

Assessing Corruption

An analytical review of Corruption measurement and its problems: Perception, Error and Utility

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Abstract

This paper analyzes how corruption is measured through an analysis of major recognized indicators. It examines the disparities between subjective and objective indicators, differentiating between large and pure objective indicators. It studies the rise of the second-generation of indicators and the most representative cases of aggregated indicators: the Corruption Perception Index (CPI), the Business Environment and Enterprise Performance Survey (BEEPS) and the World Governance Indicators (WGI), analyzing their strengths and weaknesses. The second part of this paper summarizes in three main groups the problems that every corruption measurement faces: the Perception problem, the Error problem and the Utility problem.

Key Words: Corruption – Measurement – Indicators – Aggregate – Error – Perception – Utility – Actionable – Corruption Perception Index (CPI) – World Governance Indicators (WGI)

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The rise of corruption in the international agenda has known an extraordinary acceleration in a relatively short period of time. From being a marginalized component in international aid programs, corruption has promptly moved to occupy a privileged position in most of development projects. Today, corruption is acknowledged to be a key factor in preventing development in large areas of the world, and accordingly, a vast array of projects and tools have been developed to effectively fight against.

This increased importance of corruption also generated a strong demand of particular strategies to launch, reliable indicators to measure and well-identified goals to achieve. Nevertheless, unlike other sectors in international development, corruption rapidly proved to be a much more difficult framework to assess. The objective of direct, simple and easily contrastable indicators –as they were available in other development sectors– promptly faced the fact that both scholars and practitioners agreed that corruption measurement would require much more elaborated constructions, subject to complex and, often, subjective inputs, in contrast with the traditional straightforward and ‘aseptic’ econometric indicators, common to other areas of international development.

This finding had an ambivalent effect on the evolution of the corruption studies and work. On one hand, it generated a powerful trend of mistrust towards the efforts of fighting corruption and particularly its own capacity to generate measurable indicators and accountable results. However, on the other hand, such criticism towards corruption assessment largely encouraged professionals and scholars to develop more sophisticated and rigorous measurement models. As a result, corruption assessment has received a large attention and created an extensive literature and research on this issue.

This paper summarizes the current situation of corruption measurement. It examines the main and generally accepted assessment frameworks and tools used today by the leading institutions in the sector. Accordingly, this paper does not intend to provide a theoretical review about the topic, but critically examine the main trends and discussions in today’s policy-oriented organizations working on corruption. To do so, this paper proceeds in two main parts. (1) First, I will examine how the different corruption measurement frameworks are built, as well as its evolution through time from simple indicators to more complex systems today. In this part, I will review the basic requirements that corruption indicators are expected to comply with, and how different indicators provide advantages and disadvantages according to these requirements. Afterward, (2) I will examine the main problems that corruption measurement encounters. I will divide these problems in three grand groups: (i) the “perception” problem; (ii) the “error” problem; and (iii) the “utility” problem.

Measuring Corruption: Indicators and Frameworks

Corruption measurements have proliferated, generating a vast array of indicators and sources from diverse institutions, such as international aid agencies, non-governmental organizations (NGOs), consulting firms and business actors. However, such an increase has not ceased the debate about how effectively assess corruption, but on the contrary, has motivated extensive debate on the issue.

Corruption is inherently a difficult reality to measure. Several authors have identified the distinctive features of such a mostly clandestine phenomenon, where information is scarce and objective data are not usually available. The first efforts to build corruption –and more largely, governance– measurements systems were rather fragmentary and inconsistent until the 1990s, with lack of reliable and contrastable data. The focus was hence redirected to a labor of systematization and standardization (Court *et al.*: 2002).

Through such a labor of systematization, a major finding was acknowledged: Corruption could be measured. Even if a vast array of problems challenged such a statement, and strong criticism surrounded these efforts, corruption assessment started taking place (Kaufmann *et al.*: 2006) through three broad ways: (1) By gathering selected views of significant stakeholders, including surveys of businesses, public officials, international actors (such as NGOs and multilateral agencies) and individuals. (2) By tracking countries' institutional profiles, providing valuable information on opportunity spaces for corruption, such as procurement practices, administrative framework, budget management. Although such work did not measure corruption itself, it has proved to be a useful indicator of future trends. (3) By thorough audits of particular projects, such as financial audits, spending reports, contrast between expected project outcomes and actual results, etc.

Objective Indicators

A major distinction early appeared when most corruption indicators appeared; most of them were based on the 'perception' of corruption, hence also called subjective measurements, in contrast with the scarcity of objective measurements. This gap between subjective and objective corruption indicators has been one of the major sources of controversy concerning corruption indicators. Such controversies will be later examined in the second part of this paper under the section of the "perception problem".

