14 Measuring corruption: myths and realities

Daniel Kaufmann, Aart Kraay and Massimo Mastruzzi[1]

The recognition that progress in fighting corruption requires measurement of corruption in order to diagnose problems and monitor results has sparked debate on how best to measure corruption and monitor progress in reducing it. In this context, some popular notions are commonly espoused that either lack clarity or are not backed up by rigorous analysis or evidence. In this article we highlight some of the main issues, in the form of six myths and their associated realities, and conclude by pointing to some brief implications for the private sector's role in fighting corruption.

Myth 1: Corruption cannot be measured

Reality

Corruption can be and is being measured in many forms. Different approaches serve different purposes:[2]

1. *By gathering the informed views of relevant stakeholders*. These include surveys of firms, public officials and individuals, as well as outside observers such as NGOs, multilateral donors and experts in investment rating agencies and think tanks. These data sources can be used individually or in aggregate measures that combine information from many such sources. Dozens of such sources are available, many of them covering very large sets of countries, often over several years. These are the only available data sources that currently permit large-scale cross-country comparisons and monitoring of corruption over time.
2. *By tracking countries' institutional features*. This provides information that can be related to opportunities or incentives for corruption, such as procurement practices and budget

1 The six myths on measuring corruption in this note appeared in an article in the September 2006 issue of *Development Outreach*, and are reproduced here with their kind permission. The views expressed here are the authors' and do not reflect those of the World Bank, its Executive Directors or the countries they represent. Contacts: dkaufmann@worldbank.org, akraay@worldbank.org, mmastruzzi@worldbank.org

2 D. Kaufmann, A. Kraay and M. Mastruzzi, 'Measuring Governance Using Perceptions Data' (forthcoming in Susan Rose-Ackerman, ed., *International Handbook on the Economics of Corruption*, Cheltenham: Edward Elgar, 2006), provide an exhaustive list of 22 different data sources that provide perceptions data on corruption. Examples of measuring institutional features that create opportunities for corruption include the Public Expenditure and Financial Accountability (PEFA) framework, and the Public Integrity Index of Global Integrity. Examples of audits include B. Olken, 'Monitoring Corruption: Evidence from a Field Experiment in Indonesia', NBER Working Paper No. 11753 (2005); and C.T. Hsieh and E. Moretti, 'Did Iraq Cheat the United Nations? Underpricing, Bribes, and the Oil for Food Program', *Quarterly Journal of Economics* (forthcoming).

transparency. These do not measure actual corruption, but can provide useful indications of the possibility of corruption. These efforts as yet have limited country coverage, and almost no time dimension.

3. *By careful audits of specific projects*. These can be purely financial audits or more detailed comparisons of spending with the physical output of projects. Such audits can provide information about malfeasance in specific projects within a very particular context within a country, but not about countrywide corruption more generally. These tend to be confined to specific projects and countries, and so are not suited for cross-country comparisons or for monitoring over time.

Myth 2: Subjective data reflect vague and generic perceptions of corruption rather than specific objective realities

