Corruption and Policy Reform

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Policies designed to improve the quality of life for the poor and to spur economic growth often fail. A program that succeeds in one country or even in one village may not work in another. Promising experiments may not be capable of replication and may be impossible to scale up to cover an entire country. Reformers are told: "One size does not fit all." Yet, problems of poor health, low educational attainment, degraded natural environments, and violence and crime are widespread. Why shouldn't similar policies work in various settings? We argue that, over and above substantive differences, a key reason for cross-country differences in policy efficacy is the quality of government and the ubiquity of corruption and related forms of self-dealing by politicians, civil servants, and the private individuals and business interests with whom they interact. A policy that works quite well in one country may fail or be coopted in another with lower quality governance.

Understanding the incentives for corruption and self-dealing is a precondition for making progress on the other challenges facing the world. A beautifully designed policy that seems to have high net benefits may fail in the face of weak institutions.[3] One response is to urge a crackdown by law enforcement authorities, but that strategy will seldom be sufficient. Those seeking to further economic development need to understand the institutional origins of corruption and to take them in to account in designing polices. Certain policies may simply be infeasible because they are riddled with incentives for illicit self-dealing. Others may need to be combined with programs explicitly designed to reduce the incentives for corruption built into existing institutions.

To set the stage for our analysis, we begin in part I by summarizing the macro-data on the overall costs of corruption, and we then review research on the specific costs that corruption generates. Next, in section II we explain how corrupt incentives arise in a variety of contexts. We outline the basic "corruption calculus" that underlies corrupt behavior. Understanding why people and businesses pay and accept bribes and engage in other forms of malfeasance is a necessary first step towards limiting the damage that corruption causes.

We then discuss six linked types of reforms that each can be part of an overall strategy. Section III discusses solutions that involve external monitoring and enforcement combined with the punishment of wrongdoers. Recognizing the limited impact of such strategies, Section IV concentrates on bottom-up reforms under which the victims of corruption help to limit its incidence. Section V discusses internal controls ranging from reforms in the civil service system to the redesign of programs and service delivery to limit the opportunities for illicit gains. Section VI moves to the top of the government hierarchy to discuss the control of high-level corruption that distorts infrastructure projects, defense spending, privatization of public assets, and concession contracts. Section VII locates situations where the private market can substitute for the state to limit corrupt incentives. Even when such opportunities exist, however, the process of shifting assets or services from public to private ownership can itself be corrupted. Sometimes a fall in public corruption simply means a rise is private corruption. Finally, Section VIII

[3] In an evaluation of a rice distribution program in Indonesia, Olken (2006) finds that around 18 percent of the rice was lost from the program due to corruption. Under reasonable assumptions, the welfare losses from the missing rice outweigh the redistributive gains.

discusses a set of new initiatives at the international level. We conclude with some reflections on the state of the art of quantitative research on corruption and its reform.

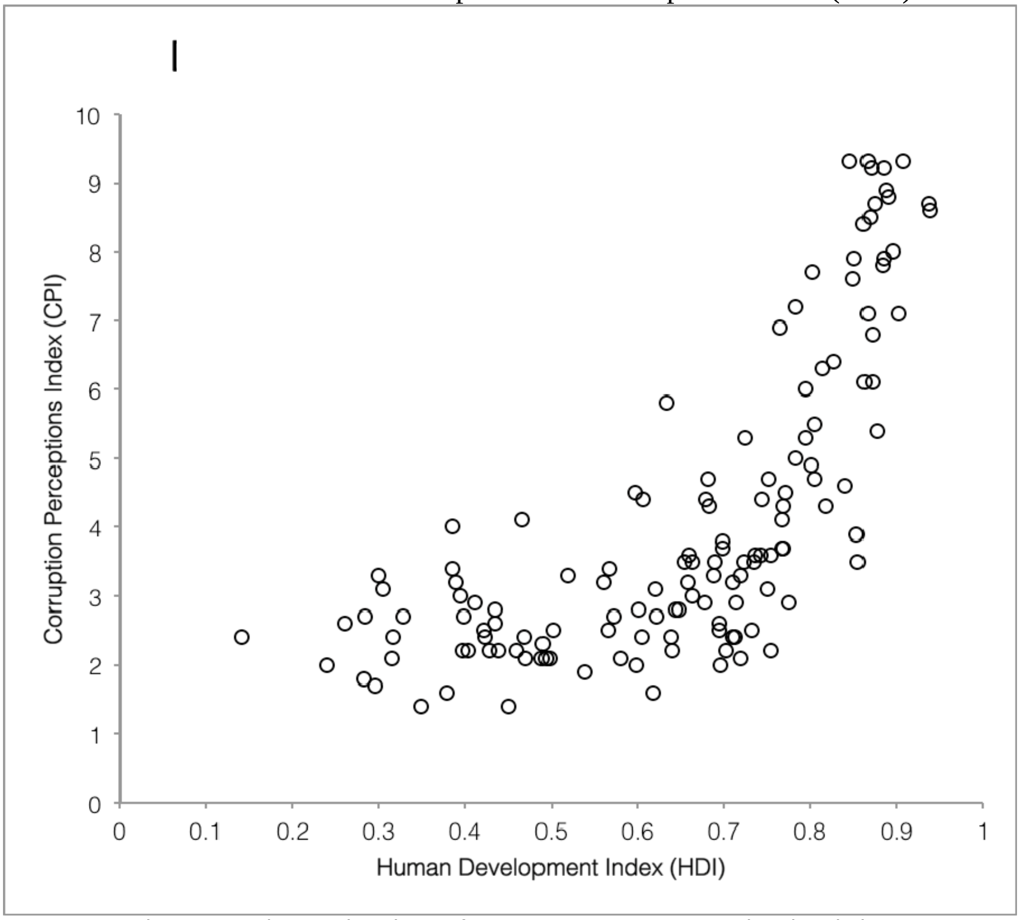
I. The Severity of the Problem

Corruption is generally defined as the abuse of public power for private gain. This is an umbrella definition, covering behavior as varied as a head of state embezzling public funds or a police officer extorting bribes in the street. Most cross-country data do not distinguish between varieties of corruption, limiting the relevance of these measures as guides to policy. Nevertheless, research suggests that the many types of corruption are highly correlated so that countries can be characterized as more or less corrupt (Treisman, 2007). In proposing reforms, however, it will be important to distinguish between grand and petty corruption, as well as between bureaucratic and political corruption, and to consider reforms that account for the special characteristics of particular sectors.

Collectively, corruption can have crippling effects on development and human welfare. Figure 1 illustrates the simple relationship between the UN's Human Development Index and perceived levels of corruption in 2010, as measured by Transparency International's Corruption Perceptions Index. This correlation is one of the most robust relationships to have emerged out of corruption research.[4] In general, countries with higher levels of corruption have lower levels of human development. Highly corrupt countries tend to under-invest in human capital by spending less on education, over-investing in public infrastructure relative to private investment, and degrading environmental quality (Mauro, 1998; Tanzi and Davoodi, 2001; Esty and Porter, 2002). However, some countries have managed to have high levels of human development despite high levels of corruption, showing that the relationship is far from deterministic.

[4] Transparency International (TI), an international organization that advocates for the control of corruption worldwide has published cross-country data on corruption since 1995. TI collects data from a number of different surveys that mostly report business and expert perceptions of corruption in various countries. Some of the underlying data sources also include questions concerning the overall business environment—asking about red tape, the quality of the courts, etc. Respondents rank the countries on a scale from excellent to poor. The annual TI indices are a compilation of corruption scores. The CPI is an ordinal ranking and does not provide measures of the volume of bribes, the incidence of corruption, or its impact. The World Bank (WB) has made use of most of the underlying indices that make up the TI index and has produced its own "graft" index using a different aggregation method and including more countries. It is highly correlated with the TI index. Most studies use one or the other of these indices. Although some countries change position from index to index and have different rankings in the TI and WB data, there is an overall stability to the rankings, even given TIs recently changed methodology covering the 2011 index. These indices are a rough measure of the difficulties of doing business across countries, but they should not be used to make precise bilateral comparisons between closely ranked countries. See http://www.transparency.org/policy_research/surveys_indices/cpi/2010 .

FIGURE 1: Development and Corruption Levels (2010)



Note: Corruption Perceptions Index drawn from Transparency International website. Human Development Index drawn from UNDP Human Development Reports website.

In general, richer countries and those with high growth rates have less reported corruption and better functioning governments (Kaufmann, 2003). Estimates of the precise magnitudes of these effects vary. Dreher and Herzfeld (2005) find that an increase of corruption by one index point dampens GDP growth by 13 basis points (i.e., .13 percentage points) and lowers per capita GDP by around $425. Gyimah-Brembong (2002) estimates the effect to be between 75 and 90 basis points or just under one percentage point.[5] Aidt (2011) constructs a broader index of sustainable development and shows that corruption, however it is measured, has a detrimental effect. Corruption in Aidt's formulation might spur investment and growth in the short run, but this could have negative effects in the long run if the projects chosen do little to enhance long-term growth and poverty reduction.

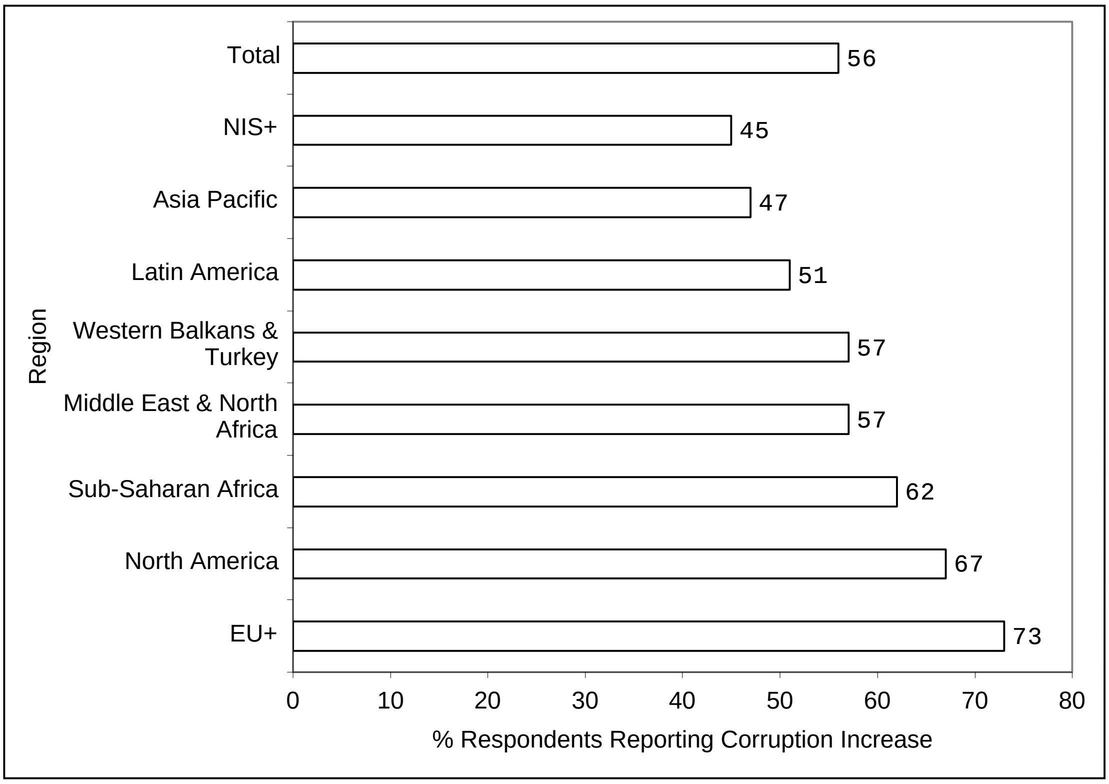
Much of this work does not deal with the simultaneous equation nature of the

[5] There is a fundamental difficulty in using an index of corruption to measure the impact of corruption on growth or GDP. The index is a measure with no obvious physical counterpart and with a minimum and a maximum (or in the World Bank index, a zero mean) determined by the researcher. Thus, it is not clear exactly how to interpret the numbers reported in the text.

relationship. It leaves unclear whether low levels of income and growth are a consequence or a cause of corruption.[6] Most likely, the causal arrow runs both ways, creating vicious or virtuous spirals (Treisman, 2000; Lambsdorff, 2006).

Citizen perceptions suggest that corruption is on the rise. According to data from Transparency International's 2010 Global Corruption Barometer (GCB), 56% of citizens worldwide believe corruption has increased in the past three years (Transparency International, 2010). Surprisingly, this figure is highest in the EU, where over 73% of respondents perceive that their country has experienced an increase. These numbers may reflect citizen pessimism more than actual corruption incidence, but the pessimism itself underlines the severity of the problem.

FIGURE 2: Corruption Perceptions Among Citizens (2010)
(In the past three years, how has the level of corruption changed?)



Note: Data drawn from Transparency International's 2010 Global Corruption Barometer. NIS+ includes Armenia, Azerbaijan, Belarus, Georgia, Moldova, Mongolia, Russia, and Ukraine.

There has been little systematic data collection on sector-specific corruption, but a cross-national survey conducted by Transparency International permits a preliminary assessment. The 2007 version of the GCB polled over 63,000 people in 60 countries on their corruption perceptions and experiences. The survey asked respondents whether they had contact with a government institution, and if so, whether they were asked for a bribe.

[6] There is also some skepticism over whether the corruption and GDP growth correlation is driven by faulty measurement, specifically the use of perceptions-based corruption measures. Treisman (2007) and Aidt (2009) find no strong relationship between corruption experiences and growth.

Experiences were collected across eleven different government sectors: health, education, judicial, police, registry and permit services, tax collection, water, electricity, gas, and telephone.[7]

Despite its limitations,[8] the GCB provides a window into the way corruption varies across sectors in different countries. For each country and sector, we can measure bribery rates by dividing the number of respondents asked for bribes by the total number of respondents who had contact with the institution. These rates are a loose proxy for the incidence of corruption. Table 1 presents bribery-rates by sector for the 53 countries in the GCB where complete data are available. The table is sorted by GDP per capita, with the poorest countries at the bottom. Each column is color-coded by quartile to depict how countries rank relative to others in the survey. White corresponds to the top-quartile, countries with the lowest bribery rates and the least corruption. Dark grey corresponds to the bottom-quartile, and the light and medium shades of gray correspond to the second and third quartile countries, respectively.

[7] The survey actually asked respondents separate questions about their experiences in the legal and judicial sectors, but it is unclear what this distinction means. Here, these categories are merged for purposes of conceptual clarity.

[8] Before engaging in cross-national comparisons using the GCB, it is important to note the limitations of the data. First, the questions only capture low-level petty corruption experiences, not grand corruption by high-level officials. Second, differences in reported bribery rates might be driven in part by cultural differences in respondents' willingness to report illicit behavior. Corruption is more openly discussed in some societies than others. There may also be cultural differences in what constitutes a corrupt transaction. A bribe in one country may be considered a gift in another. Third, government institutions may vary significantly across countries, and "registry and permit services" could represent something quite different in Turkey and Ireland, or in Venezuela and Malaysia. Any cross-national comparison assumes that sector definitions hold relatively constant worldwide.

