



WP/19/27

# IMF Working Paper

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## The Use of Data in Assessing and Designing Insolvency Systems

by José Garrido (dir.), Wolfgang Bergthaler, Chanda DeLong, Juliet Johnson, Amira Rasekh, Anjum Rosha, and Natalia Stetsenko

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**IMF Working Paper**

Legal Department

**The Use of Data in Assessing and Designing Insolvency Systems**

**Prepared by José Garrido (dir.), Wolfgang Bergthaler, Chanda DeLong, Juliet Johnson, Amira Rasekh, Anjum Roshia, and Natalia Stetsenko<sup>1</sup>**

Authorized for distribution by Yan Liu

February 2019

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**Abstract**

To date, the use of empirical data in insolvency law analysis has been sporadic. This paper provides a conceptual framework for the use of data to assess the effectiveness and efficiency of insolvency systems. The paper analyzes the existing sources of data on insolvency proceedings, including general insolvency statistics, judicial statistics, statistics of insolvency regulators and other sources, and advocates for the design of special data collection mechanisms and statistics to conduct detailed assessments of insolvency systems and to assist in the design of legal reforms.

JEL Classification Numbers: K10; K40; K41; K42; Y10

Keywords: Bankruptcy, Insolvency, Statistics, Assessment of Laws; Law Design

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<sup>1</sup> We are extremely grateful for the guidance and support received from Yan Liu. We are also grateful to Sebastiaan Pompe for the excellent comments received on the subject of judicial statistics. Finally, we want to thank Maxime Lemerle from Euler Hermes for providing valuable information on EH's insolvency heat map.

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## I. INTRODUCTION

**For a long time, insolvency legislation, as most legal reforms, has been designed without a proper empirical foundation.** Isolated from developments in other areas, insolvency law, and creditor-debtor law in general, is still designed in most countries without the support of detailed data on the actual performance of the system, or the issues experienced in its application.<sup>2</sup> Likewise, in the assessment of insolvency systems<sup>3</sup>: there are qualitative assessments, based on compliance with international standards or customized indicators, but there are virtually no assessments of insolvency systems based on empirical data. Although qualitative methods have their use, they should not substitute for reliable quantitative data. The assessments and design of insolvency regimes should be based on relevant statistics, thereby providing the infrastructure for sound policy decisions<sup>4</sup>.

**This paper represents a first step towards the development of data gathering systems that will support the analysis of insolvency regimes.** Analysis based on empirical data is invaluable in the design of insolvency reforms. The paper provides a critique of current methodologies for analyzing the effectiveness and efficiency of insolvency proceedings; and surveys various statistical systems and country experience. It also includes a preliminary set of guiding principles with respect to the data collection systems that countries should establish to assess and design their insolvency systems, while recognizing the inherent limitations of all data systems and varying country circumstances. This paper is targeted at governmental institutions which supervise insolvency proceedings, policy makers, insolvency practitioners and advisors, as well as academics.

**The paper is structured as follows:** The first section presents the conceptual framework for the use of data in the measurement of efficiency and effectiveness of the insolvency system. The section distinguishes between standards, indicators, and data, and their different potential in providing a basis for the analysis of insolvency systems. The second section describes the existing sources of insolvency data (general insolvency statistics, judicial statistics, statistics produced by regulators and other entities, NPL surveys), as well as their gaps. The third section enunciates the key characteristics of a proposed system, designed to generate specific insolvency statistics. The fourth section concludes.

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<sup>2</sup>“The most significant thing about the role of empirical research in bankruptcy policy has been its insignificance” (Sullivan, T. A., Warren, E., and Westbrook, J. L., 1987, at 195).

<sup>3</sup> For the purposes of this paper, “insolvency systems” and “insolvency regimes” should be treated as equivalent expressions and refer to the insolvency legislation and the institutional infrastructure.

<sup>4</sup>See Norwood, J. L., 1995, at xvi: “In a democratic society, public policy choices can be made intelligently only when the people making the decisions can rely on accurate and objective statistical information to inform them of the choices they face and the results of the choices they make”. See also Connors Frasier, J., 1996, at 322.

## II. CONCEPTUAL FRAMEWORK FOR THE USE OF DATA

**Gathering data represents a fundamental step towards the assessment and design of an insolvency regime.** Hard data is essential for evidence-based policy-making.<sup>5</sup> Relevant data provides the empirical foundation for the identification of issues and subsequently, formulation of changes to the law<sup>6</sup>. However, data by themselves are just isolated pieces of information –data only have value within a conceptual framework. With respect to insolvency, the concepts of effectiveness and efficiency help to define the scope of data collection.

### *1. Effectiveness and efficiency of insolvency systems*

**The definitions of effectiveness and efficiency in the insolvency context can be derived from the general systems theory.** From a general point of view, effectiveness refers to the achievement of the objectives of the system, whereas efficiency is determined by the relationship between inputs and outputs. *Effectiveness* is a measure of the extent to which the insolvency system achieves its intended objectives. *Efficiency* is the measure of the extent to which the insolvency system achieves those objectives with the minimum use of resources.<sup>7</sup> Another way of understanding the distinction is that effectiveness focuses on the achievement of objectives, irrespective of the amount of resources used. Efficiency, in contrast, can be defined as the input-output ratio:<sup>8</sup> the greater the output for a given input or the lower the input for a given output, the more efficient the activity is. Although the distinction between output and outcome is often blurred, it is useful to distinguish between outputs –immediate results of an activity- and outcomes –effects produced by the outputs, closely connected to the objectives of the system.<sup>9</sup>

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<sup>5</sup> See Alliance for Useful Evidence: <https://www.alliance4usefulevidence.org/>. The alliance is a network that “champions the smarter use of evidence in social policy and practice”. Together with Nesta (an innovation charity), the Alliance published the guide “Using Research Evidence”, 2016: “*Research evidence can help you understand what works, where, why and for whom. It can also tell you what doesn’t work, and you can avoid repeating the failures of others by learning from evaluations of unsuccessful programmes*” (*ibid.*, at 4).

<sup>6</sup>IMF staff have made this point in the context of the global financial crisis: see Laryea, T., 2010, at 13: “Data are key to diagnosing the debt problem. Data are needed to assess the relative dimension of the corporate debt problem (in absolute terms and relative to household debt problems) and the implications for creditors, in particular bank balance sheets (...). Experience demonstrates that obtaining reliable data relevant for a debt diagnosis can be a challenge. *In any case, the temptation to make policy prescriptions in the absence of data supporting diagnosis of the problem should be resisted*” (emphasis ours).

<sup>7</sup> See Skyttner, L., 2005, at 77. An additional concept is that of *efficacy*, which refers to a measure of the extent to which the system contributes to the purposes of a higher-level system of which it may be a subsystem. In this regard, it is clear that the insolvency system connects with higher-level systems: the general legal system and the economic and financial system.

<sup>8</sup> On the use of input/output analysis in legal systems, see Luhmann, N., 2013, at 32.

<sup>9</sup>This terminology derives from evaluation and results-based management frameworks: see OECD, 2002.

**Measuring the effectiveness and efficiency of insolvency procedures begins with establishing the desired *objectives*, or *outcomes* of an insolvency system.** Generally, the primary outcome -or objective- of an insolvency system is the *allocation of risk among participants in a market economy in a predictable, equitable and transparent manner*.<sup>10</sup> The achievement of this outcome plays a critical role in providing confidence in the credit system and fostering economic growth for the benefit of all participants. A close second is the protection and maximization of value for the benefit of all interested parties and the economy in general. These are high-level objectives of an insolvency system, which also point at the integration of insolvency within the broader legal and economic system.<sup>11</sup> However, an insolvency system may have other explicit objectives which may be defined by special political circumstances: among these, it is worth mentioning the preservation of enterprises or jobs.<sup>12</sup>

**An efficient insolvency framework liquidates non-viable businesses and rehabilitates viable ones in a way that minimizes costs and maximizes value.** A well-functioning insolvency system liquidates businesses that are not viable, reallocating their assets to more productive uses in the economy. Alternatively, the insolvency system supports rehabilitation, which provides enterprises the opportunity of restructuring their debts and their operations to return to solvency, when the going concern value of the business is higher than the liquidation value.

## ***2. Standards, indicators, and data***

**Determining the effectiveness and efficiency of an insolvency system requires the evaluation of both quantitative and qualitative elements.** As insolvency systems seek to achieve complex objectives, the characteristics and the volume of data required to assess their effectiveness and efficiency can be significant. In addition, there are features of the system which need to be assessed qualitatively. For this reason, the analysis of insolvency systems relies on the interplay of standards, indicators, and data.

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<sup>10</sup>See IMF, 1999.

<sup>11</sup> The efficiency of the insolvency system can be analyzed at different points in time: *ex ante* efficiency (before the occurrence of financial distress); *interim* efficiency (when it becomes public knowledge that a firm is in financial distress) and *ex post* efficiency (when there is a costless sharing of information and efficient decisions are taken on the basis of complete information). See Franks, J. R., Nyborg, K. G., and Torous, W. N., 1996; Blazy, R., and Chopard, B., 2004. For the purpose of our analysis, we focus on efficiency *during* the insolvency procedure, where efficiency translates into a quick resolution of financial distress, maximizing recovery.

<sup>12</sup> In some cases, there are explicit references to the objective of the insolvency system in the insolvency law itself (examples include France, Germany, and China, among others). Different objectives (for instance, specific references to the continuation of enterprises) may impact the assessment of efficiency (see Blazy, R., et al., 2009). In the end, the discussion of efficiency needs to be integrated with a discussion on political economy: see Hart, O., 2006.

**International standards reflect best practices endorsed by the international community and are used for qualitative assessments.** Standards represent the consensus of international bodies on the core features of legal or regulatory systems. In the area of insolvency, the international standard is composed of the recommendations included in the UNCITRAL Legislative Guide on Insolvency Law and the World Bank Principles on Effective Insolvency and Creditor Rights Systems<sup>13</sup>. Assessments of compliance with the international standard can be conducted on a stand-alone basis (Insolvency and Creditor Rights ROSCs<sup>14</sup>) or as part of a general assessment of the financial sector (FSAP). These qualitative assessments identify shortcomings of insolvency systems and are particularly valuable when both the laws on the books and the actual insolvency practice of the jurisdiction are analyzed together. However, these assessments are not based on empirical data, and some aspects of the standards are so broad that compliance with them does not ensure that the system will be effective. In theory, increases in the quality of the system should translate into increased efficiency, but only empirical quantitative data can evidence that effect.

**Indicators are designed to provide a general assessment of a system, based on a limited amount of information.** Indicators are designed to be standardized: they use data collected in a specific manner and format<sup>15</sup>. Indicators incorporate variables that are easily measured and quantifiable and can be used to represent more general qualities that are not easily measurable, such as the general efficiency and effectiveness of the system. By *selecting* certain variables and integrating them, indicators transform “facts” into norms or “standards”.<sup>16</sup> Therefore, indicators are not only descriptive, but also normative. It is important that the design of indicators (assumptions, variables and methodology of measurement) be done carefully and with integrity to avoid “gaming the indicator” – i.e., trying to improve numerical values/performance against indicators by selective measures, without addressing the underlying problems in a system.

