges for economies in transition. Various approaches to understanding of globalization as economic and social phenomena are discussed. Combining various existing classifications of the economies in transition, it is decided to consider such to be the countries of the former Soviet Union, Central and Eastern Europe, and Asia, which experienced the Soviet-type model of development and underwent large economic and political transitions from centrally-planned regimes to democratic market economies. Second prt includes overview and comparison analysis of the major alliances of the economies in transition: the CIS, BRICS, and the Eurasian Economic Union (EAEU). Third part concludes the chapter with the detailed investigation of the existing strengths and weaknesses of each economy in transition in view of international competition.

## BACKGROUND

Opening of the economies in transition to the international market over the past two decades has fundamentally changed their economic and business environments (Khanna & Palepu, 2010). The term globalization has been used since the 1980s and especially increasingly since the 1990s, when transition processes started in many developing countries (post-Soviet area, Eastern Europe, and South-East Asia).

McGrew (1990) recognizes globalization as a multiplicity of linkages and interconnections that transcend the nation states (and by implication the societies) which make up the modern world system. Dawson (2003) defines globalization as the flow across national boundaries of goods and services,



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capital, people, technology, ideas, and culture. Scholte (2002) states that globalization stands out for a public spread across the world as one of the defining terms of late twentieth century social consciousness.

Apart from public issues and social linkages, there are other approaches to understanding of the driving forces of globalization, such as environmental changes, poverty, intercultural issues, etc. However, as of Fischer and Gelb (1991), in relation to the economies in transition, effective integration to a market economy is to be achieved through progress in liberalization of prices and trade. Their point of view is supported by Mrak (2000), who states, that there is no economic integration of the economies in transition to market economy without establishing participation of economic actors from these countries in the international markets of goods and services. The International Monetary Fund (2000) recognizes international trade and transactions as one of the four basic aspects of globalization (remaining three are capital and investment movements, migration and movement of people, and the dissemination of knowledge). Capello and Perucca (2013) agree that increasing international trade is a form of internationalization of production and markets, which give rise to the growing integration and interdependency of countries on the global market.

Globalization in terms of trade and capital inflows makes economies in transition more dependent on the world market (Tisdell, 1999). The Organization for Economic Co-operation and Development (1993) also understands globalization "as the phenomenon by which markets and production in different countries are becoming increasingly interdependent due to the dynamics of trade in goods and services and the flows of capital and technology" (p. 7). Bairoch and Kozul-Wright (1996) explain globalization as a "process in which the production and financial structures of countries are becoming interlinked by an increasing number of cross-border transactions to create an international division of labour in which national wealth creation comes, increasingly, to depend on economic agents in other countries, and the ultimate stage of economic integration where such dependence has reached its spatial limit" (p. 3).

Economic theory suggests that globalization should bring economic advantages to economies in transition, such as easier access to the global market as a result of liberalization of trade, enhanced economic growth as a result of better utilization of competitive advantages, and greater diversity of choice of commodities. Kolapo, Olufemi, and Olusola (2012) emphasize impacts and effects of globalization processes on the regional growth with particular reference to African countries. Gurgul and Lach (2014) found strong and robust evidence of stimulating effect of globalization processes on rise in international trade, growth of foreign investment, and reduction of import barriers in the economies in transition of Central and Eastern Europe. Wu (2006) recognizes increasing integration with the international community (including external trade, foreign direct investments, etc.) as one of the main drivers of rapid economic growth in China in the past decades.

However, there are many consequences of globalization, which have in many cases not been favourable so far for the economies in transition (Tisdell, 1999). Market niches are already heavily occupied. New entrants have to use all their competitive advantages in the most effective way to capture them. The common internal challenges for the economies in transition are diversification of their growth base and development of internal market institutions and policies. As of Khanna and Palepu (2010), emerging markets reflect those areas where buyers and sellers are not easily or efficiently able to come together. Ineffective market mechanisms and low integration of the most economies in transition into the global market create higher transaction costs and operating challenges. In their efforts to emerge effectively, economies in transition need to improve market access through trade policies, trade and economic alliances, to introduce active industrial and other production sector policies, to develop infrastructure and attract investment and new technologies.



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## MAIN FOCUS OF THE CHAPTER

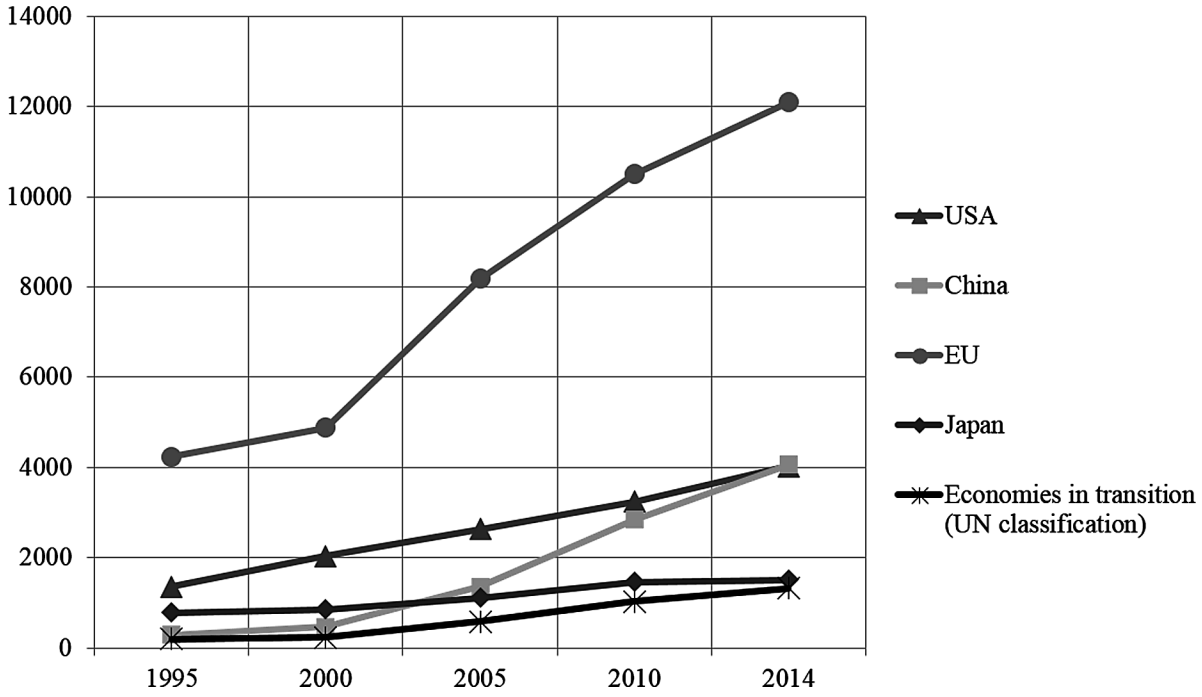
### Globalization and Its Challenges for the Economies in Transition

During past decades, countries have become interlinked. The dynamic growth of world merchandise exports and imports after the Second World War is one of the most important factors of global economic development. Such a growth was conditioned by quick restoration after the war, knowledge and technology transfer from military sectors into production, steady supply of energy resources, and growing economic integration. Liberalization of trade regimes gave a boost to international trade.

Bigger and more developed nations were more involved into international trade. The EU, the USA, Germany, and the UK are still among the top-ten countries of the world on foreign trade turnover. However, the major trend of international trade over past decades has been the increasing share of developing and newly industrialized countries. In 1960, the USA accounted for over 40% of world economic activity, in 2014 – for less than 11% of global foreign trade turnover (FTT). The USA together with the EU and Japan still accumulate a significant share of global exports, but new export powers are rising. They are China, South Korea, Hong Kong, Brazil, India, and other emerging economies.

Countries, which have been referred to as "economies in transition" since the early 1990s, have also progressed even though their aggregated foreign trade turnover (FTT) in 2014 amounted below Japan's FTT (Figure 1).

*Figure 1. Top countries by foreign trade turnover and economies in transition in 1995-2014, $ billion*
*Source: Author's development based on the United Nations Conference on Trade and Development (2015)*






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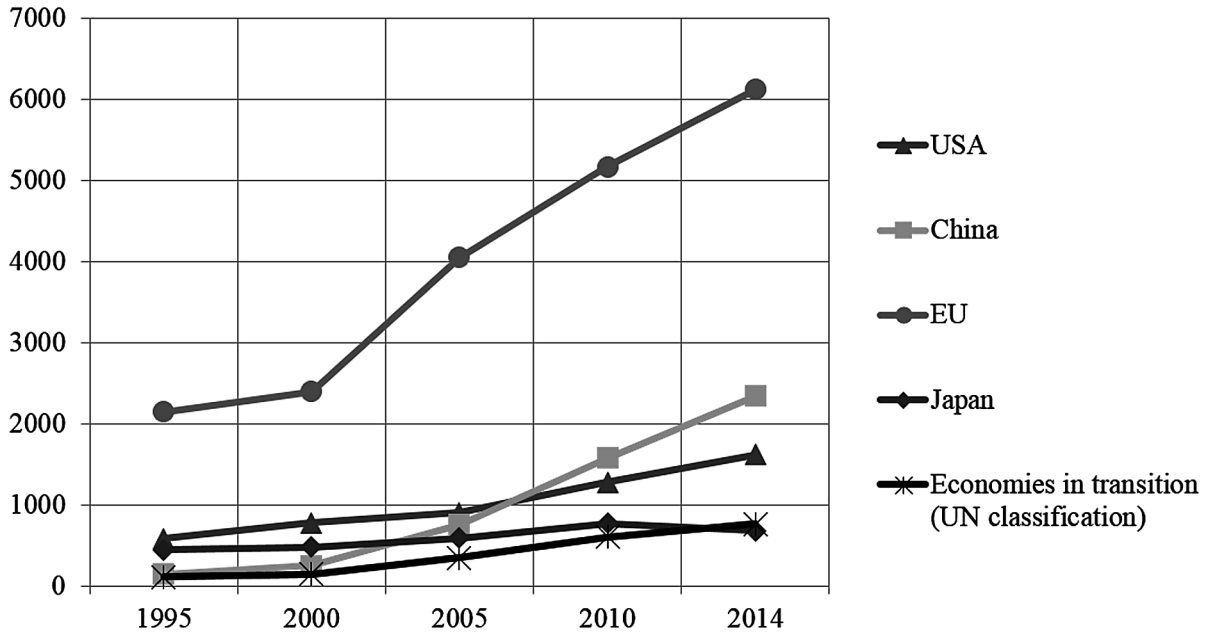
Aggregated export of the economies in transition increased from $111 billion in 1995 to almost $770 billion in 2014 (Figure 2), which was half as many, as the export of the USA. Over 65% of total export of the economies in transition in 2014 accrued to Russia (in 1995 – over 70%; in 2000 – 71%). Thus, rapid growth of export after 2000 can be explained by oil price hike on the international market, since oil amounted 55-65% of total Russia's export during 2000-2014.

Aggregated import of the economies in transition increased too, up to $560 billion in 2014 from only $90 billion in 1995 (the peak was recorded in 2013 – $595 billion) (Figure 3). Again, Russia's share in total import prevailed – over 53% in 2014.

The economies in transition have come a long way in opening up their economies to the global market. After decline in the early 1990s, most of the economies recovered and found new pathways to economic growth. Most of them returned to pre-transition level of GDP (1991) only in the early 2000s, more than ten years after the start of market reforms. For many of the economies in transition the recovery has taken longer, for some of them the process continues. Such CIS countries as Georgia, Kyrgyzstan, Moldova, and Tajikistan reached the pre-transition levels of GDP only after 2005 (Table 1).

Annual rates of GDP growth in developed, developing and transition economies are different. Since the 1990s, developed countries have grown by 2-3% annually, except two crisis years of 2008 and 2009. The rates of GDP growth for emerging economies have been even higher – about 5-6% in average (above 10% for China). As for the economies in transition, the rates have been very fluctuant. This is the result of high dependence on the global market, particularly global demand on natural resources and primary products. In addition, most of the economies in transition are not very much diversified; they are not able to spread risks of lower global demand in particular industries on the entire domestic economy. In general, aggregated GDP of the economies in transition have increased almost fourfold since the beginning of transition period in 1991 (Figure 4), while GDPs of the leading economies (the USA and China)

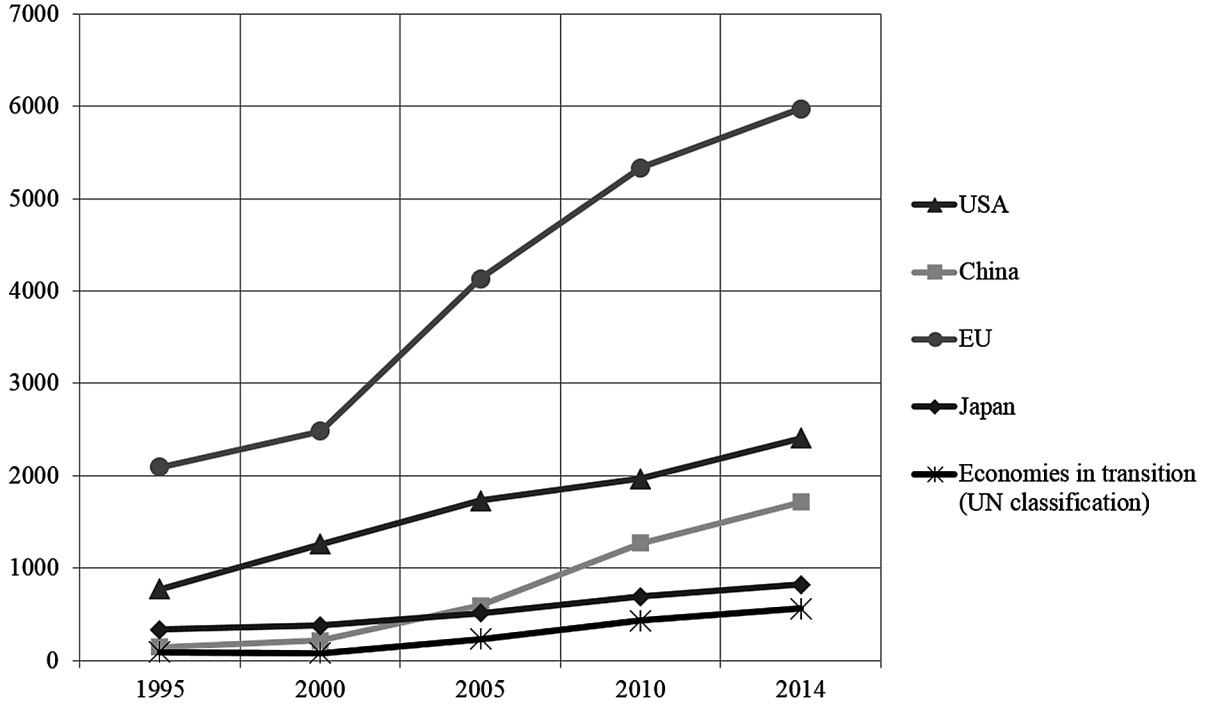
*Figure 2. World top exporters and economies in transition in 1995-2014, $ billion*
*Source: Author's development based on the United Nations Conference on Trade and Development (2015)*






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*Figure 3. World top importers and economies in transition in 1995-2014, $ billion*
*Source: Author's development based on the United Nations Conference on Trade and Development (2015)*




and alliances (the EU) have increased rapidly, especially in case of China – up to over $10 trillion in 2014 from $381 billion in 1991. It should be emphasized, that China's GDP in 1991 was only a half as big as the aggregated GDP of the economies in transition.

Despite certain progress, volumes of GDP and foreign trade of the economies in transition are well below then those of the developed countries and emerging economies. In order to increase their competitiveness on the global market most of the economies in transition are now actively seeking for strategic allies – between themselves and other emerging economies, through which they would like to strengthen geopolitical, economic and trade positions.

## Promising Alliances of the Economies in Transition and Emerging Economies

One of the alliances of the economies in transition, which was established during the breakup of the Soviet Union, is the Commonwealth of Independent States (CIS). As of 2015, CIS includes eleven FSU republics, now independent countries, which are considered as economies in transition by the Department of Economic and Social Affairs of the United Nations Secretariat (2015). Nine of them have ratified the CIS charter and are full CIS members (Armenia, Azerbaijan, Belarus, Moldova, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan). Turkmenistan is an associate member. Ukraine is a founding and participating country, but legally not a member country. In March 2014, a bill was introduced to Ukraine's parliament to withdraw from the CIS following the Russia's actions in Crimea, but the country is still officially considered as the CIS member. Another country, Georgia, left the Commonwealth in 2009 because of political reasons and right after the military conflict with Russia in South Osetia.



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*Table 1. GDPs of the economies in transition and other countries in 1991-2014, $ billion*

| | 1991 | 1995 | 2000 | 2005 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|---|
| **UN Classification** | | | | | | | | | |
| Albania | 1.14 | 2.42 | 3.69 | 8.38 | 11.93 | 12.89 | 12.34 | 12.92 | 13.37 |
| Armenia | 2.07 | 1.47 | 1.91 | 4.90 | 9.26 | 10.14 | 9.96 | 10.43 | 10.88 |
| Azerbaijan | 8.79 | 3.05 | 5.27 | 13.25 | 52.90 | 65.95 | 68.73 | 73.56 | 75.20 |
| Belarus | 17.81 | 13.97 | 12.74 | 30.21 | 55.22 | 59.73 | 63.62 | 73.10 | 76.14 |
| Bosnia and Herzegovina | n.a. | 1.87 | 5.51 | 10.90 | 16.85 | 18.32 | 16.91 | 17.85 | 18.34 |
| Georgia | 6.34 | 2.69 | 3.06 | 6.41 | 11.64 | 14.44 | 15.85 | 16.14 | 16.52 |
| Kazakhstan | 24.90 | 20.40 | 18.30 | 57.10 | 148.05 | 188.05 | 203.52 | 231.88 | 212.25 |
| Kyrgyzstan | 2.57 | 1.66 | 1.37 | 2.46 | 4.79 | 6.20 | 6.61 | 7.34 | 7.40 |
| Macedonia | 4.69 | 4.45 | 3.77 | 6.26 | 9.41 | 10.49 | 9.75 | 10.77 | 11.32 |
| Moldova | 3.09 | 1.75 | 1.29 | 2.99 | 5.81 | 7.02 | 7.28 | 7.99 | 7.94 |
| Montenegro | n.a. | n.a. | 0.98 | 2.26 | 4.11 | 4.50 | 4.05 | 4.42 | 4.58 |
| Russia | 509.38 | 395.50 | 259.70 | 764.00 | 1524.90 | 1904.80 | 2016.10 | 2079.00 | 1860.60 |
| Serbia | n.a. | 24.15 | 6.54 | 26.25 | 39.46 | 46.47 | 40.74 | 45.52 | 43.87 |
| Tajikistan | 2.54 | 1.23 | 0.86 | 2.31 | 5.64 | 6.52 | 7.63 | 8.51 | 9.24 |
| Turkmenistan | 3.20 | 2.48 | 2.90 | 8.10 | 22.14 | 29.23 | 35.16 | 41.01 | 47.93 |
| Ukraine | 77.46 | 48.21 | 31.26 | 86.14 | 136.42 | 163.16 | 175.78 | 183.31 | 131.81 |
| Uzbekistan | 13.80 | 13.35 | 13.76 | 14.31 | 39.33 | 45.32 | 51.18 | 56.80 | 64.64 |
| **Plus Countries Considered as Economies in Transition by the IMF** | | | | | | | | | |
| China | 381.45 | 732.03 | 1205.26 | 2268.59 | 6039.66 | 7492.43 | 8461.62 | 9490.60 | 10360.10 |
| Vietnam | 9.60 | 20.70 | 33.64 | 57.64 | 115.93 | 135.54 | 155.82 | 171.22 | 186.20 |
| Laos | 1.03 | 1.76 | 1.73 | 2.74 | 7.18 | 8.28 | 9.36 | 11.19 | 11.77 |
| Cambodia | n.a. | 3.44 | 3.65 | 6.29 | 11.24 | 12.83 | 14.05 | 15.23 | 16.71 |

Source: Author's development based on Trading Economics (2015)

Hereinafter for the purposes of the analysis, the author considers the CIS as the union of eleven post-Soviet states, i.e. economies in transition, due to their common political past and similar peculiarities of domestic markets and trade.

Most of the CIS countries passed through economic and social turbulences during the 1990s. Aggregated GDP of the bloc decreased almost twofold during the 1990s (Figure 5).

Nevertheless, after 2000 most of the CIS countries were able to recover. Growth of the aggregated GDP was to a high degree conditioned by Russia's recovery due to the growing oil prices. Russia has been the trendsetter of the bloc since the very beginning of the 1990s, having the biggest GDP among the CIS members. In 2010, Russia's GDP amounted 74.3% of the aggregated GDP of eleven CIS countries (Figure 6). Second biggest was Kazakhstan with 8.5%.

In spite of the collapse of the Soviet Union in 1991, traditional economic and trade ties between the newly established independent states remained tight. Naturally, those new states had aspiration to restore them; therefore a significant number of regional trade and economic agreements was signed in the 1990s.



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*Figure 4. GDP of the leading world economies and economies in transition in 1991-2014, $ billion*
*Source: Author's development based on Trading Economics (2015)*

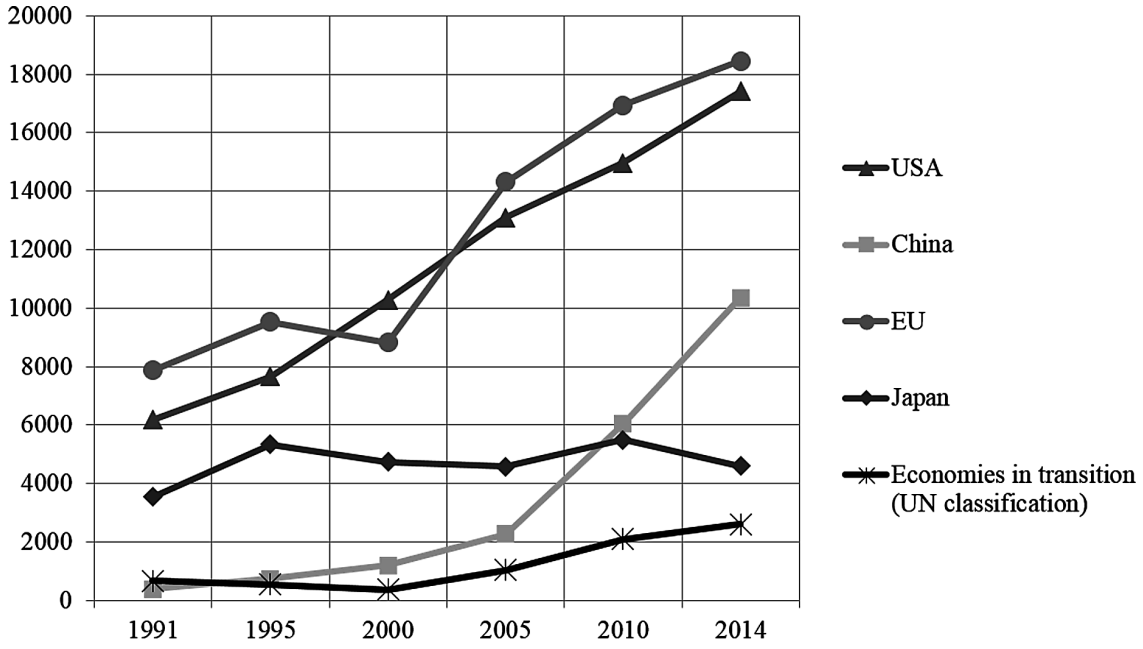
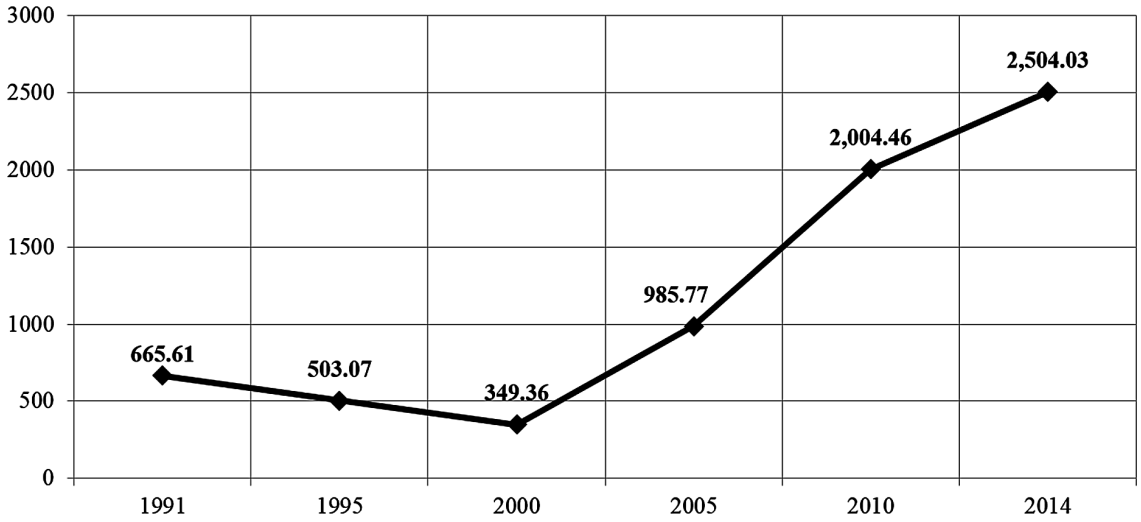



*Figure 5. GDP of the CIS countries in 1991-2014, $ billion*
*Source: Author's development based on Trading Economics (2015)*

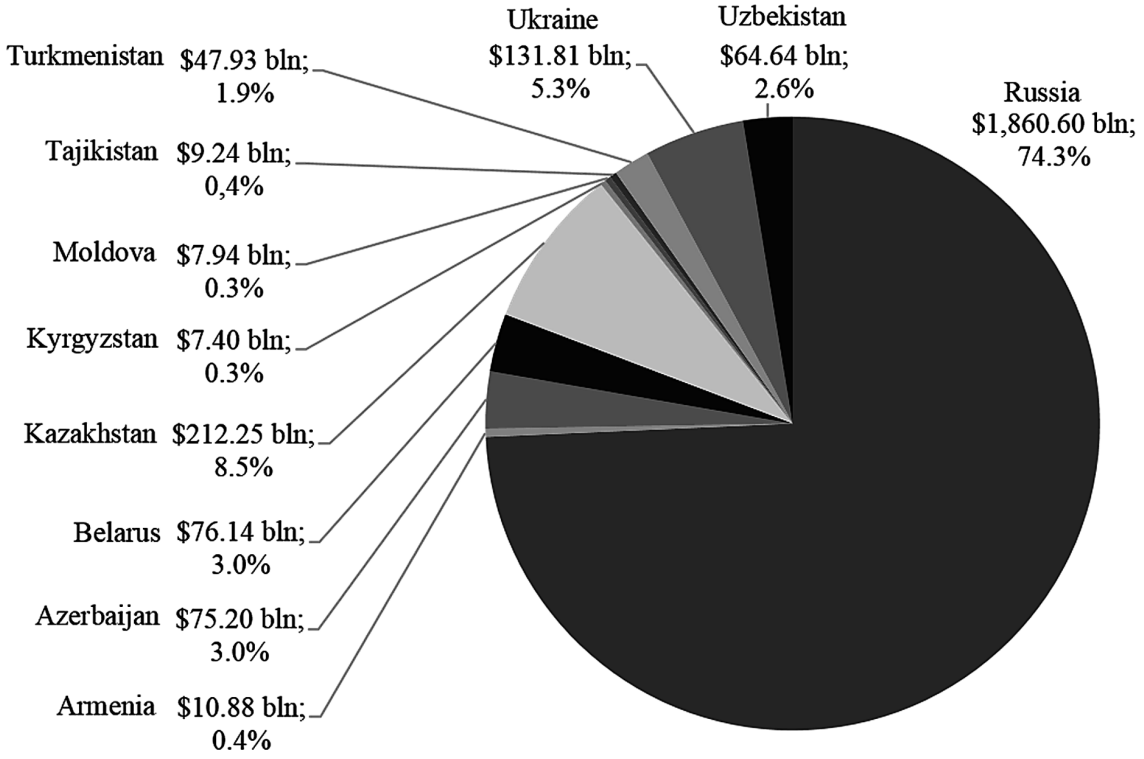



The first one was Free Trade Zone of 1993, which was initiated by Russia and geographically covered Armenia, Belarus, Georgia, Moldova, Kazakhstan, Kyrgyzstan, Tajikistan, Ukraine, and Uzbekistan. However, this initiative did not exist long. Although it was initiated by Russia, the Russian Parliament did not ratify the Free Trade Agreement. The reason was that Russia insisted on exclusion of oil and gas from the free trade regime, which was unacceptable for its trade partners. The next agreement was



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*Figure 6. Percentage breakdown of the total GDP of the CIS area by countries in 2014*
*Source: Author's development based on Trading Economics (2015)*




signed in 1995 when Russia, Belarus, and Kazakhstan established the Customs Union (CU). In 1997 and 1998, the CU was expanded by Kyrgyzstan and Tajikistan, and, finally, in 2001 was reorganized into the Eurasian Economic Community.