TABLE 1: Percentage of Citizens Encountering Bribery by Sector by Country

Country	GDP per Cap	Educ	Legal	Health	Police	Reg & Perm	Tax	Tele	Elec	Water	Gas
Luxembourg	103.0	1.9	2.1	3.9	5.1	4.3	3.3	2.4	1.3	1.5	1.6
Norway	82.5	0.0	0.0	0.1	0.8	0.2	0.0	0.4	0.0	0.7	0.0
Iceland	64.2	0.1	1.7	0.5	0.9	0.7	0.2	0.5	0.2	0.3	0.0
Ireland	59.3	4.8	5.5	3.9	3.3	4.4	3.2	4.3	3.5	4.9	3.4
Denmark	57.1	1.6	1.1	1.3	2.1	1.1	1.0	2.0	0.9	1.3	1.4
Switzerland	56.2	0.6	0.8	0.7	2.1	0.2	0.4	0.6	0.2	0.3	0.8
Sweden	49.7	0.5	0.7	1.0	0.9	0.9	0.6	1.6	1.2	0.9	0.0
Netherlands	46.7	1.3	2.6	0.7	0.0	2.5	0.5	1.5	1.3	2.0	0.3
Finland	46.3	2.0	2.5	0.8	1.3	0.5	0.8	1.1	1.4	2.2	6.3
USA	45.6	1.7	4.7	1.7	1.8	2.3	1.9	1.5	0.9	1.4	0.6
UK	45.4	2.8	0.0	3.2	4.2	3.8	2.1	0.0	0.0	0.0	0.0
Austria	44.9	8.3	2.4	2.9	0.7	9.2	3.4	2.6	1.4	1.4	0.0
France	42.0	1.1	1.4	3.1	2.2	3.7	0.3	0.6	0.5	0.6	0.0
Canada	40.3	0.9	0.7	1.5	1.1	0.9	0.2	0.8	0.0	0.0	0.3
Singapore	36.4	1.8	1.0	1.5	0.0	1.4	0.0	0.4	0.4	0.0	1.3
Japan	34.3	0.0	0.0	0.6	0.8	0.5	0.4	0.3	0.4	0.4	0.0
Spain	32.0	0.7	1.7	0.5	0.0	1.5	0.5	5.0	1.2	0.4	1.1
Hong Kong	29.9	3.8	6.3	2.4	4.3	2.6	3.5	2.9	3.3	3.6	2.3
Greece	28.0	2.8	6.2	22.1	2.1	8.0	7.9	2.1	4.0	2.4	2.9
S. Korea	21.7	1.0	3.2	0.4	2.0	0.3	0.6	0.3	0.0	0.0	0.0
Portugal	21.0	1.1	2.3	1.9	6.3	2.2	1.5	3.8	1.8	1.3	1.8
Czech Republic	16.8	3.7	8.8	8.3	10.9	13.1	2.4	2.3	2.1	2.0	2.2
Croatia	13.2	1.5	4.4	5.6	5.6	1.7	0.5	0.3	0.4	0.9	0.7
Lithuania	11.5	2.9	7.0	12.1	19.9	4.6	1.2	0.9	1.0	0.8	0.4
Poland	11.1	1.7	4.2	8.7	9.7	2.8	0.5	0.8	1.1	0.8	0.8
Russia	9.1	20.1	11.9	10.3	25.8	9.7	5.0	1.9	3.5	1.7	2.8
Turkey	9.0	5.4	4.5	3.8	16.6	4.9	1.6	1.4	1.4	1.0	2.5
Venezuela	8.3	13.9	27.6	16.5	16.3	29.9	6.3	3.2	6.5	5.8	7.1
Romania	7.7	11.1	10.4	17.4	9.9	10.6	3.3	1.5	1.9	2.6	1.5
Malaysia	7.0	1.7	5.3	2.1	30.3	1.9	0.0	1.6	1.4	1.5	0.4
Argentina	6.6	0.0	3.4	1.1	15.7	9.4	0.6	2.1	1.4	1.9	2.1
South Africa	5.9	3.9	7.1	2.9	11.2	5.4	1.1	2.2	2.6	2.3	0.9
Panama	5.8	13.9	21.6	12.3	32.7	14.4	19.6	10.4	11.7	11.2	13.2
Serbia	5.4	5.4	6.8	12.4	17.5	2.6	2.4	4.0	2.6	1.5	0.0
Bulgaria	5.2	2.8	12.9	9.8	21.5	1.8	1.2	0.0	0.3	0.3	0.0
Dominican Rep.	4.2	6.8	18.7	4.7	41.2	19.8	5.8	2.8	10.4	4.7	7.5
Bosn. & Herz.	4.0	5.3	10.0	9.8	13.0	2.3	1.3	1.1	0.9	0.7	0.7
Macedonia	3.9	5.4	9.5	7.9	8.7	6.5	3.6	0.5	1.7	1.3	3.4
Peru	3.8	8.3	25.9	4.1	42.4	11.7	5.8	4.7	3.4	4.7	0.7
Thailand	3.5	3.3	14.3	2.4	27.1	8.6	3.4	1.1	1.9	0.8	0.0
Albania	3.5	12.5	32.7	20.6	18.1	11.9	12.4	11.2	12.9	8.5	5.2
Maldives	3.5	18.0	12.2	19.3	20.7	10.2	8.8	4.4	4.6	4.5	5.0
Ukraine	3.1	22.8	27.2	26.1	44.3	11.9	13.3	1.9	2.1	2.9	3.2
Guatemala	2.5	4.7	5.6	1.6	25.8	5.4	0.0	2.3	2.6	3.1	1.4
Indonesia	1.9	8.8	10.3	3.8	59.7	40.2	0.0	2.1	6.1	1.9	0.6
Philippines	1.6	15.9	12.1	20.7	24.0	17.1	7.9	5.2	4.4	2.9	1.3
Bolivia	1.4	21.5	38.6	9.4	56.0	16.5	15.8	6.0	5.8	5.9	13.5
Nigeria	1.1	17.1	16.7	5.4	65.9	25.2	34.8	4.4	35.3	1.7	5.8
Cameroon	1.1	47.4	19.2	40.1	47.6	25.3	27.8	6.2	18.0	14.2	5.8
India	1.0	23.8	40.6	16.3	66.5	51.3	9.5	14.5	17.2	13.0	11.7
Senegal	1.0	7.8	17.4	11.9	43.3	27.7	18.5	1.4	7.3	3.6	4.3
Pakistan	0.9	16.5	31.9	21.2	55.7	37.3	36.6	20.0	43.4	23.4	16.3
Ghana	0.7	9.5	9.6	4.8	48.4	21.1	8.4	3.0	8.1	3.1	0.3

Note: 2007 Transparency International Global Corruption Barometer. Sector scores represent reported bribery requests per contact; Columns color-coded by quartile; GDP per capita measured in thousands of USD.

As expected, corruption is more endemic to some sectors than others (Hunt, 2006). On average, 18% of respondents faced corruption when interacting with the police, while only 2% experienced corruption in dealing with water providers. The chart also illustrates a strong relationship between income and corruption although countries of similar development levels differ in the sectors most prone to corruption. The groupings, although crude, give a sense of how countries perform in different sectors—indicating where they overachieve and underachieve. For example, the Greek police seem to be performing reasonably well, with only 2.1% of police interactions resulting in a bribe request. This relative success is in sharp contrast to rampant corruption in Greek hospitals, where almost 22% of users reported some form of bribery. In health-related corruption, Greece ranks third to worst, just above Ukraine and Cameroon. Based on the GCB data, Turkey seems to have the opposite problem. Turkish doctors and hospitals are relatively clean, only 3.8% of interactions involved bribery. In the police sector, Turkey fares much worse than Greece, with a bribery rate of around 16%.

There is no good data on the global impact of corruption on economic growth and the incidence of poverty. Ten years ago the World Bank estimated that worldwide bribery totaled at least $1 trillion dollars a year by extrapolating from firm- and household-level data, but that estimate was obviously an extremely rough guess.[9] Furthermore, it is a poor measure of the impact of bribery on growth and poverty. Small bribes can have large distortionary effects when bribe payers are in a strong bargaining position. Conversely, some corrupt deals are mostly transfer payments, albeit often in a regressive direction from poor citizens and taxpayers to wealthy officials and multi-national firm.

A few attempts have been made at the country level, but these resist generalization. For example, Gorodnichenko and Peter (2007) estimated the extent of corruption in the Ukraine based on estimates of the gap between reported personal earnings and actual expenditures by public officials. Although public sector workers have an income 24 to 32% less than comparable workers in the private sector, they have approximately the same levels of consumption, suggesting either that the perks of office are very large or that formal income is supplemented with illicit sources or both. Dialing their estimate up to the level of the Ukrainian economy, they estimate illicit income to be around $460 to $580 million, which constitutes around 1% of the country's GDP. The estimate ignores legal in-kind benefits, and more importantly, it provides no information on the impact of corruption on the choices of bribe payers and public officials. In another study, McMillan and Zoido (2004) explore high-level political bribery in Fujimori's regime in Peru, taking advantage of filmed bribery interactions between his top advisor, Vladimir Montesinos, and members of the Peruvian legislature, judiciary, and media. The size of the bribe estimates is startling— politicians received monthly payments of from $3000 to $50,000 per month, and some media outlets received as much as $1.5 million per month. This permits the authors to judge the relative value of different actors to the regime, but it does not produce any overall estimate of the social costs of bribery.

[9] Correspondence with Daniel Kaufmann, then of the World Bank Institute, in 2004.

Thus, we must turn to more focused research that concentrates on measuring the costs of corruption in particular sectors and locations. Some of this work has a global reach; other studies are micro-analytic.This research provides quite convincing evidence concerning the mechanisms by which corruption reduces growth and human welfare.

First, corruption negatively affects the business and investment climate. Corrupt countries tend to suffer from more bureaucratic red tape, which may be intentionally created by rent-seeking bureaucrats. According to Wei (2000), an increase in the corruption level from relatively clean Singapore to relatively corrupt Mexico is the equivalent of an increase in the tax rate of over 20 percentage points. Lambsdorff (2003a, 2003b) finds that an improvement moving Colombia's level of integrity to that of the United Kingdom would increase net yearly capital inflows by 3 percent of GDP. According to World Bank research in Bangladesh, China, India, and Pakistan, firm export levels and foreign investment were higher where hassles and delays were low. To help one understand the magnitude of the effects, the authors report, "if Calcutta could attain Shanghai's level of investment climate, the share of firms …exporting would nearly double from the current 24% to 47%, comparable to the coastal Chinese cities. Similarly, the share of foreign-invested firms would increase by more than half, from the current 2.5% of firms, to 3.9%" (Dollar, Hallward-Driemeier, and Mengistae, 2006).

There is evidence that corruption distorts firms' production decisions. Thus, Sequeira and Djankov (2010) study bribe payments for cargo passing through customs in ports in Maputo, Mozambique and Durban, South Africa for a random sample of 1,300 shipments ultimately headed for South Africa. On average, bribes represent 14 percent of the shipping costs for a standard container passing through the port of Maputo and 4 percent of shipping costs for a standard container passing through Durban. They show that some shippers bear higher transport costs in order to ship through the low bribery jurisdiction and that South African firms are more likely to use domestic suppliers when bribery raises the costs of imports. Corruption in customs creates important distortions in the real economy.

A second mechanism through which corruption dampens development is by inflating the budgetary costs of public goods and services because these costs incorporate kickbacks. Corrupt demands from officials are analogous to a tax insofar as a business or household is concerned, but the consequences are much more pernicious. Bribes are paid to obtain and retain business. Unless the procurement process is very competitive, this means that individual projects and procurement contracts are excessively expensive and unproductive.[10] Cole & Tran (2011) document the magnitude of these costs in an Asian country by examining the account books of two firms. One firm sold industrial parts, and reported kickback demands from both private and public buyers, although the level and incidence of kickbacks were higher for government and military sales than for other buyers. They show a statistically significant positive relationship between the profit

[10] In a somewhat competitive procurement market, bribes could both reduce firm excess profits and inflate costs. If suppliers collude with each other and corrupt officials to keep prices high, most of the costs of corruption will be shifted to the government budget. See Rose-Ackerman (1978) and Lambert-Mogiliansky (2011).

margin and the size of the payoff that is almost dollar for dollar. The second firm sold imported pharmaceuticals to public and private hospitals and faced widespread kickback demands from both types. In the former most of the gains flowed to the managers, and in the latter, the hospitals benefitted. Overall payoffs roughly double the prices of the drugs. If this study can be generalized to other countries and firms, it suggests that the impact of corruption on development is not limited to payoffs to public officials but extends to private to private dealings as well. It also suggests that if the distortionary effect of kickbacks is not equal across sectors, then that difference will distort the government's programmatic choices. If corrupt officials set priorities, they will set priorities to maximize their payoffs. If honest officials set priorities, they will use the distorted information on costs that results from the distribution of corrupt kickbacks.

Third, if tax collectors accept payoffs, the impact on the government budget is direct. One researcher reports that at least half of tax collections are lost to corruption in some countries (Fjeldstad, 2005). In Bolivia one study estimated that 42% of the VAT was lost in 2001; reforms reduced the loss to 29% in 2004 (Zuleta, Leyton and Ivanovic, 2006). In 2004 Russia reported losing $4.5 billion in duties on goods imported from Europe. Bangladesh in 2000 lost duties equal to 5% of GDP, and that figure omits the discouragement of potential investors caused by the corrupt regime (OECD 2003, 9). Corrupt countries may also be reluctant to balance their budgets during times of financial crises because this would reduce the level of rents available. Using a data set for 28 OECD countries spanning the period 1978-2007, Peren et al. (2011) find that corruption significantly reduces the probability of successful budget consolidation.

In circumstances of low government legitimacy, citizens try to avoid paying taxes, and firms go underground to hide from the burden of bureaucracy. Cole and Tran (2011: 419-424) show how this can be done through the examination of the official and the internal books of an Asian construction firm. In this firm accounting manipulation to lower taxes mostly involved reporting excess costs for materials and machinery, not labor.

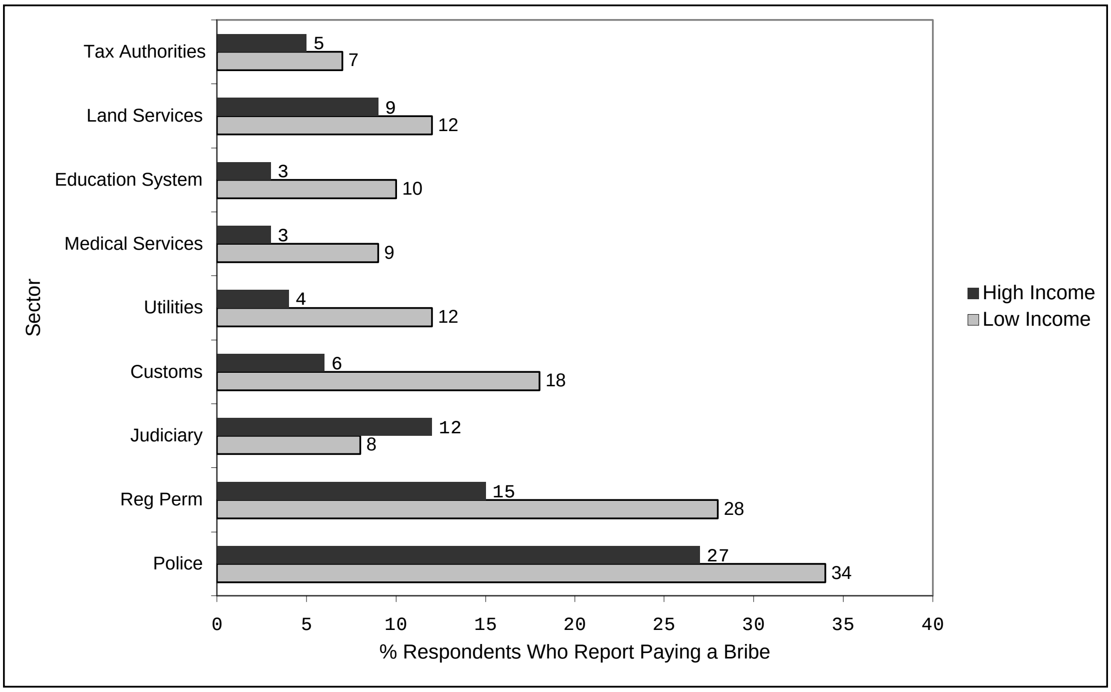
High levels of perceived corruption are associated with high levels of tax evasion (Uslaner, 2007). Similarly, Torgler's (2003) study of attitudes toward tax evasion in Central and Eastern Europe shows that when individuals perceived that corruption was high, they were less likely to say that people have an obligation to pay taxes. Thus, one indirect impact of corruption is to persuade people that it is acceptable not to pay taxes because government has been captured by corrupt officials, violating norms of fairness. As a consequence, corrupt governments tend to be smaller than more honest governments, everything else equal (Friedman, Johnson, Kaufmann, and Zoido-Lobaton, 2000; Johnson, Kaufmann, McMillan, and Woodruff, 2000).