**Indicators can be qualitative or quantitative.** Qualitative indicators are similar to standards: as a matter of fact, a frequent critique of qualitative indicators is that they end up becoming a prescriptive tool, without the legitimacy or representativeness of international

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<sup>13</sup> The latest version of the standard was prepared in 2011 (available at [http://siteresources.worldbank.org/INTGILD/Resources/ICRStandard\\_Jan2011\\_withC1617.pdf](http://siteresources.worldbank.org/INTGILD/Resources/ICRStandard_Jan2011_withC1617.pdf)). The World Bank has further revised its principles and UNCITRAL has added new recommendations to the Legislative Guide, but a new version of the combined standard has not been issued yet.

<sup>14</sup> ROSC stands for Report on the Observance of Standards and Codes. This term designates the assessments of compliance of states with the international financial standards.

<sup>15</sup> See Davis, K. E., Kingsbury, B., and Engle Merry, S., 2012; 2015.

<sup>16</sup> See Nelken, D., 2015, at 318.



standards. In some cases, these qualitative indicators are based on selective aspects of international standards, resulting in a more simplified and less nuanced assessment.<sup>17</sup>

**Quantitative indicators are based on key variables that provide the basis for a general assessment of the insolvency system.** There are certain key indicators that can provide a general image of the system. A robust theoretical work led by Djankov et al. (2008) identified three key indicators that can inform a general assessment of the efficiency of an insolvency system.<sup>18</sup> These indicators (time, cost, recovery rate) provide the basis for a qualitative efficiency assessment derived from quantitative data, where efficiency of the insolvency system is understood as maximum recovery for creditors, and specifically, for secured creditors.

**The quantitative indicators developed by Djankov et al. to measure the efficiency of an insolvency system are the following:**

- *Time* is generally defined as the period from the moment the debtor defaults until a solution is found to its insolvency –typically, the liquidation or the reorganization of the business. A related indicator to measure the efficiency of credit recovery is *time to payment*,<sup>19</sup> which measures the estimated duration, in years, of the time from the moment of the debtor’s default to the point at which a secured creditor receives payment.
- *Cost* includes the costs of the insolvency proceeding, reported as a percentage of the value of the estate, and borne by all parties, including *inter alia*, court/bankruptcy authority fees, attorney fees, insolvency administrator fees, accountant fees, notification and publication fees, assessor or inspector fees, asset storage and preservation costs, auctioneer fees, government levies, and other associated

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<sup>17</sup> For instance, the additions to the Doing Business indicator “resolving insolvency” in 2014 included a list of questions based on the insolvency standard, to provide a simple qualitative analysis. However, those questions are basic and select only a few aspects of the insolvency standard –key aspects of an insolvency framework are entirely missed in the exercise. Similarly, the OECD has developed an insolvency indicator which adds certain aspects to those included in Doing Business. The indicator includes the time to discharge for entrepreneurs or the existence of special procedures for SMEs (see Adalet McGowan, M., and Andrews, D., 2016; Adalet McGowan, M., Andrews, D. and Millot, M., 2017). Responses to these basic questions hardly provide any evidence of the quality of an insolvency system. The EC has used responses to key questions to assess systems as part of the process to prepare its proposals (see Carpus-Carcea, M., et al., 2015).

<sup>18</sup>These indicators were defined in the pioneering work by Djankov, S., Hart, O., McLiesh, C. and Shleifer, A., 2008. The analytical tools developed in the paper were eventually incorporated, with adaptations, in the “Doing Business” methodology. The set of papers underpinning the Doing Business methodology is closely related to the “law and finance” movement: see La Porta, R., Lopez-de-Silanes, F., Shleifer A., and Vishny, R. W., 1997.

<sup>19</sup>See Djankov, S., Hart, O., McLiesh, C. and Shleifer, A., 2008.

insolvency costs. Costs of the process can be included upfront or at the end of the process.<sup>20</sup>

- The *recovery rate* measures the return that creditors receive in the insolvency process. It recognizes that the recovery for creditors is not only determined by the time and cost of the procedures, but, given that a debtor’s enterprise is generally worth more as a going concern than if it is sold piecemeal, the recovery rate is also affected by the outcome of the process itself. Therefore, the indicator seeks to account for the loss of economic value caused by dismantling the enterprise in liquidation procedures.

### Box 1. Theory and practice in the “*Resolving Insolvency*” Indicator

**Doing Business** seeks to measure the efficiency of individual country’s insolvency frameworks. In its original formulation, the “*closing a business*” indicator sought to provide information on the three main indicators identified by Djankov et al. (2008): time, cost, and recovery rate. In 2014, the indicator was revised to include a list of qualitative questions based on parts of the international insolvency standard.

**The insolvency indicator in the Doing Business report is not based on actual, empirical data.** Instead, the resolving insolvency indicator is based on a hypothetical case (the insolvency of a hotel located in the main business city of the country) underpinned by a set of standard assumptions, to facilitate comparison across countries. Insolvency specialists from each country provide responses to the hypothetical case,<sup>21</sup> and this is the source for the numerical information that is incorporated in the Doing Business report.

The methodology includes some interesting –and questionable– assumptions:

- There are too many creditors to reach an out-of-court restructuring agreement;
- However, the recovery rate is calculated only with reference to the secured creditor in the case. All other claims are ignored in the analysis;
- The secured creditor is fully secured, to the point that the value of its claim coincides exactly with the value of the collateral. There are no unencumbered assets; and
- By definition, liquidation cannot yield more than a 70 percent recovery rate for the secured creditor. However, if there is a reorganization plan, the recovery rate is always 100 percent.

<sup>20</sup>The analysis of bankruptcy costs is complicated because there are direct costs of the bankruptcy process (described in the text), but also indirect costs: see Altman, E. I., 1984. These include lost sales, loss of suppliers, employees or investment opportunities, and their measurement is much more difficult. See also Senbet, L., and Seward, J., 1995, at 930: “*Bankruptcy costs may potentially emerge directly in the form of court fees involving third party advisors to the firm, such as lawyers, tax accountants, trustees, etc., or indirectly in the form of costly disruptions in the relationship of the firm with customers, suppliers, and employees*”.

<sup>21</sup> See European Commission (ECFIN), 2016, at 7.

**The assumptions in the indicator reflect certain biases:** there is a clear bias in favor of systems where the interests of secured creditors are given total preeminence, to the detriment of any other creditors or parties to the insolvency process. The methodology also favors systems that privilege reorganization plans over other solutions –including the sale of the business as a going concern- irrespective of the specific economic outcome. The limitations inherent in this methodology require caution in reliance on the indicator.<sup>22</sup>

**Indicators such as time, cost, and recovery rate should rely on actual data.** The theoretical underpinnings of the Doing Business insolvency indicator did not translate into the design of a system that would produce a result based on actual data (see Box 1). Unfortunately, the results of the Doing Business surveys are converted into numerical parameters that only have the *appearance* of actual data,<sup>23</sup> Gathering actual data on time, cost, and recovery rates (for all categories of creditors) would permit a more reliable assessment of the efficiency of insolvency systems.

**In addition, data collection allows for more granular assessments than indicator-based efficiency.** Even if time, cost and recovery rates are based on actual data, these indicators are signs of overall performance, but data can offer deeper insights on the working of the insolvency system, for instance by identifying bottlenecks or misuse of procedural mechanisms. Findings backed by reliable data offer objectivity, credibility and accountability.

**Data collection and statistics support analytical work, rather than replacing it.** Any attempt to measure inherently qualitative concepts in numeric terms is challenging. Extensive data collection requires reliable mechanisms that can be costly, but even the best statistical results have interpretative limits. Data and statistics cannot offer details about the context, history, externalities or country-specific circumstances. Information on the underlying policy problems or the policy changes that could result in improvements to the system requires expert and independent analysis.

### III. CURRENT DATA SOURCES TO ASSESS INSOLVENCY SYSTEMS

**There are various sources to access data relevant for the assessment of insolvency system.** This section reviews the existing mechanisms to collect and organize data related to insolvency systems. A general perception is that insolvency data are scarce. Several cited factors explain the scarcity of insolvency data: expense, time lags, and the need for

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<sup>22</sup> In this regard, see IMF, 2017b, at 8 (referring to the internal review to assess strengths and weaknesses and ensure proper use of third-party indicators).

<sup>23</sup> “The image is rather artificial, for it naturally does not reflect many of the facts which influence the insolvency proceedings in the real world [...]. This is benchmarking, not ascertainment of reality” (Arltová et al., 2016, at 28).

interdisciplinary expertise to analyze the data.<sup>24</sup> But there are several important sources of insolvency data in many jurisdictions (see Fig. 2). The problem is that none of these sources provides a full response to the existing needs for tools to assess and design insolvency systems. Although some of these data sources are evolving to include increasing amount of information, there are gaps in the information produced, mainly because the purpose of the existing data sources tends to be different from the assessment and design of the insolvency system.

**The type of data collected, the methodology used, and the agencies entrusted with the task will be determined by the purposes for which data collection is undertaken.** Data collection for insolvency cases could focus on: (i) general statistics on the number and type of insolvency proceedings with the aim of monitoring economic trends; (ii) resolution of non-performing loans and the rate of credit recovery by banks; (iii) measuring the effectiveness and efficiency of the insolvency system (including measuring the impact of reforms against a baseline); and (iv) other purposes (e.g., for budgetary resource allocation for infrastructure and institutional improvements, key performance indicators for courts.). Of course, (i) to (iv) are not mutually exclusive: where data is collected for any one purpose, it could overlap with data collected for other purposes (for example: the indicator of *time* may be relevant for assessing the efficiency of the insolvency law as well as for judicial statistics).

### *1. General insolvency statistics*

**Most advanced economies collect general statistics on insolvency.** As part of the analysis of a country's overall economic health, national statistics agencies publish data on the establishment of new businesses, the survival rate of new businesses, and insolvency filings.<sup>25</sup>

**There are numerous examples of general insolvency statistics.** A selected number of examples of insolvency statistics developed at the national level (see Box 2) show certain common traits<sup>26</sup>:

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<sup>24</sup> Sullivan, T. A., Warren, E., and Westbrook, J. L., 1987, at 217-220.

<sup>25</sup> Examples of insolvency statistics go back to the 19<sup>th</sup> century, although the quality of those records is variable: see Marriner, S., 1980. The statistical analysis of court records, going as back as to the 17<sup>th</sup> century, presents serious challenges: see Deshusses, F., 2008.

<sup>26</sup> The authors have analyzed many other national insolvency statistics, including Denmark (see e.g. Statistics Denmark, Documentation of statistics for Bankruptcies 2018 Month 3, available at <https://www.dst.dk/en/Statistik/dokumentation/dokumentationofstatistics/bankruptcies>); the Netherlands (see e.g., CBS Statline, available at <https://opendata.cbs.nl/statline/#/CBS/en/>); Finland (Bankruptcy, available at [http://www.stat.fi/til/konk/index\\_en.html](http://www.stat.fi/til/konk/index_en.html)); see Business Restructuring Proceedings, available at [http://www.stat.fi/til/ysan/index\\_en.html](http://www.stat.fi/til/ysan/index_en.html)); and Hungary (see e.g., KSH Statistical Reflections, (April 20, 2018), available at <https://www.ksh.hu/docs/eng/xftp/gyor/gaz/egaz1712.pdf>).