Pure objective measurements in corruption assessment are actually extremely rare. In fact, when several authors refer to "objective" indicators in contrast with "subjective", they are still referring to perception-based indicators. The difference lies, however in the fact that subjective indicators may include generally based questions such as "Do you think that your government is corrupt?". In contrast, more "objective" perception-based indicators significantly narrow their questions to real experiences, rather than ideas, in order to get rid of attitudinal bias (Bradburn: 1983). Hence, it is more likely to find objective measurement models (experience-based) within this *large* conception of objective indices, like for instance survey responses on corruption real experiences in four Latin American countries (Seligson: 2002) or on surveys of business managers on the bribes paid to twenty-one Eastern European and Central Asian nations (Clarke and Xu: 2004).

More recently, some authors have tried to build *pure* objective corruption measurement through innovative tools (Duncan: 2006). Golden and Picci compared spending on public works on diverse regions of Italy, finding out that the gaps were much higher in southern Italy (Golden and Picci: 2005). More sophisticated is the model developed by Olken, where he studied a particular case of infrastructure corruption in Indonesia (the construction of a road in a local community) through the comparison between corruption perception by local individuals and real corruption, measured through reported expenditures on building materials, financial audits and the final construction of the road. (Olken: 2006)

Subjective Indicators

Most of indicators, however, lie on subjective measurements. Such models are currently based on polls and surveys in which individuals are requested to answer different questions intended to effectively measure the level of corruption. Such survey may include perception-based questions or on the contrary, experience-based" ones. There could be an inevitable tendency to believe that experience-based surveys can be more "useful" than perception-based polls. However, perception matters¹. The large extent that corruption fight has reached worldwide is due to the consensus that, corruption hurts economic performance and development.

Some may be skeptical about the relation of corruption and development. Cases like Bangladesh, where very poor corruption rankings have coexisted with impressive economic growth, seem to undermine such

assessment. However, empirical studies have extensively proved a negative correlation between corruption and economic performance, regardless of some exceptions. (Rigobon and Rodrik: 2004; Rodrik *et al.*: 2004). Today, research has proved that a one standard deviation increase in corruption reduces investment rates by three percentage points and lowers average annual growth by one percentage point. (Acemoglu *et al.*: 2001).

Accordingly, the “perception” of corruption by significant actors –such as foreign investment executives or simply citizens– has a real importance, and its measurement is necessary and useful. Hence, important perception-based indicators are elaborated by commercial risk-assessment firms such as Standard and Poor’s or Political Risk Services. Another illustrative example of this kind of measurements is the data gathered by the Economist Intelligence Unit, which assesses risk and business attractiveness for more than 180 nations.

Aggregate Indicators

Beyond objective and subjective indicators, a new generation of corruption and governance indicators appeared in the mid 1990s, providing a much more sophisticated approach to corruption assessment. These new indicators are characterized for being constructed by combining several primary measures. They have been accordingly called “second-generation” measures (Johnston: 2000), “composite indicators” (Arndt and Oman: 2006) or more commonly, “aggregate indicators” (Kaufmann *et al.*: 1999)

As Johnston notes, this second-generation indicators was born mostly because of the strong criticism that previous indicators had generated (Johnston: 2000). In effect, even if scholars and most of practitioners had warned about the necessity to carefully interpret these indicators, their data were used too laxly, fostering negative reactions from government officials and other actors who blamed corruption indicators in preventing foreign investment and economic development. Aggregate indicators present several advantages over individual indicators. Kaufmann and Kraay have identified four main benefits from aggregate indicators: (1), aggregate indicators allow a broader country coverage than individual ones, (2) they provide a functional summary from a vast array of individual indicators, (3) they average out and therefore, they reduce measurement error as well as the influence of bias of individual sources and (4) they allow for the calculation of explicit margin of errorⁱⁱ. (Kaufmann and Kraay: 2007)

Although several aggregate indicators are today available, three of them have stood out because of its sophistication and very extensive use among anti-corruption practitioners: (1) the Corruption Perception Index (CPI), published annually by Transparency International, and (2) the Business Environment and Enterprise Survey (BEEPS) and the (3) World Governance Indicators (WGI), both built by the World Bank.