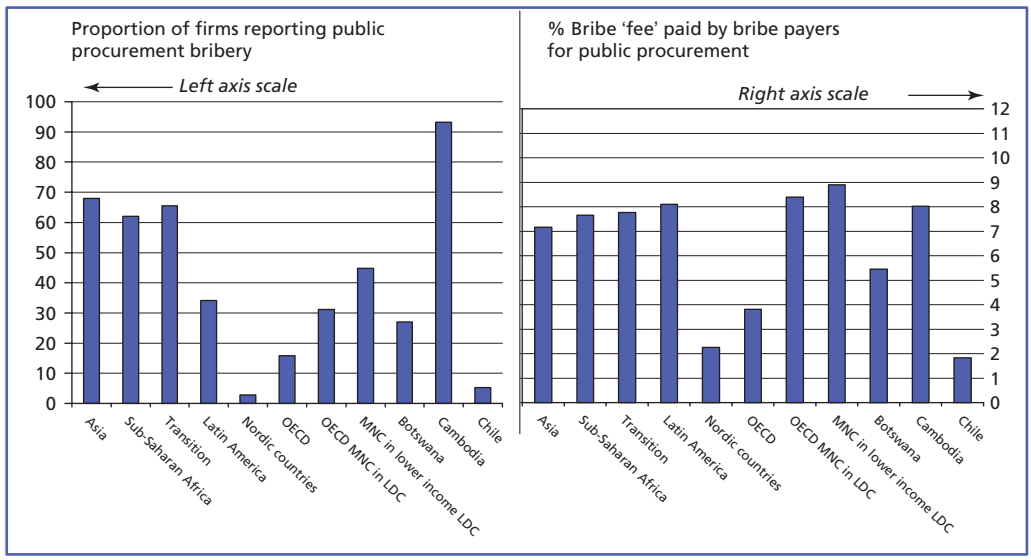
Reality

Since corruption usually leaves no paper trail, perceptions of corruption based on individuals' actual experiences are sometimes the best – and the only – information we have. Perceptions also matter directly: when citizens view the courts and police as corrupt, they will not want to use their services, regardless of what the 'objective' reality is. Similarly, firms will pay fewer taxes if they believe they will be wasted by corruption, and they will invest less in their country. Further, while social norms might affect what people view as corruption, in practice such cultural bias in perceptions does not appear to be substantial. It is telling for example that perceptions of corruption from cross-country surveys of domestic firms tend to be very highly correlated with perceptions of corruption from expert ratings in commercial risk rating agencies or multilateral development banks.[3]

Survey-based questions of corruption have also become increasingly specific, focused, and quantitative. For example, we have commissioned the following question from the Global Competitiveness Survey coordinated by the World Economic Forum: 'When firms like yours do business with the government, how much of the contract value must they offer in additional payments to secure the contract?' As illustrated in figure 1, the results can be very specific – and also sobering – pointing in this case to the frequency and extent to which firms (including many multinationals) pay bribes to obtain public procurement contracts. Household surveys such as Gallup's Voice of the People and Global Barometer Surveys and

3 There is a very high correlation between corruption in the ratings of the Global Competitiveness Surveys and those of expert pollsters such as Economist Intelligence Unit and Global Insight, or multilateral institution ratings such as the World Bank's Country Policy and Institutional Assessments (CPIA). A related critique is that assessments of corruption produced by think tanks and commercial risk-rating agencies display ideological biases, generally pro-market and pro-rightwing. In D. Kaufmann, A. Kraay and M. Mastruzzi, 'Governance Matters III: Governance Indicators for 1996, 1998, 2000 and 2002', *World Bank Economic Review* (2004), we develop a test for such ideological biases and find that they are quantitatively unimportant.

the Latinobarometer ask respondents (citizens and companies residing in the country, including the subsidiaries of multinationals) to report the number of times they witnessed acts of corruption.



Source: Authors' calculations based on EOS enterprise survey by World Economic Forum. MNC stands for multinational corporation while LDC stands for less-developed country.

Figure 1: Bribery reported by firms for public procurement

Myth 3: Subjective data are too unreliable for use in measuring corruption

Reality

All *efforts to measure corruption using any kind of data involve an irreducible element of uncertainty*. No measure of corruption, objective or subjective, specific or aggregate, can be 100 per cent reliable in the sense of giving precise measures of corruption, but reasons for this imprecision are common to all types of data, specific, subjective or otherwise:

1. *There is measurement 'noise' in specific corruption measures*. A survey question about corruption in the courts is subject to sampling error. Even a detailed audit of a project cannot conclusively distinguish between corruption, incompetence and waste, and other sources of noise in the data.
2. *Specific measures of corruption are imperfectly related to overall corruption – or to another manifestation of corruption*. A survey question about corruption in the police need not be very informative about corruption in public procurement. Even if an audit turns up evidence

of corruption in a project, this need not signal corruption in other projects or elsewhere in the public sector.

Efforts to measure corruption should aim at minimising measurement error, which aggregate indicators attempt to do by using many different data sources per country.[4] It is also important to be explicit and transparent about imprecision in estimates of corruption or other dimensions of governance, although this practice is uncommon. In the Governance Matters aggregate indicators (measuring six dimensions of governance, one of which is corruption), we report explicit margins of error.

Users of governance data should not confuse the absence of explicit margins of error with accuracy. Nor should they confuse specificity of corruption measures with precision or reliability. Very specific measures, such as proxying for the opportunity for corruption in procurement, based on a review of procurement practices (or through specific survey questions), are affected by both types of measurement error.

Myth 4: We need hard objective measures of corruption in order to progress in the fight against corruption

Reality

Since corruption is clandestine, it is virtually impossible to come up with precise objective measures of it. An innovative effort to monitor corruption in road building projects in Indonesia illustrates the difficulties involved in constructing direct objective measures of corruption.[5] The audit compared reported expenditures on building materials with estimates of materials actually used, based on digging holes in the roads and assessing the quantity and quality of materials present. But separating sand from gravel, and both from the soil present before the road was built, is difficult and inevitably involves substantial measurement error. As a result the study could not provide reliable estimates of the *level* of corruption, although it was still useful as it could provide good estimates of differences in corruption across projects.