Fourth, corruption negatively affects service delivery and human capital because goods and services leak out of the system before reaching their final recipients. In Uganda, estimates from the 1990s suggested that 40% to 94% of drugs simply disappeared (McPake *et al.* 1999, 855-856). Brazilian federal police authorities estimated that embezzlement in the pharmaceutical sector totaled $637 million (Colitt, 2004). In an

Indonesian program designed to provide food aid to the poor, at least 18 percent of the rice was lost; in one third of the villages 43 percent disappeared (Olken, 2006). Ferraz, Finan, and Moreira (2010) show that students in Brazilian municipalities where corruption was detected in education have test scores that are 0.35 standard deviations lower than those without corruption, as well as higher dropout and failure rates. Teachers in corrupt municipalities are less likely to have a computer or science lab and less likely to have received formal training, presumably because resources have leaked out of the system.

Public Expenditure Tracking Surveys (PETS), a monitoring tool developed by the World Bank, frequently reveal similar estimates of the loss of funds and goods. The first PETS was conducted in Uganda and found that only 13% of an annual capitation grant actually reached the intended beneficiary schools (Reinikka & Svennson, 2004). Such leakage undermines the efforts of both governments and donors. In turn, poor service delivery reduces the accumulation of human and physical capital with obvious negative effects on growth. This effect may be particularly acute for the poor, who tend to report paying bribes more frequently. This trend is illustrated in Figure 3, which presents results from the 2010 Global Corruption Barometer. Low income respondents experienced higher bribery rates across every government sector except the judiciary. As a result, the allocation of services will have little to do with need or qualifications, but rather reflects willingness to pay (Bertrand, Djankov, Hanna & Mullainathan, 2007).

FIGURE 3: Bribery Incidence across Income Groups (2010)



Note: Results drawn from Transparency International's 2010 Global Corruption Barometer. Percentages are weighted and calculated for respondents who came in contact with the services listed. Figures reflect experiences of the 77,000 people surveyed in the GCB.

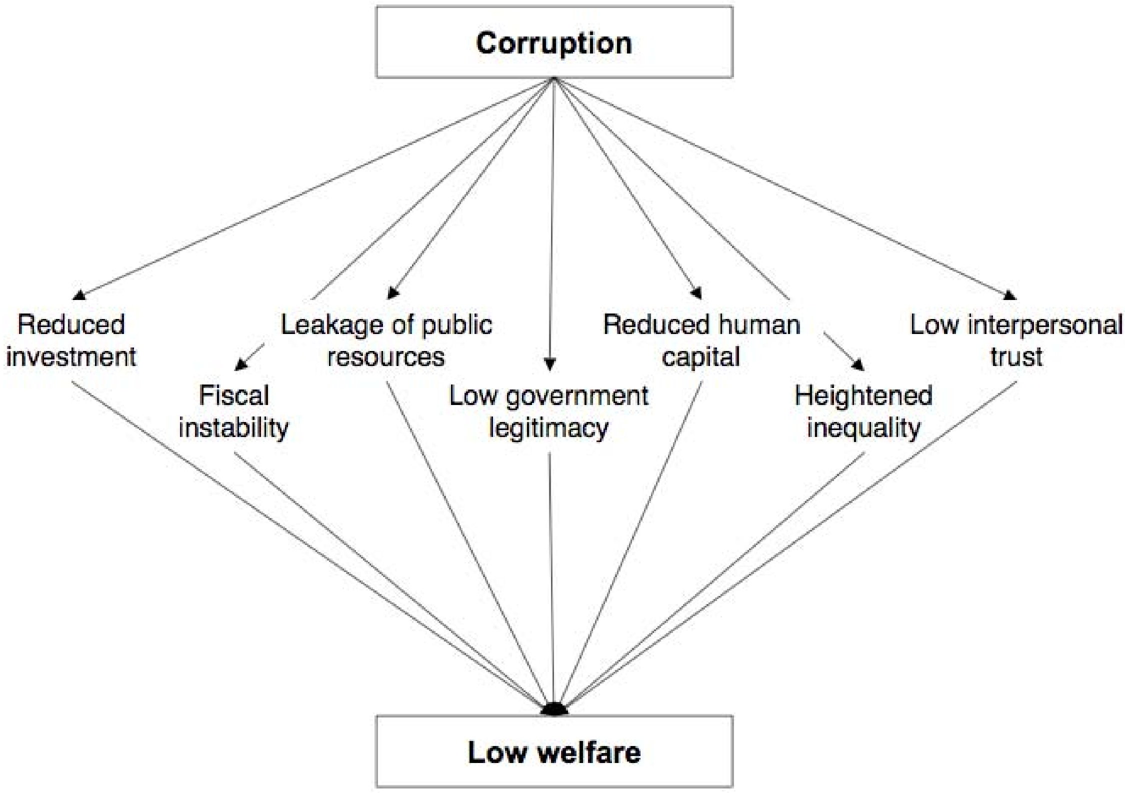
Fifth, corruption likely has negative effects on "softer outcomes", such as popular satisfaction with government and democratic legitimacy. Corruption can undermine government competence (Piga, 2011). In a country with high levels of corruption, competence may not be a worthwhile attribute of public officials. Much higher benefits can be obtained through networking activities that give one access to the dominant, corrupt crony and patronage-dominated environment. The resulting, pervasive technical incompetence makes the corrupt system run much more smoothly because of the absence of accurate and precise monitoring and the ease of capture. This interaction, in turn, undermines public trust in government.

Interviews in a range of countries have found widespread popular disapproval of entrenched corruption (Anderson, Kaufmann, and Recanatini, 2003; Pasuk and Sungsidh 1994). In a study of four Latin American countries, Seligson (2002) finds that citizens who had personally experienced a corrupt act reported lower levels of interpersonal trust and belief in the political system. In Nicaragua, respondents were asked if the payment of bribes "facilitates getting things done in the bureaucracy." Interestingly, those who agreed that corruption gets things done *were less* likely to believe in the legitimacy of the political system.[11] The corruption-legitimacy finding has been replicated across a number of other countries and contexts (Anderson & Tverdova 2003; Chang & Chu 2006). Low levels of trust may ultimately contribute to political instability and internal turmoil.

In short, corruption is a lynchpin problem that both curbs growth and investment and exacerbates other problems associated with weak states and poverty. Figure 4 outlines the many mechanisms linking corruption to low levels of welfare. Efforts to improve educational outcomes will be frustrated by absentee teachers, missing school supplies, and inadequate buildings. Efforts to improve infrastructure will be burdened with nepotism and inflated costs. Efforts to mitigate disease will be thwarted if medical supplies are stolen and sold in the black market.

[11] One study of Central and Eastern Europe shows that people disapprove of corruption even if they report engaging in it themselves (Miller, Grødeland and Koshechkina, 2001, 2002). Although experience with corruption varied markedly across the countries, the public's underlying values and norms did not differ greatly. A majority in each country expressed strong moral disapproval of payoffs, but, at the same time, a plurality of citizens in every country except the Czech Republic said they would pay a bribe if asked.

FIGURE 4: The Many Consequences of Corruption



With this summary as background, section II outlines the fundamental conditions under which corruption can flourish. That analysis provides a framework on which to build our discussion of efforts, both successful and unsuccessful, to reduce corruption.

II. The Corruption Calculus

Corruption is a crime of opportunity. It occurs at the intersection between the public and private sectors (or even entirely within a sector) wherever the opportunity for illicit private economic gain exists. Identifying an act as "corrupt" implies a background standard of acceptable behavior. Thus, its prevalence depends upon the way the law and the society define the proper scope for public and private action.

II.A. Kleptocracy, Cronyism, and Corruption

In a state controlled by an autocrat who does not recognize any distinction between public and private funds, bribery and other forms of under-the-table payoffs may be uncommon. The state is simply organized a personal, kleptocratic fiefdom. The population may be impoverished and the economy monopolized by "public" firms controlled by the ruler, but corruption, in the ordinary sense of the word, does not exist except insofar as underlings seek to gain at the ruler's expense. Such states, of course, face serious problems of governance, but the problems go deeper than the misuse of public power for private gain. The rulers of such states do not recognize the distinction between public and private power.[12] It is a sign of progress when those with political power recognize that it is illegitimate for them to use their political power to accumulate wealth.

Closely related to such kleptocratic regimes are ones where the state largely serves the interests of a narrow group of business people and politicians, sometimes with criminal elements mixed in. Even if the group with influence changes when the government changes, most of the citizens are left out. In Michael Johnston's (2005) taxonomy the contrast is between "power chasing wealth" and "wealth chasing power." For example, Russia may be moving from a case where private wealth controlled public power to one where political power dominates private wealth.

In some states where the link between the political and the economic elite is strong, favored firms may not have secure property rights in the legal sense, but they obtain beneficial treatment because of their insider status (Hellman, Jones, and Kaufmann 2003). Political connections can operate much like outright payoffs to distort investment priorities. In a study of 20,202 publicly traded firms in 467 countries, Faccio (2006) finds that having politicians as board members or substantial shareholders brings a 2.29 percent increase in share value. Political connections may promote short-run economic growth although it is likely to be unbalanced and inequitable and to limit long-term growth prospects (Rock and Bonnett 2004; Aidt 2011). A study of bank loans in Pakistan by Khwaja and Mian (2005) found that firms with a politician on their boards borrow 45 more than other firms but have a 50 percent higher default rates on these loans. Because only government-owned banks provide special treatment, the excess defaults are a cost to taxpayers. They estimate the deadweight loss at between 0.15 percent and 0.30 percent of GDP. In addition, many of these bad loans presumably financed projects that did not make economic sense ex ante. If so, then Pakistan loses an additional 1.6 percent of GDP per year due to preferential lending.
In such polities the main risk to the economic elite is a change in political leadership. For example, in a study of Indonesia under President Suharto, Fisman (2001) used an index of the political connectedness of firms listed on the Jakarta Stock Exchange, dubbed the Suharto Dependency Index. He demonstrates that rumors about Suharto's health problems between 1995 and 1997 had a more negative impact on the share prices of firms with high levels of this index and that the differential impact was greater the worse the rumors.[13]

[12] See, for example, some of the cases examined in Barma et al. (2011) which discusses the special problems that can arise in natural resource rich states controlled by a small elite. On the case of Angola see the reports of the Christian Michelson Institute, Norway at http://www.cmi.no/angola.

[13] Of course, Suharto did actually resign from office in May 1998, but as Fisman points out, this is a difficult event to study within his framework because so many other things were happening at the same time: the "event window" was several months long, the successor was a Suharto ally, and trading volumes were exceptionally low by the end of 1997. Perhaps for these reasons, the relationship did not hold in the

Sustained corruption can itself undermine political legitimacy, shortening the time horizon of both rulers and investors, and prompting regime change (Rose-Ackerman 1999: 32). However, the more democratic regimes that emerged in several of the countries studied by Rock and Bonnett (2004: 1101) have had to confront corrupt networks that now work to undermine growth.[14] If top political figures themselves exploit their position for private gain, the effectiveness of government programs and the impact of foreign aid and lending suffer. This inequality of influence can extend beyond special treatment by the executive and the legislature to include the courts as well.

In this essay we leave to one side such political systems where either regime change or a drastic change of heart at the top is a precondition for reform. We focus, instead, on the structural conditions that create corrupt incentives in states that are nominally organized to benefit their citizens, whether or not they have strong democratic institutions. Thus, we concentrate on situations where private gains are available to officials and to private actors, if they take advantage of the opportunities created by public programs. We recognize that similar conditions may exist entirely within the private sector (Argandona, 2010), especially in large firms, but our focus here is on public sector corruption and its connection with private wealth and public power.

II.B. High and Low-Level Corruption

Corruption can occur when the state engages in large scale projects that generate massive rents that can be shared between corrupt officials and their private sector counterparts. However, corruption is not just a phenomenon that occurs at the large scale. Although the misallocation of resources may be most dramatic in large projects, day-to-day petty corruption has an immediate impact of people's lives. The basic causes are similar—a scarce public benefit—or one that can be made scarce by corrupt officials—and monitoring difficulties. The gain to the citizen may be access to a public service or the "benefit" of not having the law enforced against him, whether or not he is a lawbreaker. Examples are numerous, but consider just a few. Suppose there are a limited number of places in subsidized housing so that the households that qualify exceed the available apartments. People may pay to be put at the head of the queue, and officials may manage the queue to maximize bribe revenue. Licenses to operate a motor vehicle are not limited in number but are only available to those who qualify. Officials may refuse to award licenses even to those who qualify unless they are paid, and licenses may also be awarded to the unqualified. Tax collectors may accept a payoff in return for issuing a low tax bill, and inspectors of all kinds can be paid to issue favorable reports. Operators of illegal or unregistered businesses can pay the police to avoid being shut down, and bribes can be

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beginning of 1998 except for steep declines in the shares of firms controlled by Suharto's children. (Fisman 2001: 1100, note 9).

[14] See also studies of the former Communist states in Europe and Central Asia. Although administrative corruption is a problem throughout the regions, state capture is a particularly serious problem in the countries of the former Soviet Union. In such situations the firms that do the capturing perform well, but overall economic growth suffers (Hellman, Jones, and Kaufmann 2003). Fries, Lysenko, and Polanec (2003: 31-32) document the differences between "captor" firms with insider status and "non-captor" firms. The former have higher growth rates of fixed capital, revenue, and productivity.

levied on ordinary citizens by police to avoid being charged with real or invented offenses (Fried, Lagunes, and Venkataramani, 2009; Peisakhin and Pinto, 2010).

The incidence of both high- and low-level corruption not only depends upon the opportunities available, as determined by the level of rents and the ability to keep payoffs secret. It also depends upon the effectiveness of measures designed to deter malfeasance. If the law enforcement system is itself corrupt or simply incompetent, it will not matter much if people know that corruption occurs. Even if the law enforcement system is honest, it may be understaffed and underfunded. Expected formal punishment is often minimal. However, structural policies can limit corruption even in the face of weak law enforcement, and we outline some of these below. These policies limit the rents in public programs without undermining their basic purposes. They also improve transparency and accountability—both top-down and bottom up—so that corruption is exposed and controlled through techniques other than the criminal law. Of course, the criminal law is a necessary background condition, but it will generally be insufficient unless other institutions support the development of honest and effective government (Rose-Ackerman, 2010).