The Corruption Perception Index (CPI) is an aggregated indicator built by adding a varying set of component measures. Hence, the CPI is commonly called the “poll of polls”. Much criticism has been addressed against the CPI, in the terms of inaccuracy, inconsistency and real impossibility to assess what a particular given degree of corruption means for a country. However, the CPI has revealed as a powerful tool, accepted worldwide. Several elements of the indicator internal architecture help to make the CPI more reliable and accurate. (Lambsdorff: 2006). The CPI is constructed from very different sources, such as the World Economic Forum, the Institute for Management Development, PriceWaterhouseCoopers, Freedom House and Gallup International, for instance. The CPI also combines evaluations of previous years in order to decrease sudden variations among scores due to random effects. As Johnston summarizes,

“I have methodological reservations about Transparency International’s famous Corruption Perceptions Index [...] but I also have great respect for what TI –and its index– have done to put corruption issues on page one and keep them there” (Johnston: 2005; p. xi)

The Business Environment and Enterprise Performance Survey (BEEPS) was an ambitious World Bank initiative, launched in 1999 after a growing consensus on the idea that corruption and institutional weakness actively halted business and investment flows (Brunetti *et al.*: 1997). Hence, from the data gathered for the elaboration for the World Development Report in 1997, and the ongoing World Business Environment Survey, the BEEPS was conceived to effectively measure from a private-sector view the quality of governance across 20 nations of Eastern Europe and Central Asia.

The BEEPS was very costly to build, requiring a great investment on its productionⁱⁱⁱ. Nevertheless, the BEEPS provided an excellent occasion to empirically explore the frameworks that private firms try to influence, and therefore assessing a new approach to the reality of state capture in the region and providing new inputs for anti-corruption and public-private partnerships projects. (Hellman *et al.*: 2000). The BEEPS, as well as other aggregate indicators, include an array of features to ensure accuracy and reliability in its measurement. Specifically, the BEEPS estimates a margin of error for several of its questions, and therefore allowing controlling it from the results of the survey.

Together with the CPI and the BEEPS, the World Governance Indicators (WGI) are one of the most important indicators used today. The WGI is not strictly a “corruption” indicator, because it measures other factors in order to assess a governance “photo” of every country. However, it is relevant to the discussion because one of the dimensions captured by the WGI is the (1) control of corruption. The other five dimensions are (2) voice and accountability, (3) political stability and absence of violence, (4.) government effectiveness, (5) regulatory quality, and (6) Rule of Law. The WGI count today with an extensive history, because since 1996, the World Bank Institute (WBI) has produced the WGI through more than 30 data sources in over 200 countries and from more than 25 different organizations worldwide^{iv}. (Kaufmann *et al.*: 2005).

The WGI aggregated structure is based on a statistical methodology known as “unobserved components model” (Kraay: 2006). The aggregate indicators shown in the WGI are weighted averages of underlying data. These weights represent the precision of the individual data sources taken into consideration. As in the BEEPS, the unobserved components model also allows to control margins of error for every country’s measurement. These margins of error provide very useful information, because they help to make comparisons more accurate. As a result, in those cases where range of values for corruption overlap, this fact indicates that minor differences in country rankings should not be overestimated. The complexity of the statistical construction of the WGI requires therefore a good understanding of the indicators’ structure. As Arndt and Oman insightfully point out,

“these technical features of the KKZ indicators^v (indicators which, it bears repeating, are probably the most carefully constructed), together with our earlier observations about how they are widely used, point up four major reasons for concern about their *misuse*: the likelihood of correlation of errors among sources; lack of comparability over time; sample bias; and insufficient transparency” (Arndt and Oman: 2006; p. 65)*

* The italics are present in the original.

The Problems of Measuring Corruption: Perception, Error and Action

It is now clear that corruption as a field of study and work count with a myriad of different indicators. Their variety offers to those interested in understanding –scholars– or in fighting –practitioners– a clear advantage because the weakness of some can be made up for the strengths of other. Indeed, the use of diverse indicators assures a more contrasted assessment and better available information for researchers and project managers. Furthermore, the large quantity of information gathered in the last 20 years, and the increasing sophistication of theoretical models explaining the causes, effects and remedies of corruption, have also a positive effect in the conception of new indicators.

Nonetheless, despite these major improvements, corruption assessment is still today facing the same obstacles that it did years ago. Notwithstanding increased complexity of indicators, the challenges remain unaltered through time. Certainly, every indicator has to cope with its own problems, and modern aggregate measurements reveal new dares. However, all these setbacks can be gathered under a few –but persistent– major problem groups. Hence, I have identified four main problem-types that summarize the challenges of corruption measurement: (1) the *perception* problem; (2) the *error* problem; (3) the *insufficiency* problem; and (4) the *actionable* problem.

