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Lifting the curtain on corruption in developing countries

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Recent innovations in methodology have sparked a remarkable expansion in economists' ability to measure corruption. This column reviews these new techniques, which range from inferring corrupt links from stock prices to attempting to observe bribes undercover. It concludes that, while corruption is prevalent in poor countries, there remains little consensus about its magnitude or the best way to fight it.

In recent years, innovations in methodology have sparked a remarkable expansion in economists' ability to measure corruption. New techniques, from inferring corrupt links from stock prices to attempting to observe bribes directly, have been combined with randomised controlled trials and other empirical methods not only to uncover how much corruption exists but also to suggest what policies might be effective to reduce it. The resulting literature represents a small window on a vast, hidden world of bribes and graft that follows surprisingly familiar economic rules.

Three major questions emerge in the literature.

- What is the magnitude of corruption?
- What are its efficiency consequences?
- And what determines its level?

Just how prevalent is corruption?

Though anecdotal and survey evidence suggest that corruption is rampant in the developing world, there are remarkably few reliable estimates, and those that exist show a high level of heterogeneity.

Early studies used surveys to measure the perception of bribes on the part of villagers or experts, sometimes measuring perceptions against other indicators. Others asked the bribe-payers themselves, like a 2003 study which surveyed firms in Uganda and found that payouts constituted about 8% of

their total costs (Svensson 2003). Increasingly, the preferred approach is more direct measures of corruption. Olken and Barron (2009) dressed enumerators as truck drivers' assistants and sent them with drivers on their regular routes in Indonesia with the task of noting the bribes paid at every police checkpoint or weigh station. On over 300 trips during a nine-month period, they observed more than 6,000 illegal payments which in total represented 13% of the marginal cost of the trip. By comparison, the salary of the truck driver was only 10% of the marginal cost of the trip.

The most common method for calculating graft is by subtraction. Take one measure before corruption takes place and another after – the difference is an estimate of the rent collected by the government official. This technique was pioneered by Reinikka and Svensson (2004) who compared the amount of a special education block grant sent down from the central government in Uganda with the amount received by schools, and arrived at a leakage rate of 87%. Other studies calculate how much a project would cost without corruption, and then compare this number to the real-world cost (eg Olken 2007).

Some researchers have estimated the 'connectedness' of a politician by watching how the stock market values of firms fluctuate when he falls ill (Fisman 2001); others have arrived at estimates of corruption in the public sector by finding irregularities in government audits, or gaps in how much public servants make and how much they spend (Ferraz and Finan forthcoming). The results speak to the pervasiveness of corruption in developing countries (especially when the same measures are applied to rich countries with negligible results) yet there is marked heterogeneity in corruption levels. In our exhaustive review of the literature it becomes clear that there is no reason to expect magnitudes to be similar across settings (Olken and Pande forthcoming). This suggests the need for both a more modest policy approach when attributing the problems of low-income countries to corruption and an expanded research agenda that provides many more direct estimates of corruption magnitudes across different settings.

Does corruption matter?

A study in the Ukraine showed that on average public employees have the same consumption levels as their private-sector counterparts, even though their salaries are 24-32% lower (Gorodnichenko and Sabirianova Peter 2007). Corruption does not seem to be providing extra income to these public employees, as what the government pays them is reduced to offset the

amount they receive in bribes. In cases such as this, if the way the corrupt rents are extracted does not impose distortions on society, it is theoretically possible that corruption may have no efficiency cost.

However, in the majority of studies the efficiency costs are positive, and possibly high. Firms often waste time and money navigating around corrupt officials, and they may be wary of investing, lest their investments make them subject to more bribes. And for citizens depending on government goods and services, corruption imposes costs in lost food relief (an Indonesian anti-poverty programme leaked 18% of the rice provided according to Olken 2006), worse education (students in corrupt Brazilian municipalities had test scores that are 0.35 standard deviations lower than others (Ferraz and Moreira 2010), and dangerous roads (the proven ease of buying a driver's licence in India very likely contributes to the world's highest traffic fatality rate; see Bertrand *et al* 2007 and Timmons and Kumar 2010).

What determines corruption?

A prevalent motivation in the world of corruption is the need to keep it hidden, so it is difficult to sort out the forces that compel and restrain officials from dipping into that world. Monitoring and punishments appear to decrease corruption in the short term (Olken 2007), even though the very individuals tasked with these deterrents may themselves be corruptible. In the longer term, however, increasing monitoring may also result in increasing transfers from low-level officials to auditors. Corrupt officials also appear to be choosing among multiple ways of being corrupt. Several studies have captured them forgoing certain illegal activities now in the interest of future opportunities for rents, or increasing one type of corruption when another becomes more risky (Niehaus and Sukhtankar 2009).

One emerging finding is that market forces can affect the level of bribes. In some cases, corrupt officials compete against each other for rents, and the more bureaucrats in the market, the lower the bribe rate. Alternatively, if one needs to pay off multiple different officials to complete a transaction, you may need to pay more than if a single official controlled everything (Olken and Barron 2009, Bruhn 2008, and Burgess *et al* 2011).

Several studies document that it takes time for corruption to emerge after a new policy is put in place. When a new Colombian poverty index was introduced, it initially looked free of manipulation. But a few years later, people had found new loopholes and methods of fraud, and the rate of undeserved claims was as high as 40% (Camacho and Conover 2009).

Transparency, provided through new legislation and often facilitated by new technology, is one area that appears promising. Banerjee *et al* (2010) show how public disclosures about politicians' performance and qualifications can influence electoral accountability in Delhi, India. Using the 2005 Right to Information Act and candidates' affidavits, they created report cards on legislator performance, then randomly distributed them to slum dwellers. The campaign increased voter turnout by 3.5 percentage points, reduced the incidence of vote-buying by 19 percentage points, and seemed to increase the quality of government. The vote share of the best-performing incumbent increased by seven percentage points in the treatment group relative to the controls. Innovative information delivery can also directly influence service providers by providing incentives to remain honest; designing technologies to accomplish this and measuring their effects represents an area wide open for research.

In sum, there has been a revolution in the measurement of corruption over the past few years. This literature has revealed that estimated levels of corruption are remarkably heterogeneous, so while there appears to be more corruption in poor countries, there remains little consensus about its magnitude. In terms of fighting corruption, there is fairly robust evidence for a few general economic principles. Corrupt officials respond to monitoring and punishments as one would expect from basic incentive theory, and standard market forces influence the level of bribes. But the ability of corrupt officials to substitute to alternate forms of corruption and to otherwise adapt to policy changes, either in the short or long run, suggests that applications of these principles will be tricky in practice.

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