- These statistics focus on the economy, not on the functioning of the legal system. The reports provide data on industry, region, years in operation, type of legal entity, turnover, and employment in the insolvent enterprises. In addition, the evolution of the number of insolvency cases is taken as an indicator of the evolution of the real economy. When the statistical reports cover the insolvency of individuals, they tend to include demographic details as well.
- Some statistical reports offer data that are useful in an overall assessment of the insolvency system: for instance, some reports offer data on the length of cases, and the proportion of cases that end in liquidations, as opposed to cases ending in reorganizations or other solutions preserving enterprises.

There are diverse methodological approaches to the elaboration of general insolvency statistics: in most cases, however, the statistical agency retrieves data from the courts by way of responses to structured questionnaires.

### **Box 2: Examples of general insolvency statistics**

**France:** The Bank of France collects and publishes monthly data on enterprise insolvencies, including year-to-year variation, economic sector, segmentation between SMEs, and large enterprises; and percentage of claims in insolvency as of the total of exposures declared by banks in the credit registry. The methodology includes criteria to determine the size and sector of the enterprise, as well as total exposures. All types of insolvency procedures are covered. Cases where an enterprise undergoes two successive insolvency procedures are treated as separate.<sup>1</sup>

**Germany:** The Federal Statistical Office (“Destatis”) publishes monthly data on the number of insolvency cases in courts, differentiated by business, consumer, self-employed, and decedents’ estates, as well as the value of the expected claims. On an annual basis, Destatis provides further breakdown of insolvencies by economic sector and by state. Its online databank gives greater detail on insolvency proceedings which were dismissed for insufficiency of assets, and those for which a debt settlement plan was accepted, by type of debtor, and in the case of enterprises, by type of industry. It also provides some summary analysis, like the recovery rate in various proceedings.<sup>1</sup>

**Spain:** The National Statistics Agency of Spain (“INE”) collects and publishes insolvency data quarterly, distinguishing the numbers of enterprise and consumer insolvency cases, initiation of the process (creditor-initiated and debtor-initiated), ordinary procedures and simplified procedures, legal form of the enterprise, economic sector, variation quarterly and yearly, size of the enterprise (assets and liabilities), number of employees, years in operation, region, and presentation of a plan proposal with the initiation of the procedure. The methodology is based on a standardized form that includes the following variables: number of bankruptcy proceedings presented at the court; number of bankruptcy orders (number of bankruptcies notified); tax identification number of the company declared bankrupt; type of procedure (ordinary/abbreviated); type of bankruptcy

(voluntary/necessary); existence of anticipated proposals of agreement; content of the proposal (debt reduction, rescheduling, arrangement with creditors, or another proposition); active mass of the company declared bankrupt (assets); and passive mass of the company declared bankrupt (liabilities).<sup>1</sup>

**South Africa:** Statistics South Africa (“Stats SA”)<sup>1</sup> aggregates and publishes data on compulsory and voluntary liquidations for both companies and closed corporations, by industry, on a monthly basis. In addition, Stats SA provides data on insolvencies, specifically the numbers of individuals or partnerships that are unable to pay their debts and have been placed under final sequestration.

### **National insolvency statistics do not provide sufficient granularity for policy making.**

For the most part, the national bureaus on statistics which publish data on insolvency collect data at a very high level of generality. The purpose of these statistics is intended to give a broad-brush view on the financial health of the economy. The data on gross numbers of liquidations or debt restructurings does not, however, provide insight on how the legal and institutional framework for insolvency is performing.<sup>27</sup>

### **Lack of consistency in the collected data makes cross-country comparisons challenging.**

Different countries collect different types of data, and on different periodicities (monthly, quarterly, annually). Within a country, the collection of data in the same category, over the same time frame, year by year, has the advantage of producing consistent time series data for analysis of national trends, although legal changes produce discontinuous results. However, differences between countries in the categories of data being collected, as well as different legal definitions for types of insolvency proceedings, makes it very difficult to do meaningful cross-country comparisons of data.

### **Some financial institutions provide global economic research based on national statistics.**

The credit insurer Euler Hermes conducts economic research and provides analysis to its clients regarding commercial risks, including trends in insolvencies (see *Insolvency Heat Map* – Fig. 1).<sup>28</sup> Based on national statistics, and their macroeconomic research, experts at Euler Hermes predict increases or decreases in the numbers of insolvencies in future years.<sup>29</sup> Another credit and risk management firm, Creditreform, issues analytical reports on developments in corporate insolvencies in Western and Eastern Europe, which draw on national statistics and their proprietary economic analysis.<sup>30</sup>

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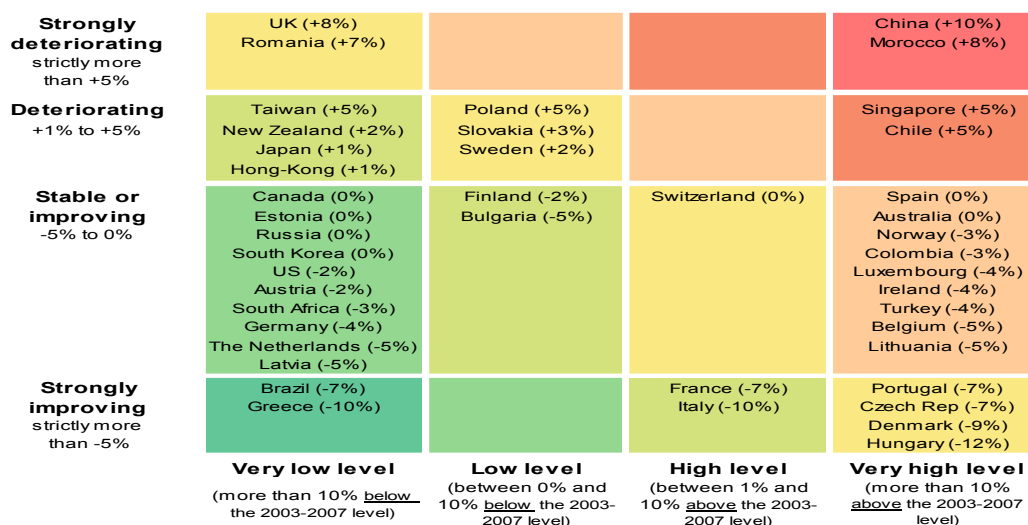
<sup>27</sup> See Sullivan, T. A., Warren, E., and Westbrook, J. L., 1987, at 222.

<sup>28</sup> In addition, Euler Hermes presents these results in a map format (see Global Insolvency Index, 2017, at 8-9). This observes the trends in the growth of insolvency cases nationally, across the world.

<sup>29</sup> Euler Hermes (2015); (2016); (2018).

<sup>30</sup> Creditreform, (2015); (2017).

**Figure 1. Euler Hermes Insolvency Heat Map, 2018**



## 2. Judicial statistics

**Most advanced and emerging economies collect judicial statistics, and these may include information on insolvency proceedings.** It is important to focus on the usefulness of judicial statistics to evaluate policy choices in the areas of bankruptcy or insolvency.

**The primary purpose of judicial statistics is to evaluate judicial performance.** Judicial statistics are generally ill-suited to assess the efficiency of the insolvency system, because these data are principally collected to monitor the duration of proceedings, which may reflect whether the courts are staffed with sufficient court personnel and judges to handle applications, and whether efficient processes are in place. However, the length of a proceeding may also reveal gaps or inefficiencies in the law or in the internal processes that prevent the case from being decided expeditiously. It is these bottlenecks in processing insolvency cases that are of most interest for legal reform.

**In Europe, policy makers have access to the data and reports of the European Commission for the Efficiency of Justice (CEPEJ).** The work of CEPEJ is a response to the need for member states to ensure compliance with Article 6 of the European Convention on Human Rights, which establishes the right to a fair trial within a reasonable period. The European Court of Human Rights has developed certain criteria for assessing the reasonableness of the length of proceedings, and rules for calculating that duration. Based on this guidance, CEPEJ has developed several key indicators to monitor court efficiency in different categories of cases, including insolvency cases.

**CEPEJ has developed a set of guidelines (“GOJUST Guidelines”) to aid member States in the organization of their data collection.** In addition to the GOJUST Guidelines<sup>31</sup>, every two years CEPEJ circulates an explanatory note to the member States about the data required to promote uniformity and consistency of responses across countries. Member States appoint national correspondents to be the interlocutors with CEPEJ on replying to the survey instrument and clarifying or validating responses as needed. When there are noteworthy discrepancies in responses from cycle to cycle, the CEPEJ Secretariat engages in extensive exchanges with the national correspondents to identify reasons for the variations. CEPEJ may exclude data if the figures from one cycle to the next are too disparate.

**Standardization of judicial statistics remains a challenge.** Although CEPEJ makes considerable efforts to ensure the reliability of the data, the quality of the data necessarily depends on how national correspondents interpret the questions regarding their country, and the efforts they make in matching the questions with information available from their national judicial systems. Because the judicial systems of the member States may not share the same definition of even the most basic terms – such as insolvency or insolvency proceedings– it is a significant challenge to collect data that measures the same economic phenomenon. Moreover, the iterative process of disseminating the survey, collecting responses, and validating the submitted data, takes time. By way of example, the latest report, published in October 2018, is based on 2016 data, and only 17 countries provided information about their insolvency systems. The two-year lag in producing the data limits its usefulness in making timely decisions<sup>32</sup>.

**There are few examples of judicial statistical reports which focus solely on insolvency.** As there are few examples of jurisdictions assigning insolvency cases exclusively to specialized insolvency courts, there are also few examples of separate statistical reports covering the insolvency activity of the judiciary in a jurisdiction. Where there are specialized insolvency courts (e.g. USA, or Thailand), it is easy to isolate the insolvency cases, and measure the courts’ workload and their performance.<sup>33</sup>

**The United States has been viewed as a model for judicial statistics on bankruptcy, but its statistical reports have limitations.** Since 1948, by law, the Administrative Office of the U.S. Courts (“AOUSC”) has been charged with providing statistical information on the caseload of the federal courts on an annual basis. These reports include information on the total number of bankruptcy filings in each judicial district by type of proceeding as defined in the chapters of the U.S. Bankruptcy Code (liquidation under Chapter 7 or reorganization

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<sup>31</sup> CEPEJ, 2008.

<sup>32</sup> See CEPEJ, 2018, at 259-260.

<sup>33</sup> For Thailand, see <http://www.coj.go.th/en/statistic.html>. However, the collected data only supports the analysis of the case burden and the performance of the courts.



under Chapter 11), and the predominant nature of the debt (i.e. consumer or business). The AOUSC also publishes the numbers of filed, pending, and terminated bankruptcy cases by judicial district. The time series provides general information on trends in filings. This information is part of the Integrated Database (IDB) of the Federal Judicial Center.,<sup>34</sup> However, the database focuses on the number of cases filed, terminated and pending, and does not provide additional information, such as the size of the debt or characteristics of the debtor.<sup>35</sup> Private initiatives, such as the database for large corporate insolvency cases created by Professor LoPucki at UCLA,<sup>36</sup> have attempted to fill the gap.