Despite such a growing integration within the bloc, the share of intra-CIS trade has been declining. During 2009-2010, it was negatively affected by the global financial crisis being only 8%, but in 2011-2013 there was a recovery back to 10%. Throughout the period of 1991-2014 the share of exports going to the EU was fluctuating around 40-50% with the peaks in 1992 and 2006.

Foreign trade of the CIS with the world is growing. During 1995-2014, aggregated foreign trade turnover of the bloc increased sixfold (Table 2). Russia prevailed in the aggregated FTT with 64.1% in 2014, followed by Kazakhstan (10.2%) and Ukraine (9.4%).

Foreign trade is an important source of income for the most of the CIS countries. Considering the bloc as a whole, top-five trading partners of the CIS in imports are the EU, China, the USA, Turkey, and South Korea. Top-five trading partners in exports are the EU, China, Turkey, Japan, and the USA. Aggregated share of the CIS bloc on the global market is rather small – 3.3% in 2014 (Table 3). Composed, largely, by Russia, it has decreased since 2011, when Russia's export to the world was the biggest due to the high oil prices.

Not every CIS country is export-oriented. For example, Armenia, Uzbekistan, and Turkmenistan are among the least exporting countries, which earn less than 17% of their GDPs with exports. Leading exporting CIS countries are Azerbaijan and Belarus with a share of exports over 40% of their GDPs.



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*Table 2. Foreign trade turnover of the CIS countries in 1995-2014, $ billion*

| | 1995 | 2000 | 2005 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|
| Armenia | 0.76 | 0.83 | 2.37 | 3.31 | 3.95 | 4.10 | 4.35 | 4.96 |
| Azerbaijan | 1.60 | 3.00 | 12.57 | 36.19 | 47.00 | 47.03 | 48.29 | 45.48 |
| Belarus | 10.67 | 15.06 | 31.58 | 63.07 | 83.18 | 82.90 | 70.20 | 72.06 |
| Kazakhstan | 9.51 | 13.67 | 46.21 | 91.10 | 130.11 | 138.36 | 134.12 | 126.86 |
| Kyrgyzstan | 1.20 | 1.07 | 2.68 | 8.39 | 10.29 | 11.12 | 11.49 | 10.93 |
| Moldova | 1.86 | 1.51 | 3.90 | 5.24 | 6.91 | 6.89 | 7.86 | 8.85 |
| Russia | 131.22 | 145.99 | 369.22 | 621.31 | 819.80 | 843.72 | 851.46 | 797.53 |
| Tajikistan | 1.21 | 1.37 | 2.04 | 4.51 | 5.55 | 5.57 | 5.78 | 6.54 |
| Turkmenistan | 2.86 | 3.72 | 7.51 | 11.58 | 20.16 | 25.62 | 26.15 | 27.01 |
| Ukraine | 27.57 | 27.78 | 74.27 | 108.41 | 147.17 | 144.51 | 139.47 | 116.35 |
| Uzbekistan | 6.35 | 4.88 | 8.18 | 20.34 | 23.42 | 22.30 | 25.55 | 27.10 |
| Aggregated FTT | 194.81 | 218.88 | 560.53 | 973.45 | 1297.54 | 1332.12 | 1324.72 | 1243.67 |

Source: Author's development based on the United Nations Conference on Trade and Development (2015)

*Table 3. Shares of the CIS countries on the global market in 1995-2014, %*

| | 1995 | 2000 | 2005 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|
| Armenia | 0.007 | 0.006 | 0.011 | 0.011 | 0.011 | 0.011 | 0.012 | 0.013 |
| Azerbaijan | 0.016 | 0.023 | 0.059 | 0.118 | 0.128 | 0.128 | 0.128 | 0.121 |
| Belarus | 0.104 | 0.116 | 0.149 | 0.206 | 0.227 | 0.225 | 0.187 | 0.191 |
| Kazakhstan | 0.092 | 0.105 | 0.218 | 0.298 | 0.355 | 0.376 | 0.357 | 0.337 |
| Kyrgyzstan | 0.012 | 0.008 | 0.013 | 0.027 | 0.028 | 0.030 | 0.031 | 0.029 |
| Moldova | 0.018 | 0.012 | 0.018 | 0.017 | 0.019 | 0.019 | 0.021 | 0.023 |
| Russia | 1.273 | 1.125 | 1.744 | 2.029 | 2.235 | 2.292 | 2.264 | 2.116 |
| Tajikistan | 0.012 | 0.011 | 0.010 | 0.015 | 0.015 | 0.016 | 0.015 | 0.017 |
| Turkmenistan | 0.028 | 0.029 | 0.035 | 0.038 | 0.055 | 0.070 | 0.070 | 0.072 |
| Ukraine | 0.267 | 0.214 | 0.351 | 0.354 | 0.401 | 0.393 | 0.371 | 0.309 |
| Uzbekistan | 0.062 | 0.038 | 0.039 | 0.066 | 0.064 | 0.061 | 0.068 | 0.072 |
| Aggregated share on the global market | 1.891 | 1.687 | 2.647 | 3.179 | 3.538 | 3.621 | 3.524 | 3.300 |

Source: Author's development based on the United Nations Conference on Trade and Development (2015)

Export flow from the CIS consists of capital-intensive goods. Most of the CIS countries, including Russia as the biggest exporter in the region, rely heavily on fuels and fuel product exports. CIS countries also specialize in export production that is intensive in the use of low-skilled workers (Zelenko, 2012). Such a low added-value export specialization limits market opportunities and makes economies in transition dependant on price fluctuation on specific markets (in particular, oil).



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*Table 4. Competitiveness rankings of the CIS countries and top-five economies*

| Rank (2014-2015) | Economy | Scores | | |
|---|---|---|---|---|
| | | 2014-2015 | 2013-2014 | 2012-2013 |
| 1 | Switzerland | 5.70 | 5.67 | 5.72 |
| 2 | Singapore | 5.65 | 5.61 | 5.67 |
| 3 | USA | 5.54 | 5.48 | 5.47 |
| 4 | Finland | 5.50 | 5.54 | 5.55 |
| 5 | Germany | 5.49 | 5.51 | 5.48 |
| … | | | | |
| 38 | Azerbaijan | 4.53 | 4.51 | 4.41 |
| 50 | Kazakhstan | 4.42 | 4.41 | 4.38 |
| 53 | Russia | 4.37 | 4.25 | 4.20 |
| 76 | Ukraine | 4.14 | 4.05 | 4.14 |
| 82 | Moldova | 4.03 | 3.94 | 3.94 |
| 85 | Armenia | 4.01 | 4.10 | 4.02 |
| 91 | Tajikistan | 3.93 | n.a. | 3.80 |
| 108 | Kyrgyzstan | 3.73 | 3.57 | 3.44 |
| Aggregated average competitiveness score of the CIS countries | | 4.15 | 4.12 | 4.04 |

Source: Author's development based on World Economic Forum (2015)

According to the Global Competitiveness Report (2015), which ranks countries in overall competitiveness, the most competitive country among the CIS bloc is Azerbaijan (Table 4). Three CIS countries (Belarus, Turkmenistan, and Uzbekistan) were not included into the report.

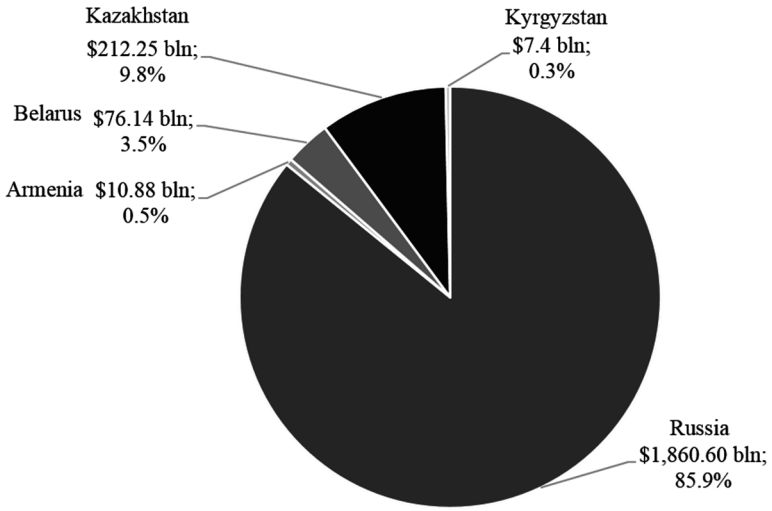
Global competitiveness index includes 12 characteristics, including infrastructure, macroeconomic environment, market efficiency, market size, innovations, and others. Despite the certain improvements and growth of the aggregated average score up to 4.15 during 2012-2014, the overall competitiveness of the CIS countries on the global market remains low. Level of 4.15 is equivalent to the positions 65-79 of the Global Competitiveness Ranking in 2014, which means that the CIS countries are far behind most of the developed countries.

The leading economy of the bloc, Russia, was 53rd in 2014 with some improvements related to the efficiency of goods markets (in particular domestic competition) and business sophistication. Although these positive developments took place before the Ukraine conflict started (Schwab, 2014). Growing isolation from Western countries because of the recent Russia's actions in relation to Ukraine pushes the country into seeking even closer and more effective ties within the CIS alliance. There was the Eurasian Economic Community, which originated from the Commonwealth of Independent States in 2000 and was transformed into the Eurasian Economic Union (EAEU) in 2014. EAEU was established for effective promotion of free movement of goods, services, capital, and labor between participating countries (Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Russia as of July 2015). Aggregated GDP of the union is $2.2 trillion in 2014, out of which Russia's share is 85.9% (Figure 7). Second is Kazakhstan with 9.8%, which totally makes 95.7%. Two countries control the union; provide its GDP and foreign trade turnover.



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*Figure 7. Percentage breakdown of the total GDP of the EAEU area by countries in 2014*
*Source: Author's development based on Trading Economics (2015)*




Size of this newly established block is comparable to the CIS ($2.2 trillion of the EAEU against $2.5 trillion of the CIS in 2014). Russia's intention is to make the union an alternative to rather inertial alliance of the CIS countries. Moreover, to make matters worse, such countries as Ukraine and Moldova do not consider the CIS as an effective integration mechanism, and would probably withdraw from it in the nearest future in pursuance of the integration with the EU. Another reason for Russia to develop the new EAEU initiative is its non-regional character. In the pursuit of increasing its economic and geopolitical power, Russia is actively looking for new strategic partners. Vietnam joined the free trade zone with the EAEU in 2015; two other countries (Syria and Thailand) expressed their interest in joining the union in the nearest future. The union is also open for those Central Asian states, which have not joined it by now (Tajikistan and Uzbekistan). Potentially, in the years ahead the EAEU may grow to be a certain alternative to the existing global powers: the EU, the USA, Japan, and China.

Nowadays the EAEU is still too small to grow into the regional power, comparable with the EU or any other alliance of developed nations. The vast majority of wealth comes from Russia, so it is not as if Russia is getting access to huge new markets by developing this union. One of the promising alliances for Russia (and for the entire global economy) is BRICS, which is an association of five major emerging national economies: Brazil, Russia, India, China, and South Africa. The BRICS members are countries, distinguished by their large, fast-growing economies and growing influence on regional and global affairs. As of 2014, five BRICS countries represent almost 3 billion people, which are 40% of the world population, with a combined nominal GDP of $17 trillion, which is 20% of the world GDP.

Growth in the BRICS area has increasingly diverged during the past years, especially after 2011 and in 2014. China and India continue to grow, although at slower paces, while Russia, Brazil, and South Africa shrink because of falling oil prices, geopolitical sanctions and policy uncertainty (Russia), decline in industrial production and investment and slowdown in household consumption (Brazil), energy shortages (South Africa) (Table 5).



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*Table 5. GDP of the BRICS countries in 1995-2014, $ billion*

| | 1995 | 2000 | 2005 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|
| Russia | 395.50 | 259.70 | 764.00 | 1524.90 | 1904.80 | 2016.10 | 2079.00 | 1860.60 |
| China | 732.03 | 1205.26 | 2268.59 | 6039.66 | 7492.43 | 8461.62 | 9490.60 | 10360.10 |
| Brazil | 785.70 | 657.20 | 892.10 | 2209.40 | 2615.20 | 2413.20 | 2392.10 | 2346.10 |
| India | 366.60 | 474.70 | 834.20 | 1708.50 | 1835.80 | 1831.80 | 1861.80 | 2066.90 |
| South Africa | 155.50 | 136.40 | 257.80 | 375.40 | 416.60 | 397.40 | 366.10 | 349.80 |
| Aggregated GDP | 2435.33 | 2733.26 | 5016.69 | 11857.86 | 14264.83 | 15120.12 | 16189.60 | 16983.50 |

Source: Author's development based on Trading Economics (2015)

Nota bene: notwithstanding that BRIC was established in 2006 and transformed into BRICS with entrance of South Africa in 2010, hereinafter the author considers separate member countries regardless their membership in the alliance, i.e. before 2006 (before 2010 in case of South Africa). The aim is to discover the retrospectives and current development tendencies of both the alliance and its members in order to assess their potentials on the global market.

Brazil, second largest BRICS economy, has been shrinking since 2012. The country suffers from water shortage, which prevents hydroelectric power stations from operating at full capacity and increases the cost of energy resources for industrial production, as well as from the slowdown in neighbor countries of Latin America (in particular, Argentina), which is the main foreign market for Brazil's export.

Russia has also been a bad performer since 2013. Western sanctions, imposed on Russia in 2014 in retaliation of its actions in relation to Ukraine (Crimea and South-Eastern regions of Ukraine) and Russia's counter-sanctions (food import ban) resulted in the rapid depreciation of the national currency (by almost 45% in 2014), high inflation (11% in 2014; 15% in the first quarter of 2015), capital flight (more than $150 billion in 2014), growing household debt and, consequently, shrinkage of domestic private consumption.

Economic growth in South Africa is held back by unstable electricity supplies, level of household debt, high rates of interest, and rather weak domestic demand.

China, despite the relative slowdown, is the largest economy of the bloc with 61.0% of its aggregated GDP (Figure 8).

Dominance of China is also observed in foreign trade of the bloc – 61.3% of the aggregated imports and 67.4% of the aggregated exports of BRICS in 2014. Russia is second in exports with 14.4% of the aggregated export in 2014, while India is second in imports (15.6%). As regards to foreign trade turnover, China is the ultimate leader with over $4 trillion in 2014, which is 64.7% of the aggregated BRICS's FTT (Table 6). Since 1995, it has increased thirteen-fold, which resulted in the rapid tenfold growth of the aggregated BRICS's FTT.

Growth in foreign trade turnover, rather high before 2011, stabilized in 2012 onwards. As of 2014, China is the only country among its BRICS associates, which FTT increased as compared to 2013 (by 3.1%). Russia along with Brazil experienced the deepest falls (by 6.4% and 6.0% correspondingly). Russia's export, largely dominated by oil and gas, was essentially constrained by the falling oil price, while import shrank due to the depreciation of the national currency. Brazil's FTT suffers from decreasing exports of industrial products to the markets of Latin America and depreciating national currency, which restricts imports.



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*Figure 8. Percentage breakdown of the total GDP of the BRICS area by countries in 2014*
*Source: Author's development based on Trading Economics (2015)*

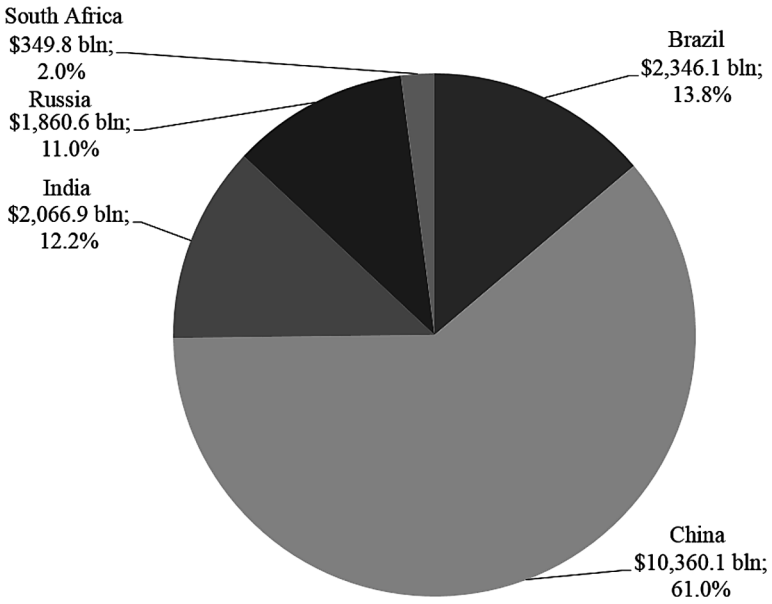



*Table 6. Foreign trade turnover of the BRICS countries in 1995-2014, $ billion*

| | 1995 | 2000 | 2005 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|
| Russia | 131.22 | 145.99 | 369.22 | 621.31 | 819.80 | 843.72 | 851.46 | 797.53 |
| China | 296.21 | 462.99 | 1356.24 | 2846.78 | 3466.75 | 3670.98 | 3933.91 | 4058.07 |
| Brazil | 98.03 | 112.60 | 195.63 | 384.86 | 489.77 | 476.79 | 484.30 | 455.04 |
| India | 70.30 | 87.27 | 207.38 | 565.08 | 735.69 | 741.87 | 772.92 | 753.52 |
| South Africa | 58.40 | 56.75 | 109.29 | 179.47 | 232.38 | 226.02 | 221.46 | 212.57 |
| Aggregated GDP | 654.16 | 865.60 | 2237.76 | 4597.50 | 5744.39 | 5959.38 | 6264.05 | 6276.73 |

Source: Author's development based on the United Nations Conference on Trade and Development (2015)

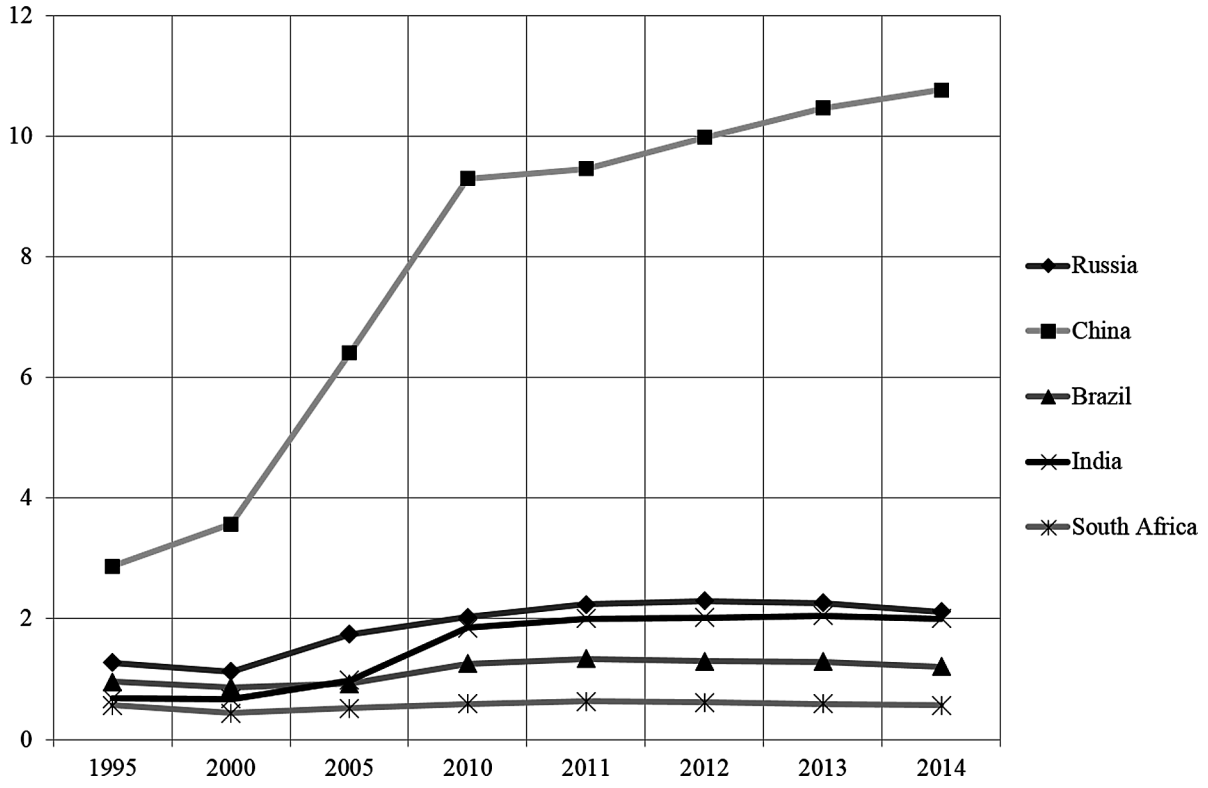
Shares of the BRICS countries on the global market are rather small, except China, which occupied 10.8% in 2014. Russia's share decreased from the average 2.3% during 2011-2013 to 2.1% in 2014. Third biggest global market player among the BRICS countries was India with 2.0% of the global market in 2014 (Figure 9). Aggregated market share of five BRICS countries amounted 16.6% in 2014, the highest in 1995-2014.

In spite of the BRICS common core as an alliance of emerging economies, politically, economically and geographically BRICS countries have little in common. Member countries have unequal economic resources. As can be seen from GDP, FTT and market share breakdowns, China is the dominating economic force within BRICS. Its economy is bigger than those of all the other BRICS combined are. China may survive without BRICS, while BRICS would hardly survive without China. Brazil, India, and South Africa have the alternative organization, which is the IBSA Dialogue Forum. In case BRICS breaks up, these three countries still have a platform for integration.



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*Figure 9. Shares of the BRICS countries on the global market in 1995-2014, %*
*Source: Author's development based on the United Nations Conference on Trade and Development (2015)*




It seems that Russia is the most interested party. Russia has an economy based on raw materials extraction as opposed to other BRICS members, which try to focus their economies on innovation and high-tech manufacturing. Russia needs those technologies for development, as well as BRICS common market for its exports. In view of escalating sanctions, growing trade, and financial isolation from Western countries, BRICS is becoming the only alternative for Russia. As soon as Western financial market is now limited for Russia because of the sanctions, BRICS becomes the largest potential source of investment. In 2015, the BRICS countries established the BRICS Development Bank worth over $100 billion (with Russia's share worth only $2 billion). This reserve pool is now accessible for Russia in case of escalating restrictions on Western financial market.

Indeed, participating countries, not only Russia, value its BRICS membership. There is a range of opportunities, which BRICS may bring to participating emerging economies. BRICS has a common core; it unites a group of emerging economies that grow fast, but until now had no chance to influence on global economic regulations. Recent Russia's and China's policies are aimed at the development of a multipolar world. BRICS is the very union, which may serve this goal through trade, investment, and political support. BRICS common market is considered by member countries as the extension of their domestic markets, which is ultimate for economic growth in the conditions of shrinking domestic demands.



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## Strengths and Weaknesses of the Economies in Transition on Their Way to the Global Market

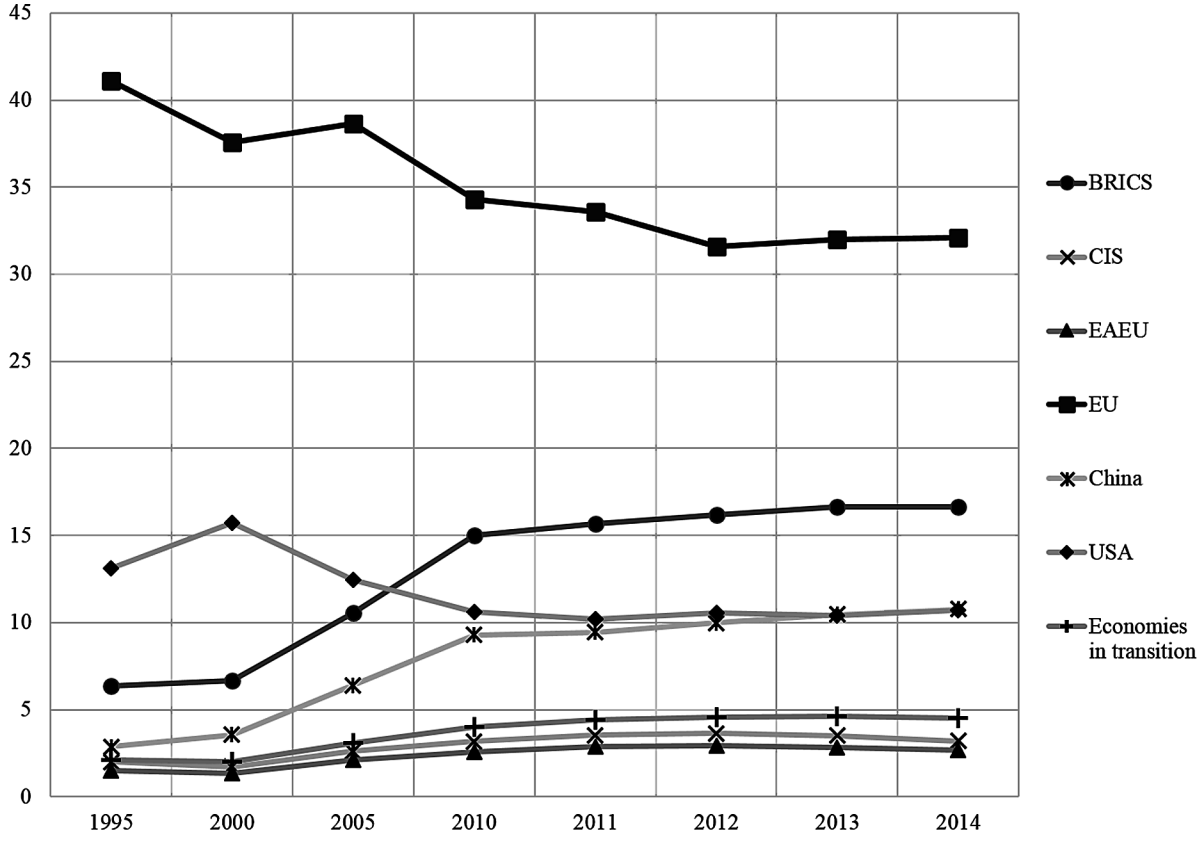
Current leading world producers and traders are the EU, the USA, China, and Japan. China has surpassed Japan as the world's second largest economy, after the United States, and now China is the only one convincing rival to the USA. Global market shares of China and the USA in 2014 are 10.8% and 10.7% correspondingly. Having approached each other in 2010-2011, since that time the market shares of those two major global powers have been fluctuating around 10% (Figure 10).