An implication of the above discussion is that the lower the level of rents created by the public sector, the less the incentive for corrupt payoffs. A highly competitive, open economy where most firms do not earn monopoly rents ought to be less corrupt than a closed, monopolistic one. Indeed, some studies find that trade openness and other measures of competitiveness are associated with less corruption (Ades and Di Tella, 1999, Sandholtz and Koetzle, 2000, Blake and Martin, 2006). However, the direction of causation is unclear. Corrupt officials may create and maintain private monopolies in return for corrupt payoffs. The causes of corruption may be deeper than the organization of the private sector, which may not be exogenous. Lambsdorff (2003a), for example, finds that weak law and order and insecure property rights encourage corruption that, in turn, discourages foreign capital inflows.

If inequality and poverty lower the level of public oversight, both can contribute to high levels of corruption. In democracies, in particular, inequality is linked to corruption, a result consistent with the state capture variant. The negative effect of inequality on growth may be the result of its effect on corruption, taken as a proxy for government weakness (You and Khagram, 2005). Here too, the causal arrow goes both ways. Extreme inequality suggests that a wealthy elite controls the state by paying off officials to provide that elite with benefits.

II.C. Corruption and History

Cross-country differences in perceived corruption levels may have historical and social roots. For example, Acemoglu, Johnson, and. Robinson (2001) use the mortality rates of European settlers as an instrument for the type of colonial regime put in place by the imperial power and find that it does a good job of predicting expropriation risk (and corruption levels) at the end of the twentieth century. La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999) consider legal origin, religion, ethno-linguistic fractionalization, latitude, and per capita income as determinants of a range of features of economic, social, and political life. Corruption and other measures of institutional weakness are worse in countries with higher ethno-linguistic fragmentation, few Protestants, and Socialist or French legal origins. (See also Sandholtz and Koetzle 2000, Treisman 2000.)

Colonial heritage, legal traditions, religion, and geographical factors seem associated with corruption and other measures of government dysfunction. One can understand why that might be so by studying the different ways that rents are created, maintained and shared under different systems. However, these factors are not policy variables that present day reformers can influence. The key issue is whether these historical regularities directly affect government quality or whether they help determine intermediate institutions and attitudes that present-day policies can affect. In La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999) the historical variables are not always significant and become entirely insignificant when their studies include income and latitude as explanatory variables. Historical patterns may operate through their impact on underlying institutional structures, not as direct determinants of corruption. If so, that may be good news for reformers who concentrate on the institutional conditions for corruption and its reform. So long as there are alternative routes to institutional reforms that facilitate economic growth and high income, latitude and history need not be destiny (Rodrik, 2003).

II.D. Corruption and Democracy

The impact of democracy on corruption is complex. Democracies generally function with higher levels of transparency and public accountability than non-democracies, and that fact should help control corruption. High levels of economic freedom and lower levels of corruption go together as does an index of democratization (e.g., Sandholtz and Koetzle 2000, Blake and Martin 2006, Kunicová and Rose-Ackerman 2005). Governments with more female participation in politics are less corrupt, and this is consistent with survey evidence suggesting that women are better monitors because, in general, they are more disapproving of corruption than men (Swamy, Knack, Lee, and Azfar 2001, Crook and Manor 1998: 42). Within the universe of democracies, elements of constitutional structures—such as presidentialism, closed-list proportional representation, and federalism—facilitate corruption (Kunicová and Rose-Ackerman, 2005; Treisman, 2000).[15] Presidential systems that use proportional representation (PR) to elect their legislature are more corrupt than other types of democracies. Many parliamentary democracies that elect legislatures by plurality rule have a heritage of British colonial rule, and many PR systems had French or Spanish rulers. Present day levels of freedom also have historical roots. However, if constitutional form, protection of rights, women's rights, and electoral institutions are important determinants in and of themselves, then countries have policy levers available even if their histories led to institutions that favor corruption.

[15] Fjeldstad (2003) reviews the literature on decentralization and corruption and cites studies that contradict the results for federalism found in the sources listed in the text. In any case, it is important to distinguish between federalism and explicit policies designed to empower those at the grassroots.

II.E. Summing Up

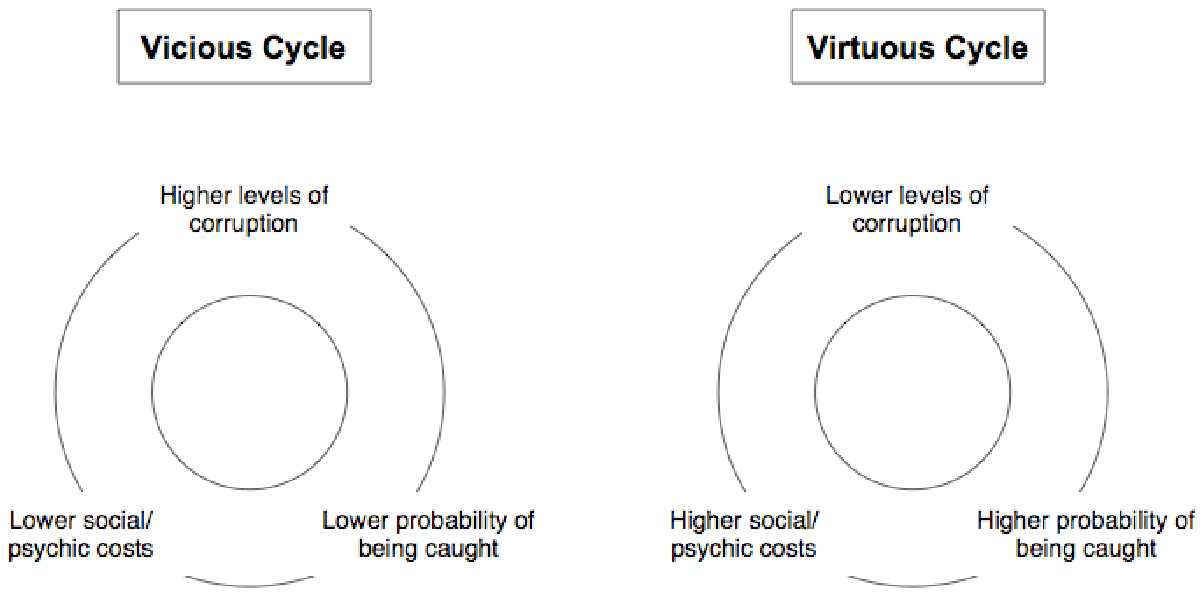
A World Bank survey permits one to see how countries compare on a range of different factors that may facilitate or control corruption (Kaufmann, Mastruzzi, and Zavaleta 2003: 363-364). Although broad measures of corruption, government quality, and informal sector activity are strongly correlated, more fine-grained analysis shows pockets of strength and weakness. For example, a study of Bolivia, using this survey, showed that it ranks poorly on several measures of corruption, judicial quality, and property rights, but rather well on standard macro-economic variables such as inflation, the exchange rate, and the quality of the central bank. Because Bolivia has had a low growth rate, the results suggest that getting the macro-economics fundamentals right is not sufficient. Institutional reforms are needed, and within Bolivia itself some public institutions score better than others and may provide reform models (ibid. 364-365).

To summarize, corruption, like any other crime, occurs when the illicit benefits of malfeasance outweigh the expected costs. However, a distinctive feature of corruption is its two-sided nature. Like any licit market transaction, both the bribe payer and the recipient must experience net gains relative to the feasible alternatives. The benefits of corruption to officials include the bribe payment itself as well as the social benefits that come with dealing out illicit favors. Corruption may also allow a bureaucrat or politician to expand his political power. On the cost side of the equation, corrupt officials consider the prospect of formal punishment, as well as the internal moral "psychic" costs of engaging in wrongdoing.[16] If discovered, corrupt officials may also face social opprobrium and the loss of office. On the other side of the transaction are the illicit benefits earned through bribery to be balanced against expected punishments and psychic costs. If officials extort payoffs by requiring citizens and businesses to pay to get benefits to which they are legally entitled (or to avoid costs), those who pay feel aggrieved, but they are still better off than doing without the benefit (or having a cost imposed on them).

Another distinctive feature of corruption is its tendency to feed on itself (Andvig & Moene, 1990; Cadot, 1987, Goel & Rich, 1989). The more corrupt players there are in the system, the more it pays to be corrupt because the likelihood of both formal and informal punishment is reduced. Bureaucrats who would be honest in Sweden could turn corrupt in Cambodia with no change in their underlying psychology. Conversely, clean governance begets clean governance, as would-be corrupt officials become clean when corrupt networks dry up and self-dealing becomes dangerous and uncouth. The net result of these vicious and virtuous cycles is that countries and sectors can fall into either a high-corruption or a low-corruption equilibrium. And once trapped in a high-corruption equilibrium, a particularly large shock may be needed to shift a country on the path towards good governance. These dynamics are illustrated in Figure 5.

[16] Recent survey evidence from Nepal suggests that anti-corruption attitudes grow stronger with education (Truex, 2011).

FIGURE 5: Vicious and Virtuous Cycles



The big question facing reformers is how best to produce that shock. The macro-level factors discussed here— inequality, democratic institutions, religion, market structure— are not typically the subject of policy interventions. Reformers need to focus on shifting individual components of the corruption calculus in the right direction, reducing rents and increasing expected costs. With the right combination of reforms, the corruption calculus can be tipped towards clean governance.

III. Solution 1: External Monitoring and Punishment

Perhaps the most often prescribed remedy for corruption is to increase top-down monitoring and punishment. The logic is straightforward. Improved monitoring, whether in the form of an external auditor, an anti-corruption agency, or an international oversight body, increases the probability of being caught. Severe punishment also pushes the cost-benefit calculus towards clean government.

There is some evidence that increased monitoring does have positive effects on government performance, reducing the leakage of funds and other forms of malfeasance. In an experiment involving road-construction in 608 Indonesian villages, Olken (2007) finds that an increased probability of being audited reduces missing expenditures. At the time the study was initiated, all the villages were in the beginning stages of building a road as part of a nationwide development effort. A randomly selected subset of villages was told that their projects would be audited by the central government audit agency, effectively increasing the probability of audit from 4% (the baseline audit rate) to 100%. The results show that the audit treatment reduced missing expenditures by over 8%. This translates to a net benefit per village of around $250. Unfortunately, in projects with weak financial controls it may be difficult to establish a cost benchmark as Olken was able to do in Indonesia. In that case cost-overruns can simply lead the recipient country to ask for and obtain more funds.[17]

World Bank researchers are studying the role of anti-corruption authorities (ACAs), an institutionalized form of monitoring and oversight. Since the 1990s, over thirty countries have established ACAs of some form. The success or failure of these institutions depends crucially on the national context. Beyond strong political support, a healthy ACA requires a clear, legally defined mandate, a well-articulated communication strategy, coordination with other agencies, and a clear long-term funding source. Agencies without these agreements end up operating "in an unclear and ineffective legal environment" and can accomplish little (Recanatini, 2011).[18]

Some scholars have argued that anti-corruption agencies and audit mechanisms may grow more effective with time. When they are initiated, the agencies are often small and under-resourced, so that they are barely noticed by bureaucrats and politicians. Over time, as the number of audits and corruption convictions accumulates, officials may take more notice of the agency and adjust their behavior accordingly. Silva (2010) describes this spillover dynamic in a study of a Brazilian anti-corruption program. Beginning in 2003, the national government initiated a program aimed at "naming and shaming" local governments, randomly selecting 4% of cities per year for auditing. The analysis suggests that "well-informed" mayors, those in audited cities or in neighboring cities, committed significantly fewer corrupt acts in later periods than those with no proximity to an audit. Silva concludes, "small anti-corruption agencies may become more efficient over time, as their reputation becomes stronger and diffuses amongst the politicians in its jurisdiction."

The relationship between punishment severity and corruption has been more difficult to establish, but there is some evidence here as well. In a laboratory setting, Abbink, Irlenbusch, and Renner (2002) find that subjects are less likely to engage in bribe-like behaviors if the penalty threat is higher. In a field experiment of bribery experiences, Fried, Lagunes, and Venkataramani (2009) suggest that officials adjust their behavior based on potential punishments. Confederates committed illegal left turns at busy intersections in Mexico City, a common (but never punished) traffic violation that aroused the attention of the traffic police. A portion signaled high socio-economic status by driving expensive cars and wearing expensive clothes, while the control group signaled low status. The analysis, although based on a small number of observations, suggests that the officials were more likely to target the lower class group for bribes, letting the affluent confederates off with warnings. In related interviews, the officers

[17] Numerous examples can be drawn from the rebuilding experiences in Iraq and Afghanistan. Consult the websites of the Special Inspectors General for Iraq and Afghanistan,: www.SIGIR.mil; www.SIGAR.mil.
[18] The World Bank has also launched a broader Governance and Anti-Corruption (GAC) initiative to promote the demand for good governance, and can point to some positive cases. However, more research is needed both to conceptualize the way accountability institutions operate and to understand how these institutions behave in different national settings. The GAC web portal is at: http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALDEVELOPMENT/0,,contentMDK:21211265~pagePK:210058~piPK:210062~theSitePK:244363,00.html

voiced concerns that wealthy citizens were better connected and might be able to punish extortive policemen directly with a real risk of “losing their job or being sent to jail."

Increasing audit probabilities, resources for anti-corruption agencies, and legal penalties will likely reduce corruption, but we should not be overly optimistic about these sorts of interventions. First, if bribes are paid to avoid being punished for legal violations, a reduction in payoffs may do little to reduce other kinds of illegality. Consider, for example, the traffic violation example above. Some motorists were not solicited for bribes, and as a consequence, they could violate the law with impunity. Those who were required to make payoffs may have reacted by reducing the level of traffic violations. Bribe demands can act like a fine or tax, presumably lower than the legal penalty, measured in time and money, but a penalty nonetheless. Only if the potential bribers are entitled to the benefits on offer, will it be obvious that a reduction in payoffs is, in and of itself, socially beneficial. As we argue below, crackdowns on corruption need to be integrated with reform of government operations to encourage honest official behavior that does not reward law breaking. A reduction is payoffs must be part of a broader governance reform strategy in weak states.

Second, although ideally, an ACA or auditing agency is free from political manipulation and staffed with officials willing to punish corruption regardless of the status of the offender, in reality, these bodies are often subject to manipulation by those in power. Supposedly random audits and prosecutions may end up being anything but random, as politicians accuse rivals of corruption, veiling political attacks in the guise of good governance. Observers cite instances of well-designed anti-corruption programs that “did not live up to potential” because of political interference (Bryane, 2004; Lawson, 2009). At their worst, these institutions can perpetuate social injustice by allowing a corrupt leader to claim a commitment to anti-corruption while using the agencies themselves for political gain (Shah & Huther, 2000).

Institutions that promote accountability and transparency need more rigorous evaluation. At a theoretical level, their role in promoting anti-corruption and good governance seems clear, but we do not know much about how their practical operation or about what conditions are required to make them effective. Unfortunately, both country officials and representatives of donor agencies may benefit from the absence of solid data on the effect of good governance programs; this possibility may explain the current lack of information about the efficacy of these institutions. Suppose, for example, that an anti-corruption program involves a series of seminars and workshops for public officials with per diems set to encourage attendance. Given the lack of hard measures of corruption, attendance at these events is reported as a measure of success. However, attendance may not translate into concrete achievements and the seminars themselves, held at attractive locations, can be a kind of perk.[19]

Independent oversight is only as effective as the strength and honesty of the overseer. Furthermore, deeper structural changes may be the only way to improve compliance with

[19] For a more extensive discussion of the role of travel perks as a salary supplement and potential source of corruption see Søreide, Tostensen & Skage (2012).

the law and the honesty and competence of government. Ironically, countries where corruption programs prove most successful may be the very places where they are needed the least (Truex & Søreide, 2011). Even if the evidence shows that audit agencies and oversight are valuable tools in some settings, one needs to move beyond such policies to consider other interventions.