**There has been a longstanding discussion on how to improve judicial bankruptcy statistics in the US.** There have been proposals to use standard forms, and to gather data from electronic filing and electronic case management. However, an overall concern about expense exists.<sup>37</sup> Initiatives to collect data on consumer bankruptcies have met limited success.<sup>38</sup>

**Procedural filings with the courts in insolvency cases include valuable information but the courts may not be best suited or equipped to extract and analyze this data.**

Substantive data on the debtors, creditors, and size of claims, could be extracted from the initial insolvency petitions, the confirmed reorganization plan, and the final insolvency administrator's report. The insolvency administrator's report is a particularly valuable source of information for the costs of the process, and for calculating the rate of recovery of creditors. Although insolvency petitions or insolvency administrator reports approved by the courts have a wealth of information in them, either court clerks (for paper filings) or software applications (for electronic filings) are needed to pull this data and render it usable for policy

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<sup>34</sup>See IDB, available at <https://www.fjc.gov/research/idb>.

<sup>35</sup> There are other sources for such data, for example, there have been industry-funded studies on measuring how much bankruptcy debt is discharged and how the rate of recovery for creditors would change if certain laws were changed; and the Executive Office of the U.S. Trustee in the Department of Justice has engaged in studies on selected bankruptcy issues. See Porter, K., 2006, at 967-968.

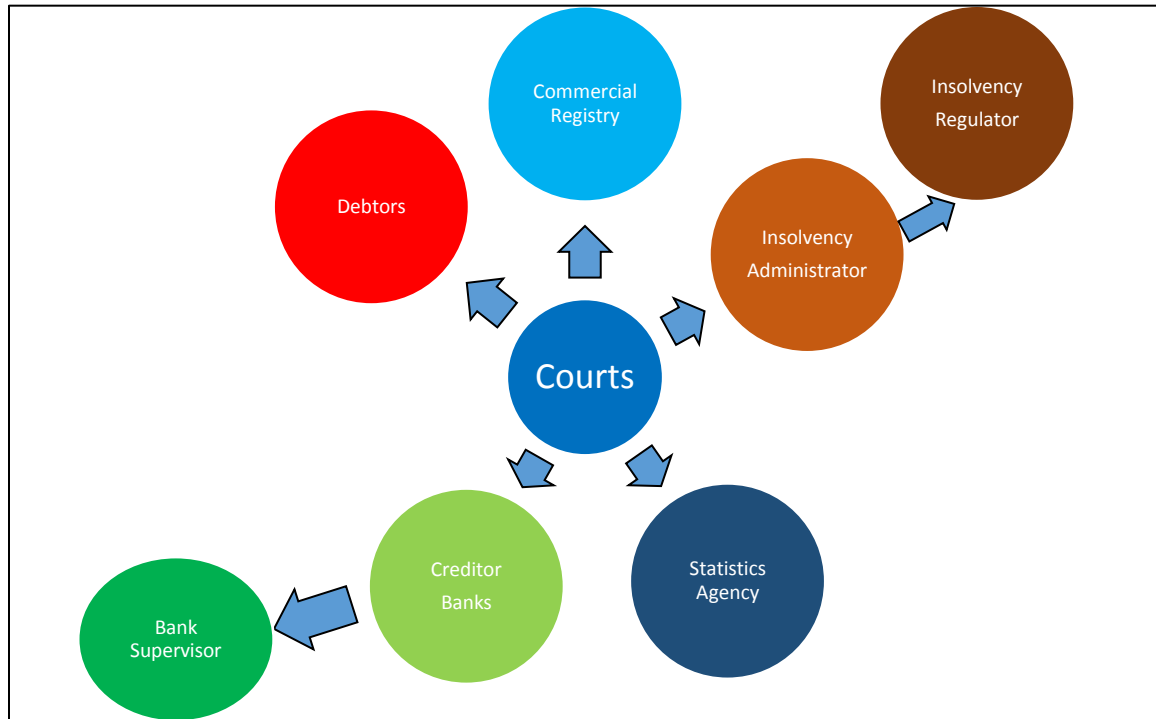
<sup>36</sup> See <http://lopucki.law.ucla.edu/>. The database has provided useful empirical information for numerous law review articles: see especially LoPucki, L. M. and Whitford, W. C., 1993; see also Baird, D., Bris, A., and Zhu, N., 2005, among many others.

<sup>37</sup> See NBRC, 1997.

<sup>38</sup> According to the Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 (BAPCPA), the AO was required to compile, analyze, and publish statistics on consumer debtors on an annual basis (28 U.S.C. §159(b)). The annual BAPCPA report *does* provide information on the debtors' assets, liabilities, income and expenses; which is a significant advance on what was previously available. However, the BAPCPA data is self-reported by debtors when they submit required forms and motions, and the information is not subject to any validation by the courts. As numerous studies have shown, self-reporting by debtors can lead to significant inaccuracies, due to confusing definitions and instructions, or built-in biases in automated software: see Lawless, R. M. and Warren, E., 2005, at 768 (finding that the rise in the use of EZ-filing form software, with default setting in favor of consumer filings, resulted in understating of small business bankruptcy filings).

analysis. Such efforts require training of court personnel and/or investment in automated IT systems and specialized applications. Limited court budgets and/or lack of skilled personnel can significantly restrain such initiatives.

**Figure 2: Sources of insolvency data and data collection**



### ***3. Statistics of Insolvency Regulators and other Authorities***

**Insolvency regulators frequently produce their own statistical reports.** In countries where the institutional framework includes an insolvency regulatory agency, those agencies tend to prepare statistical reports that relate to their oversight functions as well as the individual cases of the insolvency professionals they supervise. For this reason, these reports include information on insolvency proceedings that is far more specific and relevant to insolvency analysis than the information found in general insolvency or judicial statistics. Although there can be an overlap with the information included in judicial statistics, the reports produced by insolvency regulators also include information on the insolvency professionals themselves (e.g., number of appointments, administrator reports, disciplinary actions). These data are extremely relevant to gain insights on the effectiveness and efficiency of insolvency systems.

**The level of detail of the statistical reports produced by insolvency regulators varies<sup>39</sup>.**  
Some examples include:

- In *England and Wales*, the Insolvency Service produces quarterly insolvency statistics by type of procedure for companies (voluntary and compulsory liquidations, voluntary arrangements; administrations) and procedures available to individuals (bankruptcy orders, individual voluntary arrangements, debt relief orders). The Insolvency Service undertakes further analysis of these insolvencies by extracting data on the scope of the company's activity from the Companies House.<sup>40</sup>
- In *Australia*, the Australian Commission (ASIC) prepares statistical reports on insolvency. The reports are extensive because they are based on compulsory filings by insolvency administrators. These data, arranged by economic sector and region, include: (i) size of the company; (ii) nominated causes of failure, (iii) possible misconduct and documentary evidence; (iv) assets, liabilities and deficiency; (v) unpaid employee entitlements; (vi) secured creditors; (vii) unpaid taxes and charges; (viii) unsecured creditors; and (ix) remuneration of administrators.<sup>41</sup>
- *Ireland* also produces insolvency statistics that correspond to the competencies of the regulator, the Insolvency Service of Ireland (ISI).<sup>42</sup> ISI produces reports that focus on personal insolvency procedures, such as the DRN (debt relief notice), DSA (debt settlement arrangement), and PIA (personal insolvency arrangement), apart from the personal bankruptcy process. The statistics cover case management, outcomes, type of debts, and profile of applicants, number of cases, amount of debt (secured and unsecured), gender, and geographical distribution.
- The *U.S.* Trustee, in an equivalent role to insolvency regulators of other jurisdictions, produces its own statistical reports, in addition to judicial bankruptcy statistics.<sup>43</sup> These reports focus on the role of the U.S. Trustee office in ensuring the efficiency and integrity of the U.S. bankruptcy system. The reports include details on enforcement actions and fraud cases.

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<sup>39</sup>In some cases, these reports provide general information on insolvency cases. For instance, the Official Receiver's Office in Hong Kong has monthly statistics available on the numbers of bankruptcy petitions filed by debtors and creditors, and orders issued in these cases; as well as compulsory winding up orders.

<sup>40</sup> See Collection: Insolvency Statistics – Documents, available at <https://www.gov.uk/government/collections/insolvency-statistics>

<sup>41</sup> See Monthly Insolvency Statistics, available at <https://asic.gov.au/regulatory-resources/find-a-document/statistics/insolvency-statistics/>

<sup>42</sup>See [https://www.isi.gov.ie/en/ISI/Pages/Media\\_&\\_Statistics](https://www.isi.gov.ie/en/ISI/Pages/Media_&_Statistics)

<sup>43</sup>See <https://www.justice.gov/ust/bankruptcy-data-statistics/bankruptcy-statistics>

- In Colombia, the *Superintendencia de Sociedades* combines the role of adjudicating authority and insolvency regulator. This places the *Superintendencia* in a unique position to gather data and produce reports that cover both general information on insolvency proceedings, and information on the performance of insolvency administrators. The statistics also show general characteristics of the insolvent businesses (size of enterprise, number of employees, location, etc.).<sup>44</sup> These data can be used by researchers to study levels of indebtedness and inform insolvency prediction models.<sup>45</sup>

**Other entities without direct competence over insolvency matters may produce valuable insolvency analyses.** In some jurisdictions, the commercial registry is in an ideal position to produce insolvency statistics, as they centralize the financial information of companies and are notified of all the key events in an insolvency case. In Spain, the *Registro mercantil* produces a very detailed statistical study:<sup>46</sup> it includes information with the economic characteristics of the insolvent enterprises (size, sector, age, viability, and solvency), and also distinguishes between cases commenced by debtors or by creditors. Because of the features of the insolvency process in Spain, the report also describes the changes in control over management of the insolvent business; and provides numerous details about reorganization plans. Analysis of recovery rates includes the median recovery for unsecured creditors. The duration of the process is also studied in detail, segmenting the process in all its phases. The analytical work is possible because the commercial registry is where businesses deposit their financial statements, and thus all key decisions in the insolvency process are notified to the registry. However, the analytical work required to extract information from the documents is arduous and time-consuming.

#### ***4. Surveys on the management of non-performing loans***

**Surveys on the management of non-performing loans (NPLs) focus on the use of debt resolution tools by banks.** Bank surveys can be a useful instrument in assessing the effectiveness and efficiency of debt resolution mechanisms, including the insolvency process. Such surveys allow a comprehensive analysis of the aggregated information on the levels and quality of the distressed debt system, as well as show how a bank's NPLs stock and its work-out strategy compare to its peers. Bank surveys have an advantage of collecting a large amount of detailed information from primary sources and effectively triage the data by type of resolution strategy employed, time, costs and other factors affecting debt resolution (see Box 3). The accuracy of the findings will largely depend on the design of the survey and its ability to account for the specificity of the system in which banks operate. Banking

<sup>44</sup> See [http://www.supersociedades.gov.co/delegatura\\_insolvencia/Paginas/publicaciones.aspx](http://www.supersociedades.gov.co/delegatura_insolvencia/Paginas/publicaciones.aspx)

<sup>45</sup> See Arroyo Mina, J. S., Pena Benítez, D. F., Sánchez Mayorga, X. 2009.