There is a distinctive tendency on the global market: "recognized" economic powers lose their market shares (minus 9.1 percentage points for the EU during 1995-2014; minus 2.4 percentage points for the USA), while emerging economies and their alliances rise. For the past two decades, China has made a pass from only 2.8% of the global market share in 1995 up to 10.8%. Although the deceleration in 2014 and, most probably, in 2015, China has certain advantages, which are expected to facilitate its economic growth in the future.

*Figure 10. Comparison of shares of the major world alliances and leading economies on the global market in 1995-2014, %*

*Source: Author's development based on the United Nations Conference on Trade and Development (2015)*

*Note: "Economies in transition" array includes twenty economies, recognized as transition ones by the UN and IMF (see Table 1), excluding China*





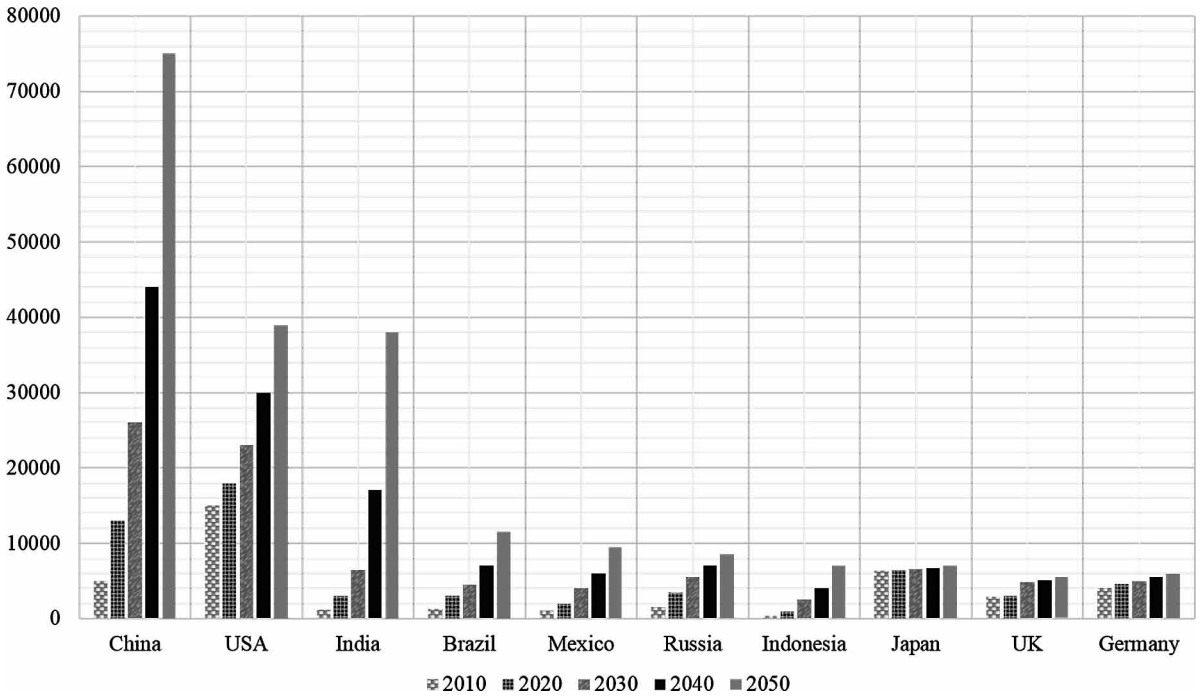

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BRICS alliance, where China dominates with 61.0% of the aggregated GDP and 64.7% of the aggregated FTT, has also spurred from 6.3% of the global market in 1995 up to 16.6% in 2014. As of Goldman Sachs (2007), by 2050 BRICS's economies are expected to become the major global economic powers (Figure 11). China and India will become the world's dominant suppliers of manufactured goods and services, while Brazil and Russia will become similarly dominant as suppliers of raw materials. Indonesia and Turkey have been mentioned as candidates for full membership in BRICS, while Argentina, Egypt, Iran, Nigeria, and Syria have expressed interest in joining BRICS. With inclusion of these economies, BRICS is expected to become the world largest economic alliance in the near future (Erokhin, 2015).

Is there a place for such players as economies in transition on the reshaping global market? For the purposes of the analysis, author excluded China and concentrated on such economies in transition, as the CIS and Eastern Europe. During 1995-2014, they have not been broken through on the global market (growth up to 4.5% of the global market share in 2014 from 2.1% in 1995). Non-CIS countries of Eastern Europe, recognized as the economies in transition by the United Nations (UN) (Albania, Bosnia and Herzegovina, Macedonia, Montenegro, and the Republic of Serbia), occupied only 0.2% of the global market in 2014. South-East Asian countries, recognized as the economies in transition by the International Monetary Fund (IMF) (Vietnam, Laos, and Cambodia) altogether reached 0.9% of the global market share in 2014.

What factors restrict economies in transition from a sustained growth of production and trade? What competitive advantages they have on the global market?

*Figure 11. Ten biggest economies in the world by 2050, measured in GDP, $ billion*
*Source: Author's compilation based on Goldman Sachs (2007, p. 140)*






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The leading economy among those in transition is Russia (2.1% of the global market in 2014). Although Russia is forecasted to grow into the world's sixth economy by 2050 (Goldman Sachs, 2007), currently it is smaller than most of the developed countries. Being under Western sanctions, Russia has been the worst performer among the economies in transition since 2014. During the 2000s, lack of comprehensive structural reforms was masked by a growth fueled by sizeable oil revenues. Recent events around Russian-Ukrainian crisis clearly exposed economic weakness of such a growth model. In conditions of growing isolation from Western countries, BRICS may become an alternative for Russia, since it gives access to new export markets for Russia's oil and gas, and new sources for agricultural and merchandise imports. BRICS is larger than the EU, and is fitted up with all opportunities for development. Member countries are interested in each other, which is the fundamental background for integration. Another Russia's integration initiative, the EAEU, may have potential in case of its expanding. Currently, due to its overdependence on Russia, it cannot rival the wealth of a single EU country, Germany.

Second biggest economy in the region of the CIS is Kazakhstan. The country performed rather well during 1995-2014. As of 2014, it occupied 0.3% of the global market (0.1% in 1995). The country has a strategic position between Asia and Europe, diversified natural resources and actively attracts foreign investments. Its exports, however, essentially depend on oil prices. Deceleration of two Kazakhstan's major trade partners, Russia and China, will affect its economy in a negative way.

Ukraine, despite its current economic downturn due to political situation and military tensions, has certain potentials on the global market. The most competitive industries of Ukraine's economy are wheat and maize production. As most of the industrial export-oriented facilities (steel and coal) are concentrated in the regions of Donbass and Lugansk, Ukraine's export opportunities have been severely cut by temporary loss of those territories.

Fourth biggest economy in transition among the CIS countries is Belarus with $76 billion GDP and 0.2% of the global market in 2014. Competitive advantage of the country is diversified industrial sector, including rather competitive and profitable agricultural, machinery and chemical production. Belarus is very much dependent on Russia, which accounts for almost half of the total volume of Belarussian foreign trade in goods. Belarus is not rich with natural resources, and has to import them from Russia, exporting domestic agricultural and food products and machineries in return. Decelerating effective demand on Russia's market due to the fall of real incomes and inflation will decrease Belarussian export essentially.

Diversification of export destinations is becoming increasingly important for the economies in transition in view of ensurance of sustainable income from integration into the global market. The CIS country with the most undiversified export is Azerbaijan (92% of total export to the world is oil, gas, and mining products). Revenue from oil and gas exports is expected to suffer in the coming years because of falling prices, that is why the country needs to look for the ways to ensure sustainable income. Domestic non-oil and gas sector is currently suffering from a lack of investment, but as investment performance of oil industry decreases, non-oil sector might be attractive.

Uzbekistan, country in the Central Asia, resulted with the sixth GDP among the CIS countries and 0.07% of the global market share in 2014. Uzbekistan's exports are quite well diversified, but are still comprised mainly of natural resources and low value added goods including cotton, copper, fruits, and fertilizers. The national government has been rather effective in implementation of public investment programs directed towards modernizing energy production, hydrocarbon sector, and transport infrastructure. Uzbekistan's export to the world is very much dependent on raw materials prices and focused on the decelerating markets of Russia, China, and Kazakhstan.



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The neighbor country of Uzbekistan, Turkmenistan, also heavily relies on export of oils and petroleum products to a small number of concentrated markets including China, Italy, and Turkey. Fuel and mining products provide over 80% of Turkmenistan's export to the world. Despite the fourth largest natural gas reserves in the world and diversified hydrocarbon export channels to China and Iran, such a weak economic diversification may bring serious threats to sustainability in the future.

Low level of product diversification and reliance upon export of natural resources is the common characteristic of the most economies in transition in the region of Central Asia. Another Central Asian state, Tajikistan, is also susceptible to volatile commodity prices with 60% of mining products, particularly aluminum, in national export to the world. It is worthwhile to note another, very specific item of Tajikistan's export, which is a workforce. About one million Tajiks, which is approximately a half of working-age population of the country, are working abroad, mostly in Russia. Their remittances account for almost 50% of national GDP, making Tajikistan the most remittance-dependent country in the world (World Bank Group, 2015, p. 12). Russia's economic downturn caused substantial decrease of remittances, which resulted in lowering of domestic consumption and decelerated economic growth.

High dependence on remittances from Russia is also specific to Kyrgyzstan (30% of national GDP). Kyrgyzstan is heavily dependent on export of gold, metals and minerals. Having vast hydroelectric potential, Kyrgyzstan nevertheless depends on energy and gas supplies from neighbour countries. The share of the country on the global market is one of the smallest among the CIS members (0.03% in 2014).

Two economies in transition in the region of Caucasus (Armenia and Georgia) have similar small contributions to the global trade turnover (0.01% and 0.03% respectively). Armenia's main export categories are manufactured goods chiefly classified by materials and natural resources, while Georgia export scrap metal, ores, wine, vehicles, mineral water and fruits and nuts. Georgia, as opposed to Armenia, is more oriented on Western markets, not Russia, due to the series of political and even military tensions with Russia during the 2000s. Whereas, Armenia's heavy dependence on trade with Russia and investments from this country is considered as Armenia's diversification weakness.

One of the smallest CIS countries ($7.9 billion GDP; 0.02% of global market in 2014) is Moldova. Moldova is the country, which may withdraw from the CIS in the near future. The country has the Partnership and Cooperation Agreement with the EU, and the European integration seems as an irreversible trend for Moldova. Moldova's target is to become an EU accession candidate country from 2017 and then a member in 2020. However, Moldova does not have substantial competitive advantages, except rather productive agriculture, in particular viniculture, while its domestic weaknesses are rather common to other economies in transition. The concluded free trade agreement with the EU (DCFTA – Deep and Comprehensive Free Trade Area) is expected to spur Moldova-EU trade flow, as it removes some import duties and provides Moldavian exporters with access to European markets.

There are countries among the economies in transition, which are well closer to the European integration, than Moldova. The UN recognizes five South-East European states (Albania, Bosnia and Herzegovina, Macedonia, Montenegro, and the Republic of Serbia) as economies in transition. Four of them, except Albania, used to be parts of Yugoslavia and became independent during the 1990-2000s. Aggregated GDP of the five countries is $91.5 billion; aggregated share on the global market is 0.2% (2014). The biggest economy in the region is the Republic of Serbia with $43.9 billion GDP. Originating from the single state, Bosnia and Herzegovina, Macedonia, Montenegro, and the Republic of Serbia have common features: poor export diversification, high unemployment, weak banking infrastructure, lack of investments, and social and ethnic fragmentation. There are certain advantages, which may increase the role of the region on the global market: energy (hydroelectric), agricultural and tourism potentials,



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friendly business environment, and close ties with the EU countries. Economies of South-East Europe are now actively focusing on the integration with the EU, considering the European market as strategic export destination.

The remaining three economies in transition, which have to be considered, are South-Asian states: Vietnam, Laos, and Cambodia. They are recognized as the economies in transition by the IMF due to their common past, related to the socialist modes of development and close ties with the Soviet Union. While the transition economic reforms in the former republics of the Soviet Union and Eastern European states were accompanied by the serious declines in GDP (see Figure 5), the South-Asian economies were rather successful in increase of their production and external trade. As of Shimomura et al. (1994), Vietnam, Laos, and Cambodia were able to take advantage of their geographical proximity to the emerging economies of East Asia (Japan, China, Singapore, Malaysia, etc.) and became integral parts of rapidly developing intra-regional trade networks.

Vietnam was a production and trade leader among the considered economies in transition with $186.2 billion GDP and 0.9% of the global trade turnover in 2014. The country has a strategic vision of its future economic development, which is built on diversification of domestic production and export, solid agricultural potential and natural resources, and skilled and low-cost labor. At the same time, Vietnam, Cambodia, and Laos have common shortcomings, originating from their past: underdeveloped infrastructure, high poverty levels, and incomplete economic and public sector reforms.

## SOLUTIONS AND RECOMMENDATIONS

Economies in transition, even representing one and the same geographical region, are considerably diverse from each other. Nevertheless, summarizing the overview of the major competitive advantages and existing weaknesses of the economies in transition in their integration into the global market, the most common features have to be emphasized (Table 7). Author divided the economies in transition into three groups: the CIS, Eastern European countries (the UN classification), and Asian countries (the IMF classification). Then the author distinguished the leading country in the regions (the biggest average GDP among groupmates in 1991-2014) and analyzed strengths and weaknesses separately for those three countries (Russia for the region of the CIS, Republic of Serbia for the region of Eastern Europe, and China for the region of Asia).

In order to breakthrough on the global market, economies in transition have to transform economic growth drivers, seize existing opportunities, reduce dependence on factors of production (investment and labour), and increase reliance on innovation and quality (Guoqiang, 2015). The major challenge would be development of a favourable external environment through establishment of effective ties with other countries and alliances. The process has already started for most of the economies in transition. The analysis demonstrated positive dynamics and potentials of such emerging markets, as BRICS. Participating countries need to make full use of those emerging markets and resources to expedite their economic transformations and improve their positions in increasingly globalized value chains.



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*Table 7. Common strengths and weaknesses of the economies in transition in relation to international competition*

| Countries / Groups of Countries | Strengths | Weaknesses |
|---|---|---|
| CIS | • Abundant natural and labour resources.<br>• Agricultural potential.<br>• Traditional close economic, trade and social ties between the countries.<br>• Initiatives on inter-regional integration.<br>• Common language. | • Low diversification of output and export, dependence on fossil-fuel exports.<br>• Low value-added and innovation component in export.<br>• Weak infrastructures.<br>• Low effective demand on domestic markets, poverty.<br>• High degree of state involvement into market regulations.<br>• Corruption.<br>• Unfavorable and non-transparent investment regimes. |
| Russia | • Natural resources.<br>• Skilled labour force.<br>• Statue of regional and energy power. | • Growing dependence on fossil-fuel exports.<br>• Decreasing investment opportunities (restricted access to Western capital markets, foreign revenues shortfall).<br>• Low innovation component.<br>• Weak infrastructures.<br>• Declining demography (aging population, brain drain).<br>• Uncertainties and high political risks in domestic business environment and foreign policies. |
| Eastern Europe | • Energy (hydroelectric), agricultural and tourism potentials.<br>• Friendly business environment.<br>• Close ties with the EU countries. | • Poor export diversification.<br>• High unemployment.<br>• Weak banking infrastructure.<br>• Lack of investments.<br>• Social and ethnic fragmentation |
| Serbia | • Natural resources.<br>• Recreational potential.<br>• Prospected accession to the EU.<br>• Substantial foreign exchange reserves. | • Dependence on external funding.<br>• Weak infrastructures.<br>• Weak banking sector.<br>• High unemployment. |
| Asia | • Abundant natural and labour resources.<br>• Diversification of domestic production and export.<br>• Solid agricultural potential.<br>• Low-cost labor. | • Underdeveloped infrastructure.<br>• High poverty levels.<br>• Incomplete economic and public sector reforms. |
| China | • Industrial competitiveness.<br>• Output and export diversification.<br>• Infrastructure development.<br>• Gradual market reforms.<br>• Natural resources.<br>• Low-cost labor. | • Low share of consumption in GDP.<br>• Growing social and income inequality.<br>• Gradual drying up of the pool of low-cost labour.<br>• Environmental problems. |

Source: Author's own development

## FUTURE RESEARCH DIRECTIONS

Author believes the major trend of research activities in relation to the economies in transition should be aimed at facing new global challenges. Until the present time, economies in transition have been focused on their domestic developments, but in order to be competitive on the global market they will have to face new global challenges. Integration gains momentum. Neither single country, even such giants as the USA or China, is able to compete. Investigations have to be directed on exploration of economic and trade cooperation of the economies in transition with the international community. China has recently proposed the "five connections" development plan (policy exchange, road network, trade talks,



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currency circulation, and people-to-people friendship), which encourages cooperation at practical and cultural levels (Guoqiang, 2015). Other economies in transition have to investigate implementation of such an approach in their domestic and foreign policies, as it encourages countries to share development opportunities in a mutually beneficial way.

## CONCLUSION

Regardless the region (former Soviet Union, Eastern Europe, or Asia), economies in transition originated from their common socialist-type model of economy, where the dominant state and collective ownership of the means of production minimized the role of natural competitive factors (Kolodko, 1998). Foreign trade was controlled by the state, which resulted in various distortions, low level of diversification, specialization of export destinations and import channels due to political preferences. During early stages of transition, most of the economies of that type experienced a decline in output and export, significant increase in inflation, and decrease in living standards of domestic population. Economic and trade liberalization in transition economies rapidly embedded them into the international market, however, being considerably non-competitive, they had to specialize on low value-added exports and high value-added technological imports. For at least two decades after the beginning of market reforms, most of the economies in transition have not been able to break the existing trade patterns.

Things are changing. Unimaginable growth of China, certain economic successes of Russia and Kazakhstan, and improvements in the region of the Eastern Europe demonstrated potentials of the economies in transition on the global market. By the 2010s, particular countries and their strengthening alliances had been rather effective in increasing their shares in the global output and trade. New economic powers have arose: China, Russia, Brazil, Eastern European and South-East Asian nations. The countries accelerated integration processes between themselves in order to aggregate existing competitive advantages and mitigate market risks. Most of the economies in transition are now involved in various inter-regional and international integration initiatives: the CIS, BRICS, the EAEU, and others.

Despite the evident achievements, transition process goes on and will persist in the near future. Unlike the past two-three decades of transition, coming years will manifest new factors: increasing competition between alliances; intensifying role of trade regulations (unification in the WTO framework and protectionism of particular domestic markets); growing tensions between major global powers as to shape a new multi-polar world order.

Is there a space on the reshaping market for such players, as economies in transition? The long-term outlook of such economies will depend on effective structural reforms, diversification and technical modernization of domestic production and exports, utilization of existing comparative advantages, and benefiting from integration: trade, economic, and financial. Mutually beneficial international trade and economic relations, predictable political situation, favourable regimes for investments, and respect to all foreign partners are key factors of success on the contemporary global market.

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## KEY TERMS AND DEFINITIONS

**Economies in Transition:** The countries of the former Soviet Union, Central and Eastern Europe, and Asia, which experienced the Soviet-type model of development and underwent large economic and political transitions from centrally-planned regimes to democratic market economies.

**Emerging Economies:** The countries, progressing toward becoming advanced, but still lacking market efficiency and sustainable market mechanisms, having greater domestic and external risks due to political instability, infrastructure problems and currency volatility.

**Foreign Trade:** The system of international commodity-money relations composed of foreign trade activities of all countries worldwide.

**Global Market:** The system of relationships between buyers and sellers from different countries, who participate in the trade of goods and services.

**Globalization of Trade:** A process of development of an increasingly integrated international market by free trade and flow of capital between nations.

**Trade Liberalization:** A process of reduction or elimination of constraints in the sphere of international trade, including reduction or removal of custom tariffs, import quotas, abolishment of multiply exchange rates, and simplification of administrative requirements to import and export operations.

**Transition Period:** A period of time, when economy is changed to a new condition because of economic and administrative reforms.

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# Chapter 91
# Internet Finance

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## ABSTRACT

*New developments in the Information and Communications Technology industry have substantially increased the importance of the internet over the last decade. As a result, the finance sector has developed its technological capability to be able to compete in an online marketplace with other financial services providers and to be able to serve their customer. This chapter examines the use of technology in the financial industry and the various factors associated with it, as well as introducing the reader to the main types of project initiators-contributor business relations in online crowdfunding.*

## INTRODUCTION

E-Banking also written as electronic banking refers to the usage of computers in carrying out bank transactions. Examples of such transactions include withdrawal of money through cash dispensers or engaging in funds transfer through a point of sale. Electronic banking is also known as internet banking or online banking (Ainin, Lim & Wee, 2005). Therefore, this illustrates the complex nature of the concept of financial services as there is not a universal definition of E-banking. However, it is significant to note that internet or E-banking refers to the use of various electronic services that allow a financial account holder with a particular bank to access all his or her information through a computer. Therefore, in the context of this discussion E-banking will be defined as a self-service activity that permits bank account holder to get access to their accounts, as well as their updated general information on a financial institution's products and services. In addition, these users have the liberty of conducting financial transactions without time or geographical limitation by accessing the bank's website (Kallstrom, 2000, p. 20).

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The technological advancement and the use of the Internet have raised a new platform for fundraising known as crowdfunding. Crowdfunding involves three parties: the project initiator or owner who needs funding, the contributor who is willing to give their money and the moderating organization that facilitates the engagement between the contributor and the initiator (Young, 2013, p. 33). Moderation can also be done through technology by the project initiator himself, using Web 2.0 and outside of platforms. The platform involves entrepreneurs or potential business owners asking for funding for their projects from the "crowd" or users from all over the world who may be interested in supporting their cause or business. Crowdfunding allow individuals the possibility to develop into their business ideas, even if it is only with a small amount of money. Governments encourage crowdfunding due to its positive impact on the economy as a whole, as it creates new jobs and fosters the economic growth of countries.

This chapter seeks to introduce the reader to e-banking services, online investments, and the main types of project initiators-contributor business relations in online crowdfunding.

## BACKGROUND

In the late 1970's home banking was the only way of offering financial products without the customer being present at the banking hall (Xu, Wikes, & Shah., 2006, p. 19). Financial institutions call this service home banking; however banks offer this service through phones.

Banking customers were able to transfer money, pay their invoices or check their account credit through touch-tone telephone while they were at home. New software was created that permitted connecting customer to the bank through a dial-up connection. Although in the late 1980s this service was not very popular for several reasons. First, home banking was only allowed for some services agreed by the bank. Second, this new service needed an important investment in technology, and only few financial institutions could afford this cost.

The use of computers was not common at the time in many households (Laopodis, 2013, p. 26). Among the financial institutions that offered home banking services are the leading banks like Citibank, Manufacturers Hanover and Chase Manhattan. All of them had its origin in America, thus showing the contribution of the United States to the e-banking industry. In the mid-1990's banks were starting to realize the need to move their financial services into the virtual realm. Apparently, e-banking was becoming an attractive concept as it helped banks diminish transaction costs; it was helpful in promoting easy integration of services as well as introduced interactive marketing capabilities. Additionally, online banking was instrumental towards boosting the bank's customer lists and profit margin faced by the businesses. Furthermore, internet banking allowed institutions to bundle their services into single packages; thus, attracting more customers at minimal overheads. The period of late 1990s saw the advent of the clicks and bricks euphoria; as a result, many banks realized that e-banking was a strategic and imperative innovation (Lassar, Woodford, & Moschovitis, 2005, p. 15). More so, during this period there were a lot of mergers and acquisitions within the financial industry that resulted in expanding customer base Therefore, financial firms viewed the World Wide Web as the only channel that would help in maintaining customers, as well as build loyalty. However, in the wake of the banks realizing the potential of e-banking a lot of customers across the globe remained hesitant to conduct their financial transaction over the internet. For example, there was the Y2K scare that was a disambiguation about a world crisis by the year 2000. In this connection, many customers feared online transactions because of



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the fear that all computers would fail. Therefore, to avoid this problem a number of financial consumers were reluctant to move into the virtual world of financial service provision. Companies such as America Online, eBay and Amazon.com invested in marketing purchase of items through online platforms. For example, Bank of America took about 10 years to reach 2 million e-banking clients. In 2009 as per a report by Gartner Group, at least 47 percent of American adults were banking online.

Computational investing is another topic that provides insights on investing and stocks. It includes a collection of theories that have effectively been used as strategies for investing. For instance, John Bogle's passive investment approach recommends that entrepreneurs should allocate resources to assets that have minimum trading expenses. The reason for that is that active involvement in market-stock trade cannot match the returns of the market (Laopodis, 2013, p. 32). In other words, Bogle advocates for a long-term view approach to investing – one should pay attention to taxes and costs. Therefore, according to him, a well-diversified portfolio is an assortment of low-cost assets that have been in the market for a considerable number of years. That is, investors should adopt a buy-and-hold strategy.

Another theory of computation investing is value investing. According to Warren Buffet, who developed the idea, investors should exercise discipline, intelligence, and patience in relation to buying stock (Laopodis, 2013, p. 32). In other words, the entrepreneurs should purchase shares of reputable companies only.

## MAIN FOCUS OF THE CHAPTER

### 1. E-Banking

Internet banking allows access to financial information through accessing internet over a computer or by use of mobile phone that has Internet connection. Mobile banking is the latest revolution in virtual banking, it involves conducting financial transactions via a mobile device; for example, a mobile phone or tablet. The introduction of mobile banking led to new methods of payments by using a mobile phone to pay for commodities or services remotely. The first form of mobile banking was referred to as SMS banking. However, the invention of smart phones has overtaken SMS banking and now users of the internet-enabled mobile phones can use various applications based on the operating system to carry out financial transactions. There has been a remarkable growth in the number of households using virtual banking services. Population born between 1970 and 1990 also referred to as the generation Y embrace technology very fast once it comes to the market. Generation Y account for the highest number of users of online billing services to settle their account on student loans, credit cards and expenditures aimed at improving their lifestyle for example shopping online. Noteworthy, e-banking is highly entangled in every individual way of life without discriminating against age or those with disabilities (see Friedman (2000)).

Internet banking offers various services depending on the bank of choice for each customer:

#### Account Opening and Access Information

Banks that provide e-banking services allow their clients to open new accounts by accessing the bank's website. In order to complete this service, an individual logs in into the bank's website, fill an application online and submit the application. Afterwards, an account holder with online banking services



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enjoys the opportunity of accessing financial information wherever they are with an Internet connection. Such information may include closing or opening accounts, checking updates as well as make inquiries captured in the account or even making payments.

## Electronic Check Conversion and Transfer of Funds

Electronic check conversion allows customers to convert their paper check to a new electronic payment. Essentially, the benefit of electronic payment is that the account holder with a bank can withdraw money from their account and wait until the other party receives the check. This service is faster as the normal check takes longer duration to process. Customers can also transfer funds across personal accounts and to different users as a way of covering the shortage in some accounts or make payments.

## Download Online Bank Statement

Clients can go through this document because it allows one to check even the previous year transactions so as to make sure accounts are in order (Lassar et al., 2005, p. 24). In the event of complaint, users can save their bank statement either as word or as PDF on their computer, tablets or smartphone for future evidence.

## Buy Financial Products

E-banking allows clients of the bank to buy financial products online. Examples of such products may include deposits, stocks, mutual funds and mortgages. The bank products vary across different financial institutions.

## Buy Good Online

Users of online banking benefit from the ability to login into their accounts and to buy goods online or make payment to their credit card. Nowadays, it is easy to buy goods online safely and quickly or simply make enquiries; therefore, saving on travel costs and time.

## Order for a Check Book

This is a booklet of blank checks that facilitates bank account holders to draw money from their account or deposit funds for the purpose of settling other company accounts or payment of bills (Lassar et al., 2005, p. 30). These checkbooks can be ordered online by e-banking service users, they receive the booklet through their mail.

## Make IRD Payments

IRD refers to the income that an individual is not entitled to receive during his or her lifetime. Such payments include IRA or other retirement schemes that an account holder cannot receive before death. The amount of IRD payments is not part of the final income tax return. This service is now available through internet banking, and it is easy to process all information an individual may need pertaining to IRD payments electronically.