IV. Solution 2: Transparency and Bottom-up Accountability

The natural complements to external monitoring and punishment by formal organization are increased transparency and bottom-up accountability. There is substantial variation across countries in the degree of transparency, as well as within countries across different sectors and dimensions. If the processes of government are publicized— budgets posted online, rules/regulations available on notice boards— citizens can hold officials to account if they observe wrongdoing. This punishment may come through complaint procedures, social shunning, or for elected officials, through the ballot box. Citizens have an interest in fighting corruption, and if given a voice, they can be a potent force for its reduction.

Transparency and accountability initiatives come in a variety of forms, and a growing body of evidence suggests their beneficial effects. Reinikka and Svennson (2004) demonstrate the power of information in reducing leakage of an education capitation grant. In 2004, the Ugandan government began publishing the details of education funding processes in local newspapers, allowing citizens and schoolmasters to better monitor the release of funds from higher levels of government. The analysis shows that communities with better access to newspapers, as well as more informed schoolmasters, experienced lower leakage rates, and that the introduction of the newspaper campaign as a whole substantially reduced leakage rates and associated embezzlement.

In general, a free media with active investigative reporting is an aid to anti-corruption efforts (Brunetti & Weder, 2003).[20] If the local media are weak and dependent on either the government or wealthy private interests, outside actors should help to support any independent outlets and engage in reporting activities independent of local entities. These groups might supply well-researched stories to local outlets. They can be a place for whistleblowers to report and could provide protection to those who reveal corruption if that is a risky activity. They can seek reform in libel laws that make it easy for journalists to "insult" the political and economic elite in ways that "violate national sovereignty" and to be subject to fines and imprisonment. One way to do this is to defend journalists under these laws, publicize cases, and attempt to raise popular awareness of the harm caused by such restrictive laws.[21] International actors may also be able to help local media make effective use of new electronic sources of communication and to help members of the public participate in newsgathering and dissemination. A move away from conventional media to "social media" leads to what Alan Rusbridger (2010) calls "the mutualization of the news" in ways that can be harnassed to expose corruption and self-dealing.

[20] This section on the media draws heavily on Wrong (2011)
[21] An example here is Reporters without Borders, http://en.rsf.org/.

Good information helps citizens “vote the rascals out” (Adsera, Boix, and Payne, 2003). However, even if voters want to punish corruption, they may lack reliable information on politicians’ ethics and corrupt behavior. Rumors and whisperings may not be enough to produce coordinated action. In a survey experiment in Brazil, Weitz-Shapiro and Winters (2010) find that respondents who were told of a corrupt act expressed a desire to punish that politician, regardless of the politician’s level of performance. De Figueirido, Hidalgo, and Kasahara (2010) go a step further in a randomized field experiment conducted during a Brazilian mayoral election. The authors exploit a situation where both the incumbent and challenger had corruption convictions, randomly informing different blocks of voters about the convictions with 187,177 flyers. The analysis shows that knowledge of corruption can affect vote choices. For one of the candidates, the corruption treatment reduced vote share by 2.6%.

Transparency and citizen-induced mechanisms can be most powerful when combined with external accountability mechanisms. A recent laboratory experiment on bribery hints at these synergies. Serra (2010) finds that bribery is lowest when external auditing is combined with a citizen reporting mechanism. In a non-laboratory setting, Ferraz and Finan (2011) show the interplay between auditing and electoral accountability in Brazil. Starting in 2003, the federal government randomly audited municipalities on the expenditure of transferred funds. The results of the audits were then publicized in local newspapers and radio programs. The authors compare areas with similar levels of corruption and find that the release of audit results negatively affected the electoral performance of the incumbent. The effect, however, is conditional on the presence of media outlets that released the information, further supporting the Reinikka and Svennson result on the key role of the media.

Providing information to citizens can reduce corruption and increase the quality of service delivery. Peisakhin and Pinto (2010) find that India’s recently passed Right to Information Act (RTIA) allows citizens to better access a public service without having to resort to petty bribery. Slum dwellers in Delhi were randomly assigned to four groups as they applied for ration cards. In the ordinary course of applying for the ration cards, most people made payoffs, usually to agents who facilitated their applications. The control group applied for the ration card according to the standard legal procedure with no payoffs. The various treatment groups accompanied their applications with either a RTIA request, a letter of support for a local NGO, or a bribe. Although the bribe proved the most effective tool, those who filed the RTIA request also received their ration cards in a timely manner, suggesting the importance of information.

These findings on the efficacy of transparency and accountability reforms are promising, but several caveats are in order. First, as is suggested by some of the research findings, transparency is only as effective as accompanying punishment mechanisms. If citizens have no way to report their grievances to authorities or if officials are never punished for being corrupt, increasing openness and the flow of information may do little to address the problem. Transparency efforts must be complemented by other policies that give them value (Kolstad & Wiig, 2009).

A second caveat concerns the public's monitoring capacity. Although greater information provision is a good in and of itself, one should not overestimate the capacity of the public to digest information and to act accordingly. A recent international program, the Construction Sector Transparency Initiative (CoST), aims to reduce corruption and increase transparency by making detailed project information publicly available on government websites (Truex & Søreide, 2011). The spirit of the initiative is well taken, but most citizens may be incapable of understanding the nuances of construction contracts, and of those who are, few may take the time to do so. Transparency initiatives directed at the general public ought to focus on providing simple pieces of information on topics of direct interest to a large number of citizens.

V. Solution 3: Internal Controls and Bureaucratic Incentives

The first two solutions dealt primarily with external forms of accountability, both bottom up and top down, but internal bureaucratic organization and the administration of public programs are equally, if not more, important to the anti-corruption calculus. If bureaucrats have easy access to rents, an abundance of corrupt partners, and a low public service ethos, self-dealing is nearly inevitable. Furthermore, as noted above, even if bribery is limited through harsh penalties, the result may be impunity for law-breakers, not improved governance. Internal reforms and program redesign can help ensure that those situations do not occur.

V.A. Civil Service Reform

The most common policy remedy is to increase the wages of public servants. In the language of the corruption calculus, higher wages translate to higher expected costs of engaging in malfeasance, as the bureaucrat would be reluctant to put his well-paying job at risk. Conversely, underpaid bureaucrats have a greater incentive to embezzle funds and solicit bribes, as they could easily find an equivalent wage in the private sector. Generous public pensions that would be lost in the event of corrupt behavior can be a further deterrent (Becker & Stigler, 1974).

There is some evidence that low wages do contribute to high corruption levels although the evidence is largely confined to the laboratory (Azfar & Nelson, 2011). Barr, Lindelow & Serneels (2004) conduct an experiment that mimics an embezzlement opportunity using Ethiopian nursing students as subjects. Subjects were given an opportunity to siphon off a public resource and were also paid a "wage," which was set either high or low. Participants with the higher wage stole fewer public resources. A "natural field experiment" in Burkina Faso, where subjects were not aware they were participating, corroborates these results. Participants each graded an identical set of 20 papers, and the 11th paper in the set was accompanied by a small bribe. Graders were randomly assigned to high wage, low wage, and monitoring treatments (where the quality of their grading was checked), and the graders with higher wages proved less likely to accept the bribe (Armantier & Boly, 2008). Higher salaries seem to yield better political candidates in the Brazil— a 20% salary increase is associated with an increase in 0.2 years of schooling and a 25% increase in the number of bills submitted (Ferraz & Finan, 2010).

This relationship has also been supported at a macro-level using cross-national regressions (Van Rijckeghem & Weder, 2001), although the effects of wages on corruption are not particularly impressive. In a cross-section of 31 countries, doubling government wages only results in a corruption decrease of 0.5 points on the ICRG index—an index that ranges from 1 to 10.

However, Di Tella and Schargrodsky's (2003) show that the interaction between wages and corruption can be complex. They study a crackdown on corruption in Buenos Aires hospitals' procurement departments. A central authority pointed to the price divergences for standard products and asserted that they would target for investigation hospitals paying higher than average prices. At first, prices decreased and the variance fell. During that period when the audit possibility was credibly high, wage differences did not affect behavior. However, as the expected probability of detection fell over time to a more moderate level, prices rose again, but higher wages emerged as a deterrent to corruption. This result shows how policies can combine to produce effects that may either complement or undermine each other. Here, strict enforcement can dominate all other factors, but when it is less strict, its impact depends on other conditions, such as the opportunity cost of losing a government job.

One difficulty with proposals to raise wages is the lack of a clear standard for wage levels. Small changes in wages seem to have little effect, and in many developing countries, public servants, especially women, are quite well paid relative to their private sector counterparts (Filmer & Lindauer, 2001; Van Rijckeghem & Weder, 2001; Panizza, 2000). A study of 17 Latin American countries in the 1990s found that in only three countries were men in the civil service paid lower wages than their private sector counterparts (for one of these the absolute difference was very small) (Panizza, 2000). For women there was a statistically significant shortfall in only one country. Table 2 reports these results. Over and above their wages, civil servants often receive subsidzed housing, the use of government vehicles, and foreign travel. Furthermore even if increasing wages curbs corruption, it may at the same time increase inequality in the country and drain government resources. Citizens may especially resent corruption committed by bureaucrats with high wages and generous perks.

TABLE 2: Public Sector Wages Relative to Private Sector Wages, 1990s	Men	Women
Bolivia	-0.17*	0.01*
Brazil	0.02	-0.08*
Chile	-0.025	0.17
Colombia	0.16	0.27
Costa Rica	0.17	0.47
Ecuador	0.30	0.26
El Salvador	0.27	0.67
Guatemala	-0.045	0.40
Honduras	0.01	0.60
Mexico	0.11	0.23
Nicaragua	-0.02	0.02
Panama	0.11	0.49
Paraguay	0.11	0.28
Peru	0.05	0.11
Dominican Republic	-0.37	0.23
Uruguay	-0.015	-0.04
Venezuela	-0.001	0.27

Note: * = Significant at 1%
Source: Panizza (2000), table A2; surveys from various dates in the 1990s

Furthermore, above-market public sector wages may simply shift corruption onto the process of selecting applicants for public positions (Patrinos and Kagia, 2006). People may now be required to pay to obtain a scarce government job. In Pakistan, one study reports that teachers commonly paid between $200 and $1400 for jobs, collected their monthly salaries without actually working, and then paid off their supervisors (Burke, 2000). The appropriateness of a wage increase is context specific, but at a minimum, it seems prudent to raise wages in instances where public servants are grossly underpaid relative to their counterparts in the private sector and do not value their jobs as a result.

Many corrupt behaviors require partners of some kind, either favor-seeking citizens or co-conspirators in the bureaucracy. The longer a bureaucrat is in his post, the more corrupt relationships he can develop. Many governments, from ancient Chinese dynasties to the current German federal government, employ regular staff rotation as a precautionary measure. To study the effect of this anti-corruption lever, Abbink (2004) conducts a laboratory experiment where pairs of “citizen bribers” and public officials are randomly re-matched after every round, simulating the process of rotation. Compared with the case where the pairs remained fixed, the rotation treatment reduces both the frequency and level of bribes exchanged. There is, however, a downside. In a fully corrupt bureaucratic hierarchy, higher level officials can use the threat of rotation to a remote and impoverished area as a threat to keep would be whistleblowers in line and induce them to gather bribes to share with superiors (Rose-Ackerman, 1999). This practice proved common in studies of an irrigation system in India (Wade, 1982) and of police forces in Thailand (Phongpaicht and Piriyarangsan, 1994, 99-120). Furthermore, as we discuss below, rotation can undermine the impact of another promising option—competition between officials.

A final type of civil service reform is to improve meritocratic recruitment practices. Would-be bureaucrats vary widely in their commitment to public service and honest government. Patronage and nepotism can quickly fill the public sector with rent-seekers. Those who paid to obtain public sector jobs will often seek to repay themselves by soliciting bribes. A number of studies have demonstrated a country-level correlation between meritocratic recruiting practices and lower levels of corruption (Rauch & Evans, 2000; Dahlstrom, Lapuente, and Teorell, 2009). Reform measures include more transparent hiring practices, public job announcements, and independent hiring committees.

In theory, civil service reforms, such as, wage fairness, staff rotation, and meritocratic recruitment should reduce corruption levels, but the strength of the effects are conditional on the surrounding environment. In the Chinese setting, for example, meritocratic reforms aimed to screen out "shirkers" during a transfer to a new civil service system. However, only 0.3% of officials in certain areas ended up failing to make the cut. Interview evidence suggests that local norms of social harmony prevented supervisors from firing lazy subordinates, at the expense of efficiency and anti-corruption (Burns and Wang, 2010). Similar difficulties have been documented in Mexico. According to Laguna and Dussauge (2011), Mexico's civil reform experience was hampered by the "politico-administrative inheritances that characterize the region"— patronage, corruption, and centralism. Moreover, simpler issues of timing, policy coordination, and resource availability also undermined the reform package. In short, any anti-corruption intervention that targets the rewards and organization of the civil service must consider the full menu of corrupt options and ask if reform in one area will simply transfer corrupt incentives elsewhere.

V. B. Competitive Service Delivery

Under some conditions, bureaucratic competition can reduce the level of rents available. If a citizen who is qualified to receive a benefit can only obtain it from one office or individual, she may be forced to pay a hefty bribe to gain the desired service. If there are multiple bureaucrats, the citizen has more bargaining power, as she can simply move on to the next bureaucrat if she is extorted by the first. This dynamic should reduce the overall level of extortive bribes in the system (Rose-Ackerman, 1978, 1999). For example, in Nepal, traders faced several possible points for passing through customs, and were able to flock to entry points where bribe levels were lowest (Alfiler, 1986, 48). In the study of corruption in the customs services of Maputo, Mozambique, and Durban, South Africa mentioned above (Sequeira & Djankov, 2010) shippers sorted themselves between the ports depending upon their vulnerability to high bribes in Maputo and the relative costs of shipping through these ports to buyers in South Africa. These competitive pressures did keep bribes in check in both ports, but it did not equalize them for a range of reasons, including the short time horizon of officials in Maputo. A recent reform, presumably designed to limit corruption, rotated officials every six months. This had the effect of giving the officials a short time horizon that led them to extract high bribes in the short run in spite of the fact that their behavior might lead to more cargo being diverted to Durban and lower bribery receipt in the long run. Thus, this study highlights the way in which anti-corruption policies need to consider the broader context in which corruption occurs. Rotation and competitions may be incompatible strategies.

Obviously, competitive bureaucracy will not be socially beneficial if citizens are seeking illegal benefits. Bribes may indeed fall, but that will only imply that breaking the law in other ways has become less expensive (Rose-Ackerman 1978). Increasing the number of bureaucrats with overlapping responsibilities may bring down equilibrium levels of extortion but increase equilibrium levels of bribery. A citizen seeking an undeserved benefit can go to different bureaucrats until she finds a corrupt one willing to accept a bribe (Di Gioacchina & Franzini, 2008). Burgess and coauthors (2011) find evidence of increased bribery with respect to deforestation in Indonesia. Local forestry officials could allow illegal logging in exchange for bribes, and as the number of bureaucratic jurisdictions increased, logging rates increased.