<sup>46</sup> See Van Hemmen Almanzor, S., 2017.

supervisors are best positioned to administer bank surveys, with input from banks and private sector experts.<sup>47</sup>

### **Box 3. The Italian survey on the management of NPLs**

**The experience of Italy in conducting an NPL survey among its main banks offers useful insights about the process and its potential benefits.**<sup>48</sup> In February 2016, the Bank of Italy published the results of a survey conducted in 2015 on the efficiency of credit recovery procedures undertaken by 24 large banking groups. These banks held 78 percent of NPLs in the system and the survey focused on those NPLs which were being liquidated or restructured at the end of the 2014. The assessment of procedures concluded in 2014 was based on the recovery rate of loans in the period after the insolvency proceedings were opened. Regarding restructured debts, the first four years of the restructuring were examined to assess the recovery of claims.

#### **The survey included both quantitative and qualitative aspects:**

- **Quantitative questions** were designed to collect data on: a) characteristics of the various credit recovery and restructuring procedures (amounts involved in-court and out-of-court procedures, average age of the procedures at the end of 2014; collateral); b) final recovery rate by different mechanisms used (e.g., out-of-court agreements, bankruptcies, arrangements with creditors, and foreclosures) and the percentage of initial credit recovered in each year after the procedure was started; and c) changes in debtor companies' position in the four years following the start of the restructuring procedure.
- **Qualitative questions** were designed to seek the banks' opinions on factors negatively affecting the credit recovery process (e.g., court backlogs, procedural complexity, lack of public creditors' participation in restructuring, professionals' fees, access to interim financing, and creditor coordination issues). Furthermore, the banks were asked about their internal organization and credit recovery costs.

**The results of the survey provided justification for policy actions.** The results distinguished between: (i) debt subject to in-court recovery procedures vs. out of court; (ii) collateralized vs. non-collateralized debt; and (iii) the year of initiation of recovery processes. The results indicated the need for measures to shorten the procedures, and the desirability of regulatory changes that make it possible to close procedures formally. Furthermore, the survey revealed that the quality of the responses provided by banks

<sup>47</sup> IMF staff has used a different type of survey to identify obstacles to the resolution of problem loans, by way of a general questionnaire addressed at national authorities: (see Aiyar, S., et al., 2015).

<sup>48</sup> See Carpinelli, L., et al., 2016.

occasionally reflected their lack of integrated information systems for NPL management, which in turn impacted the effectiveness of their respective NPL resolution strategies.

**Bank surveys can complement other data collection systems.** Bank surveys can perform a useful role if they are carefully designed. This requires consideration of the different mechanisms for debt resolution, according to national laws and practices. The resolution methods normally covered under the survey should include at least the following: informal restructuring, sale of loans, enforcement (by type of collateral) and insolvency procedures. Where several resolution methods were attempted, it is useful to record the sequence of those attempts to assess if certain methods may be redundant or abused. The optimal design of the survey and the necessary level of granularity of the collected data would need to weigh against the considerations of the time and cost employed by banks in responding to the survey as well as the ultimate objective of the surveys.<sup>49</sup> Banks should use their own internal systems to produce their responses.

**Despite some comparative advantages, bank surveys face inherent limitations.** The advantage of surveys is that they can provide a complete picture of the methods used to deal with problem loans (for instance, by including informal restructuring agreements, and sales of NPLs, which are absent from insolvency statistics) and allow comparisons of their relative use and efficiency. As information is obtained directly from banks, the surveys also offer the best method for assessing the cost of the use of each mechanism for creditors. Another valuable feature of bank surveys is the possibility to include qualitative and targeted questions which are responded to by professional creditors. However, these surveys present limitations when there is a need to assess a general system of debt collection. The data only capture the functioning of the system from the perspective of the selected financial institutions. In addition, bank surveys are costly to replicate and the lack of continuity represents a practical challenge assessment of the insolvency system over time.

#### IV. SPECIFIC INSOLVENCY STATISTICS

**Existing data sources are insufficient to assess and design insolvency systems.** The sources of data and information described in the previous sections fall short in providing an empirical basis to evaluate existing insolvency regimes and to design new ones.<sup>50</sup> The existing sources of data have very different objectives: the analysis of economic trends, in the case of general insolvency statistics; the performance of the judiciary, in the case of judicial

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<sup>49</sup> Surveys can be designed as one-off or regular/periodic. While it is always useful to understand and monitor the developments in the NPL resolution, identification of the major blockages in the system becomes particularly important when NPL levels are high. The impact of the regulatory measures or legal reforms adopted to address the identified problems can be assessed in follow-up (more limited/targeted) surveys.

<sup>50</sup> See the analysis conducted on the Czech insolvency data sources by researchers of the University of Economics in Prague: Kislingerová, E., 2012, at 181. See also Smrčka L., and Schönfeld, J., 2014; Smrčka, L., Schönfeld, J., Sevcik, P., and Plaček, J., 2014; Plaček, J., Smrčka L., and Schönfeld, J., 2015, at 128.

statistics; specific features of insolvency regulation in the case of reports of insolvency regulators; and the effectiveness of debt resolution mechanisms from the banks' perspective, in the case of NPL surveys. Therefore, no single source of information satisfies the needs of a comprehensive evaluation of the insolvency framework system.

**Specific insolvency statistics are needed to assess the overall effectiveness of the insolvency system.**<sup>51</sup>

The effectiveness of the insolvency system is based, first of all, on the quantity of insolvency cases, and their outcome. In this regard, data on the frequency with which businesses resort to insolvency proceedings can provide some basic information on effectiveness -or lack of effectiveness- of the system (see Box 4). Data on the outcomes of insolvency proceedings (i.e., reorganization, sale as a going concern, piecemeal liquidation) can also provide general insights about the effectiveness of the system in responding to enterprise distress.<sup>52</sup> The number of insolvency cases closed because of lack of assets (“no-asset cases”) also provides a good indication of the existence of defects in the design of the insolvency system which affect its practical use by debtors and creditors. Outside of formal proceedings monitored by the court or insolvency regulator, data on the frequency of out-of-court restructurings can only be obtained if there is a registry of agreements or if participants agree to disclose the existence of such restructurings.

**Box 4. Relative Use of Insolvency Procedures**

**The frequency of recourse to insolvency is an important indicator of the general effectiveness of an insolvency system.** One of the key factors to assessing the effectiveness of an insolvency system is the extent to which businesses resort to insolvency proceedings to resolve debt distress. In some jurisdictions, insolvency frameworks tend to be no more than ink on paper with very little practical relevance or application. In these jurisdictions, business failures are dealt with through other mechanisms such as informal negotiations, debt enforcement proceedings or simply the closing down of businesses. This absence of an insolvency culture and very low usage of insolvency proceedings are often indicators of significant underlying shortcomings such as the lack of trust in institutions, exorbitant costs of proceedings and/or outdated legal frameworks. When insolvency is underutilized, this indicates that market participants do not view the process as an effective or efficient method of debt resolution.

**There is a variety of approaches for gauging the use of insolvency.** Traditionally, the frequency of use has been inferred from the ratio between the number of insolvency cases and

<sup>51</sup>See the analysis produced by IMF staff on Bulgaria (IMF, 2016) and Romania (IMF, 2017).

<sup>52</sup> In this regard, it is important to identify whether there is any bias in the system – i.e., there are insolvency systems where viable enterprises are liquidated; and systems where non-viable enterprises are kept alive through restructuring procedures. These are classic examples of “type-I” and “type-II” errors, and it is important to identify the propensity of the system to commit these errors. See Fisher, T, and Martel, J., 2004.

the number of registered companies in a country.<sup>53</sup> A more focused variation of this approach is the ratio between the number of companies with NPLs and the number of insolvency cases.<sup>54</sup> A third approach relies on the ratio between GDP and the number of insolvency cases; on the assumption that the larger an economy, the greater the number of insolvency cases. However, one problem with the latter measure is that it may inadvertently overstate the use of insolvency proceedings under certain scenarios; for example, during an economic downturn when GDP is likely to contract, the number of insolvency cases may be on the rise.<sup>55</sup> In general, the number of insolvency cases may simply be attributable to the market structure of the economy in question rather than to the effectiveness of the insolvency system as such. For example, in an economy characterized by the presence of many SMEs, the number of insolvency cases filed will by default be higher than in one dominated by large enterprises. Instead of relying on the number of insolvency cases, an alternative approach has focused on measuring the overall value of claims and of assets of companies in insolvency.<sup>56</sup> This measurement avoids the problem of differences in the size of enterprises and can be usefully integrated with the number of procedures to provide a combined indicator of the relative use of the insolvency system.

**Specific insolvency statistics are required to measure the efficiency of an insolvency system.** As discussed in Section II, the core indicators of time, cost, and recovery rate are highly relevant measures of the efficiency of an insolvency system. A data collection mechanism can provide actual data to calculate these measures, which may provide more detail in each category (time, cost and recovery rates are general concepts which may be further specified, as discussed below), and also furnish additional data on the economic and social reality of the insolvency system, as well as on specific legal questions, such as the relative use of procedural options and ancillary litigation. These points are elaborated in the following paragraphs.

#### **a) Fundamental Insolvency Indicators**

- **Time.** As noted, of key interest is the duration of the insolvency process, at least from commencement to the point where a reorganization plan is confirmed, or the debtor's assets have been liquidated. This information can be obtained from judicial statistics, insolvency administrator reports, or documents deposited with the relevant registries. Estimating when creditors' claims have been satisfied in a reorganization can be

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<sup>53</sup> See Claessens, S., and Klapper, L., 2005.

<sup>54</sup> See Van Hemmen Almanzor, S., 2007.

<sup>55</sup> While this may also complicate cross-country comparisons, this concern could possibly be mitigated by examining a sufficiently extended period, and by the fact that countries are often afflicted simultaneously by economic crisis. On the relationship between a decrease in GDP and the increase in the number of insolvency cases, see Manavald, P., 2010.

<sup>56</sup> See, for example, Mikhailova, A., Fomicheva, M., Treshchev, S., and Malevich, E., 2017.



difficult, because the plan only provides the projected payments; in a liquidation, payments to creditors are more readily ascertainable. Data on time can be elaborated with different objectives in mind: from the point of view of the satisfaction of creditors' claims, what is relevant is the time when the creditors receive payments from the liquidation of assets. In a reorganization, payments to creditors start with the confirmation of the reorganization plan, and it is not possible to ascertain the effective time for payments unless there is a monitoring mechanism in place. The plan itself includes the data on projected payments and these can be taken as effective data, unless the debtor defaults under the plan and the insolvency case is reopened.