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### Tax Information and Documents

Financial institutions assist their customers to complete several tasks such as offering tax documents online. Additionally, the banks help their clients to fill and submit the forms online. Overall, a financial firm helps in resolving tax related issues and usually this service is available to the customers free of charge.

### Alerts

An account holder with the access of internet banking can subscribe to receive alerts of every processed transaction by the financial institution. Consequently, the service will inform the customer about the existing bank account balance, and introduction of new products and transactions completed.

### The Importance of E-Banking

The main important characteristic of internet banking is significant time management, elimination of queues due to the automation of most financial services and availability of easy maintenance tools for managing one's money. E-banking offers cheaper costs of attaining banking services and increased comfort. With regard to the latter, customers are able to make financial transactions any time of the day, and without physical interactions with the bank.

Another characteristic of e-banking is rapid and uninterrupted access to information. For example, business firms can enjoy easier access to information by checking on multiple accounts at the tick of a button. In addition, internet banking allows for better management of cash by speeding up cash cycles and increasing efficiency of business transactions since numerous cash management tools are available on the World Wide Web. For instance, it is possible to manage a firm's short-term cash through internet banks in money market funds, in commercial papers, in over-night deposits, or in bonds and equities (Appei, 2009, p.7).

Furthermore, e-banking allows a customer to enjoy the convenience of carrying out financial transactions from the comfort of his or her office or home. The fact that e-banking allows a rapid response enables customers to wait until the end of a financial transaction without any fuss about it. Finally, internet banking allows for effective management of funds. Customers are allowed to download their account history and fund analyses on their computers or mobile phones before carrying out any actual transaction.

## 2. Benefits and Challenges of E-Banking

E-banking has transformed the provision of financial services around the world (Liao, Yuan, & Chen, 1999, p. 66). Financial institutions as well as customers obtain certain benefits from using e-banking as compared to the conventional method of banking.

Online banking allows account users to make payments across accounts to just about anyone. For example, client of the bank can choose anybody or any company whom he or she wants to make payments to and the bill pay service will facilitate this transaction.

Internet banking gives the account holder the liberty to control almost every aspect of his or her account. Besides this control over personal or business bank accounts, the customer can access other services within the financial industry (Liao et al., 1999). For example, buy or sell interest-earning assets,



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keep an update on stock market and money market. It is imperative to mention that accessing internet banking services on the bank's website is free, the only requirement is being an account holder with the entity and have access to the internet.

Customers enjoy the benefit of comparing best deals across banks and get access to the best special offers. Often individuals operate more than one bank account; therefore, it is easy using e-banking services to compare products offered by different banks. E-banking service allows bank account holders to access the financial institution on a 24 hours basis (Krantz, 2013, p. 19). Automated teller machines, and access to their bank account through the internet is convenient to the clients. Virtual banking is beneficial to customers because this system helps bank account holders to avoid queues common in banking facilities. Many of the customers who use online banking feel that this system saves time unlike when they spend time queuing in banks.

Internet banking contributes to a reduction of operational costs in the financial Institutions. In the long run commercial banks save on resources that would be paid to the tellers to manage the growing customer base in the bank. Therefore, it is relatively cheap to conduct financial services over the internet for the banks. Virtual banking has allowed banks to acquire a greater customer base through reaching new target markets (Liao et al., 1999). Precisely, the use of internet surmounts any geographical boundaries that would be difficult and expensive to break when using traditional banking systems. Interestingly, the banks use internet to reach the well-off households as internet penetrates highly in households that have a sustainable income. E- Banking reduces the costs affiliated to marketing especially with the introduction of internet marketing, helping to create a similar playing field for small and big banks. Therefore, the upcoming financial institutions can fight for survival through competing for customer base in the same market with the successful banks (Liao et al., 1999). Otherwise, it would be impossible for the small financial firms to compete with the leading companies through the traditional systems of marketing because of capital and market power challenges enjoyed by the big banks.

There has been a significant change in the level of efficiency in commercial banks after the introduction of e-banking. Use of internet in banking facilities allows the firms to operate in a paperless environment. For example, it is easy to keep records within a single file for a huge number of clients. The level of customer service and satisfaction continues to improve remarkably with e-banking systems. Principally, this improvement is attributed by the levels of efficiency in banks. In addition, internet banking offers the customers services that would be difficult to access through bank's branches (Liao et al., 1999). Online banking contributes to a reduction of the number of people visiting the facilities daily; therefore, improving on customer service both online and offline. Using e-banking services helps a financial entity to improve its public image by giving a good impression to existing and prospective customers. Noteworthy, an account holder may not be willing to use e-banking system, but by providing such services a bank helps in promoting a good reputation to the prospective and current customers.

Internet banking is beneficial to the stakeholders in the financial industry. Banks and customers enjoy extensive benefits by using this modern way of accessing financial information and products (Sarlak, & Astiani, 2011, p. 29). However, there are certain concerns or challenges that arise in the use of internet banking. Firstly, with the introduction of this new technology by the commercial banks there is a need to create a customer service support system that will provide support to the clients. Commercial banks face the challenge of maintaining a fast and reliable customer support system in a bid to protect their reputation as well as image in the market. Establishing such systems is costly but it is important towards getting the customers to trust internet banking as a way of undertaking financial transactions. Secondly, laws governing different countries present an interesting challenge to e-banking. Internet banking cannot



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be limited within a geographical location or borders (Lassar et al., 2005, p. 45). However, each country or state has different laws that are distinct and are not applicable in territories beyond where the laws are enacted. Therefore, there is a need to harmonize some laws pertaining to electronic banking worldwide so as to ensure access to financial information and products is not restricted. Thirdly, the issue of security over the internet is another challenge that continues to affect online banking. In fact, this is one of the challenges for banks as customers inquire know the level of security or protection that virtual technology offers to them before they proceed to open online banking accounts. Internet technology attracts online cyber-crimes, and often bank customers become victims of fraud or theft especially with the use of ATM's (Lassar et al., 2005, p. 45). Hacking and phishing of financial information is an emerging trend and a challenge that banks deal with every financial year. Fourthly, internet banking creates regulatory challenges because of globalization of the financial industry. Internet allows provision of services from any location in the world posing a danger in regulation of financial intermediaries by the central bank. Inherently, commercial banks will find ways to avoid any supervision or regulation by the relevant authorities. For example, it is mandatory for every business to acquire a license from the government; similarly, financial institutions have to establish a licensed branch before they are granted permission to venture into virtual banking (Marina, 2009, p. 4). Fifthly, internet banking has led to increased activities of money laundering. Anonymity is one of the features evident with electronic banking. A client opens an account in a bank, but it is difficult for the financial entity to identify the type of business the nominal account holder is undertaking or even the location of the transactions. Presently, many governments have put up guidelines to combat money laundering. For example, it is mandatory for every individual opening a bank account to verify their identity and notify the bank of their residential address (Marina, 2009, p. 6). Finally, online banking poses serious macroeconomic challenges to the country's economy. For instance, the technological revolution in the finance industry particularly the advancement of banking practices makes it difficult for central bank to implement monetary policy. Consequently, it is always a challenge for the central bank trying to control economic activities and inflation especially with the globalization of financial services. In essence, expansion of electronic banking leads to a significant decline in financial transaction costs. Consequently, this leads to cheap credit in the economy hence eroding the effectiveness of monetary policy. Tobin tax is an example of a tool used by many governments towards controlling availability of credit in the economy especially it helps to increase costs of accessing financial products from the banks by the borrowers.

## 3. Investing Online

Some of the concepts discussed in Modern Investment Theory and computational investing are useful to stock brokers, especially when opening an online account. A stock broker is an individual or company that trades in shares on behalf of a client. If the interaction between the client and the broker is through a website, the broker is referred to as an online broker. The online service allows the investor to allocate some funds to the brokerage firm for the purchase and sell of stock. Normally, the transactions occur on order basis, that is, the client must request the broker to buy or sell profitable shares. Apart from trading in shares, a significant number of online brokers also provide other support services such as tax reporting, creation of financial statements, and so on. Optionally, an investor may decide to do the online trading independently. That means the entrepreneur will need to open an online stock brokerage account. To succeed in such a venture, the entrepreneur must consider several factors.



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Firstly, the investor needs to acquire a portfolio tracking tool, which is a set of online tools that provide information on the trading of stock. Hence, the tool allows investors to keep a close eye on the performance of their stock while shopping for additional profitable investments. The portfolio tracking tool can be treated as an additional expense to the cost of opening an online brokerage. However, an effective method would be to treat portfolio tracking as a support service provided by an online broker (Hart, 2005, p. 36).

Secondly, transaction costs are incurred in operating the online brokerage account. Normally, the online broker that hosts the independent stockbrokerage account charges a specific amount for each transaction executed. In other words, an online broker may provide the portfolio tracking tool at a low cost, but charge the investor highly per transaction (Hart, 2005, p. 42).

Apart from that, some hosts charge for stop-sell order requests. Therefore, investors should take time to compare the charges of different hosts to ensure that they get value for their money.

Thirdly, the type of account matters. Often, investors have the option of opening either an individual retirement account (IRA) or retail account. Before opening an IRA, the entrepreneur should consult a tax advisor because some of the transactions done through the account are taxable. For instance, if a transfer of funds is done from the investor's IRA to an online broker's IRA, there are no tax penalties or consequences. However, taxes apply if the investor withdraws money from an online brokerage IRA. Conversely, transferring funds to a retail account has no tax implications. Similarly, the purchase of stock through the use of funds in the retail account has no tax implications. However, the income from the stocks sold through the account is taxable (Hart, 2005, p. 50).

Additionally, investors expect returns in form of dividends from companies in which they own shares. The dividends may be scrip dividends or dividend re-investment plans (DRIP). For the investors that subscribe to the scrip-dividend policy, the expected cash returns are automatically converted to new shares. Conversely, for those in DRIP, the cash dividends are first sent to a scheme administrator who then may use the funds to acquire the company's shares through the stock market or send the money to the stakeholders. Therefore, before opening an online account, the investor should consider the reinvestment service offered by the host (Hobson, 2012, p. 15).

Also, the investors need to determine the means through which they will fund their online brokerage accounts. Firstly, capital may be sourced from savings. In this case, keeping money in bank accounts yields low annual interest. Depositing the money into an online brokerage account will result in better cash benefits. Secondly, the IRA is also a source of funding. In this case, the funds can be transferred from an existing IRA to the online brokerage IRA mentioned earlier. Thirdly, the investors can opt to make direct deposits. In this regard, the cash-in-hand that they possess should be greater than or equal to the bare minimum required to open the online brokerage account. Given that the option will force the entrepreneurs to develop a working plan on how to make regular deposits into the account, discipline is required (Hart, 2005, p. 55). The investors can obtain additional hard cash from gifts, financial assets converted to money, extra income, refunds, and so on.

Therefore, before opening an online brokerage an account, one must consider several things. These include the type of account to be opened, transaction costs involved, and customer service. The investor should also take into account how the online brokerage shall be funded, the cost of the portfolio tracking tool, and the dividend re-investment policy provided. Once these queries have been addressed, the next step is to open an online brokerage account (Hart, 2005, p. 57). In reference to that, it is worth noting that managing a profitable stock investment portfolio requires thorough knowledge of ways of investing.



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## 4. Trading Stocks and Options Online

Online stock trading is another important subtopic of investing and stocks. This type of trade is to some extent similar to regular transactions that involve one walking into a shop, picking the required items, paying for them, and leaving. That is, the online traders select the shares they prefer and electronically transfer the sum required for the purchase. Once the money is received, the sale is reflected. However, online trading has some complications because the prices of stocks are set in real time (Krantz, 2013, p. 129). Thus, the online investors have to use the following options in trading through the internet.

Firstly, customers can trade their stocks online through market orders. In this case, they have to instruct their stock brokers to sell their stock. Normally, the brokers are requested to sell the shares at the highest price that a willing customer is ready to pay. As a result, such orders are quickly executed (Krantz, 2013, p. 129). Given that it is easy to find such willing buyers, the online investors pay a small commission for the brokers' services.

Secondly, stocks can be traded online through limit orders. In this case, the online investors are allowed to set the prices at which they are willing to purchase or accept the sale of stock (Schwartz, 2010, p. 156). For instance, consider an entrepreneur who owns 40 shares, each valued at $100. Suppose the price of the stocks is declining and hence the investor estimates that soon the value of a share will plunge to $70. In this case, the online investor can sell the shares in two ways. The first option is through the market order, which was discussed above. However, that may not give the best returns since the buyers may momentarily offer lower prices than the projected minimum. Optionally, the online investor could set the lowest selling price at $85 to minimize losses. Thus, so long as the decline proceeds as expected, the limit order is the preferable alternative. When the shares' price falls to $85 per unit, the broker will sell all stocks if possible. Limit orders are not based on price alone. Some investors give a deadline within which to sell the stocks (Krantz, 2013, p. 129).

Sometimes, one may not obtain the returns expected after the sale of shares through the limit orders. This is because the shares' price may decline so rapidly that the seller is unable to place the stocks on sale at the agreed price. In this case, the broker may only sell a restricted number of stocks. The rest of the shares are kept in the investor's portfolio. Thus, the limit orders provide a false sense of security.

Online investors can also use stop market orders to trade online. This type of order is similar to a limit order in that a minimum buying or selling price is set. However, for the stop market orders, when shares' price reaches the designated value, the orders are converted into market orders (Krantz, 2013, p. 130). For instance, using the previous example, the broker may be instructed to execute a stop market order when the stocks' price reaches $85. In this case, if the value of shares suddenly plunges to $80 per unit, the online broker would still have to sell the shares at that price.

Fourthly, the shares can be traded through a stop limit order. This option is similar to a stop market order. However, once the defined price is exceeded, the stop limit order is converted into a limit order (Krantz, 2013, p. 130). Thus, the stop limit order prevents the sale of shares if the value of the stocks falls beneath the limit price. To elaborate further, still using the same example, suppose the activation price for selling stocks is $85 and the limit value is $75. When the shares' value falls below $85 per unit, the order becomes a limit order. Hence, when the price reaches $75, the broker is supposed to sell every available stock at that price (Krantz, 2013, p. 130). However, a further decline in price would result in no sale at all. That is, the remainder of stock is kept in the online investor's portfolio.



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Lastly, the online stocks can be traded through a trailing stop. This type of order basically follows the market. For a favorable market, rising stock prices, the online investor instructs the broker to retain the shares until the value of the securities reaches a predetermined value. This order is referred to as a trailing sell stop. For a bearish market, the broker is expected to sell the shares as the stocks' price approaches a set minimum value (Pardo, 2008, p. 85). This order is known as an exit trailing stop. Thus, the online investors continuously search for positive yields during the stocks' transaction life.

Apart from stocks, options can also be traded online. An option is a financial instrument that gives one the right to sell or purchase a precise quantity of underlying stock at a prearranged price within a defined time period. The option seller is not legally obliged to carry out all the tasks stipulated in the contract when the financial instrument is handed over to a buyer. The online trading of options is done through screen-based or electronic methods. In the United States of America, there are several institutions – exchange companies – that specialize on options trading. They include the International Securities Exchange (ISE), Boston Options Exchange (BOX), and NASDAQ. The online trading of options has advantages as well as prerequisites that are worth discussing in details (Fontanills & Cawood, 2009, p.43). The online trading of options yields more benefits to the online investor than full-service or traditional brokerage. For example, for this type of trade, commission expenses are lower. That is, the traditional broker may charge $100 for a round turn, whereas an online brokerage charges only several dollars (Fontanills & Cawood, 2009, p. 45). In this case, a round turn refers to each deal or sale. Normally, a commission cost is charged on all orders. The charge applied varies depending on the service being offered. Also, the commission expenses decrease as the services offered to the investors increase. Another advantage of the online trading of options is that the online investors receive considerable support in terms of information as opposed to what happens in traditional brokerage.

## 5. Online Crowdfunding

A new startup needs some amount of funds in order to get the business started. In order to transform the entrepreneurial project into a reality, then it is necessary to have adequate cash to execute all such plans. Moreover, the fundraising will help the entrepreneur to develop the business model for the growth of the project and a successful business marketing plan (Damos, 2014, p. 32).

The technological advancement and the use of the Internet have raised a new platform for fundraising known as crowdfunding. Crowdfunding involves three parties: the project initiator or owner who needs funding, the contributor who is willing to give their money and the moderating organization that facilitates the engagement between the contributor and the initiator (Young, 2013, p. 33). Moderation can also be done through technology by the project initiator himself, using Web 2.0 and outside of platforms. The platform involves entrepreneurs or potential business owners asking for funding for their projects from the "crowd" or users from all over the world who may be interested in supporting their cause or business. Crowdfunding allow individuals the possibility to develop into their business ideas, even if it is only with a small amount of money. Governments encourage crowdfunding due to its positive impact on the economy as a whole, as it creates new jobs and fosters the economic growth of countries.

This chapter seeks to explain the main types of project initiators-contributor business relations in online crowdfunding.

The term crowdfunding is a relatively new concept to the market, however its origin comes from the construction of the Statue of Liberty's Pedestal. John Pulitzer, who was a popular publisher at the time, employed his newspaper to collect money for the construction of the pedestal. The initiative raised



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100.000 dollars in only six months. Pullitzer promised to print the name of each donor, regardless of the amount of money donated. In August 1885, Pulitzer announced that he had collected the amount to $100.000 for the statue's pedestal. The Statue of Liberty, that had arrived from France packed in crates, was erected the next year. (See Young, (2013)). Nowadays, Crowdfunding is becoming is already very popular around the world and the Internet platforms are leading the rasing of funds.

In 2013, Crowdfunding raised over 5.1 billion dollars to help people in various projects all over the world and the figure is projected to increase in the future with the new platforms becoming more popular (See Crowdfunding Industry Report from Research firm Massolution). The new law of the Jumpstart Our Business Startups (JOBS) by President Obama in 2012 introduced a regulatory framework. Most of it still has to be translated into active regulatory elements to this date, protecting donors to crowdfunding projects and enabling businesses to use crowdfunding as a real source of funding. The Act enhanced the credibility of the platforms for crowdfunding while at the same time ensuring that the project owners or entrepreneurs had a viable and a good source of funding for their projects. Kickstarter and Indiegogo are some of the most popular platforms boasting of members in millions of all parts of the world, these websites have enough people to pool huge amounts of resources for the funding of their businesses.

There are different types of relations between project initiators and contributor in online crowdfunding:

## Reward-Based Crowdfunding

The reward-based form of crowdfunding is the most popular type with most contributors and initiators preferring this method due to the security of their funds under this method (See Crowdfunding Industry Report from Research firm Massolution, 2014). In reward-based crowdfunding, the target amount has to be established first for the completion of the project (Steinberg, 2012, p. 97). Then, the person or organization sets up donation amounts with an attached incentive that is proportional to the amount donated for the project. This method is hugely popular for artists, movie directors and other projects that have an aesthetic or prestigious value to the donor. For instance, if an artist was looking for a donation to help with a tour of Europe, he may offer signing autographs to people that will contribute $500 and backstage preparation with the cost to people contributing $1.000. These incentives ensure that the enthusiasts and the music lovers are motivated to donate to the cause (Young, 2013, p. 79). One of the unique characteristics with this method is that if the set platform allows for the project owner to get the amount only after the targeted amount is reached, he/she cannot be awarded the amount collected in case the donors do not raise all amounts. The donors can therefore get their money back and they have the confidence of recovery of the raised amount as a result (Agrawal, Catalini, & Goldfard (2015)).

One of the major benefits of reward-based crowdfunding is that it has low risks for the promoter or the company that is behind the campaign to raise funds or donated amounts. Once a company has raised the required amount for the project and they may have had the donations only with a special clause for the specific project they are able to avoid dealing with debts, credit implications or interest that is attached to the loans or government grants (Bruntje, & Gajda, 2016, p. 45). The reward-based crowdfunding method offers the chance to completely avoid all these problems and start their business or project without any possibility of future shortcomings due to any changes in the plans or the success of the project. The reward-based method also runs on low cost with the project owners being offered a chance to showcase their projects for only a small fee of their total collection and there are no high costs of managing the platform. As opposed to raising money through other conventional methods, where a person could end-up incurring a lot of costs for setting up the funds, crowdfunding sets this up at only a



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small fee and the project is viewed and supported by millions from all over the world (Roebuck, 2011, p. 104). The reward-based method also offers the donors a chance to gain a personal connection with the project they have donated towards and the people they have funded.

## Equity-Based Crowdfunding

Equity-based crowdfunding is a form of crowdfunding where the contributors become part-owners of the company raising funds. Equity-based is not a popular form of crowdfunding since the majority of the projects are not huge companies that donors and people funding the projects can get a stake and own part of (Douw, 2012, p. 60). Most of the projects are by entrepreneurs who do not have shares that the investors can invest in. However, since the enactment of the Act in 2012 this form of crowdfunding has gained popularity with most people seeing it as an investment opportunity for the interested investors in lucrative projects that the investors deem to pick up and be beneficial in a near future. This is offered at very low rates as compared to the market rate since the project owners will need to make their proposal and project attractive to the potential investors through their competitive prices and growth potential in the future (Douw, 2012, p. 60).

Equity-based form of crowdfunding is slowly catching up with the other methods of crowdfunding. It is, however, a safe and viable method to raise money for the company and beneficial for the donor if the company makes profits in the future and they gain from the dividends or distribution. Equity-based crowdfunding can also be used to create a venture finance market. Equity crowdfunding does not only involve the shares as the only forms of securities, but also debt notes, convertible notes, and hybrid forms of equity and debt (see Freedman & Nutting, 2015, p. 5). In addition, there are some forms of partnerships that qualify as securities in equity-based crowdfunding. One of the main attributes of equity-based crowdfunding in creating venture-based market is its ability to connect startup business and the medium businesses to the larger investor community. Equity-based crowdfunding offers a platform to reach out to the companies through a single advertisement on the web. It ensures that the information reaches out to interested potential buyers and sells the business to the investors (Mollick, 2014). The venture space is therefore in ensuring that the investors and the business people meet. In addition, the venture space ensures that people with similar businesses and ideas can interact and advise each other on the best practices and the best ways to improve the businesses. The venture space is not only useful in raising the funds, but also ideas and plans on the best ways to improve the business given that there are other members of the crowd with the same ideas. It can also lead to mergers and amalgamation of two or more different venture businesses since the equity-based crowdfunding targets the business people who are interested in increasing their venture capital either through shares or other securities. The equity-based finance structure has a pool of professional small and large businesses that need a regular appraisal either through funding or through further investments (Steinberg, 2012, p. 113). Economic growth is also a factor that is hugely influenced by the success of the equity-based crowdfunding, since the growth of business companies contribute to the economic growth of the country. Most governments all over the world are taking up the new platforms and legislations have already been passed to ensure that crowdfunding for businesses and individual projects help the larger financial community that is the whole country. The venture finance marketplace has therefore transformed the equity-based crowdfunding concept to rally the support of the government and security legislations since it has been viewed as a milestone and a new trend in the financial sector.



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## Reward-Based Crowdfunding

Credit-based crowdfunding is a method where the donors to a specific project loan out money to the person in the hope of future repayment of the amount owed. This is the safest method of crowdfunding for the donors since in case the project owner defaults in payment of the advanced loans the platform is liable for the payment of the loan to the donor (Tomczak & Brem, 2013, p. 341). Under this method the borrowers submit an amount that they wish to be loaned and the donors interested in the specific project advance the borrower the amount with a promise of repayment at a future date. The platform acts as the intermediary and or surety for the borrower and the donor to ensure that the donor gets the amount back and facilitate the pooling of funds for the borrower. The borrowers find crowdfunding attractive since it has very low or no interest rates for the borrowers and they only have to incur a fee to process the funds by the platform and agree on a flexible payment plan to refund the amount forwarded. In the event that there is any interest to be charged on the amount of money borrowed the borrower sets the interest to be charged that they are comfortable and can guarantee a refund within the stipulated time period (Mollick, 2014). This makes the method attractive for the borrowers since they are not required to pay a minimum or set interest rate that is predetermined and as a result they can guarantee payment. The lenders on the other hand have to evaluate the project for its risks or benefits and potential and establish if they are willing to lend money at the interest rate set by the borrower. The arrangement is similar to that of a bank loans with the main difference being the predetermined interest rates. Whereas in credit-based crowdfunding the borrower sets the interest rates, inviting donors to fund the project in a bank loan the borrower must agree to the terms set by the bank or the authorities involved (Althoff & Leskovec (2015)).

One of the main advantages is that the borrower does not have to give any form of collateral to the lender and they transact only in terms of good faith from the borrower and the donor of the project. The donor funds the borrower in the hope that they will repay the money not because they have a history of repaying or they have presented evidence to suggest that they are capable of repaying the money but only on faith they have on their project. This ensures that the platform eradicates many processes of loan funding and borrowing that would slow the timeline of acquiring a loan. Background checks run by the banks and also the examination of the presented information are a large part of the processing process making it tedious and time consuming. The process also rules out borrowing from poor and new business people that are looking for money to kick start their business and have no collateral or no history to guarantee payment of the amount that they have borrowed. Crowdfunding offers such people a chance to borrow even huge amounts of money without any form of guarantees and guarantors. Credit-based crowdfunding has been immense in eliminating the factors that hinder borrowing and lending since there are none in crowdfunding. The project and presentation of the ideas are the most important aspects of a project if one aims to be funded for a project accordingly. It is therefore advisable for one to lend both their time and resources in the presentation of the project to as many people as possible.

## Donation-Based Crowdfunding

Donation-based crowdfunding is the last method available for funding new initiatives. In this method, funds are raised for an initiative of public interest, although there is no economic benefit to the community financing the initiative. One of the greatest challenges of social entrepreneurs today is accessing startup



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capital, that´s why donation-based crowdfunding makes this method an interesting financing solution. One example of donation-based crowdfunding is the 2008 election campaign of President Obama, the campaign team collected more than $137 million by this method.

One of the risks in a crowdfunding initiative is targeting and unrealistic financing initiative, as crowdfunding platforms charge a larger percentage fee if the target is not met, failing to deliver on the project's promise will negatively affect the project's reputation. Thus, it is very important to engage the potential community into the project and design the project according to their interests. That´s why advertising the campaign is an important part of the crowdfunding process, always keeping costs in mind, it is important to advertise the campaign through several channels and reaching the largest possible potential supporters. Most donations-based crowdfunding initiatives reward donors with something in exchange for their contribution. Typically this is some kind of perk, this is usually the most expensive part of the crowdfunding campaign. The most challenging part of the crowdfunding process is moving from the zero donation phase, as potential donors usually imitate what other supporters did, then a potential donor might be not willing to give funding to a project when no money has been raised yet. Encouraging close friends and contacts to contribute in the initial stages of the campaign will be helpful. The Regional Studies Association (RSA) explains that the most critical zone is when the 10%-50% of the initiative has been funded, as most unsuccessful campaigns fail somewhere in this range. Thus, in order to take the initiative to reality it is essential to push the campaign after the launch with advertising and showing previous donations. In initiatives involving social entrepreneurship like the ones involving this type of crowdfunding it is more important to have the certainty that it is a feasible project, as a poor crowdfunding campaign could harm the reputation of the company and affect future initiatives to get funding. Another important issue to consider is that the amount raised can be affected by declined funds later on coming from credit cards, wrong donations, or fraud.

## 6. Security in E-Banking and Finance

Some factors affect the safety of internet banking and online financial services. These include regulatory body supervisions, customer awareness, and internet infrastructure. On the other hand, according to Chavan (2013), increased use of the internet and mobile services as a new channel for distribution of banking services requires more thought towards security against sham activities. However, this responsibility should not be left to banks alone; Lee (2012) explains that customers and regulatory bodies also have a role in e-banking security. Furthermore, banks do not have any influence regarding the electronic devices and channels used by their customers to perform transactions.