The Perception problem

It is unanimously acknowledged that perception matters in corruption. Investment bankers, risk-assessment firms or political consulting firms corruption perceptions largely determines business and political operations every day. However, virtually everyone also acknowledges that perception is not enough. Real data about actual corruption is a permanent demand from actors involved in corruption and governance issues. The availability, however, of such information is extremely scarce, or simply non-existent.

This situation has led too often to read perception indices as “real” levels of corruption. Moreover, the complex statistical constructions of modern aggregate indicators can easily create an illusion of quantitative sophistication that leads to interpret them as actual corruption indicators.

Actually, recent research has shown that the gap between perception of corruption and real corruption can be even larger than expected, “...implying that using corruption *perception* indices as a measure of corruption *experience* may be more problematic than suggested by the existing literature” (Donchev and Ujhelyi: 2007; p.17). The necessity to rely on subjective factors –because of lack of better sources– cannot prevent the fact that even the best built perception-based surveys have a potentially very large margin of error, particularly when compared with actual corruption. (Bertrand and Mullainathan: 2001).

Such criticism has generated an enormous pressure for obtaining what Kraay calls “hard objective data” rather than “soft perception data” (Kraay: 2006). I have illustrated about some encouraging examples about innovative models for gathering objective data from corruption. However, it is worth wondering if objective measurements are necessarily more helpful than perception-based indicators. As Kraay warns regarding governance issues

“Even where objective measures *are available*, they provide only imperfect proxies for real conditions on the ground (of course the same is true for perception-based data which has potential problems of its own). For example, the constitutional limits on executive authority in a country, the laws governing judicial independence, or the

regulations governing business entry may correspond very poorly with the actual application of those rules and procedures” (Kraay: 2006; p.8)

Yet, users of perception-based indicators –both individual and aggregate– are aware of such a problem, and are consequently impelled to interpret them carefully. Alleged “objective data” could nevertheless include similar degrees of error (between the indicator reading and the *actual* corruption) and produce a nominal and rigid, –but still inaccurate– image of the reality.

The Error problem

The issue of error has posed several problems for corruption measurement, and it is today still one of the most challenging areas of debate. The fact that corruption indices are based on perceptions includes a supplementary difficulty to measure the error in models for assessing corruption. Social science has extensively coped with error. For instance, making predictions about neighborhood choice in relation with income level will always include a level of confidence and margin of error, obtained through statistical work. The sociologist in charge of such a research will need to take into consideration the uncertainty of social science when expressing his conclusions and forecasts. However, his data are precise (in the example, the level of income of people in different areas). Corruption assessment has by contrast to deal with data that *already* include large margins of error, making its work even harder.

Today, major corruption indices include different systems to manage error in their assessment. Both the Corruption Perception Index and the World Governance Indicators report measures of error. Kaufmann and Kraay have identified two main kinds of measurement error that affect corruption and governance assessment: (1) the error relative to the specific concept that is expected to measure, and (2) the imperfection by definition of any proxy for governance (or corruption) regarding a broader concept of governance. (Kaufmann and Kraay: 2007). Hence, Kaufmann and Kraay’s error are related first, to the inherent measurement problems in any social research (e.g. sampling error, operationalization problems, etc.) and second, to the very nature of corruption assessment.

The WGI expresses the confidence interval as the country’s score plus and minus 1.64 times its standard error. The standard error is obtained from one hand, the number of sources taken into consideration for country, and on the other hand, the estimated precision of every source. So, for instance, the confidence interval for a country with only one source is about twice as large as the confidence interval for a country with seven sources (Kaufmann *et al.*: 2003). The WGI have even incorporated error measurement in the construction of the aggregated indicators. Through a complex system of diverse stages, the WGI incorporates the different sources for building the final indicator. In the third stage of this process, the aggregation is not done through a simple average, but sources on the contrary are weighted according to the strength of their correlation with one another. (Kaufmann *et al.*: 1999).

Thus, error variance is estimated by the separation among the different individual indicators taken into consideration at this level. The smallest this difference is (smaller error variance), the more presence is granted in the final output of the aggregated indicator (more relative weight in the calculation). Arndt and Oman have thoroughly studied this procedure, revealing that such system is however based on

“a crucial –and unrealistic– assumption: that different sources’ errors are *uncorrelated* with one another, so that a high degree of correlation between the numbers shown by some sources is *not* a reflection of a correlation of these sources’ measurement errors, but instead a reflection of their greater accuracy, compared to less closely correlated

sources, in terms of the underlying reality of governance they are designed to reflect” (Arndt and Oman: 2006; p.58)

Arndt and Oman proposes four main reasons to show how sources’ errors are effectively correlated: (1), sources that provide data used in the WGI are usually informed and influenced by the WGI themselves, (2) are influenced by other colleagues, (3) perceptions are often influenced by crises, long-term trends, or other exogenous factors such as foreign direct investment, and (4) interpretation of survey questions is specific to every context and culture, so it is likely that perception differences are smaller because they share a similar background (Arndt and Oman:2006). These four reasons effectively show how the supposed independence of the sources is much smaller than expected, and therefore, small variance among inputs –and accordingly, increased weight in the indicator- can easily been overestimated.