- **Cost:** Measuring the cost of insolvency procedures poses several practical challenges:
  - ***Cost and expenses associated with liquidation:*** As noted, the cost of the insolvency process include all expenses and fees associated with winding down the insolvency estate and liquidating its assets: e.g. court/bankruptcy authority fees, insolvency administrator's remuneration, experts' fees, asset storage and preservation costs, auctioneer fees, and government levies. These costs are recorded by insolvency administrators in their reports reflecting the operations and accounts of the insolvency process.
  - ***Cost and expenses of reorganization:*** Apart from the costs of reorganization-which includes also court fees, and fees of insolvency administrators and advisors, the cost of ongoing operations must be included. Statistical studies have been able to assess the costs of reorganization procedures, based on company financial statements that include the direct costs of the reorganization<sup>57</sup>.
- **Recovery rate:** In some respects, the recovery rate is perceived as the ultimate test of the efficiency of an insolvency regime. However, there are common misconceptions about the meaning of the recovery rate in insolvency and how to measure it. Several aspects require explanation:
  - ***Secured creditors.*** The recovery of secured creditors is directly affected by the value of collateral. The best approach to measuring the recovery rate for secured credit in an insolvency system is to compare the amount of the claim and the valuation of collateral at the time of initiation of the procedure (or at the first opportunity when claim values are verified). By comparing the value of the collateral with the value of the loan, the system would provide a

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<sup>57</sup>See Betker, B. L., 1997; Giné, X., and Love, I., 2006. In addition, the latter paper also measures duration and credit recovery. Empirical studies need to be based on samples, due to the lack of comprehensive statistics: Gilson, S. C., John, K., and Lang, L.H.P., 1990; Ferris, S. P., and Lawless, R. M., 2000.

measure of the deficiency in secured claims (“under-secured” claims), and the system should then measure how the *secured portion of the claim* is satisfied.<sup>58</sup> This would provide a robust indicator of efficiency, since the recovery rate of the secured portion will tend to be less than one hundred percent, due to inefficiencies and delays of the process, defective sale and auction mechanisms, the costs and expenses imposed on the secured creditor, or the depreciation and loss of the assets.

- ***Privileged creditors.*** To assess the efficiency of the insolvency system based on the recovery rate, it is crucial that the data collected distinguishes among different classes of creditors. Privileged creditors represent different claims in every system, although most priorities tend to protect workers and tax and social security claims. In any case, there are disparities among legal systems regarding the type of claims that are privileged, their amounts and the degree of protection they receive. The rate of recovery of privileged creditors informs the calculation of the recovery rate of unsecured claims. Frequently, the recovery of unsecured claims is insignificant. In many cases, this is due to the fact that once the secured creditors have been paid from the proceeds of collateral the privileged creditors absorb the rest of the proceeds.<sup>59</sup>
- ***Unsecured creditors.*** The reduced rate of recovery of unsecured creditors should be viewed in the context of the disproportion between the value of the insolvency estate and the total amount of claims. The recovery rate for unsecured claims is mostly determined by that initial disproportion between the value of the assets and the value of claims – for this reason, it would be helpful to measure how the insolvency system operates to reduce or increase the recovery of unsecured claims once that proportion is determined at the stage of the verification of claims.

## b) Statistical Treatment and Granularity of Indicators

**The statistical treatment of the data obtained on time, cost and recovery rates must be appropriate.** It is not sufficient to obtain accurate data according to an established methodology: those data must be compiled in statistical reports. In this regard, it is necessary to keep in mind the basic statistical distinction between *average* and *median* values. There is a trend to consider average values as the ideal measure to assess insolvency data<sup>60</sup>. In fact,

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<sup>58</sup> For example, if there is a loan whose value is 200, and the collateral is valued at 100, it would be appropriate to measure whether the secured amount of 100 is effectively satisfied on completion of the insolvency process.

<sup>59</sup> See Brouwer, M., 2006, at 13 (finding that there is a much higher of variability in the recovery of unsecured claims across insolvency systems).

<sup>60</sup> This is the approach followed by the proposed European Directive – see Box 5.

median values can provide better information, because typically there are large differences between large complex insolvency cases and small cases.

**With these qualifications, an analysis based on time, cost and recovery rates can provide a reliable measurement of efficiency of an insolvency system.** The approach of the European Commission in formulating its proposal for a Directive on preventive restructuring frameworks<sup>61</sup> is consistent with the need to use empirical data to assess the different dimensions of time, cost and recovery rate<sup>62</sup> (see Box 5). Member states should collect data which would cover, at a minimum, the number of filings for each type of procedure (restructuring; insolvency; second chance); length; outcome of procedures; administrative costs of procedures; recovery rate (including no-asset cases); and the success of insolvency procedures. In addition, data will be broken down by size and type of debtors. The preamble of the draft Directive explains that the collection of data, based on a standard methodology, is necessary to ensure proper monitoring and implementation of its rules.

**Box 5: Data collection in the EU draft Directive on preventive restructuring frameworks**

Title V of the draft Directive (on monitoring of restructuring, insolvency and discharge procedures) includes a provision on data collection (art. 29) whereby member states would be required to collect data annually based on a standard methodology, and transmit it to the EC. The objective is the compilation of reliable annual statistics. It is noted that the text is subject to negotiations and may be modified substantially before its adoption. The data to be collected and aggregated nationally by member states, according to the proposal, are the following:

- (a) *the number of procedures which were initiated, pending and resolved, broken down by:*
  - (i) *preventive restructuring procedures,*
  - (ii) *insolvency procedures such as liquidation procedures,*
  - (iii) *procedures leading to a full discharge of debt for natural persons;*

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<sup>61</sup>See European Commission, 2016, *Proposal for a Directive of the European Parliament and Council on preventive restructuring frameworks, second chance and measures to increase the efficiency of restructuring, insolvency and discharge procedures and amending Directive*, available at <https://ec.europa.eu/transparency/.../1/.../COM-2016-723-F1-EN-MAIN-PART-1.PDF>.

<sup>62</sup> This corresponds to the mandate given by the Euro Group: see European Commission (ECFIN), 2016, at 2: “Acknowledging the lack of comparable, systematically updated, objective and outcome-based data to benchmark insolvency frameworks in the euro area, ministers supported the Commission’s work to improve data availability and quality”.

- (b) *the length of the procedure from initiation to payout, separate by types of procedures (preventive restructuring procedure, insolvency procedure, discharge procedure);*
- (c) *the share of each type of outcome within each restructuring or insolvency procedure, including the number of procedures applied for but not commenced for lack of available funds in the debtor's estate.*
- (d) *the average costs of each procedures awarded by the judicial or administrative authority, in euro;*
- (e) *the recovery rates for secured and unsecured creditors separately, as well as the number of procedures with zero or no more than two percent total recovery rate in respect of each type of procedure referred to in point (a);*
- (f) *the number of debtors subject to procedures referred to in point (a)(i) who within three years from the conclusion of such procedures are subject to either of the procedures referred to in points (a)(i) and (a)(ii);*
- (g) *the number of debtors who, after having undergone a procedure referred to in point (a)(iii) of this paragraph, are subject to another such procedure or another procedure referred to in point (a) of this paragraph.*

*For the purposes of point (e) of the first subparagraph, recovery rates shall be after costs and anonymised data fields shall show both recovery rate and recovery rate lined to time until recovery.*

*2. Member States shall break down the statistics referred to in paragraph 1 by:*

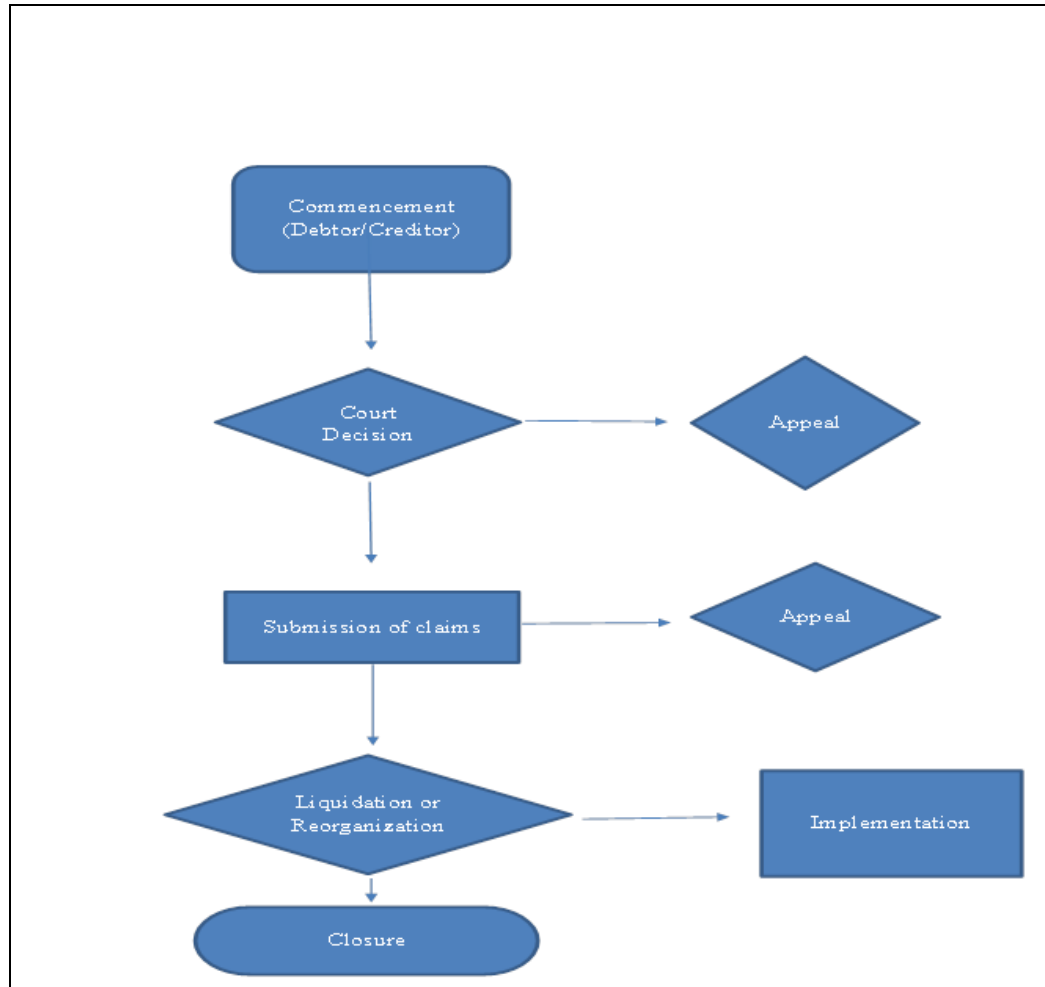
- (a) *the size of the debtors involved, by number of workers;*
- (b) *whether debtors are natural or legal persons;*
- (c) *in respect of discharge and where such distinction is made under national law, whether the procedures concern only entrepreneurs or all natural persons*

**It is paramount that the system collects data at various stages of the process.** Because insolvency is essentially a legal *process*, the proceedings can be understood with the assistance of *flowcharts*. The flowchart defines, by means of conventional symbols, the start and end of a process, the decisions that influence the process, and the documents and data required to complete the different phases of the process. In this regard, insolvency procedures can be easily converted into flowcharts. The insolvency process has a clear starting point and several possible outcomes, and the intermediate steps are described in the relevant legislation.

**Basic flowcharts of insolvency processes provide a template for data collection.** A flowchart for an insolvency process indicates the main steps, which correspond to actions by the parties, court, and/or the insolvency administrators. Figure 3 includes a stylized example (for more complex examples, see the flowcharts in figure 4 - US Chapter 11 Reorganization-; and figure 5 - Corporate Resolution in India-): what is apparent is that every insolvency process presents the opportunity of recording **milestones** – i.e. stepping stones in the process

before it is completed; and **data collection points** – i.e. moments in the procedure where relevant data can be obtained and processed.