The bank should create a procedure to increase security. Firstly, it is supposed to formulate a secure online banking infrastructure. Then it should ensure the implementation of an appropriate information security policy. Thirdly, the bank should provide a robust monitoring system for fraudulent activities and notify its account holders of any high-risk transactions through SMS. Fourthly, the bank is supposed to offer a two-factor authentication (TFA) protocol for its account holders. The first factor is something like a PIN number, which the customer knows, whereas the second factor is something that the customer will own such as a smart card with a chip authentication (Lee, 2012, p. 8). On the other hand, the customers' responsibility is to ensure that they have enough knowledge regarding the safety tips required in e-banking. For instance, a customer should always stay alert in safeguarding his or her identity as well as limiting public access to personal computers. According to Lee (2012), there are numerous tips for



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safely logging on and off to a computer (Lee, 2012, p. 10). For example, a customer should never use a public computer to access his or her internet banking website. Customers should also close any open tabs and windows in a browser before logging on into e-banking. Moreover, after using the online service, the customer should always remember to log off. In safeguarding their identity, customers should use unique passwords that are difficult to guess. According to Lee (2012), a strong password should have at least six characters with a combination of numbers and letters. Furthermore, it is good for customers to often change their passwords and disable the 'Autocomplete' function in their browsers so that it does not remember previously input data.

Lee (2012) also advises that customers should never leave their TFA devices unattended (Lee, 2012, p.14). Other tips include disconnecting internet connections when not in use, backing up critical data on removable hard drives or Compact Discs, and installing internet security software for real-time detection of intrusions on a customer's computer. The roles of regulatory bodies in e-banking security are also several. According to Lee, regulatory bodies should develop adequate policies that promote customer protection and international cooperation among partners (Lee, 2012, p. 19).

## CONCLUSION

The e-banking revolution has quickly changed the global business of banking. As a result, banks all over the world have reoriented their business strategies in order to encompass the new opportunities offered by online banking. In other words, the banking sector has led global electronic trade in recent years. Internet banking has enabled banks to change strategic behavior, scale borders, and create new possibilities as a result. Furthermore, internet banking has changed banking services towards the neoclassical economic theories of market functioning. Due to this, the market has become transparent and clients can easily compare banking services from different banks. For example, while using the internet, the customer is only one-click away from competitors. Thus, if a client is not satisfied with the products or services offered by one bank, he or she is able to change to a preferred banking partner faster and more easily.

Online investing has tremendously reduced the physical costs of operations. As Williamson (2006) stated, technological advancements in information technology have reduced the costs of processing financial information, whereas use of the internet facilitates transmission of financial information. In fact, this is why online financial services have gained popularity in recent years. In the future, this will ensure that banking rates are friendly as well as encouraging to more innovations regarding the current products and services being offered by banking institutions. In addition, electronic delivery of financial services has enabled banks to meet their clients' expectations and create close customer relationships (Williamson, 2006). Hence, as discussed by Chavan (2013), online banking will eventually triumph over traditional banking in the coming years as more developing nations are now building their economies with specific focus on e-learning, e-commerce, and e-banking.

Online crowdfunding has funded many new companies and initiatives in their initial stages and is substituting the funding of organizations with more online platforms being created. The examination of the risk from both sides, the borrower and the donor, is essential before making an investment or borrowing to make sure that the business is finally successful. The legislation of the Act has enabled the platforms to conduct business better and have a larger crowd since the donors have the backing of the government and the law while engaging in the business.



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Online Crowdfunding has introduced new funding new funding mechanism and rules for news businesses. Most of crowdfunding funds are collected through reward-based platforms, however equity crowdfunding is becoming more popular. It is expected that online crowdfunding will grow in popularity as many new crowdfunding opportunities become available. A new business that seeks funds through the online crowdfunding process comes out stronger as for the questions that has to answer and the scrutiny that it is put under, compared to convince a single angel investor. It is worth mentioning that because a startup does not obtain online crowdfunding does not necessarily mean that the business is not viable. It might be that investors may not be on that platform or perhaps is not the right time. One of the biggest challenges ahead will be communicating efficiently and engaging with investors after successful funding. Investors will possibly be interested in the big numbers and updates instead of the news from daily operations. Investors will be more likely to reinvest if they are kept engaged and the company is looking after them. Creating a mutual interest might foster that investors act as ongoing mentors in the business.

The importance of e-banking and online financial services can be summarized as significant time management, elimination of queues, cheaper costs. Customers are able to make financial transactions any time of the day, and without physical interactions with the bank. Another characteristic of e-banking is rapid and uninterrupted access to information. Furthermore, e-banking allows a customer to enjoy the convenience of carrying out financial transactions from the comfort of his or her office or home.

Security is an important issue in e-banking and finance. Banks have to create the organizational procedure for security. A secure online banking infrastructure is necessary, as well as the implementation of an appropriate information security policy, the bank should provide a robust monitoring system for fraudulent activities. Finally, the bank is supposed to offer a two-factor authentication (TFA) protocol for its account holders.

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## KEY TERMS AND DEFINITIONS

**Angel Investor:** An investor who provides funding for small startups or entrepreneurs.

**Crowdfunding Platform:** Internet platforms which enable companies to advertise over the internet and obtain investments from registered users in return.

**E-Banking:** The performance of banking business through the internet. It is also known as "Internet banking" or "Online banking".

**Electronic Commerce:** A business model that enables to conduct business over the internet.

**Financial Institutions:** An institution that provides financial services to potential clients.

**Information Technology:** It is the use of any computers, storage, networking and other processes to create, store and exchange electronic data.

**Online Security:** Computer security related to the internet involving browsing and network security. It is designed to establish measures to use against attacks through internet.

**Online Trading:** Individual investors buy and sell stocks over an electronic network through a brokerage company.

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# Chapter 92
# Nanotechnology, Long Waves, and Future of Manufacturing Industry:
## Comparative Analysis of European Union, East Asian Newly Industrialized Countries, and MENA Region

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## ABSTRACT

*This study concerns the long wave theory of capitalist development with an aim to discuss and analyze the impact of nanotechnology on manufacturing industry. Long wave theory was asserted by Russian economist Kondratieff and it states the capitalist development with subsequent cycles which last 40 to 60 years each. The theory of Kondratieff was also contributed by other scholars as Schumpeter, Freeman, and Perez. Our research attempts to review how nanotechnology contributes economic growth, and how it changes the structure of manufacturing industry at the eve of the sixth Kondratieff wave. This structure was examined by using comparative case study of European Union, East Asian Newly Industrialized Countries and Middle East and North African (MENA) countries.*

## INTRODUCTION

The 2007-2008 crisis that went down in history as the first global crisis of the twenty first century and qualified as the “great depression”, brought together the debate about the economic growth and industry policies of many countries. Starting from 2008 the American mortgage crisis has transformed into a

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global crisis and hit many national economies. While the world's growth slowed down, industrial production declined owing to both global and domestic demand collapse in many countries. It can be said that world economy has divided into two main economic sides since the late 1990's. One of the sides, the so called surplus economies, consists of national economies which have technology intensive industrial production base and competitive advantages in the engineering industry (automotive, machine, electronics, chemistry) such as Germany, South Korea, China, (albeit China's export depends on less technology intensive sectors); on the other side, the so called deficit economies, consisting of the USA, Southern parts of the European Union (Italy, Spain, Greece, Portugal), and Turkey. It is observed that behind the processes of their growth; are the fund flow and borrowing capacity of households through expanding credit, rather than relying on a successful technology-intensive industry capacity. This financial-based growth inevitability resulted in debt crises in many countries such as Italy, Greece, Portugal, and Iceland.

This debate that is ongoing in academic circles is related to how capitalism will get out from the ongoing stagnant conjecture and how a stable and sustainable economic growth would be ensured in the world's economy by reducing uncertainties after the crisis. While understanding the fact that the stagnancy caused by the crisis, which commenced in the global financial markets and dominated the real economy by expanding in a short period, would last for an extended period caused a questioning of the current industry policies, it accelerated the new industry policy searches that constitute an alternative for such policies as well. Countries are in search of a new industry policy for the revitalization of the industry and for recapturing permanent growth. In today's world where the demands for reindustrialization are increased, this priority is set to render the country's industry policies with the growth targets and base them on a sustainable growth strategy (OECD, 2013). The moving force of this new industrialization process will be the new generic technologies. In the OECD countries, share of the manufacture industry within the national production-added value and employment has been diminishing for the last thirty years. While the industry is losing its competitiveness, service sectors are growing more rapidly. The findings of UNIDO from the data that involve 90 countries in the 1950-2005 period, showed the proportion of the manufacturing industry within the GDP presents the fact that this proportion varied between 25 and 40 percent in the period subsequent to the Second World War in the early industrializing countries and exhibited a tendency toward a rapid decrease after 1980. The findings show that the regression in the proportion of the manufacturing industry in the GDP encountered since the 1980s are being experienced in developing countries (UNIDO, 2013).

It is clear that the crucial factor determining underlying competitiveness and economic growth is innovation. The growth of the GDP is positively related to the growth of the manufacturing sector and the productivity of the manufacturing sector is positively related to the growth of the manufacturing sector as well (Kaldor, 1967; Verdoorn, 1993).[1] Various studies in economic growth and development literature have shown that there is a robust and positive correlation between economic growth and technological capabilities of economy, export performance and industrial productivity (e.g. Stern et. al. 2000; Fagerberg & Verspagen, 2007; Fagerberg, 1987, 1996, 2005). It is important to understand that manufacturing industry is not only the main driving factor of economic growth but also the main source of technological development. After new technologies are firstly applied in manufacturing, they diffuse to other sectors such as services, construction, and agriculture (McKinsey, 2012). Hence surplus economies owing to their own industrial infrastructure have become more resistant against the crisis tides. For this reason, the European Commission recommended reinstalling industrialization plans to reverse the declining role of the manufacturing industry and increase its share of European Union GDP in 2011 as a preventative



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measure to the crisis (European Commission, 2012). The future of European manufacturing industry debate has underlined the necessity and importance of supporting generic technology research areas such as nanotechnology, green technology, and biotechnology.

While growing literature on recent crises focuses on financial market failure, bad governance and wrong policy, few scholars have taken account of the structural roots of global crises (e.g. Šmihula, 2009; Gore, 2010; Devezas, 2010; Korotayev & Tsirel, 2010; Perez, 2009). Indeed; financial boom-bust cycles stemming from financial market failures or lack of sufficient regulations on the market is the conclusion of the crises rather than the cause. Actually, the structural roots of the recent crises should be searched for within long run development dynamics of capitalist economy. Long wave theory is the main way to explain this long run development dynamics. This approach was postulated by the seminal work of the Soviet economist Nikolai Kondratieff. He observed long-term economic fluctuations in cycles of 40 to 60 years (Kondratieff, 1935). This approach was transformed to an analytical and theoretical framework for understanding technological evolution and social change in historic times by Schumpeter and his followers. This study aims to analyze the impact of nanotechnology on the manufacturing industry. Advances in science and technology, especially in material science, microelectronics, information technology, biotechnology and nanotechnology will profoundly affect manufacturing. Our research tries to review how nanotechnology contributes to economic growth and changes the structure of the manufacturing industry on the eve of the sixth Kondratieff wave. This framework is investigated by using a comparative case study of European Union (EU), East Asian newly industrialized countries (NICs) and Middle East and North African (MENA) countries.

This paper will be organized as follows: In the first section, long wave theory from neo-Schumpeterian perspective will be examined. In the second section, the potential impact of nanotechnology on industry and its opportunity window will be drawn. In the third section, the role of nanotechnology research on industrialization strategy will be discussed via the comparative case study of the EU, the East Asian economies and MENA countries.

## LONG WAVES THEORY OF CAPITALIST DEVELOPMENT AND SCHUMPETER'S CONTRIBUTION

The theories that try to explain the capitalist development on the basis of long waves that are rising and falling into the stagnancy and crisis environment in connection with the termination of the postwar expansion period after the 1970s are gradually attracting the attentions of more and more economists. Different from the short term fluctuations referred to as the business cycles, development dynamics of the capitalist economy defined as long waves have become a rapidly growing field of research. According to the fundamental results reached by these different studies, economic development in capitalism forms as the consecutive big waves and the impacts and results of each of these waves expand within an entire period and leave its place in time for the subsequent waves of progress. The conjecture theories asserting that economy navigates with long termed fluctuations with ups and downs and that it has waves consisting of improvement, well-being, shrinkage, and crisis stages that have 40 to 50 years of life were presented for the first time in the article entitled "Long Waves in Economic Life" published by N. D. Kondratieff in 1919 (O'Hara, 1994). These long termed fluctuations can be considered to have consisted of four main periods which are improvement, well-being, shrinkage, and crisis. In 1939, Joseph Schumpeter suggested naming the cycles "Kondratieff waves (K-wave)" in his honor (Schumpeter, 1939).



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Since the late 18th century, economists have empirically proven five Kondratieff waves. The fifth Kondratieff wave ended with the turn of this century, while a new long cycle, the sixth Kondratieff, has begun (Linstone & Devezas, 2012). The sixth wave will likely be focused on emerging research areas such biotechnology, "bioelectronics", nanotechnology and new material sciences (Perez, 2008; Klein, 2005).

Long wave theory was progressed by contribution of Joseph Schumpeter, one of the original social scientist of the twenty century (Fagerberg, 2003, p. 127). He developed an original approach focusing on the role of innovation and entrepreneur in economic life (Schumpeter, 1934). Economic development had to be seen as a process of qualitative change which is determined by innovation in Schumpeter's opinion. Innovation, in his view, as a new combination of existing resource was realized by entrepreneur. Schumpeter's dynamic theory used analyzing long run development of economy as well. According to his theory, K-wave begins with technological innovations, which then become the cornerstones of a prolonged economic upturn (McCraw, 2006). Innovations have clustered in certain industry and trigger new bursts of productivity throughout the entire economy. Productivity of whole economy began to decline because booster impact of innovations ran out. This periodic upward-downward motion of economic activities, so-called long wave, in world economy mainly has been determined by clustering innovation.

Schumpeter has scrutinized the capitalist system within the framework of the non-balance evolutionary process instead of the neoclassic stable fixed state balance approach. Innovation underlies the foundation of Schumpeter's this change dynamic, which is internal with its capitalist development. Innovation is defined as the presentation of the current resources as the new amalgamations (Schumpeter, 1934, p. 66). There are five basic innovation forms that are the source of an economic change.

1. New consumables: development of the new products qualified as the product innovation.
2. New production methods: use of the new techniques in the production qualified as the process innovation.
3. New markets: development of the new markets or new marketing possibilities.
4. New raw material resources: start of utilizing of new resources.
5. New industrial organizations: changes in the form of business conduct qualified as organizational innovation.

Those who realize innovations are the entrepreneurs. An entrepreneur is the person who pursues new products, who is in new searches in terms of the management of the firm, and who explores new markets. The role of an entrepreneur is to renew and remedy a production system by means of utilizing

*Table 1. The Kondratieff Waves*

| | Technological Revolution | Period of technological Revolution |
|---|---|---|
| **1** | Water-powered mechanization of industry | 1780 – 1848 |
| **2** | Steam powered mechanization of industry | 1848 – 1895 |
| **3** | Electrification of industry, transport and the home | 1895 – 1940 |
| **4** | Motorizations of transport, economy and war | 1941 – 1973 |
| **5** | Computerization of economy | 1973 – |

**Source:** Freeman & Lauça (2001, p. 141).



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an invention or a technique that has never been used in general (Schumpeter, 1942, p. 202). Schumpeter's entrepreneurs do not come from a certain class; they constitute a talented minority (Heilbroner, 1999). This elite human type exhibit talent differences within itself. Differentiation of the agents, which ensure technological development, within themselves, constitutes the engine of the technological diversity and evolutionist development. The motive that activates an entrepreneur is profit. Profit is the gain of conducting innovation and obtained by entrepreneurs. In the appearance of innovation, bank loan plays a central role. In addition to the creative entrepreneur, risk-undertaking banker is the most significant element of an economic development (Hanusch & Pyka, 2007, p. 282). There is an inseparable union between the entrepreneur and the banker. According to Schumpeter, internal change dynamics of a capitalist economy is "innovation (reason)", "entrepreneur (subject)" and "bank loan (instrument)" (Gürkan, 2007, p. 254). Schumpeter defines capitalist economy as an unending "creative destruction" process. Every firm within the capitalist system try to increase its market share, and to have a dominant state by means of finding a new design, cost reducing endeavor, a new product, and new inputs as well as of developing new production methods. However, each innovation destroys the monopolist power preceding itself. This creative destruction waves constitute the basic dynamic of the long term development of the capitalist economy. Basic factor underlying the long fluctuations following a trend of decrease and increase in the capitalist development is that while new sectors where the profit shares and investment opportunities are extremely high depending on the innovation aggregations are appearing, the sectors based on the current matured technologies are disappearing in line with their loss of their profitability ratios. From this time, the topic of the causes of long waves remains central in the agenda of the neo-Schumpeterian tradition which is placed itself opposite to neoclassical economics, based on maximization behavior of rational economic agents. This analytical framework has been developed via contributions of neo-Schumpeterian scholars since the beginning of the 1980s.

## NEO-SCHUMPETERIAN TECHNO-ECONOMIC PARADIGM APPROACH

The Neo-Schumpeterian approach expounds the long waves of capitalist development within the framework of the scientific advancement model developed by Thomas Samuel Kuhn, an American physicist, historian, and philosopher of science. According to Kuhn, a stable period that is referred to as a normal scientific period is interrupted by a crisis period and this crisis period allows the inauguration of a new normal scientific period by causing the appearance of a scientific revolution (Kuhn, 1962). The current scientific paradigm defines the rules, standards, and scientific research methods shared by scientists, and create an ambiance of reconciliation for the continuation of the research tradition. Neo-Schumpeterian theory, or the technoeconomic paradigm approach, is a theory that combines Kondratieff's long waves theory with Schumpeter's economic development theory and that focuses within the capitalist development process on technological change (Taymaz, 1993, p. 14).

Techno-economic paradigm approach which focused on long run socioeconomic and institutional change dynamics of capitalistic economy by using K-wave framework was based on this neo-Schumpeterian tradition. Dosi (1982) defines technology paradigm as a "model and pattern of solution of selected technological problems based on selected principle from the natural science and on selected material technologies" (p. 150). This conceptual analysis provides framework to understand how technology change in specific direction, and why this direction transforms. The paradigm thus limits the possible directions technological development may take. According to this approach, institutional environment is



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itself endogenous factor which is determined by technological development. Moreover techno-economic paradigm approach provides theoretical background for analyses long wave in economy and understanding the groundbreaking transformation in society. Changes in techno-economic paradigms may be said to redefine the trajectory not only of the technological and economic spheres but also of the social sphere (Perez, 2008). Each techno-economic paradigm requires a new infrastructure allowing the new technologies to be diffused throughout the economic system while the dominant characteristics of the production system are restructured to incorporate processes that allow new products to be created and distributed. For each paradigm, there are common denominators that influence the behavior of the relative costs, supply and diffusion of new technologies and the organization of production processes (Dosi, 1984). Thus the notions of trajectory or paradigm highlight the importance of incremental innovations in the growth path following each radical innovation. Though it is true that major innovations have a central role in determining new investment and economic growth, expansion depends on incremental innovation (Perez, 1983, 1985, 2002).

According to Schumpeter, every long wave is unique because of the technological newness differences in that period on one hand and of the difference of the historical events such as wars, discovery of gold mines, or famine on the other. However, in the explanation of this long term fluctuations, the most important factor is innovations, which is the engine of capitalist growth source of the profits of the entrepreneurs (Freeman & Soete, 1997). The expression of technoeconomic paradigm contains, as a meaning, the economical selection process among a range of innovations that can be technically realized. In reality, a new paradigm's becoming clear takes relatively a long time (a few decades); expansion of this within the entire system takes longer. This expansion contains an interaction process where, among the technological, economic, and political forces, corporate innovations (or corporate renewals) gain utmost importance (Freeman, 1989, p. 89). For understanding the technoeconomic paradigm change, basic analysis level is the innovations also highlighted by Schumpeter. Some changes stemming from the innovations in their technological systems are so long-ranged in terms of the results they create that they have a substantial impact on functioning of entire economy. These changes form the phenomenon that Schumpeter names as "creative gales of destruction" that constitutes the main axis of his "long cycles in the economic development." Basic power underlying such creative destruction gales is the innovations that intensify in a certain historical period. Innovations are analyzed under four headings (Freeman & Perez, 1988, pp. 45-47):

1. **Incremental Innovations:** They are the minor technological changes that are encountered in the industry and services, that take place in different rations among industries from country to country, and that provide very little continuation. They are the innovations that mainly take place not as a result of the R&D studies but depending on the learning-by-practicing processes and the improvement of the engineering activities taking part in the production process or through the impressions and recommendations of the users.
2. **Radical Innovations:** They are the important and effective technological changes that appear as a result of the R&D activities, that do not exhibit a continuous feature, and that take place unequal among sectors. Even though the radical innovations such as nylon create significant structural changes, their impacts on the generality of the economy are relatively small and local.



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3. **Technological System Changes:** Deep-rooted technological changes causing the formation of the new sectors that affect the different sectors in economy. It stems from the amalgamation of the radical and incremental innovations in the manner that it will cover the organizational innovations affecting one or multiple firms. Synthetic substance innovations, petro-chemistry innovations, and internal combustion motor innovations can be exemplified for such changes.
4. **Techno-Economic Paradigm Changes (Technological Revolutions):** Some technological system changes have substantial impacts on the entire behavior of economy. These types of changes take place by way of the aggregation of the radical and incremental innovations and joint appearance of numerous technological systems as a result of it. Characteristic feature of a technological revolution is not its widespread impact on every branches of economy, not only on some products, services or sectors.

Technological revolutions or creative destruction gales create significant changes on the social structure. In order for these changes to expand along the entire economy, fundamental transformations in the manner of organization of production must be realized. Such technological revolutions cause the occurrence of rapidly shifting production functions for both the old and the new products. The extent of savings to be obtained in the labor or capital cannot be initially estimated completely; but the general economic and technical benefit in the design of the products and production method by means of using new technology become visible well by increasing gradually and new practical rules are also developed gradually. Such shifts in the paradigm make it possible to make a significant spurt in the potential productivity but such spurt takes place initially only in a few leading sectors. These gains cannot generally take place without organizational and social changes in other sectors (Freeman, 1989, p. 90). In order for the new economic paradigm to be superior over the old paradigm, it has to have the factor that can be defined as a group of key inputs that are unique to the new paradigm. These factors must have the following conditions (Freeman & Perez, 1988, p. 48):

1. Low and rapidly decreasing production costs;
2. Possibilities of supply that seem to be endless in the long term;
3. In the entire economy, potential of use in many products and processes

After the new technoeconomic paradigm dominates, it develops beneath a new orbit. Even though technological diversity grows rapidly as a result of the technological revolution, the productivity increase that will appear among the sectors based on the newly emerging technologies has a limit. As long as the possibilities of the new technological paradigm are consumed, profits will fall one by one as the sectors will come down to the level of growth and productivity increase speed will slow down (Taymaz, 1993, p. 15). Loss of productivity by the current paradigm will push economy toward the search of a new paradigm and the system will transit to a new technological paradigm. According to the neo-Schumpeterian approach, capitalist development process consists of five Kondratieff waves that are consecutive to date. Paradigm transitions have impact on the developing countries' industrialization dynamics. In the period of which the current technoeconomic paradigm is stable, corporate constructs will contribute to the development of the system harmonious with the dominant technological structure.

Capitalist development's stagnation depending on the technology matured within the current techno-economic paradigm will cause that a long-wave will enter a regression path decreasing the profit ratios. In the regression stage of the long wave, financialization appears as a historical resort with the purpose



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*Table 2. Seven Stylised Facts of Long Waves*

| Constellations of technical and organisational innovations (1) | Examples of highly visible, technically successful, and profitable innovations (2) | Carrier branches and other leading branches (3) | Core inputs and other key inputs (4) | Transport and communication infrastructure (5) | Managerial and organisational changes (6) | Appr. Upswing (booming)/ Downswing (crisis of adjustment) (7) |
|---|---|---|---|---|---|---|
| **1. Water-powered mechanisation of industry** | Arkwright's Cromford mill (1771)<br>Henry Cort's 'puddling' process (1784) | Cotton spinning<br>Iron products<br>Water wheelers<br>Bleach | Iron<br>Raw cotton<br>Coal | Canals<br>Turnpike roads<br>Sailing ships | Factory systems<br>Entrepreneurs<br>Partnerships | 1780-1815/<br>1815-1848 |
| **2. Steam-powered mechanisation of industry and transport** | Liverpool-Manchester Railway (1831) and Brunel's Great Western Atlantic Steam ship (1838) | Railways and equipment<br>Steam engines<br>Machine tools<br>Alkali industries | Iron<br>Coal | Railways<br>Telegraph<br>Steam ships | Join stock companies<br>Subcontracting to responsible craft workers | 1848-1873/<br>1873-1895 |
| **3. Electrification of industry, transport and houses** | Carnegie's Bessemer steel rail plant (1875)<br>Edison's Electric Power Station NY (1882) | Electrical equipment<br>Heavy engineering<br>Heavy chemicals<br>Steel products | Steel<br>Copper<br>Metal alloys | Steel railways<br>Steel ships<br>Telephone | Join stock companies<br>Subcontracting to responsible craft workers | 1895-1918/<br>1918-1940 |
| **4. Motorisation of transport, civil and war economy** | Ford's Highland Park assembly line (1913)<br>Burton process for cracking heavy oil (1913) | Automobiles<br>Trucks<br>Tractors, Tanks<br>Diesel engines<br>Aircrafts<br>Refineries | Oil<br>Gas<br>Synthetic materials | Radio<br>Motorways<br>Airports<br>Airlines | Mass production and consumption Fordism<br>Hierarchies | 1941-1973/ |
| **5. Computerisation of entire economy** | IBM 1401 and 360 series (1960)<br>Intel microprocessor (1972) | Computers<br>Software<br>Telecommunic.<br>Biotechnology | Chips' (integrated circuits) | Information-Highways | Networks; internal, local and global<br>Flexible specialisation | 1973-??? |

**Source:** Freeman & Soete (1997, pp. 78-79).

of getting rid of the tendency of stagnancy encountered in economy. In this financialization period, in order to overcome the structural stagnancy by means of financial speculation and indebtedness, partial demand expansions are created. These demand expansion waves bring about problems as it is unable to constitute a sustainable growth. These problems expand toward high unemployment, incomplete employment, frequently encountered recessions, collapse of the stock exchange, and deflation. Deepening of the crisis will ensure the transformation of a technological system for the commencement of new increase waves. With the 2008 crisis, the debates regarding the structural roots of the crisis bring the fact that whether we are in the beginning of a new Kondratieff wave into the agenda of the economic arguments. In this context, the impacts of the crisis, the future of the manufacture industry, and whether a re-growth trend based on new technologies exists or not have become an important subject of debate. Another matter of debate is about the countries that might make use of the opportunity windows that will be opened in such a technological paradigm transition period.

Hence, in the following section, the opportunity windows opened by the techno economic paradigm changes and the situation of the countries that made use of it in the transition period before the opportunity (microelectronic revolution) and that are referred to as the Asian Tigers (Taiwan, South Korea, Hong Kong, Singapore) will be briefly presented and their position within the current paradigm change process will be scrutinized in comparison with the EU countries and other developed countries.

## Technoeconomic Paradigm Changes and Opportunity Windows: Rise of Asian Tigers

Perez and Soete's (1988) argument that new technological revolutions and paradigm changes open windows of opportunity that allow developing economies to catch up. These authors propose that the early entry into new techno-economic paradigm is the crucial point for the process of catching up. Within the technoeconomic paradigms, there are the product cycles presented by Vernon that affect developing countries' industrial developments and that make it possible for them to catch up to the developed countries. Depending on the standardization of product technology, comparative superiority will develop for the benefit of the developing countries. In this process, current standard products will be started to be manufactured by the developing countries' industries and this industrial output will open opportunity windows for the countries whose increased potential is developing (Shin, 1996, p. 18). Perez and Soete (1988) assert that the actual opportunity windows that will be a solution for the developing countries' development problems will appear within the technoeconomic paradigm change period. According to the authors, being the one that enters first into the technoeconomic paradigm has critical importance for the developing countries in order to capture what is developed.