V.C. Program Redesign to Limit Corrupt Opportunities

One response to corruption is to redesign public programs to reduce the level of rents available to officials and private clients. Rose-Ackerman (1999) provides numerous examples of how this might be done in ways that reduce the discretion and limit the monopoly power of officials. The state can make rules clearer and more transparent; it can increase staffing to reduce delays or increase supply to reduce scarcity. Many such opportunities are likely to exist in any polity that will be relatively inexpensive to implement. The costs are the loss in discretion that might have been used for beneficial purposes to sort out the most deserving beneficiaries or to punish only the most harmful behavior. However, if a system is riddled with corruption then discretion is being misused. Hence the losses are likely to be small when an anti-corruption policy is compared with the status quo, not some ideal state of affairs. Many such reforms are thus socially costless, the only losers are those engaged in the corrupt system, who obviously will resist reform. The explanation for the persistence of many corrupt practices is not the high social cost of reform but rather the political power of those engaged in corrupt networks.

Although we lack systematic evidence of the costs and benefits of most programmatic reforms, there is one area where the benefits are particularly easy to measure and that is tax and customs collection. The evidence suggests that reforms can be very efficacious although maintaining reform momentum over time can be difficult. The best evidence comes from Latin America since 1990 where there are numerous examples of tax and customs reform (Stein et al. 2005, 186). Most of these reforms consist of a mixture of simplified tax schedules that are affordable to taxpayers and importers, automation of operations, better auditing, and improvements in the training, oversight and incentives of officials. For example, in Bolivia, where these reforms were combined with overall civil service reforms, corruption and smuggling declined in the customs service, and the proportion of the VAT lost went from 42% in 2001 to 29% in 2004 after reforms.[22] Gómez Sabaini (2006) reports that tax collections as a share of GDP in Bolivia rose from 8.2% in 1990 to 20.5% in 2000 to 23.0% in 2004. In Peru total tax revenues increased from 8.4% of GDP in 1991 to 12.3% in 1998 at the same time as many tax rates were reduced. Taxpayers increased from 895,000 in 1993 to 1,766,000 in 1999. Tariff revenues went from 23% of revenues in 1990 to 35% in 1996 and increased four-fold in dollar terms despite reductions in duties (OECD 2003:9).[23] Peru reduced total staff from 4700 in 1990 to 2540 in 2002 and increased the share of professionals from 2.5 percent to 60 percent (Goorman 2004). The average clearance times fell from 2 days to 2 hours. In Costa Rica times fell from 6 days to 12 minutes (OECD 2003, 22).

A comparison of reforms in Chile and Argentina designed to increase compliance with the VAT shows how similar policies can have different results (Bergman 2003). The average VAT compliance coefficient is 77.6% in Chile and 54.3% in Argentina. After examining and rejecting other explanations, the author concludes that the difference can be explained by the greater credibility of Chile's reform because the tax agency was stable and had broad autonomy. Hence it was better able to induce voluntary compliance because of its more credible deterrence capacity. However, Chile, with considerable revenue from the copper industry, may simply find tax administration easier because it does not have to tax its citizens as highly. Taxes as a share of GDP were 26.3% in 2004 in Argentina and only 17.3% in Chile (Gómez-Sabaini 2006).

These results are consistent with one specific reform that has received detailed study: the creation of a semi-autonomous revenue authority. Taliercio Jr.'s (2004) study of such authorities in three African and three Latin American countries is broadly favorable. The reforms appear to be very cost-effective. Though some countries had better experiences than others, revenue collection improved. Talierco points to a range of factors that contributed to increased revenue collection for a modest administrative cost. It is not possible to measure the marginal costs of the reform, but they appear low or even negative. Overall, the cost of revenue collection as a share of revenues collected ranges from 1.7% to 2% for the Latin American cases. The best performer was Peru whose agency was the most independent from the executive and whose leaders were most able to motivate employees by creating a professional organizational culture. Talierco does, however, recognize the need for accountability and recommends the Mexican model under which the authority reports to the legislature. Unfortunately, when Talierco checked to see if the reforms had been sustained over time, he found a disappointing pattern of backsliding in all the cases he studied (Talierco 2001).[24] He argues that the political coalition in favor of independent revenue authorities is likely to be fragile, and demonstrates that this is so. Officials in the Ministry of Finance oppose revenue authorities especially if the authorities seem competent and professional and, as a

[22] Unfortunately, however, smuggling appears to be on the rise (Zuleta, Leyton and Ivanovic 2007; Escobar 2004).
[23] Including Social Security contributions, the tax share increased from 11.6% in 1990 to 14.0% in 2000. However, the share fell between 1995 and 2000 from a high of 15.4% (Gómez Sabaini 2006).
[24] Stein et al (2005, 186, 192) also found that countries, such as Colombia, are forced to pass reform after reform because each gets watered down in the approval process.

consequence, seek to be involved in tax policy, not just tax collection. Furthermore, taxpayers may also object. However, at the time of his study, the one bright spot was Peru where the organized business community supported the independent revenue authority because it was able to collect taxes more evenhandedly from all business and because it promised certainty and limited official extortion.

VI. Solution 4: Controlling "Grand Corruption"

So far, our solutions have concentrated on reforms in monitoring, in transparency and accountability, and in the operation of the bureaucracy. We turn now to the special problems that arise when the state carries out large-scale projects, signs contracts, and sells assets. These are usually special purpose, one-of-a-kind deals so that it is difficult to locate benchmarks to measure excessive costs or to set externally verifiable quality standards. They produce high levels of economic rents (financial gains) that are difficult to monitor. Hence, "grand corruption" may be a serious problem. Although the solutions outlined above have value even here, they are unlikely to be sufficient. They must be supplemented by ex ante polices that limit rents up-front. Because of the special purpose nature of these deals, good statistical evidence is difficult to come by. The broad cross-country indices discussed above go some way to capturing this aspect of corruption because they are largely based on the perceptions of international actors. However, those data do not translate easily into policy recommendations. They highlight interstate differences in perceptions of corruption without providing information on the mechanisms at work.

If the state carries out infrastructure construction projects, privatizes public firms, makes large defense purchases, or allocates concessions to natural resources, these activities are very valuable to the successful private firms and, as one-of-a-kind projects, are difficult to price competitively. Thus, those involved in the government and in the private sector may inflate overall contract values and then struggle over the division of the excess profits. Some of these profits will be provided as bribes or kickbacks; the rest will revert to the contractor with some of the total siphoned off by agents and firm managers. This competition for gains means that the size of the bribe per se is not a good measure of the social harm. A very influential private actor may pay only a small bribe in return for a massive gain because of its overwhelming bargaining power.

If corruption is endemic in large public undertakings, it will give officials incentives to create extra unneeded projects to hide monopoly gains to be split between government officials and their private sector counterparts. These projects may be self-consciously designed as special purpose deals to make monitoring difficult by both insiders and outsiders, such as aid and lending organizations. In such cases the loss to society is not just the bribes paid; it is the total of wasted resources spent on the project.

Corrupt payments and excess profits can be more easily hidden in complex, special purpose deals. This implies that one anti-corruption strategy is to change the types of things the government buys to favor standardized, off-the-shelf products as much as is feasible. The government would go “shopping.” It would, for example, buy standardized fighter jets already in wide use around the world for the air force, purchase ordinary automobiles for the police with special features prices separately and transparently. Government land purchases or sales would be made public and benchmarked in comparison with private sales (Rose-Ackerman 1999).

If the state cannot go shopping but instead needs to sign a special purpose contract, for example, for a major infrastructure project, the nature of the bidding process is a central concern. The World Bank’s most recent standards for International Competitive Bidding, for example, include provisions designed to limit corruption,[25] and World Bank has begun a more stringent crackdown on corrupt contractors than at any time in its history (World Bank, 2011). However, it is by no means obvious that the Bank has hit upon the optimal formulation. There needs to be more careful study of the relationship between bidding and auction processes, on the one hand, and results, on the other. Such studies would not need to document corruption itself but would instead ask how different procedures perform in terms of the ultimate outcome of concern, be it efficiently provided infrastructure or a privatization process that enhances competition and increases efficiency while bringing revenue to the state.

VI.A Procurement

Corruption can occur at many different stages in the procurement process. Before the formal process begins, the government must decide what projects it wants to support and must produce preliminary designs and cost estimates to help it set priorities. Even in the absence of kickbacks and bribes, procurement officials have an incentive to underestimate both costs and technical difficulties and to overestimate benefits (Flyvbjerg, Bruzelius, & Rothengatter 2003; Flyvbjerg & Molloy 2011). If they compete with others for scarce public funds, they will seek to make “their” projects look better than the competition. Infrastructure projects are usually de facto irreversible once begun because governments are likely to be punished politically for leaving big holes in the ground and unfinished buildings to blight the landscape. Because everyone expects everyone else to issue overly optimistic projection, even those who would never think of paying or accepting an outright bribe play along or exit the sector. Because there are no good objective measures of costs and benefits, this opens the door to corrupt operatives who exploit the unreliability of the data to enrich themselves and to further the interest of their firms. If officials, both bureaucrats and politicians, are not held responsible ex post for their optimistic projections ex ante, they are likely to continue to act in this fashion. Waste and corruption are facilitated by the lack of clear lines of responsibility.

Over and above inflated net benefit projections, the bidding process itself can be undermined by firms that act as a cartel to share government business. Here too corruption can thrive, but in this case as a counterpart of the collusive behavior of the cartel. Thus Lambert-Mogiliansky (2011) shows how instead of competing with each

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[25] See: http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/PROCUREMENT/0,,contentMDK:20060844~menuPK:93305~pagePK:84269~piPK:84286~theSitePK:84266,00.html

other in the level of bribe payments, firms may organize a cartel and pay off the procurement official to keep the collusive arrangement operating, giving him a share of the excess profits from the project. If a reform targets kickbacks, the official has less power to extort payoffs, but the firms may still collude to share the market. If corruption is attacked with no concern for collusion, there may be few social benefits from a crackdown. An anti-corruption drive might simply make the cartel cheaper and more lucrative to organize, so that the firms still present a united front that forces the state to continue overpaying for public projects. Therefore, the state must target the risks of corruption and collusion simultaneously—both in the reform of overall procurement procedures and in the implementation of specific procurement projects. This argument exemplifies a general point about anti-corruption policy. It needs to be developed to fit the context in which it occurs with account taken of the ways officials and bribers may seek to compensate for any constraints of corrupt deals.

Modern technology can assist in reducing corruption in procurement although these systems cannot address deeper questions about the type of projects that the state sponsors. A number of countries have experimented with procurement reforms designed to limit corruption, and several have proved quite successful and may provide models for other reformers. However, even the most successful are not a sufficient response. The state also needs to confront the issues outlined above relating to the choice of public projects and the competitiveness of the private contracting market. The most well-documented examples of e-procurement come from South Korea, Mexico, and Chile.[26] In South Korea an e-procurement system permits public bodies to shop for standardized goods and services and to manage bidding processes efficiently. The government saved over $2.5 billion in 2002 simply by streamlining bureaucratic procedures. This is lower bound, however, because the government has not measured savings in the lower cost of purchased goods and services. It would be valuable to study the impact of the system on prices paid and the number of bidders participating. Has private cartel behavior fallen? In Mexico the government created an e-procurement system, called CompraNet, to deal with corruption and waste. As in Korea, administrative costs fell, by 20% as a result of reductions in both paperwork and face-to-face interactions. The system is much more transparent and, therefore, is more easily subject to citizen oversight. The government estimated that every dollar invested in an internet procurement system earned a social return of 4 dollars.[27] Chile also streamlined its procurement system and put more material on-line. The result was a shorter bid cycle and more competitive processes. The government estimates an annual savings of $70 million both from internal efficiencies and cost savings on contracts. With total procurement totaling about $7 billion per year, however, this is only 1% of the budget.

Beyond efforts to streamline the procurement process and make it more competitive, improvements in ex post oversight are a second option. Two groups with an incentive to monitor corruption are competitors and newly installed political regimes. These groups may seek redress inside the state, but if the domestic legal system has been co-opted by the corrupt elite or is simply weak, international options may have some efficacy as well.

[26] See Ware et al. (2011, 98-99), which provides links to the underlying studies.
[27] Kossick (2004).

The international aid and lending organizations have improved their anti-corruption oversight, and some argue that anti-corruption measures ought to be built into the international arbitration system. We discuss each below although neither seems a panacea. Domestic reform will remain a priority for the foreseeable future.

VI.B. Privatization

Privatization raises some similar concerns. A recent study documents the overall favorable impact of privatization in economic terms at least in Latin America (Chong and López-de-Silanes 2003), but for public utilities, in particular, the experience has been mixed. For example, in telecommunications privatization has eliminated unmet demand by raising prices so that many households still lack service.[28] Barrera-Osorio and Olivera (2007) find that privatization of water supply in Columbia was beneficial overall; however, the price rises had a strongly negative effect on poor rural households' access to water. Some transfers to private ownership are marred by corruption and patronage and impose costs on ordinary citizens. The familiar tradeoff between maximizing the revenue earned by the government from the sale versus creating a competitive market without monopoly profits is evident in many programs and has often been resolved by giving private firms monopoly power (Hoffmann 2007, Manzetti 1999). The most successful cases involved transparent and homogeneous procedures, speed, and limited restructuring prior to privatization (Chong and Lopez-de-Silenes 2003).

Privatization programs and concession agreements are prime locations for corrupt deals (Manzetti, 1999). This means that privatization is not always a move in the direction of efficiency and good service. Some firm might be better off remaining in public hands; some natural resources might be better exploited by public companies. Case studies from World Bank projects in the water, electricity and rails sectors illustrate that, compared to private sector alternatives, the performance of public firms varies widely—from well-run bodies that perform well; to wasteful, inefficient providers (Vagliasindi, 2011). This variation suggests that privatization is not always indicated, but it also suggests that corruption is a likely problem in the poorly managed state firms. According to Vagliasindi, governance reform should involve a combination of internal incentives, coming from incorporation and strong oversight by the firm's board, and of external checks, such as public stock listing. Such governance mechanisms improve public firms' performance, in part, by controlling self-dealing by public firm managers and political favoritism. She proposes to align incentives, by publicly monitoring the performance of state enterprises through regulatory contracts that are subject to third party monitoring and scrutiny by the general public.

The privatization process may involve interplay between corruption and competition that can introduce distortions (Auriol & Straub, 2011). First, a corrupt process reduces the price received by the government and leads the privatized firm to set prices and sell quantities that are not socially optimal, perhaps because it has obtained a monopoly franchise. Notice, however, that this monopoly result could arise not only from corruption but also from a revenue maximizing government that does not factor in the social benefits of competition or of effective natural monopoly regulation (Bjorvatn &

[28] Hoffmann (2007, 10) quoting a study by the International Telecommunications Union (2000, 3).

Søreide, 2005). Second, government officials may privatize the wrong firms, that is, firms that are operating at a high level as state firms and so appear valuable to private bidders. Very inefficient state-owned enterprises do not produce many corrupt rents to share and may stay in public hands, perhaps as a repository for patronage appointments of incompetent but politically connected people.[29] Once again, pure revenue maximizers might make the same socially harmful choices as corrupt officials, but the prospect of personal enrichment can be an additional spur to distort the privatization process. Notice that if this dynamic operates, the management problems isolated by Vagliasindi are especially likely to arise. Weak firms stay in state hands because some individuals or groups benefit from their very inefficiency. If an internal reform agenda is pushed too hard, those who benefited from the status quo may switch sides and support privatization because that may allow them to preserve some of their illicit rents.

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This discussion suggests that a range of options exist to control corruption but that all of them need to be put in a larger context of state functioning. We have already shown how reducing corruption along one dimension, say by raising salaries, can increase corruption elsewhere, say by leading to the sale of civil service jobs. Here we have seen how reductions in corruption need to be combined with efforts to increase the competitiveness of contracting and privatization processes. Otherwise, the result may just be to increase the monopoly rents available to private firms who obtain contracts and government assets. Furthermore, decisions on what to buy and what assets to sell need to be made with an eye to their overall social benefits, not just their impact on the public budget.