**Figure 3: Basic Flowchart of a Typical Insolvency Process**



**Milestones are useful to measure the time to completion and, potentially, to identify bottlenecks.** The most obvious milestones are commencement and closure of an insolvency case. A more accurate measurement, relevant to recovery, would consider the initiation of the process and the moment where creditors receive their payment: this means recording the payments in the liquidation, or analyzing the schedule of payments under a reorganization plan. Besides total duration, milestones would measure every phase of the process: for instance, time from the presentation of an insolvency petition to the judicial decision accepting that petition, or time to resolve an appeal on that decision. The milestones marking each stage are crucial to a more granular analysis of the inefficiencies and bottlenecks at various points in the process.

**Data collection points are the moments in the process where it is possible to gather relevant information.** For instance, when the verification of claims is finalized, it is possible

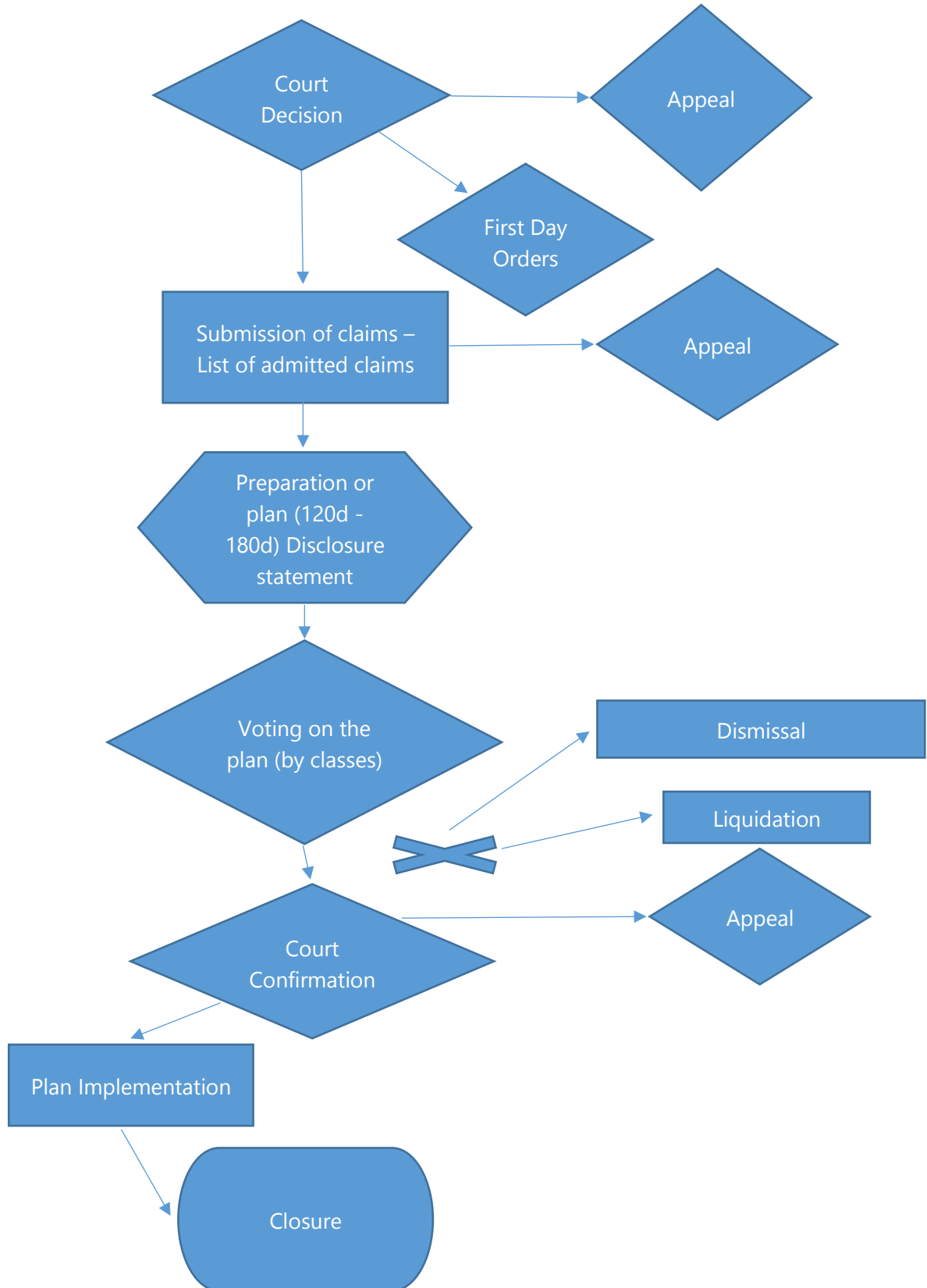
to gather data that expresses the amount of the claims owed by the debtor, as well as connecting those amounts with the value of the assets. This measures the degree of insolvency of debtors, in a balance-sheet sense. More importantly, the comparison between assets and liabilities at the time of the verification of claims provides baseline data to compare with the data collected in the reorganization plan or the liquidation report,<sup>63</sup> The comparison between the data obtained from these different data collection points is extremely relevant to assessing the efficiency of the process, since it provides a basis for measuring the decrease in value of the assets, or the inefficiencies in the liquidation process, as well as the real rate of recovery by creditors upon completion of liquidation and/or reorganization. There are other important data collection points in the process, such as the following:

- Insolvency application (by the debtor or by creditors)
- Decision of the court to open and to terminate the proceedings (including appeals)
- Reports of insolvency administrators
- Valuation reports
- Avoidance actions; liability actions
- Decisions regarding executory contracts
- Disclosure statements in reorganization and liquidation plans

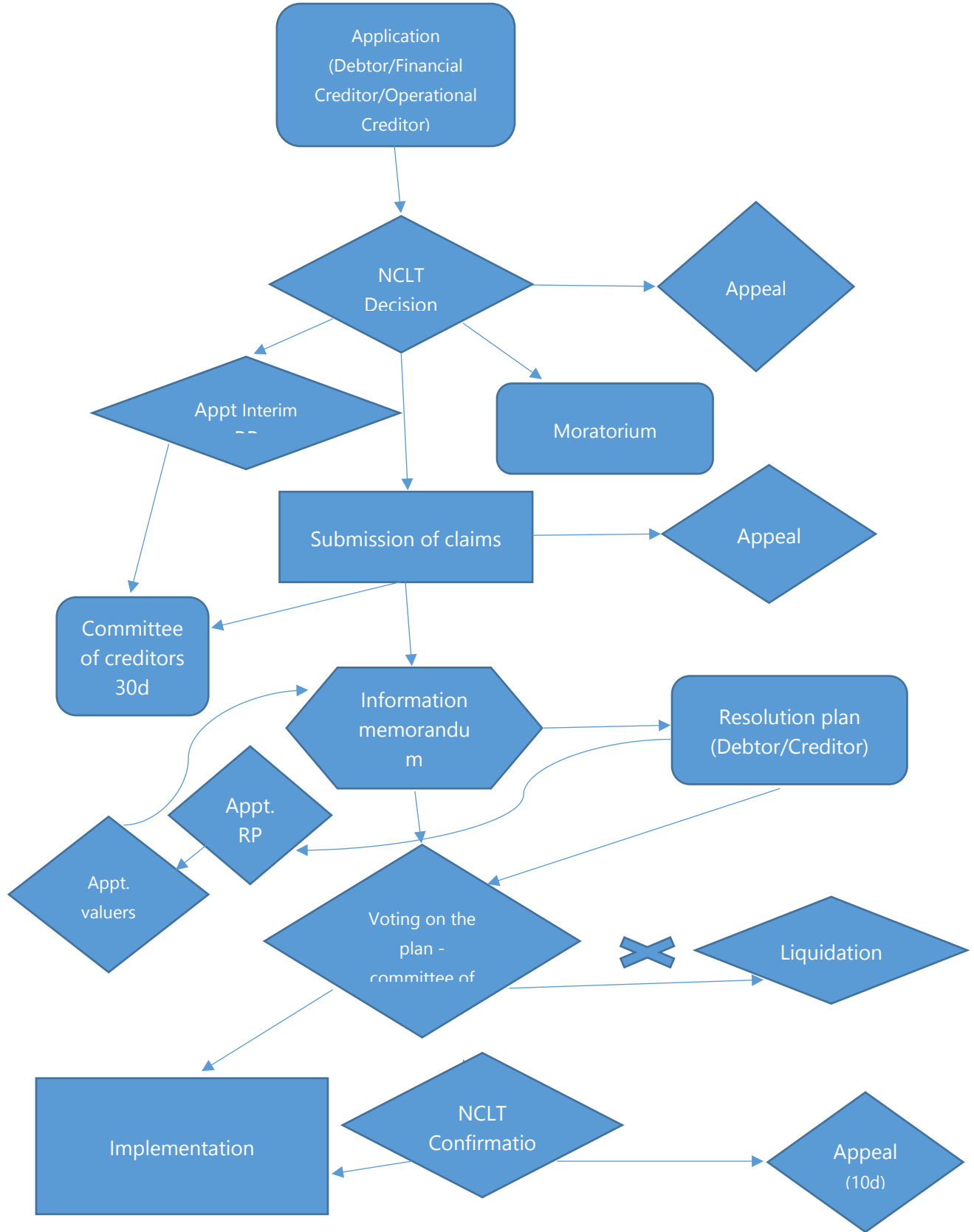
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<sup>63</sup> The generic term “liquidation report” refers to a report that, in most systems, the insolvency administrator needs to produce after completion of the liquidation operations, rendering accounts of the liquidation activities.

**Figure 4: Flowchart for Chapter 11 Reorganization (USA)**



**Figure 5: Flowchart for Corporate Resolution Process (India)**





### c) Collection and analysis of additional data

**Through the appropriate designation of data collection points, the insolvency system can provide additional data for analysis.** If data collection points are carefully selected, it is possible to collect a wide range of information to study the interaction between the legal system and economic and social reality, beyond the measurement of the effectiveness and efficiency of the system. These additional data can be numerical, but can also consist of descriptive, text information<sup>64</sup>, and be used for the elaboration of targeted statistical reports.

- ***Economic and social data:***
  - Economic data on businesses: enterprise's size; turnover, number of employees; years in operation; industry; number of creditors and value of claims. Classes of claims (especially, secured claims, tax and social security claims, labor claims). Causes of the insolvency situation.
  - Economic and social data on individuals (age, family status, gender, profession, ethnicity; amount of debt; classes of claims; previous insolvency processes).<sup>65</sup>
- ***Additional legal data and statistics:***
  - Type of legal entity
  - Dismissed cases, with a breakdown of the different reasons for dismissal
  - Numbers of voluntary and involuntary cases.
  - Repeated insolvency filings (within 3/5 years after closing of the previous insolvency process).
  - Percentage of reorganizations over the total of insolvency cases.
  - Success of reorganization plans/ liquidation cases opened after the failure of an attempted reorganization.

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<sup>64</sup> Processing text information is considerably more challenging than numerical data and requires a certain degree of standardization in forms and reports.

<sup>65</sup>Economic factors, for instance, are the main reason for the variation in personal bankruptcy rates across states in the US: see Weiss, L. A., Bhandari, J. S., Robins, R., 2001. Integration with other economic data (for instance, credit card defaults) allows for insightful empirical analysis: see Gross, D. B., Souleles, N. S., 2002.