The crisis encountered in the 1970s caused the experience of a substantial shrinkage in the developed countries' manufacture industries. This shrinkage intensified especially within the heavy industry sectors. In the developed countries, this deindustrialization phenomenon caused the increase of these countries' export from the developing countries to increase especially in the labor-intense industries (Dicken, 2007; Piore & Sabel, 1984). The phenomenon of deindustrialization within these central countries created an impact toward the development of the industries of the developing countries. Impact of this phenomenon on the spatial distribution of the global production system took place differently. Developing countries exhibited a substantial spurt in these industries as a result of the loss of productivity in the labor intensive sectors within the central countries. While the economic depression within the central countries in general were affecting the developing countries negatively, the NICs of Eastern Asia (Asian Tigers)



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found the opportunity to develop their own industries by gaining particular advantages in the world's market within the global shrinkage age. Depending on the regional integration of labor in Eastern Asia, Japan became the country that had the most dynamic and competitive economy in the 1970s among the developed countries. NICs of Asia were added to the economy centered from Japan and they gained significant advantages in terms of production and growth. On this phenomenon referred to as the "East Asian Exceptionalism", geopolitical features of the world's system in addition to these countries' industry and technology policies they applied were effective.

According to the East Asian Exceptionalism approach, economic slow-down and industrial increase on global regional, national level are differentiating. For example, the economies referred to as the Asian Tigers exhibited a substantial development in exports in the 1960-1988 period and export commodity compositions were transferred to the technology intense goods in the manner that it is not encountered in the other developing countries (Yoo, 1999, pp. 76-77). In this context, behind the process referred to as the East Asian exceptionalism, underlies the fact that they successfully applied corporate arrangements that will support the newly emerging microelectronic-based technologies by making use of the "opportunity windows" created by a Technoeconomic paradigm transition age (Perez, 1985). Especially, South Korea (hence after Korea) terminated the import substitution stage earlier and adopted an export-led development strategy in the 1970s and entered the process of a rapid industrialization with the technology, education, and economy policies managed by a developmental state. In this region, in addition to Korea, Taiwan and Singapore has adopted this strategy and created the miracle of the Asian Tigers. Within the industrialization process, learning is the result of the integration of an overt and covert knowledge. Learning is first stage copycat imitation within the firm. The basic products manufactured at this stage are the products such as textiles, toys, and household goods that are labor intensive but with low technology. This stage basically has four knowledge accumulating mechanisms. These are training, direct foreign capital investments, grand-scale firm constitutions, and experienced technical workforce. Korea started this stage in the 1960s. Second stage is the "creative imitation stage" and shows itself with the expansion of the knowledge-based production. At this stage, knowledge has five basic sources. Formal technology transfer, reverse brain drain, integrated R&D, and universities and public research institutions. Korea started this stage in the 1980s. Exports of consumer electronics, automotive, semiconductor technology products increased during these years. The final stage is "the innovation stage". In the previous stages, knowledge or technology can be used by transferring or purchasing. However, at this stage, creation of knowledge and technology are necessary. At this stage, creation of technology has five fundamental mechanisms. The basic researches at the universities and implementation of the programs for the target by the public research institutions have accelerated the learning process.

Between the years of 1980 and 2000, developing countries' industrial product export growth speed and added value's growth speed they obtained from the world manufacture industry navigated above the world's average. Developing countries' share in the manufacture industry added value, which was 13.3% in 1980, increased to 23.8% in 2000 (Lall, 2004, p. 8). The countries group that increased its share most is the Eastern Asian countries that are expressed to have created a development miracle.

The Asian countries that focused on the technoeconomic transition age on the establishment and development of microelectronic based industries did know how to make use of the opportunity windows created by the transition age. Hence, while their share they received from the world's manufacture industry production is increasing continually and the competitive power increased in the industries based on the information and communication technologies, especially in Korea and Taiwan. On the other hand, as presented in the Vernon product cycle theory, the Latin American countries and the countries like



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Turkey that applied the export of the products with matured technologies whose production was given up by the developed central countries by producing them through the advantages created by the low labor costs failed to make use of the opportunities created by this age of transition.

In order to make use of the opportunities to be created by the New Technoeconomic paradigm; the standards of judgment based on the old paradigm, research practices, and business conduct models are expected to be rendered harmonious with the requirements of the new paradigm. The countries that fulfill this requirements and having a scientific infrastructure focused on the production of technology will make use of the possible opportunity windows that will be opened in this paradigm transition process.

## SIXTH KONDRATIEFF DEBATES: NANOTECHNOLOGY AND FUTURE OF MANUFACTURE INDUSTRY

Nanotechnology, one of the generic technologies at the beginning of sixth Kondratieff, has great potential for economic growth. Some authors has suggested that the nanotechnologies will be part of the next technological revolution because they have the potential to create big changes in technologies, products and industries, with social and economical implications to long term (Perez, 2002). Few new technologies have been accompanied by such expansive promises of their potential to change the world as nanotechnology (Wonglimpiyarat, 2005). Nanotechnology has important implications for most sectors namely medicine, information, energy, materials, manufacturing, instrumentation, food, water, the environment and security as key areas (Kostoff *et al*. 2007). Nanotechnology presents a new revolutionist approach in the fundamental researches (Wonglimpiyarat, 2005; Nefidow, 2002). Investment on the technologies in nano-scale will drive the technological conventionalization defined in macro and micro levels toward the nano-systems. A new paradigm change will reveal the requirement that the old systems must be designed again as a whole. In order to create a sustainable and information-based industry system, it will be obligatory to create a nanoscience-based new research paradigm. Even though nanotechnology is principally similar with molecular manufacture, it is an applied science focusing on studying the innovations of the nano-dimensional matters resulting from the dimension-based phenomena (Roco, 2003). Nanotechnology is related to the real-life implementations of the findings of nanoscience Nanotechnology's impact is so widespread that an excessively absolute definition can be illustrated in the manner that its actual scope is not realistic. Nanotechnology is the total of multiple technologies, processes, and techniques rather than a specific field of science or engineering (Roure, 2013).

The fact that nanotechnology is an interdisciplinary science and its domination of the different areas brought together the cooperation of the scientists from different disciplines and has the potential to impact many areas fundamentally in view of its outcomes.[2] In the forthcoming years, indispensableness of nanotechnology for many fields will be understood better. The added value that will be obtained especially in health, defense, textiles, energy, electronics, and photonics will take part in the market of high products and are expected to pave the way for new sectors (Roco, 2005).

Countries' industries will rise on the technologies and products that are obtained as a result of the rapid nanotechnology researches. In the nanotechnology field, the largest investment in the world is made by the USA. In the USA, national nanotechnology investment was 710 million dollars for 2003, which was increased to 850 million dollars for the first half of 2005. The US is followed by Japan with 650 million dollars and the European Union (EU) with 400 million dollars. Nanotechnology has become a sector that is growing in the entire world like an avalanche. In this field, 20 thousand researchers are studying



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worldwide at present. According to the estimations of the American National Science Academy, the number of the workers who will be working in the nanotechnology production sector in the forthcoming 15 years will be 2 million. The fact that nanotechnology is in the early stage creates substantial growth potential for the countries that will produce and develop this technology (Perez & Dominique, 2008).

Nanotechnology's evolution as a technologic system is presented in the Table 3. While the 2001-2010 period marks a period in which nanotechnology is used more indirectly, it is seen that its use for improving the current products and processes is widespread also in this period. In the period that started subsequent to 2011, we witness that nanotechnology has transcendent the improvement of current product process or industries and started to create new product processes and industries. In this period, the transformation impact of nanotechnology on the industry is gradually increasing (Roco, 2011, p. 433).

When the basic indicators are reviewed about nanotechnology in Table 4, it is seen that the US is the banner-bearer in terms of this technology. And a significant growth in every indicator appears to have been realized from the scrutiny of the basic indicators of the technology in the 2000-2008 periods. The biggest growth takes place in the R&D investments in this technology field and in the patents received (Roco, 2011, p. 429).

*Table 3. Transition between the Two Predominant Phases in Nanotechnology Development, 2000-2020*

| Interval | 2001-2010 ("Nano 1") | 2011-2020 ("Nano 2") |
|---|---|---|
| Measurements | Indirect, using time and volume averaging approaches | Direct, with atomic precision in the biological or engineering domains, and femtosecond resolution |
| Phenomena | Discovery of individual phenomena and nanostructures | Complex simultaneous phenomena; nanoscale integration |
| New R&D paradigms | Multidisciplinary discovery from the nanoscale | Focus on new performance; new domains of application; an increased focus on innovation |
| Synthesis and manufacturing processes | Empirical/semi-empirical; dominant: top-down miniaturization; nanoscale components; polymers and hard materials | Science-based design; increasing molecular bottom up assembly; nanoscale systems; increasingly biobased processes |
| Products | Improved existing products by using nanocomponents | Revolutionary new products enabled by creation of new systems; increasing bio-medical focus |
| Technology | From fragmented domains to cross-sector clusters | Toward emerging and converging technologies |
| Nanoscience and engineering penetration into new technologies | Advanced materials, electronics, chemicals, and pharmaceuticals | Increasing to: nanobiotechnology, energy resources, water resources, food and agriculture, forestry, simulation-based design methods; cognitive technologies |
| Education | From micro- to nanoscale based | Reversing the pyramid of learning by earlier learning of general nanotechnology concepts (Roco, 2003b) |
| Societal impact | Ethical and EHS issues | Mass application; expanding sustainability, productivity, and health; socio-economic effects |
| Governance | Establish new methods; science-centric ecosystem | User-centric ecosystem; increasingly participatory; techno-socio-economic approach |
| International | Form al S&T community; establish nomenclature, patent, and standards organizations | Global implications for economy, balance of forces, environment, sustainability |

**Source:** Roco (2011, p. 433).



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*Table 4. Six Key Indicators of Nanotechnology Development in the World and the US*

| World (USA) | People primary workforce | SCI papers | Patent applications | Final products market (Billion) | R&D funding public + private (Billion) | Venture capital (Billion) |
|---|---|---|---|---|---|---|
| **2000** (actual) | ~60,000 (25,000) | ~18,085 (5,342) | ~1,197 (405) | ~$30 B ($13 B) | ~$1.2 B ($0.37 B) | ~0.21 B ($0.17 B) |
| **2008** (actual) | ~400,00 (150,000) | ~65,000 (15,000) | ~12,776 (3,729) | ~$200 B ($80 B) | ~$15 B ($3.7 B) | ~$1.4 B ($1.17 B) |
| **2000-2008** (average growth) | ~25% | ~23% | ~35% | ~25% | ~35% | ~30% |
| **2015** (2000 estimate) | ~2,000,000 (800,000) | | | ~1,000 B ($400 B) | | |
| **2020** (extrapolation) | ~6,000,000 (2,000,000) | | | ~$3,000 B ($1,000 B) | | |

**Source:** Roco (2011, p. 429).

*Table 5. Nanotechnology R&D Expenditures in the Business Sector (2011 or latest available year)*

| Country | Total nanotechnology R&D expenditures, Millions USD PPP | Year | Nanotech R&D as a percentage of Business Enterprise Expenditure on R&D |
|---|---|---|---|
| **Unites States** | 13.500,0 | 2010 | 4,8 |
| **Germany** | 1.549,3 | 2010 | 2,7 |
| **Japan** | 874,7 | 2011 | 0,8 |
| **France** | 726,9 | 2010 | 2,3 |
| **Russian Federation** | 711,4 | 2011 | 3,5 |
| **Italy** | 233,2 | 2010 | 1,8 |
| **Belgium** | 160,0 | 2011 | 2,7 |
| **Switzerland** | 156,3 | 2008 | 2,0 |
| **Mexico** | 122,8 | 2011 | 4,6 |
| **Ireland** | 51,4 | 2011 | 2,3 |
| **Czech Republic** | 48,5 | 2011 | 1,6 |
| **South Africa** | 31,7 | 2009 | 1,4 |
| **Denmark** | 22,8 | 2011 | 0,5 |
| **Norway** | 22,6 | 2011 | 0,9 |
| **Slovenia** | 11,1 | 2011 | 1,1 |
| **Portugal** | 4,2 | 2010 | 0,2 |
| **Slovak Republic** | 2,3 | 2011 | 0,7 |

**Source:** OECD, Key Nanotechnology Indicators.



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In the evaluation of the countries' current statuses in terms of the nanotechnology, the superiority of the developed countries stands out. In the Table 5, Nanotechnology R&D expenditures in the business sector are presented. According to the data given in the table, the countries that spent most for R&D are the US, Germany, Japan, and Russia. Mexico and South Africa, which will be evaluated later on within the developing countries category, are the countries that make investment on nanotechnology as well. Belgium, Italy, Switzerland, and Czech Republic within the EU are also conducting R&D activities.

In the Table 6, the number of firms active in nanotechnology is presented. The countries where the nanotechnology firms are most intense are the US, Germany, France, Japan, and Switzerland. These countries are also spearheading in terms of the number of the dedicated nanotechnology firms. The USA and Germany, France, Switzerland, Italy Belgium, and Denmark in the EU and specifically Japan in Asia seem to be the countries that have succeeded to establish nanotechnology-based business sector.

In the Figure 1, share of the countries in nanotechnology patents filed under PCT are presented. When examined in terms of the countries and country groups, the USA is by far superior in regards to nanotechnology patents. In terms of the country groups, the EU is listed second. Within the EU, the leading country in terms of the nanotechnology patents is Germany. Within the Asian countries, Japan and Korea are the countries that stand out. The countries group referred to as the BRICS (Brazil, Russia, India, China, and South Africa) countries is rated five in terms of number of patents. Within the

*Table 6. Number of Firm Active in Nanotechnology, (2011 or latest available year)*

| Country | Nanotechnology firms* | Dedicated nanotechnology firms** | % dedicated |
|---|---|---|---|
| **United States** | 4.928 | 575 | 12% |
| **Germany** | 960 | 250 | 26% |
| **France** | 524 | 108 | 21% |
| **Switzerland** | 222 | 65 | 29% |
| **Japan** | 210 | .. | .. |
| **Mexico** | 188 | .. | .. |
| **Italy** | 157 | 47 | 30% |
| **Belgium** | 125 | 14 | 11% |
| **Ireland** | 79 | .. | .. |
| **Czech Republic** | 74 | 27 | 36% |
| **Norway** | 63 | .. | .. |
| **Denmark** | 51 | 4 | 8% |
| **Portugal** | 28 | 1 | 4% |
| **Slovenia** | 11 | 3 | 27% |
| **South Africa** | 10 | 0 | 0% |
| **Slovak Republic** | 5 | 3 | 60% |

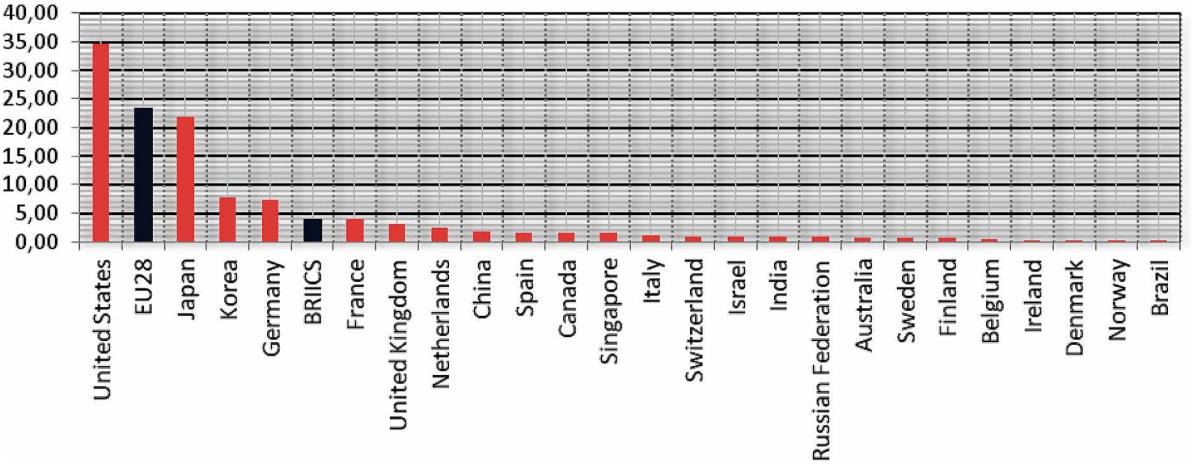
*Nanotechnology firms use nanotechnology to produce goods or services and/or to perform nanotechnology R&D. **Dedicated nanotechnology firms devote at least 75% of their production of goods and services, or R&D, to nanotechnology.

**Source:** OECD, Key Nanotechnology Indicators.



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*Figure 1. Share of Countries in Nanotechnology Patents Filed Under PCT, (2008-10)*
**Source:** *OECD, Key Nanotechnology Indicators.*




EU, the countries producing technology in the field of nanotechnology after Germany are France, the United Kingdom (UK), and the Netherlands. Among the developing countries (DCs), China is the leading country in regards to the number of the nanotechnology patents.

In the Figure 2, "Revealed Technological Advantage" in nanotechnologies is presented. Thanks to an index, technological advantages of countries in nanotechnology and the relative change of these advantages are presented for the 1998-2000 and 2008-2010 periods. According to the results of this index, within the meaning of the country groups, OECD countries and the EU countries are protecting their nanotechnology advantage they obtained in 1998 to 2000. BRICS countries seem to have lost their advantage they had in the 1998-2000 period. On country level, the Asian countries like Singapore and Korea and the EU countries like Ireland, Spain, Norway, Italy, Finland, and the Netherlands increased their nanotechnology advantage, compared to the previous year. The countries like Japan, Israel, Denmark, and China seem to have lost their technological advantages compared to the 1998-2000 period. The USA, Germany, and Russia have protected their technology superiority in terms of nanotechnology. The countries exhibiting most development between the two sub-periods compared are the countries referred to as the Asian Tigers, such as Korea and Singapore, and Spain, Ireland, Belgium, and Finland. Being within the developing countries category, South Africa and Brazil have become the countries that are developing their technological advantage. The technological advantage of these countries that are among the BRICS countries has developed stems from the relative recession of the superiority of the BRICS countries as a whole and from the decrease of technology investments in China and India.

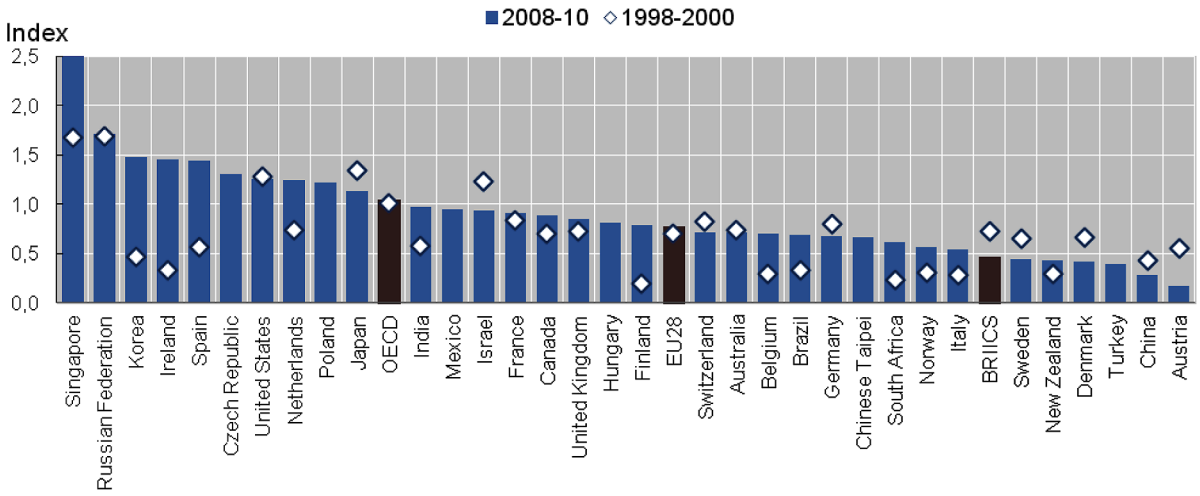
On the subject of nanotechnology, having a role of technological superiority depends on imposed national scale state policies on technology based development. Taking these national programs aimed for the nanotechnology area very dedicatedly starting with a budget is extremely important. There are national research programs in the countries that make technological effort on the topic of nanotechnology.

According to European Commission strategy document nanotechnology open up the possibility of important developments, trend breaks, for a sustainable European manufacturing future. For this reason nanotechnology is accepted as the key manufacturing technology by policy maker in the EU (European Commission, 2003). Over the last decade the EU has established a strong knowledge base in nanosci-



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*Figure 2. Revealed Technological Advantage in Nanotechnologies, (1998-2000 and 2008-2010)*
**Source:** *OECD, Key Nanotechnology Indicators,*




ences. Several EU countries have dedicated research programs from the mid to late 1990s. Despite the fact that some countries do not have specific nanotechnology initiatives, relevant R&D is often embedded within other programs such as the Framework Program (FP). Within the EU, however, Germany and France implement specific national programs aimed for nanotechnology based technological development. Numerous collaborative research projects and other initiatives have already been supported via the EU Framework Programs. While the fourth and fifth Framework Programs have already funded a good number of nanotechnology projects, only in the sixth one nanotechnology has been identified as

*Table 7. Accountability for Public Spending in Nanotechnology towards a Responsible R&D Scheme*

| Country | Funding Programs | Nano-Specific? | Value |
|---|---|---|---|
| **Brazil** | Ministry for Science & Technology | No | R$11.87 million (€4.9 million) |
| **China** | Medium & Long Term Development Plan | Yes | US$38.2 million (€29.1 million) |
| **European Union** | Framework Program | No | €3.5 billion |
| **France** | Nano 2012 Program | Yes | €500 million |
| **Germany** | Nano Initiative – Action Plan 2010 | Yes | €370 million |
| **India** | Nano Mission | Yes | Rs. 1000 crore (€144.8 million) |
| **Japan** | MEXT | No | €470 million |
| **Russia** | Development of nanotechnology infrastructure in the Russian Federation for 2008-2011 | Yes | €693.3 million |
| **UK** | Research Councils UK/Technology Strategy Board | No | €256 million |
| **USA** | National Nanotechnology Initiative | Yes | $2.1 billion (€1.6 billion) |

**Source:** Roure (2013, p. 16).



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one of the major priorities (European Commission, 2004, p. 8). USA is a pioneer country on this technology established a special program called 'National Nanotechnology Initiative'. Brazil and India as a 'developing countries' have special program for nanotechnology as well. R&D programs of several countries were presented in Table 7.

In the period when world industrial production has shifted from west to east in order to attain the objective of re-industrialization which has been proclaimed by European Commission in 2011, Europe should base their industrial infrastructure on the new technologies particularly on nanotechnology. Asian Tigers well evaluated opportunities opened by techno-economic paradigm's process of change in the end of 1970s, which is Fifth Kondratieff's period of rise. Nowadays industrialized Asian countries like Korea, Taiwan, Singapore and particularly Japan using their opportunity utilization experience value a lot investment in technology based researches. The research facilities of Asian countries in nanotechnology were summarized in Table 8.

*Table 8. Nanotechnology Research and Policies in Asian Countries*

| Country | Research policies and activities |
|---|---|
| **Thailand** | Research activities in the field of nanotechnology are intended to respond to scientific and technological needs of Thai government's policy. The National Nanotechnology (Nanotech) is set up with an aim to increase Thailand's competitiveness. The R&D areas of focus include advanced polymer, nanocarbon, nanoglass, nanometal, nanoparticles, nanocoating, nanosynthesis with applications to the industries of automotive, food, energy, environment, medicine and health. |
| **Malaysia** | The Malaysian government sets aside, under the eighth Malaysian Plan, USD 8 million for research in nanotechnology and precision engineering technology. The research projects in focus are nanophysics and nano-chemistry. Malaysia currently invests in high-cost laboratories to incubate and develop new technologies, in an attempt to shift from a traditional manufacturing and assembly base into nano-R&D. |
| **Singapore** | Singapore's government policy in nanotechnology promotion is focused on disk storage and biological fields. In 2002, the National University of Singapore Nanoscience and Nanotechnology Initiative (NUSNNI) was established as an interdisciplinary group to accelerate nanotechnology business. |
| **China** | The Chinese policy involved 'Climbing Project on Nanometer Science' (1990–1999). China has budgeted USD 240 million in less than five years from the central government and approximately USD 240–360 million from local governments for nanotechnology research. The areas of strength are development of nanoprobes and manufacturing processes using nanotubes. |
| **S. Korea** | The Korean government formulated the 'Comprehensive Plan for Nanotechnology Development' in 2001. It also launched a National Nanotechnology Program covering various fields whereby nanomaterials is one of the key research areas. The research projects are funded jointly by the government and the private sector. Major funding agencies are the Ministry of Science and Technology, the Ministry of commerce, Industry, and Energy. The research programs funded by the Ministry of Science and Technology are mostly basic nanotechnology while the Ministry of Commerce, Industry, and Energy supports the research programs close to commercialization. |
| **Taiwan** | Taiwan launched the National S&T Priority Program on Nanotechnology in Taiwan (NPNT) with a budget of USD 680 million for research in nanotechnology. The implementing mechanism of fund allocation is according to a 20C/60/20-rule, with (1) 20% of the funding to be targeted towards nanotechnology with short-term commercial potentials, particularly those help upgrade the competitiveness of the traditional industries, (2) 60% of the R&D resources to be invested in the fields that will impact future competitiveness of current Taiwan hi-tech industries, (3) 20% of the project to be concentrated on the exploratory studies for potential applications that will generate innovative and new technologies. |
| **Japan** | Nanotechnology is ranked as an important field in the Second Science and Technology Basic Plan of the Japanese government. In 2002, the Japanese government announced the promotion of the 'New Industry Development Strategy' to tie nanotechnology and material science with new industries. Japan views the development of nanotechnology as the key to restoring its economy. In addition to government sponsored R&D, large corporations—Hitachi, Sony, Toray, Mitsubishi, Fujitsu, and Mitsui have invested in nanotechnology research. |

**Source:** Wonglimpiyarat (2005, p. 135).



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On the other hand, as the last debt crisis in the EU revealed, based on industrial production between the northern industry decline and southern structural problems are seen as the biggest obstacles in front of the goal of re-industrialization. However, there is no particular united technology program for nanotechnology in the EU. Especially Germany and France, within the EU, promote research activities on the subject of nanotechnology. After these countries, Netherlands, Finland, Belgium, Spain are the countries that invest in nanotechnology.

## SIXTH KONDRATIEFF DEBATES AND OPPORTUNITIES FOR MENA COUNTRIES

MENA countries are included in the group of the oil exporting countries and other developing countries[3]. The basic development indicators for MENA region are presented in the Table 9.

They are upper-middle and lower middle countries except the oil-rich countries like Saudi Arabia, Qatar, Kuwait and Omman (Yousef, 2004, p. 92). The big stagnation of which the world economy has entered into following the 2008 crisis has put on the agenda the discussions about the assertion that the world was at the eve of a new technological revolution. In terms of share of GDP, manufacturing industry in MENA countries is generally quite low. Industrial production in the region has historically been focused on labour intensive and low-tech sectors such as textiles, oil production, food processing (O'Sullivan *et al.*, 2011). When we have a look at the economic situation of the MENA region from the perspective of techno-economic paradigm, we observe that the chances of the countries of this region to make use of windows of opportunities that would be opened up by the age of technological transformation is very low.