VII. Solution 5: Shifting Service Provision to Private Sector

If government bodies are riddled with corruption and inefficiency, a final drastic remedy is to remove certain tasks from the public sector completely, moving their provision to the private sector.[30] Firms have taken over basic service provision in parts of India (Bussell, 2010), tax collection in Uganda (Iversen et al., 2006), transportation in Mexico City (Wirth, 1997), and parts of customs inspection in over fifty developing countries (Yang, 2008). Provided there is some market competition, private actors may have a strong incentive to curb malfeasance and promote cost savings. The risk is that private actors lack a "public service ethos," and may ultimately become more corrupt and parasitic than the government bureaucrats they replace. The existing record suggests that privatization is a high risk, high reward strategy— some reforms seem to have substantially reduced corruption; others appear to have made the situation worse.

Bussell (2010) studies a unique privatization reform in rural areas of the south Indian state of Karnataka. Starting around 2006, the state government began to create 800 one-stop outsourced service posts called Nemmadi centers in village areas, a substitute for government-run *taluk* offices. A portion of offices were also computerized, allowing the citizen to interact primarily with a computer program. Because of staggered

[29] See also Shleifer and Vishny (1993) who make a similar point using a different theoretical approach.
[30] Note that this "privatization" refers to services and is distinct from the privatization of state assets.

implementation across the state, Bussell was able simultaneously to evaluate the effects of both privatization and computerization on service delivery. The analysis suggests that privatization reduced corruption— citizens visiting Nemmadi centers reported spending less money overall to access services and faced fewer demands for bribes. Computerization also showed similar positive effects although on a smaller scale than privatization.[31]

Yang (2008) documents similar success in the introduction of privatization reforms in the customs sector. Over the last twenty years, a number of developing countries have hired private firms to conduct pre-shipment inspections (PSIs) of imports that allow for an independent assessment of the value and tariff classification of incoming goods. The evidence suggests that countries adopting these reforms experience substantial increases in import duty collections, as well as decreased import misclassifications.[32] Most importantly, the intervention seems to be cost effective, with the increase in tax collections representing 2.6 times program costs within the first five years.

Governments also sign contracts with private firms to deliver services such as health care. Here the government funds the program and sets eligibility criteria, but it does not provide the service itself. A promising option is to use not-for-profit firms (NGOs) as service providers. Loevinsohn and Harding (2005) review ten evaluations of contracting out in the delivery of primary health and nutrition services in developing countries. Compared with government provision, most showed positive results from management contracts as measured by coverage of the program. The authors conclude that contracting out should be considered but that rigorous evaluation should go along with experiments. The results suggest the value of combining contracting out with some type of bottom up public accountability as discussed above.

Although these successes are promising, there are also prominent privatization horror stories, the most prominent being tax privatization in Uganda (Iversen et. al, 2006). After a fiscal decentralization prompted by the 2001 presidential election, local governments privatized tax collection in hopes of improving both tax yield and efficiency. For a given area, the local government would estimate the revenue potential, otherwise known as the reserve price. Private firms would bid on the right collect this revenue, as well as a 20% margin for cost recovery. Iversen et al. (2006) provide an independent estimate of actual tax collections across six sample markets that could be compared to the agreed reserve price. They found that actual collections greatly exceeded the reserve price, even when the 20% margin was included. Actual gross margins ranged from 71% to 970.1%, resulting in "lost revenue" of 25% to 75% across the different markets. The authors conclude that privatization gave local bureaucrats an incentive to underestimate the reserve price, which would allow firms to collect a larger pool of corrupt rents. The reform merely shifted the locus of corruption from the collection point into the bureaucracy and procurement process.

[31] Interestingly, neither reform resulted in higher levels of reported satisfaction.
[32] The growth rate of other tax revenues does not change appreciably, lending greater validity to the results.

To summarize, current reform experiences suggest that privatization can improve service delivery and reduce corruption, but reforms must not be implemented without careful planning. Private sector actors engaged in service delivery must be monitored and audited, and in turn punished for any improprieties. If the threat of losing the public contract is not credible, either because there are no alternative providers or political will, firms once thought to curb corruption may ultimately promote corruption. The privatization process itself also presents opportunities for collusion in procurement, with bureaucrats and firms working together to create a rent-generating situation at the expense of public welfare. Thus, when a service has some public service characteristics simply devolving the service to private firms will not be sufficient. Honest, competent regulation is necessary and should accompany the shift to private firm provision. If such oversight is not possible, it may be better to keep the service inside the public sector.

VIII. Solution 6: International Efforts

Solutions need to focus not only on controls inside states where corrupt deals occur but also on international forums. As noted above, reforms in the former category include both more competitive and transparent bidding processes and careful evaluation of what is being bought and sold ex ante to be sure that these choices are not distorted by self-dealing officials. At the international level, reforms should go beyond the weak enforcement mechanisms in existing treaties and contracts. Initiatives need to stress both transparency ex ante and a credible threat ex post. These efforts will do little to constrain low-level corruption that affects people's daily lives. However, it has the potential to limit high level or "grand" corruption, especially when combined with the structural or institutional efforts described above.

VIII.A. Transparency—From Soft to Hard Law

Voluntary international efforts have concentrated on improvements in transparency. Good examples include the Extractive Industries Transparency Initiative (EITI) and the efforts by Transparency International—UK to compile country-by-country data on defense contracting.

The Extractive Industries Transparency Initiative (EITI) aims to further greater transparency in corporate/country agreements in the mining, oil, and gas industries.[33]The EITI does not measure corruption directly. The goal is to permit individuals and advocacy groups to monitor the flow of funds with the aim of benefitting the citizens of countries with valuable resources. The effort grew out of the Publish What You Pay initiative that targeted only multi-national firms. Under EITI countries can become candidate countries and then must propose plans that are compliant with EITI standards. These standards focus on transparent reporting and auditing of payments from firms to countries. Firms that support the initiative must publish what they pay to compliant countries and submit a self-assessment to EITI[34] Other organizations may piggyback off

[33] See EXTRACTIVE INDUS. TRANSPARENCY INITIATIVE, http://eiti.org (last visited Sept. 26, 2011).
[34] For details consult their website at: http://eiti.org/

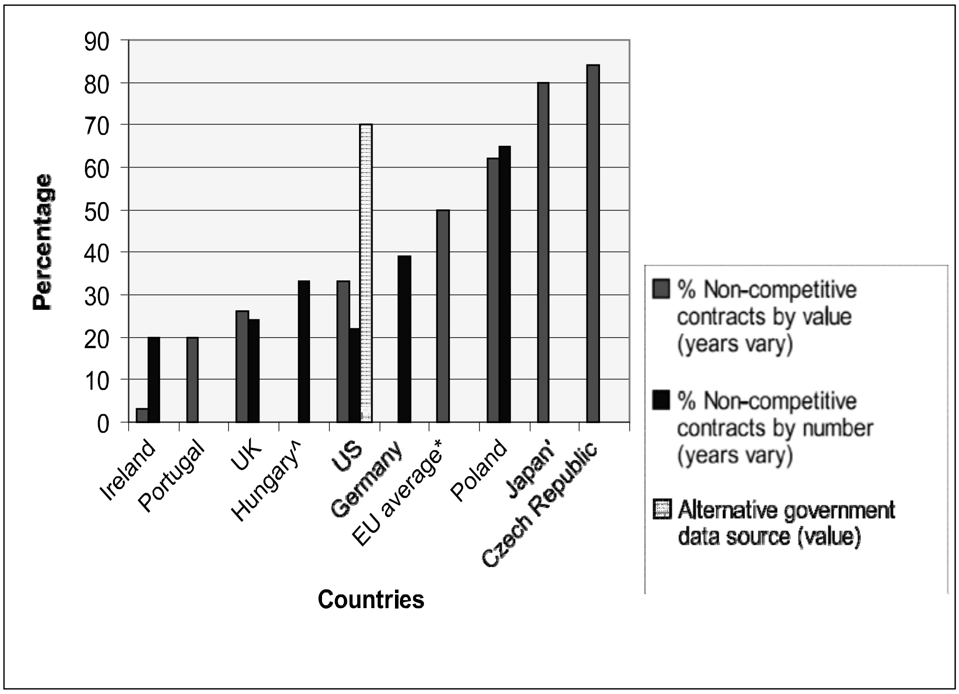
the EITI and other ratings in making decisions about funding and other forms of engagement (de Michelle, 2011).

The EITI is moving from soft to hard law in the US. One section of the US Dodd-Frank Act[35] requires firms in extractive industries to report payments under rules similar to those governing the Extractive Industries Transparency Initiative. It imposes financial disclosure requirements on all resource extraction companies listed on U.S. stock exchanges.[36] Such resource extraction issuers must disclose: "(i) the type and total amount of . . . payments made for each project of the resource extraction issuer relating to the commercial development of oil, natural gas, or minerals, and (ii) the type and total amount of such payments made to each government."[37] This statutory provision is unprecedented in requiring disclosure at the project-level, as opposed to data aggregated at the country- or continent-level.[38]

The TI-UK Defense Industry initiative is an effort to increase disclosure and encourage integrity among defense contractors and government defense ministries.[39] It is at an early stage and has had limited success in obtaining country-level data. For example, it asked countries in the OECD and European Union to supply data on the proportion of defense procurement that was single source on the grounds that high levels of single source procurement indicates a corruption risk. Although the data itself ought to be in the public domain, TI-UK was only able to obtain data from nine countries reported in Figure 6 by value and number. To highlight the problems of transparency in defense budgets the project published a report in October 2011 that grouped almost 100 countries by the degree of transparency in their defense budgets. Only about one third were in the top two categories (Transparency International, Defence and Security Program, October 2011, p. 6) In spite of the lack of systematic data, the project's reports are full of enlightening case studies and practical suggestions for reducing corruption risks based on the experiences they have documented. The program hopes that it can have an impact on industry practice by showing how some countries are setting an example of disclosure and some firms are working to curb kickbacks. They are working with a number of large defense contractors to realize their aims.

[35] Dodd-Frank Act § 1504, 124 Stat. at 2220.
[36] Dodd-Frank Act § 1504, 124 Stat. at 2220 (defining a "resource extraction issuer" as an issuer that "(i) is required to file an annual report with the SEC, and (ii) engages in the commercial development of oil, natural gas, or minerals" (internal quotation marks omitted)).
[37] Dodd-Frank Act § 1504, 124 Stat. at 2221.
[38] EITI, for example, requires "regular publication of all material oil, gas and mining payments by companies to governments," i.e., country-level disclosures. *The EITI Principles and Criteria*, EXTRACTIVE INDUS. TRANSPARENCY INITIATIVE, http://eiti.org/eiti/principles (last visited Sept. 30, 2011).
[39] Their infomative website is: http://www.ti-defence.org . See especially, Transparency International, Defence and Security Program, October 2011, September 2011, and April 2010 and Pyman et al. (2009).

FIGURE 6: Non-competitive defence procurement contracts
(as a percentage of total defence procurement)



(Transparency International (UK) May 2006)
Notes
* EU data is an estimate, taken from Watson, Rory, 'Brussels moves to open up defence contracts'. *The Times*, December 2005.
^ Hungary data estimated from Answers of the Republic of Hungary to the questions formulated in the 'Green Book on Defence Procurement' of the European Commission.
'Japan data from Singh, Ravinder Pal (ed.) (1998) *Arms Procurement Decision Making Volume I: China, India, Israel, Japan, South Korea, and Thailand*. SIPRI. Oxford University Press.
All other data obtained from official government sources of respective countries. The primary US data source is the US Department of the Defense. The authors argue that is likely the most reliable, but they were unable to locate the reasons for the discrepancy
Source: Mark Pyman, Regina Wilson, Regina & Dominic Scott (2009)'THE EXTENT OF SINGLE SOURCING IN DEFENCE PROCUREMENT AND ITS RELEVANCE AS A CORRUPTION RISK: A FIRST LOOK', *Defence and Peace Economics*,20:3,215-32, http://dx.doi.org/10.1080/10242690802016506

Such pure transparency initiatives are a first step, but they will mean little if they are not combined with follow-up mechanisms that permit those who suspect corruption to initiate complaints and to spur government or international bodies to take action. Some proposals have been made along those lines, but none is fully operational. Furthermore, measuring their impact will be difficult given the one-of-kind nature of many resource deals and the indirect nature of the control mechanism.

VIII. B. Legal Remedies—National Courts and International Forums

In a few cases, the courts of one country, such as the US, can be used to address offenses that occur in countries with weak or corrupt judiciaries. Sometimes foreign courts help with recovery of assets held abroad. Even the Swiss have recently frozen questionable assets of deposed rulers and have transferred them to incumbents who claim that the funds belong to the state. The World Bank's Stolen Asset Recovery Initiative (StAR) aims to assist countries seeking to recovery illicitly appropriated assets, but the task is difficult.[40] Sophisticated money launderers mange to hide funds in major financial centers, disguising the funds' origin though a chain of shell companies. Although domestic actions can be useful in particular cases, especially when aided by information from banking havens, they hardly represent a general solution.[41]

There are weaknesses on two fronts. First, the treaties and institutions that seek to control international corruption are all voluntary systems in the sense that nation states opt into only if they are willing to accept the treaties' conditions. Second, domestic courts are seldom willing to take on foreign bribery cases unless they involve domestic firms under the OECD Convention or involve limits on the transfer of assets held in a country's financial institutions. Law enforcement bodies in one country may extradite accused offenders to face trial, but they do not bring the cases themselves.

That leaves a final set of institutions that may be a more promising locus of reform—the international arbitration system. That regime is the main international forum for resolving commercial and investor-state disputes. States or state-owned entities are parties to many of these disputes, and corruption has been alleged in a number of cases. However, although recognized as an important issue, corruption remains a vexed and difficult problem for arbitrators, given their insulation from domestic criminal law institutions (Pauwelyn 2012).[42] Nevertheless, the institutions that organize arbitrations are stepping gingerly into this arena as litigants seek to void contracts tainted by corruption. As Mark Pieth writes, "Arbitration is no longer an exclusive area of party-interest, especially as far as large infrastructure projects are involved. It is right to consider corruption an issue of (domestic and international) public interest." [43]

One study located 38 international arbitration cases that dealt with corruption, but the arbitral system has not yet settled on an appropriate framework (Pauwelyn, 2011; Olaya, 2010). In an ironic twist, the first set of disputes arose between firms and their local intermediaries who allegedly had paid bribes. The firms were seeking to avoid paying their agents on the ground that bribery was illegal, even if they knew that payoffs were taking place (Mayer, 2012). In such cases, arbitrators generally refuse jurisdiction on the ground that they have no authority to resolve criminal allegations. Going beyond disgruntled intermediaries, the arbitral status of contracts allegedly obtained by corruption is unclear, especially because they are plagued by problems of proof. This is unsatisfactory if the complainant has been harmed by the corrupt nature of the deal and if the domestic law enforcement system is dysfunctional and even corrupt. Furthermore, in many cases, neither the host state nor the international investor has an interest in raising corruption charges – even if they can be proved. The exception, which has been arisen in

[40] See Dubois & Nowlan (2010). More information is available at the website of the World Bank's investigative unit: www.worldbank.org/integrity..
[41] On tax havens see Shaxson (2010).
[42] According to Pauwelyn, the term "corruption" does not appear in the WTO rulebook. He argues that the WTO tribunals could consider corruption to the extent that it affects trade, but its reach would be limited by the face that only nation states can bring claims and that it only judges government conduct, not the conduct of private parties. The penalties only involve reciprocal trade restrictions.
[43] Pieth (2011); see also Pauwelyn (2011).

a number of cases, is when a new host government introduces evidence of corruption under the previous regime.[44]

There are two types of forums. One is the private commercial arbitration regime; the second, the World Bank's International Center for the Settlement of Investment Disputes (ICSID), only considers cases where investors sue nation states, usually under the provisions of Bilateral Investment Treaties (BITs). In both cases private firms can initiate the arbitration process, but only if they are parties to the contracts in question. Disappointed bidders, or other outsiders to the contract, have no standing. Joost Pauwelyn (2011) argues that BIT provisions requiring "fair and equitable treatment" could be extended to cover corruption. But so far, no cases have made that connection.