One can also obtain objective data on institutional features such as procurement practices or budget procedures that might create opportunities for corruption, for example through the Public Expenditure and Financial Accountability (PEFA) initiative for monitoring financial management procedures in the public sector. Such approaches can usefully document the 'on the books' or official description of specific rules and procedures. *But these will only be imperfect proxies for actual corruption, not least because the 'on the ground' application of these rules and*

4 How much measurement error is reduced by aggregation depends on the extent to which individual data sources provide independent estimates of corruption. In D. Kaufmann, A. Kraay and M. Mastruzzi, 'Governance Matters V: Aggregate and Individual Governance Indicators for 1996–2005', World Bank Policy Research Department Working Paper (2006), www.worldbank.org/wbi/governance/govdata.

5 B. Olken (2005), op. cit.

procedures might be very different.[6] We have estimated the margins of error in the so-called 'objective' indicators to be at least as substantial as reports from experts, citizens or firms on the ground – irrespective of the extent of 'subjectivity' of the latter.

Myth 5: Subjective measures of corruption are not 'actionable' and so cannot guide policymakers in the fight against corruption

Reality

Several different surveys of firms and individuals ask detailed and disaggregated questions about corruption in different areas of government. Figure 1 illustrated the kind of specific detail on procurement bribery, for instance, that can nowadays be gathered through surveys. While such detail does not always point to which specific reforms are needed, say, *within* procurement or the judiciary, it is useful in identifying priority areas for action. Specific objective indicators of opportunities for corruption are no more 'actionable', in the sense of guiding specific policy interventions. One can measure whether a country has an anti-corruption commission or whether competitive bidding is mandated 'in the books' for some areas of public procurement, for example. But this does not tell us whether such reforms are effectively implemented and enforced on the ground, or whether implementing such reforms in these specific areas will have an impact on corruption.

Tracking even quite general perceptions about corruption can also be a useful way, if not in isolation, of monitoring anti-corruption programmes. Governments in democracies around the world rely on polling data to set policy priorities and track their progress.

Myth 6: Many countries with high corruption also had fast growth

Sceptics of the anti-corruption agenda are quick to point out that countries such as Bangladesh that score poorly on most cross-country assessments of corruption, yet have managed to turn in impressive growth performance over the past decade. One should not confuse these exceptions with the more general strong empirical finding that corruption adversely affects growth in the medium to long run. Studies have shown that a 1 standard-deviation increase in corruption lowers investment rates by 3 percentage points and lowers average annual growth by about 1 percentage point.[7]

6 See for example D. Kaufmann, A. Kraay and M. Mastruzzi (2005) op. cit. and D. Kaufmann (2005) op. cit., who show that much of the difference between objective measures of business entry based on statutory requirements and firms' perceptions of the ease of business entry can be explained by the extent of corruption.

7 P. Mauro, 'Corruption and Growth', *Quarterly Journal of Economics*, 110(3) (1995).

These results are at some level difficult to interpret when we recognise that corruption is likely to be a symptom of wider institutional failures. A large body of recent empirical work has documented that broader measures of institutional quality explain a significant portion of income differences across countries. One widely cited study found that an improvement in institutional quality from levels observed in Nigeria to those in Chile would translate into a seven-fold difference in per capita incomes in the long run.[8] This type of evidence suggests that policy-makers ignore corruption, and the institutional failures that permit it, at their peril.

8 D. Acemoglu, A. Johnson and J. Robinson, 'The Colonial Origins of Comparative Development', *American Economic Review* 91(5) (2001). Other studies include: S. Knack and P. Keefer, 'Institutions and Economic Performance: Cross-Country Tests Using Alternative Measures', *Economics and Politics*, 7 (1995); R. Rigobon and D. Rodrik, 'Rule of Law, Democracy, Openness, and Income: Estimating the Interrelationships', manuscript, MIT and Kennedy School (2004); D. Rodrik, A. Subramanian and F. Trebbi, 'Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development', *Journal of Economic Growth* 9(2) (2004); R. E. Hall and C. Jones, 'Why Do Some Countries Produce So Much More Output per Worker than Others?', *Quarterly Journal of Economics*, 114(1) (1999).