*Table 9. Basic Indicators for the MENA Region, 2013*

| Country | Population (millions) | Population Growth (Annual %) | GDP, US$ (billions) | GDP Per Capita (current US$) |
|---|---|---|---|---|
| **Algeria** | 39,2 | 1,9 | 210,183 | 5371 |
| **Egypt** | 82 | 1,6 | 271,972 | 3314 |
| **Iran** | 77 | 1,3 | 398,904 | 4763 |
| **Iraq** | 33 | 2,5 | 222,879 | 6670 |
| **Jordan** | 6,5 | 2,2 | 33,678 | 5214 |
| **Kuwait** | 3,3 | 3,6 | 183,219 | 56,367 |
| **Oman** | 3,6 | 9,2 | 80,570 | 22,181 |
| **Libya** | 6,2 | 0,8 | 75,456 | 12,167 |
| **Morocco** | 33 | 1,5 | 104,374 | 3109 |
| **Qatar** | 2,1 | 5,6 | 202,450 | 93,352 |
| **Tunisia** | 10,8 | 1 | 47,128 | 4329 |
| **Saudi Arabia** | 28,8 | 1,9 | 475,272 | 25,852 |
| **Yemen** | 24,4 | 2,3 | 35,956 | 1473 |

**Source:** http://data.worldbank.org/indicator



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MENA countries couldn't have reached a high rate of growth in the last 30 years. As presented in the Table 10, a significant part of the countries of the region have shrunken instead of growth (e.g. Algeria, Iraq and Qatar). In the recent years on the other hand, the countries of the region have failed to realize a good performance of growth as a result of the crisis conditions prevailing in the world due to the political ambiguity. Hakura (2004) has examined the growth performance of 16 MENA for the period 1980-2000 comparatively with other developing countries. The average rate of the growth of per capita real GNP of MENA countries during the said 20 years period has been zero %. While the oil exporting countries within that group has shrunken at the rate of -1.1% / year, the countries which are not oil exporter have realised an average annual growth of 1.4%. While the average annual growth rate of the East-Asian countries has been 4.1% during the same period, the growth rate of the DCs outside East-Asia has been 0.3%. When we have a look at the facts from the point of view of the performance of growth we may say that the countries of the region have remained far behind especially the East-Asian countries of which economies are based on the export of industrial goods. On the other hand, oil exporting countries have incurred the process which is called "the curse of natural resources"4 in the literature because they have an economy which is based on a single natural resource and has consequently showed a performance of growth which is lower than that of the group of countries which don't export oil. When the countries of the region are analysed among themselves we see that the MENA countries converge towards each other conditionally. An inquiry that covers 22 MENA countries during the 1970-2003 period shows that an absolute and conditional convergence has taken place but the speed of convergence was slow (Sameti et. al., 2010). However it seems quite difficult for the countries in the region which are in the middle-income group, to get rid out of the middle-income trap in which they have fallen. While the countries which have suffered economic crisis have experienced a slight process of recovery albeit below their real potential of growth in the aftermath of 2011, the rate of growth in the oil exporting countries has

*Table 10. Growth performance of MENA Region(GDP per capita-annual %)*

| Country | 1981-2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|
| Algeria | -1,4 | 2,8 | 3,3 | 2,7 |
| Egypt | 2,2 | 1,8 | 2,2 | 2,1 |
| Iran | 0,4 | 3 | 3 | -5,8 |
| Iraq | -2,8 | 9,7 | 7,2 | 4 |
| Jordan | -0,4 | 2,6 | 2,7 | 2,8 |
| Kuwait | -2,6 | 6,3 | 6,2 | n.a |
| Oman | 2,1 | 5,5 | 5 | 5,1 |
| Libya | n.a | -62,1 | 104,5 | -9,4 |
| Morocco | 1,3 | 5 | 2,7 | 4,4 |
| Qatar | -2,3 | 14,8 | 2,6 | 5,6 |
| Tunisia | 1,8 | -0,2 | 4,1 | 2,8 |
| Saudi Arabia | -2,0 | 8,6 | 5,8 | 3,8 |
| Yemen | 0,2 | -15,1 | 2,5 | 4,2 |

Source: http://data.worldbank.org/indicator



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dropped as a result of the decreasing demand in the world economy. When considered from this point of view we see that macro-economic vulnerability increases not only in the crisis-ridden countries but also in the oil exporting countries in the region.

The countries of the region have been at the stage of a series of political changes especially in the aftermath of global crisis. In addition, The Arab Spring which has been triggered by factors such as the high rate of unemployment among the young generation, unfair distribution of income and political degeneration has deeply influenced not only the crisis-ridden countries but also the entire MENA. The Arab Spring has before all else led to the decrease of the rate of the economic growth in the region. Setbacks down to 40% have been observed in the industrial output especially in countries like Egypt and Tunisia. Factors such as political ambiguity and security problem has led to the decrease of the confidence of the investors and consumers and consequently restricted the possibilities of finance. The crisis makes it difficult to maintain the economic stability in the region and leads to the increase of structural problems more intensively. Three important fields of economic problems come to the fore when MENA countries are evaluated as a whole (World Economic Forum, 2013; IMF, 2014):

*a. High rate of unemployment:* Due to the high rate of unemployment of the young generation, increased rate of participation in the labor force is also important from the point of view of ensuring political stability. And for that purpose the rate of growth must be increased. To this end private sector investments must be encouraged since the capacity of the public sector to finance the necessary investments is quite limited. One of the most distinctive characteristics of MENA countries is the population increase. According to the data of World Development Indicators for the year 2014 prepared by the World Bank, MENA countries have the second highest population increase rate with an average annual rate of 1.72 for the period 2000-2012, following Sub-Saharan countries which scored 2.68%. Together with South Asian region MENA region is the second region in the world with the highest percentage of the population of the age group 0-14 in the world, surpassed only by Sub-Saharan region.

*b. Upset of fiscal balance:* Significant increases have been observed in the public spending due to the political ambiguity following the crisis. The increasing public deficit has also increased the need for public borrowing. Because of this situation the financing of the public deficit by the financial markets which are already weak brings about an effect of exclusion on the private sector of the country.

*c. The need for structural reforms:* Structural reforms like the introduction of the arrangements required for establishing a competitive an effective market system, ensuring transparency and effectiveness in the markets as well as increasing institutional quality and the quality of education, deepening the structure and increasing the quality of the financial markets has a vital importance from the point of view of ensuring the economic functioning of these countries gain a healthy structure in the long term.

As has been discussed within the framework of the techno-economic set of values, world economy is in the eve of an age of technological transformation. Only those countries, which have a sufficient technological accumulation, shall have the possibility of making use of the opportunities opened up by this age. Taking into consideration the fact that nanotechnology is one of the leading technologies of this age of transformation, the investments made in science and technology gain even more importance. While countries like USA, Germany, Japan and Korea are ready to enter this age of technology, many developing countries are faced with the risk of remaining behind from the technological point of view due to their lack of a sufficient infrastructure. When the situation of the MENA countries in this age of technological transformation is examined, we see that they are very backward from the point of view of the scientific and technological infrastructure. The basic scientific and technological indicators about MENA countries are presented in the Table 11.



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*Table 11. Science and Technology Indicators for the MENA Region, 2011*

| | Expenditure on R&D (%GDP) | Researchers in R&D (per million people) | High technology Exports (% manufactured export) | Scientific and technical journal articles | Patent Applications (resident) |
|---|---|---|---|---|---|
| **Algeria** | 0,07* | 165* | 1 | 598 | 94 |
| **Egypt** | 0,43 | 524 | 1 | 2431 | 618 |
| **Iran** | 0,78** | 747** | 4 | 6993 | 4051* |
| **Iraq** | 0,03 | 426 | 0** | 68 | n.a |
| **Jordan** | 0,43** | n.a | 3 | 378 | 46 |
| **Kuwait** | 0,09 | 132 | 1*** | 192 | n.a |
| **Oman** | 0,13 | 160 | 3 | 120 | n.a |
| **Morocco** | 0,73 | 864 | 6 | 350 | 169 |
| **Qatar** | n.a | n.a | 0 | 104 | 3 |
| **Tunisia** | 1,03** | 987 | 6 | 978 | 76** |
| **Yemen** | n.a | n.a | 0 | 21 | 7 |

**Source:** http://data.worldbank.org/indicator *2005 **2008 ***2009

Manufacturing industry is not developed in the oil exporting countries since their economy is based on a single natural resource. On the other hand North-African countries like Egypt, Tunisia and Morocco are in a backward state in terms of the indicators of scientific and technological development. Among MENA countries Iran is the most developed country in terms of the indicators of scientific and technological development. Despite being an oil producing country Iran is in a relatively developed state in comparison to other countries in the region in terms of technological accumulation thanks to the investments made especially in the field of nuclear energy and defence industry. When the region is evaluated as a whole we observe that the countries of the region have a weak technological infrastructure. Those countries have no accumulation at all in the field of generic technologies which are accepted as the carrier of sixth Kontradief wave. For that reason the risk for the countries in the region to remain even more behind the developed countries in terms of economic development is quite high since they have no possibility of making use of the windows of opportunities opened up in this period of the change of technoeconomic paradigms.

## CONCLUSION

It is observed that the world is in a global technological revolution process relying on the developments in biotechnology, nanotechnology, material and information technologies. New areas that will be brought about by these generic technologies can be exemplified as cheap solar energy, rural wireless communications, wearable computers, quantum cryptography, hybrid vehicles, improved diagnostic and surgical methods, and green manufacturing. These new technologies will change the production methods and manufactured products in many manufacturing industry fields. The countries that will benefit from a sustainable growth depending upon the manufacturing industry's production will be the countries with the skills of producing, utilizing, and adapting these new technologies. Within the scope of this study,



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first the long wave theory for the capitalist development was scrutinized through a neo-Schumpeterian perspective and secondly, the phenomenon of technoeconomic paradigm change was discussed . Analyses regarding the fact that the phenomenon of big and deepening stagnancy experienced in the 2008 is the harbinger of the end of the current Kondratieff wave and the start of the sixth Kondratieff wave were presented and it was stated that the new growth waves will appear in connection with the generic technologies, specifically nanotechnology.

The change that will be created by the nanotechnology revolution in the near future of the humanity can only be estimated in its essentials. It seems that nanotechnology will leave its mark on civilization in the forthcoming decades and through such developments, divergence between the weak and the strong countries will increase. Nanoscience and nanotechnology are rapidly entering our lives in many different fields. This impact starts with informatics and communication and extends toward the defense industry, space and aircraft technologies, and even molecular biology and genetic engineering. Substantial and surprising outputs and new markets are expected from nanotechnology in the next 10 to 15 years. It is observed that hundreds of nanotechnology research centers and departments at universities are being established in Europe, the USA, and Japan. The expert staff is producing information and technology primarily for the national interests and then commercial interests in a competitive atmosphere in these centers. With nanotechnology, the gap between developed countries and undeveloped countries will grow bigger and bigger in such a manner that it will unlikely to be closed again and the countries that master nanotechnology will become stronger in terms of the level of wealth, national defense, and economy.

Within the scope of the study, the relative positions of enriching Asian countries and European Union countries in regards to nanotechnology were comparatively examined making use of the previous technoeconomic paradigm change (so called microelectronic revolution). A conclusion reached is that apart from these two country groups, the country that is the most ready in such a technological revolution appears to be the USA as it is highly advanced in every measure. Japan is the second country that has technological superiority in terms of nanotechnology. Within the EU, the spearheading country in nanotechnology is Germany. This is due to the fact that it is the production and export base of the EU with a very competitive manufacture industry. Other important European countries in terms of nanotechnology research and investment activities are France, the UK, Switzerland, the Netherlands, Belgium, Italy, Denmark, and Finland.

Korea, Taiwan, Singapore, which made use of the previous technoeconomic paradigm change successfully, appear to be preparing well within this technological revolution. The EU's re-industrialization program will be able to make the dream of a globally competitive Europe possible only if it is based on these new technologies. In the EU, Germany, the trailblazer of industrial production, is the leading country in terms of nanotechnology and the EU's southern countries (Spain, Italy, Portugal, and Greece) that experienced a debt crisis during the 2008 stagnation will have to create a nanotechnology-based industrial structure to reestablish their competitive power within their disempowered industries. If the EU fails to realize this transformation, it seems extremely difficult that it can maintain its competitive position against the Asian economies, primarily South Korea, Japan and China.

It seems difficult for the countries that were unable to catch the industrial and microelectronic revolution in a timely manner to make use of the opportunity window that will be opened within this technoeconomic paradigm transformation period. The ability to seize this opportunity will only be possible by nationally empowering the expert staff, by providing education, and by paving the way for the technological accumulation that will be transferred from one generation to other.



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Among the developing countries, China is in the process of obtaining a significant technological capability for nanotechnology. Thailand and Malaysia, which are accepted as the second generation of newly industrializing Asian countries, are implementing different national projects in regards to nanotechnology. South Africa and Brazil are trying to make investments in this technology even though these investment capacities are limited. On the other hand, the MENA region has no accumulation at all in the field of generic technologies which are accepted as the carrier of the sixth Kondratieff wave. These countries have insufficient scientific and technological infrastructure for utilizing the development opportunities which have emerged from transformation phase of world economy. For that reason the risk for the MENA countries to remain further behind the developed countries in terms of economic development seems to be very high.

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## KEY TERMS AND DEFINITIONS

**Kondratiev Wave:** Kondratiev wave is long termed fluctuations that can be considered to have consisted of four main periods as improvement, well-being, shrinkage, and crisis. It is claimed that the period of the wave ranges from forty to sixty years.

**Manufacturing Industry:** Manufacturing industry refers to those industries which involve in the manufacturing and processing of items and indulge in either creation of new commodities or in value addition.

**Nanotechnology:** Nanotechnology is the manipulation of matter on an atomic, molecular, and supramolecular scale.

**Technoeconomic Paradigm:** Techno-economic paradigm are at the core of general, innovation-based theory of economic and societal development as conceived by Chris Freeman and Carlota Perez. Neo-Schumpeterian theory, or technoeconomic paradigm approach, is a theory that combines Kondratieff's long waves theory with Schumpeter's economic development theory and that focuses within the capitalist development process on technological change.

## ENDNOTES

1 These relationships are also known as "Kaldor-Verdoorn's Law" in development economics literature.

2 The first name who attracts attentions in this regard is Richard Feynman who received Nobel Physics Award in 1965 thanks to his studies in the fields of quantum electrodynamics and the physics of the elementary particles. Richard Feynman says "There is plenty of room at the bottom" in his speech he gave in 1959 in California Institute of Technology, and calls attentions to atomic engineering.

3 MENA countries can be classified in three main groups: *Resource-rich, labor-abundant countries* are producers and exporters of oil and gas and have large native populations, which represent almost the totality of their residents. This group of countries includes Algeria, Iraq, Syria, and Yemen. *Resource-rich, labor-importing countries* are producers and exporters of oil and gas and have large shares of foreign or expatriate residents, who represent a significant percentage of the



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total population, even the majority in some cases. This group of countries comprises the Gulf Co-operation Council (GCC) members (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates) and Libya. *Resource-poor countries* are small producers or importers of oil and gas. These countries include Egypt, Jordan, Lebanon, Mauritania, Morocco and Tunisia (World Bank, 2007).

[4] The curse of natural resource refers to the paradox that countries and regions with an abundance of natural resources, specifically point-source non-renewable resources like minerals and fuels, tend to have less economic growth and worse development outcomes than countries with fewer natural resources. This is hypothesized to happen for many different reasons, including a decline in the competitiveness of other economic sectors, volatility of revenues from the natural resource sector due to exposure to global commodity market swings, government mismanagement of resources or weak, ineffectual, unstable or corrupt institutions.

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# Chapter 93
# Place-Based Subnational Development:
## Unpacking Some of the Key Conceptual Strands and Normative Dispositions

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## ABSTRACT

*This chapter offers a critical theoretically informed and policy-relevant exploration of some of the most prevalent conceptual strands informing place-based development scholarship, discourse, and practice. In doing so, it examines the emphasis on co-operation, open governance, and the assumption that all places have the potential to grow and prosper. Further, it analyzes normative dispositions – namely that place-based modes of subnational development could represent a viable and progressive approach which reconciles pervasive tensions between economic growth and spatial equity. In the process, the chapter identifies four key conceptual strands that characterize place-based development theory and practice.*

## INTRODUCTION

*The starting point of a place-based development policy is the idea that most of the knowledge needed to fully exploit the growth potential of a place and to design tailor-made institutions and investments is not readily available—whether held by the state, large corporations, or local agents—and must be produced anew through a participatory and deliberative process involving all local and external actors. (Barca, McCann, & Rodríguez-Pose, 2012, p. 147)*

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Place-based modes of subnational development are viewed by some as a significant emergent paradigm (OECD, 2011; Tomaney, 2010). Nevertheless, this purportedly "new" paradigm of regional development is in need of greater theoretical attention and conceptual clarification than hitherto (Pugalis & Bentley, 2014). Mendez (2012) credited Winnick (1966) with first employing the concept of place prosperity versus people prosperity to illustrate one of the core tensions in subnational development (including local and regional policy). Nevertheless, the term "place-based" is often used carelessly, such as when the same actors and institutions may adopt it in different settings to mean distinctly different things (Pugalis & Gray 2016). In some interpretations, for example, it is invoked to refer to decentralized or devolved funding and decision-making. In others, for example, place-based development is a codification of emergent practices concerned with bottom-up development, innovation, and multi-level governance. The codification of place-based development, exemplified in Barca (2009), represents a subtle case for investment in active subnational development policies intended to boost growth in highly competitive places as well as those less developed places, such as "lagging regions." In this respect, it is in part a response to "spatially-blind" policy responses, such as those advocated by the World Bank Development Report (2009) "reshaping economic geography" as well as political and other pressures.

Importantly, place-based development is not, as some have interpreted, simply another term for area-based interventions or policy that is in some way spatially targeted (Hildreth & Bailey, 2014). Neither does it posit a policy choice between focusing interventions on people or place (Barca, 2011). Indeed, its proponents argue that place-based development *is* a people focused policy, albeit one that intends to fully account for spatial factors (Garcilazo, Martins, & Tompson, 2010). Furthermore, the adoption of a place-based approach does not preclude the deployment of other, for example, "space neutral" interventions. Simply put, place-based approaches to subnational development, of which there are manifold varieties (Pugalis & Bentley, 2015), recognize that place matters.

With a focus on place-based subnational development, this chapter sets out to assist researchers and policymakers by providing a critical exploration of some of the key ideas and normative dispositions implicit within this increasingly influential approach (promoted by international organizations such as the OECD). The chapter hopes to help clarify some of the thinking lurking behind place-based policy epistemologies and philosophies through identifying four key conceptual strands that are pervasive in dominant notions of place-based development: decentralization, multi-level governance, knowledge and innovation, and institutions. Whilst collectively these strands provide only a starting point for a fuller theorization of place-based development, both individually and collectively they nevertheless offer a useful analytical device for disentangling, distinguishing, and analyzing distinct varieties of place-based development policy.

The approach for explicating foundational conceptual strands of place-based thinking recognizes that attempts to define the notion and practice of place-based development too tightly could limit its effectiveness, diluting the fundamental feature that context of place matters (Pugalis & Bentley, 2014). From this perspective, a primary dimension of place-based modes of local and regional development, and arguably one of its major strengths, is its flexibility. It is for this reason that the chapter seeks to unpack "conceptual strands" rather than a more prescriptive "framework" or "ideal type." Through an exposition of a dominant place-based narrative that has found favor in European discourse, the chapter demonstrates that it is implicitly progressive in its approach. Importantly, place-based development represents an attempt to reconcile policies intended to promote equity (within and between places) and economic efficiency (growth).



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The remainder of this chapter is organized into five sections. The first substantive sections seek to situate place-based development historically in the context of a shift from government to governance, the importance of more flexible or relational understanding of place, and the emergence of subnational development policy that seeks to promote growth over redistribution. Next, the chapter discusses some of the interrelated key conceptual strands of place-based development – decentralization, multi-level governance, knowledge and innovation, and institutions – before exploring the vital normative dispositions of the place-based narrative. The chapter closes with a discussion of some of the key conclusions and policy implications.

## BACKROUND

### From Government to Governance

Place-based development emphasizes flexible policy geographies, the involvement of multiple stakeholders, and multiple levels of governance, and as such can be conceptualized as embodying what is frequently termed "a shift from government to governance." In this sense, dominant discourse associated with place-based forms of development (Barca, 2009, 2011) does not necessarily present an entirely new approach, but rather codifies a number of economic and social development ideas and practices that have emerged over recent decades (Tomaney, 2010). In common with the social sciences more broadly, the theory and practice of development policy has witnessed the emergence of various transition theories of epochal and structural shift in the capitalist system, seen to begin around the mid- to late-1970s. Such a transformation has been theorized in a multitude of ways, often, although not always, complementary, including as a shift from a Fordist to post-Fordist regime of accumulation (Gertler, 1988) or from a Keynesian welfare state to a Schumpeterian workfare state (Jessop, 2002). A vital contention in the context of subnational development is that this shift has witnessed a transition from a system of government to one of governance, engendering state rescaling (Brenner, 2004; Goodwin, Jones, & Jones, 2012; Jessop, 2002). In respect of subnational development, this rescaling of the state has been broadly conceptualized as new regionalism or even new localism (Corry, Stoker, & New Local Government Network, 2002; Storper, 1997). Associated with the proliferation of partnership working and multi-actor collaboration has been the heightened attention afforded to "good" or "effective" governance (Hendriks, 2014), which is increasingly considered to be a decisive factor in subnational development policy, a trend that can be observed globally (Schindler, 2015; Storper, 2014).

The opening up of policy and decision-making to actors outside of the traditional formal apparatus of government has not necessarily diminished the role of the state. Rather, there has been a qualitative shift in state practice. Meta-governance describes the process by which the state in effect *lends* power to other agents while retaining a vital steering role, setting the rules by which governance institutions operate (Jessop, 2002). Meta-governance provides the background to broad changes in approaches to subnational development. This reallocation or lending state power from the center to different scales of government and dispersed actors is vital to an understanding of place-based thinking.



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## From Redistribution to Growth-Oriented Subnational Development

The rescaling of the state and attendant new forms of governance is linked to another central element of place-based thinking – a widespread interest in the "contingent conditions of growth in particular regions" (Martin & Sunley, 1998, p. 202). That is, a growing interest in the locality attributes or spatial factors that influence the development and economic trajectories of particular places, such as cities and regions. Renewed attention and interest in the spatial makeup of particular places reflects a view that previous approaches to development, such as subsidies aimed at attracting foreign direct investment, have failed in their objective to spatially rebalance national economies. This "old" paradigm of subnational development, to invoke the language of the OCED (2009), has been extensively critiqued. One severe shortcoming of old-style development policies was their top-down nature, which tended to neglect or override place-based knowledges, competencies, and attributes in favor of "one-size-fits-all" models. Moreover, old-style development policies have also been lambasted for a preoccupation with "hard" physical infrastructure to the detriment of "soft" interventions, as well as strategies intended to attract (exogenous) mobile investment at the expense of developing endogenous capabilities and capacity. The deficiencies of the "old" paradigm of subnational development has prompted "new" approaches, witnessed for example through a growing interest in bottom-up forms of subnational development policies that are often focused on mobilizing endogenous resources, such as the harnessing of place-based "assets" (of both soft and hard nature). Indeed, the contemporary interpretation of the new economic geography (Krugman, 1998), which prioritizes promoting agglomeration, described by Tomaney (2014) as the "neo orthodoxy," concludes that traditional redistributive policies intended to reduce the concentration of economic activity may have reduced overall national economic efficiency (Gill, 2010). The contemporary agglomeration-driven approach holds agglomerations to be "natural," thus advocating that efforts to stem market-driven growth of agglomerations and promote growth in lagging places are inherently inefficient. A key insight from these debates is that there is necessarily an economic trade-off or compromise between policies that promote efficient economic growth and those that promote equity and inclusion (Martin, 2015).

# PLACE-BASED THINKING: THE INFLUENCE OF EVOLUTIONARY ECONOMIC GEOGRAPHY, INSTITUTIONALIST APPROACHES, AND INNOVATION

Place-based thinking emphasizes the importance of place in the sense of history and relationships with the wider social and economic system. Within this, it emphasizes the role of governance institutions and the value of local knowledge in maximizing endogenous potential. This section discusses some of the key theories informing place-based thinking, particularly ideas around evolutionary economic geography, institutions, and innovation. However, it is important to first unpack the notion of "place," as this is instrumental in shaping place-based thinking.

## Different Understandings of Place

Given its centrality, the concept of place is employed surprisingly loosely in much of the literature on place-based development. Indeed, Barca (2009, p. 4) deployed the notions of "place" and "territory" in an interchangeable manner. Many others researchers and practitioners have assumed that "place" is an



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accepted concept: devoid of contradictions and contestation. Barca discussed relational understandings of geography and the notion of place is informed by a pragmatic, policy-led conception of place:

*In the context of a policy aimed at development, place must be defined as a social concept, a contiguous/continuous area within whose boundaries a set of conditions conducive to development apply more than they do across boundaries (i.e. relative to other places): natural and cultural circumstances and the preferences of people are more homogeneous or complementary, the knowledge of people is more synergetic, and positive externalities and formal and informal institutions are more likely to arise. The boundaries of places are thus independent of administrative boundaries, endogenous to the policy process and can change over time. (Barca, 2009, p. 5)*

From a relational geographical perspective this is potentially problematic. Painter (2010, p. 1094), for example, was critical of attempts to incorporate relational geography and networks into a "taken for granted notion of territory," going on to argue that territory is composed of diverse relations, such as socio-technical practices.

A full engagement with the notion of place calls for theories and practice to engage with global-local interplays (Massy, 2013). More prosaically, relational ideas are considered in conjunction with territorial geographies with the objective of facilitating a fine-grained interpretation of places. However, engaging with relational theories of place does not need to override territorial theories of place. Indeed, they can complement one another (Jones & Woods, 2013). In practical terms, for example, it has been observed that "… boundary setting is still evident and part of the language and practices of governance and institutions" (Pike & Tomaney, 2009, p. 30), even when relational perspectives of place are prominent. Place-based approaches emphasizing relational geographies often do so against a political backdrop of the need to define the territories of places for administrative purposes. It is in this respect that Pike and Tomaney (2009) contended that purely relational accounts risk downplaying the continued importance of territorial boundaries to subnational development.

In practice, pragmatic attempts to account for the relational dimensions of place often deploy the proxy notion of functional economic areas, which are derived from available socio-economic datasets, such as those representing travel-to-work flows or retail catchment areas. Nevertheless, the utility of functional economic area analyses in shaping place-based policy responses is not without significant limitations. Rees and Lord (2013), for example, found that while the bottom-up construction of Local Enterprise Partnership geographies in England was, in principle, based upon functional economic market areas, the boundaries were more likely to be politically negotiated and influenced by historical preferences and alliances. This is consistent with Pugalis and Townsend's (2013) observation on the continuity between these boundaries with that of a series of historical antecedents.

The notion of relational geography raises long-term practical questions of horizontal governance and relationships between subnational development entities working within overlapping geographies. Typically, institutional geographies based upon given definitions of relational and territorial geographies may overlap and even compete for public and private resources or devolved powers (Haughton & Allmendinger, 2008). This is likely to be an important issue to resolve if institutions are to successfully implement place-based strategies with an emphasis on co-operation *within* places. Different relational geographies could be competing or incompatible. For example, technical constructs based upon data, such as travel-to-work areas, will not necessarily correspond with lived experiences of place. Healey (2009) pointed to the problem of multiple interpretations of the "City Region" – not only functional



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economic market or spatial planning areas but subjective interpretations based upon distinct histories, identities and cultural understandings.

In this sense, place-based thinking can be understood as an attempt to incorporate the philosophies and language of relational readings of place; nevertheless, in practice the importance of territorial readings of place often come to the fore. There is a prosaic aspect to this perspective; it is difficult to govern a place of relational flows that is in a continuous process of becoming and is experienced by different actors in different ways. Governance is a pragmatic exercise and is necessarily territorial (Pike & Tomaney, 2009). Furthermore, while economic activity is evidently not bounded to a particular territory, there is compelling evidence that economic activity, and capitalism in particular (Cox, 2013), is fundamentally spatial and has a spatial pull – powerfully illustrated, for example, in the work of Harvey (1989a, 1989b, 1996) and the focus of New Economic Geography on cities and agglomeration in economic activity (Krugman, 1991). In essence, place-based thinking attempts to incorporate a more relational understanding of place and territory into subnational governance and development, but it is fundamentally a territorial policy approach.