The Utility problem

As explained before, one of the main reasons of the boost in corruption research is due to the boosted interest of major international development agencies upon the issue. Corruption rapidly evolved from a marginalized topic on the development agenda, to a paramount must in almost any foreign aid institution, from multilateral banks, to large NGOs or bilateral donors.

However, this kinship between corruption studies and the practitioners has not been translated into an explosion of policy-oriented measurements. On the contrary, corruption indicators have been largely criticized for offering too broad corruption assessments, difficult to convert into concrete anti-corruption efforts. Once again, the ubiquitous uncertain nature of corruption prevents measurement to be an easy source for straightforward solutions. If we think about infrastructure development, it is clear that a comprehensive evaluation of a country’s road network already contains direct measures to solve such a problem. Corruption assessment, by contrast, does virtually offer no direct-solutions for particular problems. Bad road condition may require investment and public works but state-capture at regional level, what it does need?

Such a gap between measurement and solutions has led international agencies to push for a new category of governance indicators: the “actionable” indicators. This new kind of indicators measure specific features of corruption that are directly linked to policy decisions. Particular examples of actionable indicators include the Organization for Economic Cooperation and Development – Development Assistance Committee (DAC) Procurement Indicators or the Public Expenditure and Financial Accountability (PEFA) indicators.

Authors like Johnston have praised the utility of actionable indicators, when used in combination with other systems. (Johnston: 2006) Nevertheless, actionable indicators arise several concerns. First, measurement does not necessarily mean utility; actionable indicators can easily lead to create a “reform illusion”(Kauffman and Kraay: 2007). Second, because of the very nature of actionable indicators (linked to clear and identifiable policy components), national authorities interested in improving their corruption ranking –but not necessarily in really fighting corruption– can ‘act’ on those elements (for instance, the creation of a commission for the Modernization of the Civil Service) without effectively change the situation of corruption in the country.

In conclusion, corruption assessment has proved to be a complicated task subject to several difficulties such as the lack of objective data, the error measurement both endogenous and exogenous to corruption, and the complexity to build effective bridges from measurement –the “problem”–, to policies –the “solution”. However, even if the goal of obtaining simple and completely reliable indicators is impossible by the very nature of corruption, the efforts deployed by scholars and practitioners prove that corruption

measurement has not only positively evolved but that it is still today a extremely dynamic –and stimulating– challenge.

ⁱ Perception matters not only for corruption measurement and corruption research, but also for anti-corruption projects. Lambsdorff has for instance recently indicate that fighting the reputation of corrupts actors, thus affecting the reliability of corrupt transactions, rather than focusing on penalties, may be a much more useful approach (Lambsdorff: 2007)

ⁱⁱ Kaufmann and Kraay have also identified two main disadvantages of aggregated indicators, (1) “the difficulty in interpreting such summary statistics and their changes over time, and (2) the difficulty in understanding how reforms in specific areas will affect a country’s ranking on aggregate indicators” (Kaufmann and Kraay: 2007; p. 4)

ⁱⁱⁱ For instance, the survey was initially written in English and later translated into every language of every country, and in order to assure the highest accuracy, every translation was again translated back into English by different translation services.

^{iv} The World Governance Indicators proceed thus in a similar manner than the Corruption Perception Index, aggregating indicators from different sources in order to ensure accuracy and prevent major alterations from one year to other. In fact, Donchev and Ujhelyi have run a statistical correlation between different aggregate corruption indicators. The correlation for the WGI and the CPI is an extremely high 0.98 (Donchev and Ujhely: 2007)

^v The World Governance Indicators are also currently called the “KKZ” Indicators, in reference to the three main World Bank Institute officials that created the WGI, Daniel Kaufmann, Aart Kraay and Pablo Zoido-Lobatón. Arndt and Oman provide an excellent research on the construction of these indicators, their strengths and drawbacks (see particularly the chapter 4 of Arndt and Oman (2006), “In-depth Analysis of KKZ Composite Indicators”)

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