- Survival of businesses (combining successful reorganization plans and sales of enterprises as a going concern).<sup>66</sup>
- Number of fraudulent cases, and identification of elements of fraud.
- Number of special cases (enterprise group insolvency cases; cross-border insolvency cases) and related data.

**Ultimately, the design of data collection mechanisms needs to be tailor-made to national specifications.** The selection of data and the design of milestones and data collection points depend on the legal architecture of the insolvency process.<sup>67</sup> Corporate insolvency systems present more design difficulties, given the likely existence of multiple procedures and their considerable complexity. Designing a system to cover household insolvency cases is comparatively simpler, but of course this depends on the amount of data and level of detail required. In addition, a general view of the creditor rights system may require the design of data collection mechanisms for debt enforcement actions, especially mortgage enforcement cases.<sup>68</sup> The sophistication of the data collection mechanisms is also dependent on the country's capacity.

**There are trade-offs in the design of data collection mechanisms.** While it is possible to hypothesize about systems where virtually every piece of information generated in the insolvency process is classified and processed, there may be capacity limits and implementation challenges. There are also important legal constraints: insolvency data systems need to respect data protection rules, as well as banking and commercial secrecy: anonymization of data is essential<sup>69</sup>. Finally, the prioritization of data needs should inform the design of the data collection systems. The careful selection of data points will conserve resources and facilitate the analytical work.

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<sup>66</sup> See Couwenberg, O., 2001. In any case, the analysis of the full completion of reorganization plans is challenging: see Jensen-Cockling, S., 1992.

<sup>67</sup> This poses the problem of data comparability. It is difficult to draw comparison across insolvency systems unless legislation is harmonized. In any case, national insolvency systems should develop robust data collection mechanisms before a discussion on comparability of data can take place.

<sup>68</sup> This was the case in Spain, where the impact of the crisis prompted the National Statistics Agency to collect data on mortgage foreclosures, in cooperation with the property registries. In a similar fashion, the EC has proposed to collect data on the proposed accelerated extrajudicial collateral enforcement mechanism (number of enforcement actions and timeframes) (art. 33 of the proposal for a Directive on credit servicers, credit purchasers and the recovery of collateral, COM (2018) 135 final, available at [http://ec.europa.eu/finance/docs/policy/180314-proposal-directive-non-performing-loans\\_en.pdf](http://ec.europa.eu/finance/docs/policy/180314-proposal-directive-non-performing-loans_en.pdf)).

<sup>69</sup> Naturally, the supervisors need to have integral access to data to perform their function, but this does not extend to the elaboration of statistical reports.

**Countries should use their existing infrastructures *to the extent possible*.** There are several countries where existing data collection mechanisms are of high quality, and they may only need to be upgraded to provide the level of information required for the assessment of effectiveness and efficiency of the insolvency system. It is irrelevant whether, in a given country, the best source of insolvency information is produced by the insolvency regulator, the judiciary, the statistical agency or any other authority. Building on existing infrastructures provides a clear advantage. In other cases, data collection systems may be non-existent or seriously deficient, and this will require the creation of a specific mechanism to collect insolvency data, taking into account capacity and resource constraints. In any event, the cooperation of multiple authorities may be required. The creation of special insolvency registries – a new trend in different parts of the world- offers an excellent opportunity to design data collection tools that categorize the information included in those registries.

**Insolvency data feeds into performance assessments and the design of insolvency systems.** Gathering data is no substitute for legal analysis: the reports generated by the system, however, provide the adequate empirical basis for an assessment of the effectiveness and efficiency of the system, and for the identification of significant legal and economic issues<sup>70</sup>. This type of analysis, rooted in hard data, is invaluable in designing insolvency laws. Empirical data also constitute an integral part of impact assessments (see Box 6), which are becoming a standard element in legislative reforms. Data will serve as the basis for reform proposals, and the authorities will be able to test the effectiveness of legal changes with the new data collected after the reforms are implemented (see Fig. 6).

#### **Box 6. Impact Assessments and Insolvency Law Reforms**

**Impact assessments are used in a broad range of activities.** In general, an impact assessment can be considered as the analysis of the implications of a present or a prospective action through the collection and analysis of evidence. In some fields, the use of impact assessments has long been established and standardized. For instance, the US established in the 1960s the requirement of impact assessments to assess the environmental consequences of projects. Europe followed suit when the European Economic Community initially recommended environmental impact statements to its members in the mid-1980s, and these became compulsory in 1989.<sup>71</sup>

**The use of impact assessments in legal reform is becoming the standard.** Over time, the use of impact assessments evolved beyond the environmental domain to expand to areas such as law reform and became in many countries part of the law-making process. In the US, the Reagan Administration made cost-benefit analysis—a form of regulatory impact assessment—a key

<sup>70</sup> There are many specific issues that can only be settled with the assistance of empirical data for instance, the existence of a “timing problem” and the incentives and disincentives for filings (see Povel, P., 1999). On the difficulty to access empirical data for insolvency research, see Gilson, S. C., John, K., and Lang, L.H.P., 1990; Baird, D., Bris, A., and Zhu, N., 2005.

<sup>71</sup> See Burdge, R. J., 1991, at 95.

element of federal regulatory action already in 1981.<sup>72</sup> In the EU, the use of impact assessments in the preparation of legislative proposals began in 2003 following the recommendations of the Mandelkern Group on Better Regulation (2001)—a group formed to design a strategy for improving the quality of EU regulation. Starting from 2005, all legislative proposals by the European Commission require impact assessments.<sup>73</sup>

**Quality data are essential for impact assessments.** In law reform, impact assessments seek to evaluate the effect of potential changes to the legal framework through the usage of modern techniques of data collection and analysis. The aim is to improve the quality of regulation by informing the decision-making process. To this end, an impact assessment typically identifies an existing problem, determines its underlying causes and the reason regulatory action may be needed, presents the policy options available (including that of “doing nothing”) and the advantages and disadvantages of each of them.<sup>74</sup> The analysis may include potential economic, social and environmental implications as much as efficiency, effectiveness and coherence goals. To be meaningful, impact assessments seek the views of relevant stakeholders and reflect the consultation process in a transparent and adequate manner.

**However, impact assessments are still rare in insolvency reform.** Impact assessments remain at a rather infant stage in insolvency reforms, primarily due to the lack of relevant hard data. As a result, they have relied on available indicators or surveys. A few jurisdictions (e.g. England, Ireland) have started using impact assessments in a more structured manner, although there are still lacunae in the data and a certain degree of abstraction. While it is possible to infer conclusions from some of these assessments about basic characteristics of the insolvency system, it is difficult to extract data on the effect of certain rules or changes to the legal framework. There is a clear need for reliable and relevant data to conduct impact assessments that are more accurate and informative for the law-making process.

## V. CONCLUSION AND RECOMMENDATIONS

**The collection of data is necessary for the assessment of insolvency systems.** Analysis of insolvency systems should be grounded on precise empirical data. Even in the most advanced economies, there is a need to increase the quality of insolvency-related information<sup>75</sup>, to engage in a proper evaluation of insolvency systems.

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<sup>72</sup> See Executive Order 12291, February 17, 1981 (integrating cost-benefit analysis into federal policy action by requiring that, to the extent the law permits, regulatory action not be undertaken unless the potential benefits to society from the regulation outweigh the potential costs).

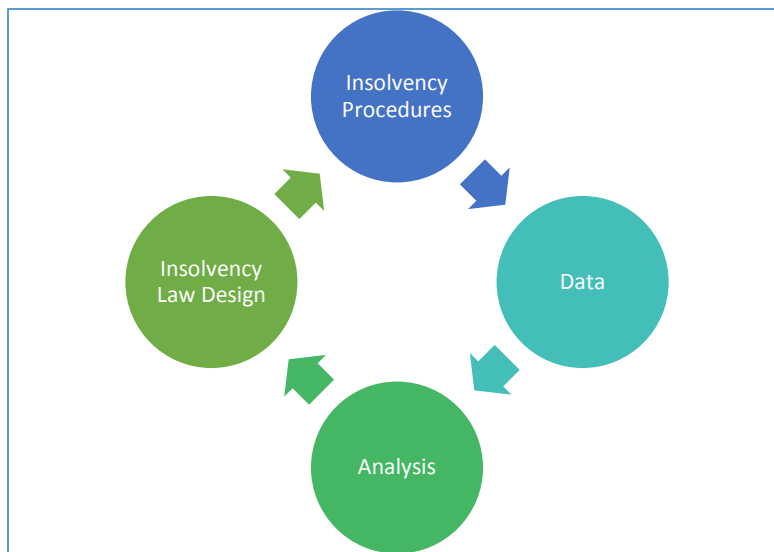
<sup>73</sup> See EC, 2005.

<sup>74</sup> See EC, 2017, at 15.

<sup>75</sup> See LoPucki, L. M., 1997.

**Formulating sound insolvency policies is only possible with the collection of relevant data and a careful analysis of empirical information.**<sup>76</sup> In this way, legislative changes can be properly targeted to address specific problems in an insolvency framework. The continuous collection and analysis of data feeds into the design of reforms and the assessment of effectiveness of reforms, in a loop that reinforces the legislative interventions (see Fig. 6). Legislating “in the dark” is an anomaly in the age of big data.<sup>77</sup> Impact assessments and legislative reforms that are not backed up by empirical data, risk being inefficient or even detrimental.<sup>78</sup>

**Figure 6: Data and Design Loop**



**States can create systems for collecting data building on existing infrastructure.** A first step for creating an advanced mechanism for the collection of insolvency-related data is to assess the existing sources of information: these can be found in general insolvency statistics, judicial statistics, and statistics of the insolvency regulator or other authorities. There may be a data collection mechanism that is superior and offers the best opportunities for improvement. Otherwise, a specific data collection mechanism will need to be created.

**Data collection systems need to be tailored to the specific needs of countries.** Several factors influence the structure and contents of the information to be collected: the legal

<sup>76</sup> See Sullivan, T. A., Warren, E., and Westbrook, J. L., 1987, at 226 (“*We do not believe that bankruptcy policy will ever be firmly rooted in reality until empirical evidence about bankruptcy is gathered widely and routinely*”).

<sup>77</sup> See IMF, 2018.

<sup>78</sup> Connors Frasier, J., 1996, at 310 (where statistics are poor or unreliable, policy choices based on them may fail to achieve their intended objective, or even aggravate the problem they were intended to fix).

regulation of insolvency procedures is possibly the key determining factor, but the economic and social circumstances also influence the contents of the information.

**The main objective of specific insolvency statistics is to assess the effectiveness and efficiency of the insolvency system, but there may be additional uses for the information.** The data generated serves the purposes described in this paper, but high-quality information on insolvency can be extremely useful for other purposes, such as bank supervision, crisis monitoring, or general macroeconomic models.

**Capacity and budgetary constraints should not become insurmountable barriers to the implementation of data collection systems.** The characteristics of the data collection mechanisms may imply substantial costs and demands on the limited capacity of existing organizations. However, there are already multiple data sources which partially cover insolvency data, and an effort of rationalization could simplify the existing mechanisms and produce information of better quality. In addition, the cost of implementing advanced systems should be compared with *the cost of not having them*: ignoring how the insolvency system works in practice, and where its main challenges lie, can result in severe consequences for the economy, and it may render legal reforms ineffective.

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