## Antecedents to Place-Based Thinking: The Influence of Different Approaches

Evolutionary thinking, the perspective that places develop according to an historical trajectory, is central to the new paradigm of subnational development. Such an approach, focusing on the way that history shapes the future development of places, according to some, is better able to explain the complexities of uneven development (Boschma & Martin, 2007). The idea of path dependency – a biological metaphor describing the way that a system is shaped by its history – continues to be influential with its emphasis on how the long-term development of spatial economies is influenced by proximity to natural resources, technological lock in, or social capital and culture (Martin & Sunley, 2006), and is a particularly influential theory in terms of shaping dominant interpretations of place-based thinking.

Institutionalist approaches also perform an influential role in contemporary subnational development theory and practice, particularly in the context of governance (Pike, Rodríguez-Pose, & Tomaney, 2006). These ideas seek to explain underlying differences in economic growth trajectories of places in terms of variations in the quality and configuration of place-specific institutions, expressed through notions such as "institutional thickness" (Amin & Thrift, 1995; Coulson & Ferrario, 2007). For example, institutions are perceived to influence a place's ability to innovate or adapt to new technology (Martin, 2008). Institutions in this sense can be formal and informal, encompassing routines and conventions as well as governance agencies, and are said to mediate social and economic processes in that they provide stability and predictability, and promote the confidence and trust between individuals that facilitates social and economic exchange (Farole, Rodríguez-Pose, & Storper, 2010). An institutional understanding of subnational development emphasizes the role of place-based institutions' particular ability to utilize local knowledge to develop place-specific and bottom-up development strategies, or to help places adapt to change. These institutional ideas run through the prevalent interpretations of place-based development although, as argued in this chapter, the dominant place-based narrative has an important normative dimension not necessarily shared by institutional approached more broadly.

Ideas around innovation-driven growth and endogenous growth theories also appear to be of central importance in respect of informing place-based thinking. Innovation is argued by many to be the key determinant of growth in a highly developed economy (Aghion & Howitt, 2006). This strain of thinking conceptualizes the building of places' ability to innovate and use knowledge through learning processes



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as crucial to economic development (Barca, 2011). Closely associated ideas of "regional innovation systems" and "learning regions" developed in part as attempts to understand spatial disparities in innovation (Farole, Rodríguez-Pose, & Storper, 2010). There are different interpretations of these ideas but they share an interest in technological infrastructure, such as universities and business research and development facilities, and their mediation through formal and informal institutions. This emphasis on the vital role of knowledge and innovation is a core component of place-based thinking.

Institutional ideas and learning theories continue to be the subject of fervent debate – they are relatively heterodox and have been criticized for a conceptual and empirical vagueness (Pike, Rodríguez-Pose, & Tomaney, 2006). Endogenous growth theories share a focus on the importance of innovation, but develop the concept within the context of an orthodox economic model. Its emphasis on tapping into or releasing potential within all places contributed to the shift in focus in regional development policy away from the redistributive donor/recipient model (Pike, Rodríguez-Pose, & Tomaney, 2007) and towards growth-oriented approaches aimed at all places – successful as well as lagging (Scott & Storper, 2003). From this perspective, the purpose of subnational development policy is to raise the performance of *all places* (not only lagging places) rather than ameliorate disparities through redistribution – a principle that underpins place-based thinking.

## FOUR CONCEPTUAL STRANDS: A PRIMER FOR A FULLER THEORIZATION OF PLACE-BASED DEVELOPMENT POLICY

This section introduces four key conceptual strands that are pervasive in dominant notions of place-based development, and which can be used to disentangle and identify different varieties and interpretations of the approach. These strands have been extracted, formulated, and reformulated based upon a close reading of the dominant European place-based narrative (for example, Barca, 2009; OECD, 2009). Collectively, the four strands are not intended to provide a definitive place-based development conceptual schema. Indeed, it is hoped that they will perform a primer for a fuller theorization of place-based development policy. Moreover, the importance of each conceptual strand will be contingent on the characteristics of particular contexts. Hence, these strands are not prescriptive, but are intended as analytical devices to help inform theory development, empirical analysis, and policy crafting.

### Decentralization

The status of decentralization within a place-based approach to development and governance requires careful consideration. The dominant European place-based narrative was initially articulated as an agenda for implementing European Union (EU) regional development policy (Barca, 2009) and assumes a degree of decentralized decision-making reflecting existing governance structures within the EU. At the same time, the EU place-based narrative does not assume that decentralized decision-making is an ultimate goal or end in itself.

While the principle of decentralized policy development and decision-making is central to place-based thinking, the perspective is somewhat skeptical of the transformative power of decentralization or devolution. Central to this reasoning is the recognition that there can be weaknesses in a "localist" methodology – the most frequently cited being rent-seeking[1] local elites and inappropriate or weak local institutions (Barca, 2009; Barca, McCann, & Rodríguez-Pose, 2012; Hildreth & Bailey, 2014). By



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definition, the approach also assumes/posits weakness in national governments' ability to implement policies for places (Hildreth & Bailey, 2014). One interpretation of this is a form of meta-governance, known as "conditional localism" (Hildreth, 2011), whereby the decentralization of policy responsibilities are contingent on centrally-imposed conditionalities. More positively, a place-based approach would involve partnership through multi-level governance in order to reach a democratic consensus. This might mean some form of deliberative democratic process. However, as Bentley, Pugalis and Shutt (2016) have argued, the national regime of meta-governance is vital – that is, attempting to implement a place-based approach in one place without the support of the central state is likely to prove challenging.

Despite the reservations discussed above, decentralization of governance capacity is often deemed to be a precondition of place-based approaches into order to provide the freedom, flexibility, and fiscal capacity required for a place-based development strategy. In the simplest sense, national governments are likely to lack the detailed and nuanced understanding of place, such as its history and economic potential (Hildreth & Baily, 2014). However, not all interpretations of a place-based approach see decentralization as a sufficient condition for success or an end goal of development that will axiomatically result in better development outcomes. From a place-based perspective, places require the institutional and financial capacity to govern, which would imply that the mere decentralization (or transferring) of responsibilities is insufficient, especially in the context of weak or dysfunctional institutional environments. As Deas (2013) found, when lobbying for greater devolution, local elites do not always prioritize increased democratic accountability as part of the process. In addition, evidence for the economically transformative effect of devolution and decentralization is unclear (Rodríguez-Pose & Gill, 2005). It does not necessarily follow that devolved leadership leads to the more nuanced elements of a place-based approach – for example, open co-operative governance institutions and policy that is rooted in a deep understanding of place, its potential, and path dependencies. Importantly in this context, the principle of subsidiarity holds that a decision should be taken as closely as possible to the people it effects. In practice this means a presumption that organizations should only perform those activities that cannot be performed more effectively at a lower level. In place-based development, the principle of subsidiarity applies to *tasks* rather than sectors. That is, functions of governance are not necessarily decentralized in their entirety; rather, different levels of government take on different tasks in a system of multi-level governance.

## Multi-Level Governance

Multi-level governance can be seen in the context of the shift to meta-governance where the central state "lends" powers to different levels and partnerships, including subnational governance institutions. National governments continue to play an active role, steering or setting the rules for other institutions and retains control of most macro-level policy. Subnational institutions, such as local development bodies or regional development agencies, are perceived as appropriately positioned to influence the supply side of the economy and facilitate structural change, and this is argued to become more important if the objective is to take a higher value, innovation-led path (Pike, Rodríguez-Pose, & Tomaney, 2007) to development, rather than one of low-cost flexible labor.

Conditionality, as discussed earlier, within a multi-level governance framework also remains an important aspect. Higher levels of government will continue to set the framework within which subnational institutions operate, and the characteristics of the framework or mode of national governance are likely to determine or constrain subnational governance institutions capability to act. Clearly, this



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interpretation of the place-based approach is open to criticism from those who argue that successful development calls for greater devolution or, more straightforwardly, that democratic decentralization is desirable in its own right.

Multi-level governance is understood to be important as a means of addressing weaknesses at the local *and* national level (Hildreth & Bailey, 2014). Given the primacy that place-based thinking affords to knowledge, it is argued that national government is unlikely to possess the necessary deep understandings of places, such as their path dependencies, economic weaknesses, culture, politics, and endogenous potential. From a different perspective, there may be long-run weaknesses at subnational scales that prevent effective policy development – for example, inappropriately configured local institutions of policy capture by ineffective and/or rent-seeking local elites (Harvey, 1974; Stone, 1989). Indeed, given that it is predicated upon building on the knowledge and capabilities of its beneficiaries, a place-based approach brings with it the risk of institutional capture by coalitions of vested interests or of encouraging rent-seeking. This risk is explicitly acknowledged in the literature, and multi-level governance has been posited as a mitigation of this risk (Barca, 2009; OECD, 2009). More positively, multi-level co-operative governance with local and national actors working together is seen as essential in facilitating innovation and endogenous development (Barca, 2011).

In a more prosaic sense, subnational governance institutions are likely to be necessary if places are to have some influence over non-localized policies, such as education (Parkinson & Meegan, 2013). Alternatively, multi-level governance itself introduces the risk that exogenous institutions or actors – particularly central government – will dominate the decision-making processes. The implication is an extremely thin form of place-based development. For example, in examining the developing configuration of subnational economic growth partnerships in England, Peck, Connolly, Durnin, & Jackson (2013) found that Whitehall departments and national agencies continued to perceive place-based institutions as mechanisms for delivering national priorities. This tendency, taken together with the ability of central government to set the agenda, suggests that effective place-based strategies require positive intention on the part of the center to collaborate in implementing place-based governance and development strategies – that is, a mode of governance that is conducive to place-based development approaches (Bentley, Pugalis, & Shutt, 2016). Tomaney (2010) cited the success of a shift in governance structure and the introduction of strong accountable subnational institutions in promoting regional development in Sweden. The Västra Götaland region was created through merger of existing smaller territories and given a greater level of autonomy via an elected assembly. "Regional Growth Agreements" were introduced, aimed at bringing together regional knowledge bases with existing economic activity, for example through better university/industry knowledge transfer. While direct cause is always difficult to establish in economic development, by the mid-2000s performance in the region had improved and the rate of R&D investment was exceptionally high.

## Knowledge and Innovation

For Barca (2011), assumptions about the nature of knowledge provide the crucial distinguishing feature of a place-based approach. Endogenous growth models suggest that low levels of human capital and low innovation capacity are vital factors in limiting growth potential (Farole, Rodríguez-Pose, & Storper, 2011). The European place-based narrative assumes local knowledge to be vital for innovation and endogenous growth, and that the goal of public policy is to uncover or stimulate new knowledge via the interaction of local and external actors (including private and social sectors) through multi-level



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governance institutions (Hildreth & Bailey, 2013). Importantly, place-based thinking observes that that this knowledge is essentially contingent and partial and not readily available to local or national actors, including central and local government, or private sector firms. The approach follows Hayek (1945) in the view that actors' access to knowledge is inevitably imperfect and that individuals and institutions will have only a fraction of the total knowledge available. It follows from an economic development perspective that no individual actor or agency, including state institutions, will necessarily "know best." Importantly, however, while the classic Hayekian critique of government builds on this understanding to argue that markets represent the most effective (or least inefficient) means of aggregating knowledge and preferences, the place-based approach posits a central role for all tiers of government institutions in facilitating the co-ordination of actors in a process of innovation.

Emphasis on locally produced knowledge leads to the closely related policy of smart specialization (Foray, 2015) – argued to be close to Rodrik's (2004) understanding of "industrial policy as a process of discovery requiring strategic collaboration between the private sector and state in unlocking growth opportunities" (Hildreth & Bailey, 2013, p. 242). Smart specialization involves strategies to invest in innovation that draws upon existing local (embedded) knowledge – the approach is distinctively place-based and emphasizes an awareness of local path dependencies (Marlow & Richardson, 2015). By way of example, Bailey, Hildreth & de Propris (2015) highlighted the value of local knowledge and local actors in promoting innovation and industrial clusters in the West Midlands region of the UK, where a "Niche Vehicles Network" facilitates collaboration around new technologies in small-scale automotive production. They argued that a central government department would lack the local knowledge and capacity to facilitate such locally tailored initiatives.

The primacy accorded to knowledge in place-based development leads the place-based approach to prioritize impact assessments of policy interventions. This is in part because the codified place-based approach was commissioned and formulated to underpin the 2015–2020 round of the European Structural and Investment Funds (ESIF). Critics have argued that development policy in Europe has suffered from a lack of serious and systematic evaluation of what works (Barca, 2009). These ideas raise a number of practical questions around the potential for place-based development strategies. The theoretical literature is not clear on the form and process through which places might stimulate and aggregate knowledge. Furthermore, it is not clear how, if at all, a place-based strategy might differ substantially from previous attempts to facilitate endogenous local innovation.

## Institutions

"Institution" as a concept has a particular and, sometimes, shifting meaning in subnational development literature. In the first instance, institutions are taken to be formal social arrangements and practices such as property right and the legal system, alongside informal social practices such as social norms and personal contacts (Rodríguez-Pose, 2013), in many ways the essential subject matter of sociology (Durkheim, 1964). In this sense, basic institutional weakness can hinder development. One example is hampering access to education or encouraging patronage in the distribution of public resources. This understanding of institutions as social norms and practices is crucial to place-based thinking, although there is limited agreement on how to increase institutional capacity in this sense (Rodríguez-Pose, 2013). At the same time, in practice, while some have argued that institutions cannot be equated with organizations (Storper, 1997), much of the literature on subnational governance and development tends to concentrate on institutions as formal governance organizations (see, for example, Tomaney, 2014).



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Storper (1997) has argued that successful local economies are likely to be rooted in the local social and institutional fabric, whilst Farole, Rodríguez-Pose and Storper (2011) posited that the relationships between institutions and the wider community is vital in the pursuit of economic growth. This conception of institutions is at the core of place-based thinking. Tomaney, for one, argued that:

*…effective institutions make a significant contribution to the process of regional growth because of their key role in the interpretation and mediation of broader economic contexts and through their leading role in shaping and coordinating incentives for investment and enterprise. (Tomaney, 2014, p. 131)*

Place-based thinking emphasizes the role that "open" governance institutions can perform in marshalling diverse stakeholders, including individual and institutional actors in the public, private, and social sectors. Importantly, subnational institutions are vital to the task of stimulating, uncovering, and bringing together the knowledge and ideas understood to be necessary for innovation and endogenous development:

*There is … a need for public action to establish a process through which the knowledge and preferences of all those living in a place are elicited and aggregated and the decisions made and their effects submitted to scrutiny and public debate. (Barca, 2009, p. 23)*

The notion of open, democratic institutions at the heart of place-based governance, working to aggregate the preferences of all stakeholders, underscores the normative nature of the dominant place-based narrative. The approach draws upon and echoes ideas of deliberative democracy and participatory governance exemplified in Fung, Wright, and Abers (2003) and implicit in Habemas's (1984) theorization of communicative action.

The principle of open democracy appears to be paramount to the articulation of the dominant European place-based narrative, but is not a necessary element in all interpretations of place-based thinking. For example, Parkinson and Meegan (2013) used the term somewhat more broadly, retaining the emphasis on endogenous potential but within an interpretation of "placed-based" that is more about devolution and decentralized leadership and decision-making without the emphasis on the open democratic process to accompany it. This distinction is potentially significant, given that the principle of democratic inclusivity contrasts with discussions of some forms of place-based governance that have been described as "post political" (Zizek, 1999). For example, some such as Deas (2013) have argued that devolved decision-making (i.e., notionally closer to the population it most directly affects) does not necessarily engender decision-making that is more open or democratically accountable. Questions of democratic deficit and transparency are part of ongoing debates internationally concerning subnational development, meaning that the central role that the codified place-based narrative envisages for open, participatory institutions is a core characteristic of the approach.

The centrality of open governance and democratic accountability to the conception of placed-development set out here raises important practical questions around the institutional characteristics necessary to successfully facilitate such an approach. Governance institutions, particularly those concerned with local and regional development, have been characterized in terms of "hard" and "soft" spaces (Haughton & Allmendiger, 2008). Hard spaces of governance are the more visible institutions of govern*ment* and are more likely to hold statutory duties around, for example, service delivery, consultation, and equality legislation. In terms of subnational development, policymakers often perceive these hard spaces to



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be "slow, bureaucratic and rigid" (Haughton & Allmendiger, 2008, p. 143). Next to this, soft spaces of governance represent "alternative administrative geographies" (Haughton & Allmendiger, 2008, p. 143), sometimes operating out of the public eye and addressing particular issues. In a positive sense, soft spaces can complement hard spaces, particularly in efforts to achieve "soft outcomes" such as building partnerships. In this respect such "spaces" could be an important part of a place-based approach. At the same time, the somewhat fuzzy lines of accountability raise some important questions associated with matters of democratic accountability, which sit uncomfortably with an approach built upon the principle of open democratic institutions.

Soft governance spaces are perceived to be agile; that is, they are in theory flexible to changing development contours. Hence, they can be more readily dissolved, adapted, or reformed to meet the needs of particular policy initiatives or places. However, Pugalis and Townsend (2013) found striking similarities between the territories of "new" spaces of soft governance and that of antecedents, which raises questions around the flexibility or newness of such arrangements. Yet Pugalis and Townsend (2013) suggested that this partial continuity could also be interpreted as evidence of the malleability of soft spaces.

The place-based emphasis on relational interactions (within and beyond defined territorial envelopes) raises further questions around the notion of hard and soft institutions and "appropriate" scales of governance. There are particular issues to resolve around whether notionally more accountable hard institutions would be sufficiently flexible to deal with the dynamics and multiplicity of "place" that a place-based development strategy would entail. This in turn relates to questions around multi-level governance and the national mode of governance. Under a governance system where the center continues to steer or set the rules of the game (Jessop, 2002), it follows that subnational governance institutions' ability to facilitate or impede place-based development strategies will be to a large extent constrained or steered by the national mode of governance (Bentley, Pugalis, & Shutt, 2016). That is, subnational governance institutions and their ability to act must be viewed in the context of the broader system of governance.

## THE NORMATIVE DISPOSITIONS OF THE PLACE-BASED META-NARRATIVE

Having identified and analyzed four conceptual strands informing the dominant place-based development narrative, this section begins to draw out some of the normative dispositions and tensions in place-based thinking. There is tension in the sense that place-based development represents and attempts to reconcile economic growth and spatial equity; the approach holds that all places have potential for economic growth, but is simultaneously presented as a way to stimulate growth in "lagging" places. In part, the place-based approach seeks to do this by framing the debate in terms of places' potential wherein a key cause of underdevelopment and, therefore, to some extent spatial disparities is the failure of particular places to make full use of their resources and economic potential (Farole, Rodríguez-Pose, & Storper, 2011). Therefore, place-based development policy should seek to facilitate places' ability to maximize their own endogenous economic potential. In this sense, a key normative disposition of the place-based meta-narrative is that the responsibility for the development trajectory of particular places, in part at least, rests with the actors and institutions coming together to produce that place. Thus, placed-based policies are open to capture by neoliberal agendas that seek to individualize responsibilities, which has witnessed an erosion of the welfare state in many countries and other trends, such as the "pushing down" of cuts to public sector budgets (Peck, 2013).



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Place-based thinking can be understood in part as an attempt to address the problem of spatially uneven development (Pugalis & Bentley, 2014); indeed, within the European Union it informs European Union subnational development policy. In the simplest sense, place-based development, particularly in the dominant European narrative, aims to maximize a locality's endogenous economic potential via informal and formal democratic institutions. In this sense it builds on long-standing ideas around the importance of endogenous growth and the role of place-based actors in uncovering and mobilizing economic potential. This emphasis on the importance of local institutions in mediating outcomes in different places suggests improved outcomes are likely to be achieved in lagging or economically less successful places with policies designed to trigger and support institutional change. This leads to a policy focus on building institutional capacity.

The focus of place-based thinking on spatial disparities indicates a prominent normative dimension. Pike, Rodríguez-Pose, and Tomaney, (2007) have contended that development theory and practice is necessarily normative, in the sense that it cannot be a technical task to be separated from underpinning principles and values such as equity and democracy. This position differs markedly from much contemporary development theory and practice that interprets development and governance as a technocratic, even apolitical, exercise (Tomaney, 2014). The dominant place-based narrative is normative in the sense that its underpinning values are close to those discussed by Pike, Rodríguez-Pose and Tomaney (2007) when arguing for development that is holistic, progressive, and sustainable.

Reflecting Sen's (1999, p. 127) argument that development should follow an "integrated and multifaceted approach," the primary objective of holistic development is concerned with balancing economic growth with alternative outcomes – for example, social, environmental, and cultural. This reflects an emergent trend: from the 1960s onwards, elements of regional development practice began to take a more social or community-led approach that in contemporary theory and "dominant economic focus" has broadened further to encompass "social ecological and cultural concerns" (Pike, Rodríguez-Pose, & Tomaney, 2007, p. 1255). Progressive development is concerned with achieving social and spatial equity and is usually underpinned by critiques of neoliberal capitalism, advocating a central role for public institutions where "public discussion and social participation within a democratic framework are integral" (p. 1263). From this perspective, governance institutions are encouraged to intervene in markets for the common good, and development should avoid negative zero-sum strategies such as inter-territorial competition or "place wars." Importantly, development should be specific to place, sensitive to the "conditioned by cultural values, institutions, and prevailing modes of social and political mobilisation" (p. 1264). Sustainable development is concerned with equity in the sense that it is long-term in the way it considers natural resources – it also encourages the identifications of structural problems and where they fit with place specific assets and solutions.

Place-based thinking takes many of the principles and ideas sketched out in this chapter – institutional economics, theories of innovation and learning, endogenous growth – and aims to codify them into an implicitly progressive approach to subnational development. In this sense, the codification of and advocacy for a particular place-based approach could represent an attempt to claim or employ the concepts of place and decentralized governance for progressive ends. It attempts to do so by providing a framework for action, based upon the principle of open democratic institutions facilitating the mobilization of endogenous potential.

The codified and implicitly progressive place-based approach is distinguished by its fundamentally optimistic view of the role of governance – one that might be characterized as modernist in its underpinning values and philosophy. It advocates that subnational development outcomes can be improved by



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active and deliberate intervention by government and governance institutions. This stands in contrast to market-first, minimal interventionist, or supply side strategies that have been said to characterize neoliberal approaches. Such approaches typically seek to "create the conditions" for growth or facilitate labor mobility via time-honored interventions such as infrastructure investment or theoretically space neutral measures around spatial planning and skills. Conversely, Tomaney (2014, p. 132) asserted that institutional/place-based thinking emphasizes the "constructive role of the state … in shaping patterns of development" – implicitly for progressive ends.

## CONCLUSION

Place is a contested concept in the social sciences and policy discourse. Yet it is often deployed in research and practice in a straightforward manner that neglects this contestation and, thus, richness. Guided by philosophies that assert that place matters in manifold ways that transcend social, economic, environmental, and cultural domains, a "new" paradigm of subnational development has been observed that is said to be informed by place-based thinking that seeks to account for the particularities of place. How places are understood, articulated, and thus produced matters, generating important policy implications. In the simplest sense it is important that subnational institutions identify policy "issues," derive policy "solutions," and make decisions in a manner that is cognizant of the matter at hand. In other words, there is no single, fixed scale or geography when pursuing a place-based methodology. Whilst the territory of the governance mechanism might be more or less fixed, this should not necessarily constrain the geographies and spaces of action and intervention.

Different approaches to development variously conflict or concur on the nature of the contemporary economy and the role of subnational governance institutions. However, while there are crucial differences in their interpretation, a core point of agreement is on the continued or growing importance of place in a globalized economy (Barca, 2011). A contemporary space-neutral approach sees a primary role for policy in facilitating natural economic agglomerations with predominantly supply side interventions, such as transport investment, education, and land use planning. Place-based approaches start from the position that subnational development policies, whether direct or indirect, are spatially sensitive, even though some forms of policy purport to be "space neutral"; spatial agglomeration always has policy as well as market causes. In this respect, place-based thinking echoes longstanding theorizations of the relationship between the economy and society (Polanyi, 1945), implicitly arguing that economic activity is necessarily embedded in society and for the impossibility of "natural" economic phenomenon free of political influence. A place-based approach can be distinguished by its "thinking" vis-à-vis place particularities, including the weight it accords to history (or path dependency) and, crucially, its normative concern with spatial disparity.

The chapter has situated place-based thinking historically as part of longer term trends – specifically a posited structural shift from government to governance and a concurrent and associated rescaling of the state. The chapter has also demonstrated that place-based approaches have recent antecedents in subnational development theory and practice, many of which it draws together or "codifies" (Tomaney, 2014). Informed by predominant theories guiding place-based thinking, four key conceptual strands have been identified, which help to realize the dominant articulation of place-based development policy.

The four conceptual strands are summarized as follows:



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- The process of decentralization can empower subnational actors and it is often considered to facilitate the scope for engendering "bottom-up" development strategies that are attuned to the "local" specificities of places. However, from a place-based perspective, decentralization is not in itself sufficient and there remains an important role for exogenous and distanciated actors, which could help to temper the risks of the "local trap," including parochial decision-making.
- Multi-level governance working is promoted as a means of enhancing vertical and horizontal co-ordination and policy integration. Multi-level governance also serves to facilitate effective oversight at the lower level – addressing weaknesses in local elites and the possibility of rent-seeking behavior. In this respect, the dominant place-based narrative is not a straightforward devolution policy, and conditionality remains important.
- Local knowledge is thought to play a central role in mobilizing endogenous potential and innovation. One high-profile practical policy manifestation of this principle is the closely related concept of smart specialization.
- Open, democratic institutions are considered to perform a vital role in bringing together local and national actors in an effort to access and aggregate this knowledge.

This chapter has argued that the dominant place-based narrative is normative, sharing many similarities with "progressive" modes of subnational development, such as those advocated by Pike, Rodríguez-Pose and Tomaney (2007). The dominant place-based approach can be viewed as an explicit attempt to reconcile tensions between equity and efficiency with the duel stated objectives to reduce "inefficiency" and "persistent social exclusion" (Barca, 2009, p. XI). It advocates achieving this through policies that build place-based institutional capacity to take advantage of or mobilize untapped endogenous potential. Equity and efficiency are often characterized as conflicting – some perceive a trade-off between policy that aims to improve the position of poor places and policy that is intended to boost economic growth (Martin, 2015), but from a place-based perspective the terms of the debate and the assumption of a trade-off are incorrect (Mendez, 2012). Equity and efficiency are reconciled by the pursuit of growth-oriented policies in lagging places with the key rationale being that national governments routinely underestimate the contribution that the least productive regions make to economic growth. Related to this is the contention that the fostering of major economic agglomerations should not be a primary growth strategy, and that agglomeration is "neither a necessary nor a sufficient condition for high growth" (Barca, 2009, p. 18).

From a practical policy perspective, place-based thinking holds that the objectives of subnational development policy are to facilitate places maximizing their resources and to promote social inclusion. The former should stimulate the latter, alongside social policies and space-neutral policies to boost skills, connectivity, and labor mobility. Hadjimichalis and Hudson (2014) have suggested the drift away from concern about uneven development is in part explained by an obsession with studying successful places, with a view to replicating their success elsewhere in the form of, for example, high-tech clusters or a large creative class. Martin (2015) has contended that less energy has been directed into understanding the path followed by less successful places. Rather than seek to replicate a successful policy, a place-based approach would begin with the aim to gain a deeper understanding of a place's history, including its relationship with other places and the wider economic system as a whole.



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## ENDNOTES

[1] In economics, rent-seeking is behavior aimed at extracting value from assets rather than engaging in productive activity. For example, this might involve land owners seeking to increase the value of their property by lobbying/influencing governance institutions to implement particular policies, such as fiscal incentives to invest in a particular area or providing infrastructure that will increase the value of nearby property.

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