This weaknesses in the present system have led to reform proposals that range from the more explicit incorporation of corruption charges into the arbitral process, to the creation of a separate body, either a formal court or another type of arbitral tribunal that would explicitly deal with claims that corruption should void a contract or, at least, lead to its renegotiation. Reform may require structural changes. Paul Carrington, for example, argues for a new international forum to hear cases initiated by outsiders to the deal. In the alternative, he suggests an expanded mandate for arbitrators to accept submissions from amici curiae that provide evidence of corruption (Carrington, 2007; Carrington, 2010).

However, even with this reform, arbitrators could not influence state governance structures directly. They would simply invalidate contracts on the basis of evidence that corruption tainted the original deal. Carrington's ultimate goal is to increase the cost of paying and receiving bribes. Even if a country's criminal justice system is weak or corrupted, an arbitral decision that invalidates a contract, or awards damages to a successor government ought to deter kickbacks up front. This deterrent will be most effective in a multi-party democracy or in an autocracy whose leader is aging or losing popular support.

Within existing domestic legal frameworks, corruption charges have been incorporated into the resolution of private law disputes in different ways (Mayer 2011). Litigants can sometimes use the legal system to obtain compensation for their losses, helping to deter corruption in the first place. In the US they have used private rights of action under US securities and anti-trust laws, as well as fiduciary duty class actions, to seek redress. Losing competitors have also claimed unfair competition or tort damages from firms convicted of overseas bribery in the US and the EU.[45] This may be a growth area for anti-corruption efforts if domestic courts in industrialized courts prove ready to accept jurisdiction.[46] Unfortunately, however, the area is so new and so focused on a set of

[44] An example from ICSID is *World Duty Free Co. v. Republic of Kenya* ICSID Case No. ARB/00/07 (October 4, 2006).

[45] In the US see, Boyd et al. v. AWB Ltd. Et al, 544 F. Supp. 2d 236 (S.D. N.Y. 2008). In the EU see ADT Projekt Gesellschaft der Arbietisgemeinschaft Deutscher Tierzuchter mbH v Commission of the European Communities, Case t-145/98 European Court reports page ll-00387. In South Africa: Transnet litd v. Sechaba Photoscan (Pty) Ld 2005 (1) SA 299 (SCA)). Abiola Makinwa supplyied these citations.

[46] Governments have also sometimes turned to ordinary courts for redress. Thus, in 1999 the Nigerian Government sought to recover the assets of a former president by asking the High Court in London to

large-scale international deals that we have no data on its potential impact on the global contracting regime. This is an area where fruitful collaborative efforts between international lawyers and empirical social scientists might have large payoffs.

IX. Conclusion: Options and Cost Benefit Analysis

A weak and corrupted government can undermine efforts to carry out otherwise beneficial policies. Programs designed to help the poor, improve the natural environment, and stimulate economic growth will have little impact and risk inflicting harm.

If possible, the choice of reform options should be driven by data and a thorough cost benefit analysis.[47] Information about possible policy initiatives needs to be grounded in valid studies that document the success or failure of policies in a variety of settings. Results in one country can help establish benchmarks for reforms elsewhere. To do this, governments must cooperate with donors in the design of projects that include competent social science evaluations. Unfortunately, evaluation may seem risky both to incumbent politicians who fear objective data and to donors who worry that evidence of failure will undermine their credibility. Even when governments and donors cooperate, studies must comply with social science protocols, including the collection of baseline data, valid study design, and competent statistical analysis. This will require international institutions to design, carry out and monitor pilot programs. Providing information on what works and what does not is impossible without hands-on projects in countries at risk of corruption.

There is an ongoing debate in economics and political science over the best evaluation methods. Nevertheless, there is widespread agreement on the limitations of many current claims for policy efficacy. International Financial Institutions (IFIs), possessing staff expertise, need to do more to incorporate evaluation procedures into projects for governance and anti-corruption reform. This may require them to provide some tailored benefits to governments willing to accept evaluation as part of an aid program and to incorporate the stick of reduced funding if they do not. It is not sufficient merely to provide information about on-going projects; the projects themselves must be set up with built-in evaluation processes.

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freeze his assets as a prelude to their repatriation. See also an effort in US court by a state-owned Costa Rican company to block Alcatel-Lucent's FCPA settlement. It sought restitution from the firm under a federal victim's rights law.

[47] The last few years have seen a growth of corruption metrics, ranging from household bribery experience surveys to detailed tracking of public expenditures at all stages in the government hierarchy. Such metrics both allow researchers to understand the determinants of corruption and permit reformers to identify particularly problematic sectors or regions. The simple act of publishing corruption measures gives citizens and observers the opportunity to name and shame governments that foster the abuse of public power for private gain. This approach can also be employed effectively for sub-national units, as evidenced by Vietnam's Public Administration Performance Index (PAPI), which richly quantifies government performance at the provincial level. Transparency International Mexico's National Index of Corruption and Good Governance.

Assuming that these evaluations locate successful interventions, IFI staff should bring these positive cases to the attention of officials in other countries. At a minimum, IFIs should be information banks that public officials worldwide can turn to for help (Rodrik, 2006).[48] IFIs should have a toolkit of options that developing countries can use to develop their domestic strategies. This does not imply that one-size-fits-all. Some countries might well reject particular reforms as incompatible with their own situation, but if they want financial assistance from aid agencies, they should have the burden of explaining why they won't adopt good governance and anti-corruption reforms shown to work elsewhere. The difficulty, of course, is that corrupt officials and contractors will try to neutralize and undermine programs to improve government accountability and transparency. Representatives of donor agencies may be similarly reluctant to support serious and systematic evaluation, especially after working closely with host governments over the years.

At present, we still do not have a good data on the relative effectiveness of most reform programs. After fifteen years of effort to promote anti-corruption and good governance, it would be valuable to consolidate experience across projects sponsored by aid and lending organizations—sharing successes, failures, and ambiguous cases. A fundamental problem here concerns public information that names countries and projects. Specific context is needed to decide if a program that worked in one country will succeed elsewhere. Domestic policymakers need to know how to evaluate programs that worked in other countries in order to generate local buy-in. Yet, country leaders often object to publicizing projects that will put them in a bad light. Alternatively, incumbent politicians may be too eager to flag the malfeasance of the previous government in the hope of assuring their own reelection. Thus, some evaluations will be easier to accomplish than others, and some political contexts will simply be impossible to use as sites for evaluation studies.

Improved metrics will assist policymaker by estimating the costs and benefits of specific reforms, a task that remains difficult and is rarely undertaken. Unresolved empirical issues limit the value of estimates of the relative cost-effectiveness of different strategies and the ways in which distinct alternatives interact. Cross-country research suggests that the gains from reducing corruption and improving governance are large. The main problem is tracing specific links from particular, concrete policies to desirable outcomes.[49] Even the World Bank, which has been a leader in quantifying the costs of the corruption, has been unwilling to organize the data in that fashion.

The few studies that do exist suggest a substantial net benefit for the anti-corruption intervention. In the audit study of Indonesia, Olken (2007) finds that the audit treatment produced a net benefit of $245 to $508 per village, depending on the assumptions being used. The improved road quality, as well as the increased wages received by workers, far outweighed the monetary and opportunity costs of the audit. Yang (2008) finds that privatized pre-shipment inspections increase import duty collections around 15% to 30%.

[48] Rodrik stresses the need to present options to developing countries based on individual country experiences, not impose a single "consensus."

[49] See the similar conclusions of Olken & Pande (2011) after a review of the empirical research.

Studies suggest the promise of various impersonal bureaucratic systems of tax collection and service delivery.[50] Even assuming that a country must pay the private firm 1% of the value of all imports inspected, the effect of privatization in this sector looks promising—the ratio of import duty improvement to fees paid is around 2.6. The ax and customs reform efforts in several Latin American countries outlined above led to substantial increases in revenue at minimal social cost. On-line procurement systems are another reform that appears to pay for itself although it is not a full response to corruption in procurement.

Even without definitive studies, some options look promising because benefits seem clear and the costs are minimal. Hence, even if the benefits cannot be precisely measured, the rates of return appear large. The release of information to citizens, for example, may require little more than a website or a well-placed newspaper story. And if the estimates from Uganda's newspaper campaign are correct, added citizen accountability could decrease leakage by 60 percentage points in places where embezzlement is particularly endemic (Reinikka & Svennson, 2011). Civil service reforms, with the exception of wage increases, may require little more than a thoughtful reshuffling of personnel and recruitment practices. Audits and heightened monitoring do require resources but have proven effective in many contexts. These promising possibilities are summarized in Table 3 along with others that ought to receive more systematic study.

[50] In addition to the material summarized here, see the on-going research summarized in Olken & Pande (2011).

TABLE 3: Outline of Corruption Solutions

Solution	Description	Benefits	Costs	Positive Examples	Key Lessons/Risks
1. External Monitoring and Punishment	▪ Increase audit probabilities and strengthen anti-corruption agencies ▪ Increase expected criminal punishments for corruption	▪ Reduction in all forms of malfeasance, most noticeably embezzlement	▪ Costs of audits and other monitoring resources ▪ Law enforcement costs and costs of false accusations	▪ Missing expenditures reduced by 8% in Indonesia village audit campaign	▪ Formal accountability mechanisms may be captured by political interests
2. Transparency and Bottom-up Accountability	▪ Increase transparency and provide information to citizens on government services ▪ Improve complaint mechanisms	▪ Reduction in leakage of funds ▪ Heightened citizen involvement in public affairs	▪ Costs of providing information to citizens and help to organize (generally relatively low)	▪ Uganda newspaper campaign reduced capture of educational funds from 80% to 20%	▪ Efficacy of transparency is conditional on presence of accountability mechanisms ▪ Certain processes may be too complex for citizens to use
3. Internal Controls and Bureaucratic Efficiency	▪ Meritocratic recruitment ▪ Foster bureaucratic competition where appropriate ▪ Ensure public salaries are competitive, including perks ▪ Consider staff rotation ▪ Reduce rents in public programs	▪ Reduction in corrupt networks throughout the bureaucracy ▪ more honest service ▪ Better service delivery and revenue collection	▪ Higher wage bill ▪ Perhaps some efficiency losses from rotation, bureaucratic competition, & simplification ▪ Risk of sale of offices ▪ Some tax and customs reform are net revenue raisers.	▪ Chile meritocratic civil service reforms in 2003 ▪ Lower corruption at Durban port compared to competitors encourages its use ▪ Latin American tax and customs reform: revenue authorities, simplified tax codes, etc in Bolivia Peru, Costa Rica	▪ Wage interventions may not always be appropriate ▪ Bureaucratic competition may cause substitution across different corrupt behaviors ▪ All require ongoing oversight to maintain benefits.

4. Controlling "Grand Corruption" inside States	▪ Enact procedural reforms to favor standardized purchases and sales that enhance market competition. ▪ Develop an e-procurement system on the models of Korea, Mexico and Chile	▪ Cheaper and better quality government purchases and infrastructure ▪ Higher return to the government treasury from privatizations	▪ Organizing auctions and bidding systems ▪ Ex post oversight by states and IFIs ▪ E-procurement likely to pay for itself. Mexico estimates a $4 return per $1 invested.	▪ Need better empirical studies of the benefits of these reforms, but the costs are small (or negative) and the potential benefits are very large. Cases: Korea, Mexico, Chile	▪ Consider links between grand corruption and both the organization of markets—including cartels—and decisions of which firms to privatize and which projects to pursue. Social costs will often much exceed the bribes paid.
5. Shifting Service Provision to Private Sector	▪ Delegate service provision to private firms using open tender process	▪ Elimination of bureaucracy for certain aspects of service provision ▪ Efficiency gains from privatization	▪ Possible loss of service ethos in transfer to private sector ▪ Weaker monitoring	▪ Privatization of pre-shipment inspection increases tax revenue 2.6 times ▪ India village service privatization reduces extortion	▪ Possibility for corrupt transactions in privatization process ▪ Private contractors must also be monitored
6. International Initiatives	▪ Introduce international checks through stronger enforcement of OECD Convention, more active debarment processes at IFIs	▪ Better value for money for government projects ▪ More competitive international markets	▪ Burden on IFIs and international arbitration system, or ▪ Costs of a new adjudicatory body	▪ Reforms appear to have potential but their newness and individualized character makes generalizations difficult.	▪ Potential for national courts and international arbitration regime to constrain corruption needs to be explored and strengthened

Collectively, improving top-down monitoring and punishment, fostering transparency and citizen involvement, adjusting bureaucratic incentives through civil service reforms, improving the competiveness of government asset sales and large purchases, and privatizing certain government services may provide the shock needed to push a country or sector towards a self-fulfilling cycle of good governance. It is likely that the initiatives would prove most effective when bundled together, signaling a firm commitment to anti-corruption for all would-be corrupt officials.

Obviously, individuals and firms, many with political power, benefit from the status quo and will oppose change. A major challenge for governance reform is to overcome or co-opt entrenched interests. If there has been one collective lesson from decades of anti-corruption reform, it is that political calculations can derail even the most well conceived initiatives. Some reforms may be blocked directly, but equally pernicious are corrupt leaders who pose as reformers—expressing a superficial commitment to good governance as they continue to gain at public expense. A crackdown on low-level corruption may just push the illicit rents up the hierarchy where they can be captured by the top officials.

We conclude with a few thoughts about the relationship between these policy proposals and the international environment. Consider aid and lending. Presently there is an ongoing debate about the value of conditionality in the provision of aid. "Conditionality" in some broad sense is inevitable. International donors must choose where to put scarce funds, and they will consider where the funds will have some positive payoff. A weak state or one with high levels of corruption will be unlikely to manage aid well and so will get less. A state that does receive aid must comply with financial reporting requirements to assure that the funds are not lost to corruption and waste. Such conditionality, however, is less directly intrusive than aid that comes with explicit requirements for institutional reform. This latter type of conditionality has not been notably successful. An alternative is to organize projects that are directly focused on improved governance, but experience here is mixed with some notable failures such as the effort to control the use of the windfall produced by the discovery of natural gas in Chad.

A related problem arises when aid is tied directly to perceptions-based measures of corruption, as has historically been done by the Millennium Challenge Corporation. Such measures rely on expert surveys of the level of corruption in a given country in a given year, which have proven subject to several systematic biases (Treisman, 2007; Kenny, 2006; Seligson, 2006; Olken, 2009).[51] At best, these measures are noisy indicators of the level of corruption, and they may fail to capture important policy changes. For example, if anti-corruption agencies successfully prosecute high-level politicians for corruption in Country X, experts may hear of these convictions and perceive the country has become more corrupt, even though it is on the path towards good governance. Perversely, countries that have actually taken a stand against corruption may take a hit on aid allocation because the biases in corruption indices. This problem speaks to the importance of developing richer, more accurate metrics.

We have documented some successes and some failures, but projects that improve governance and oversight seem the place for IFIs and other international donors to put resources. If they do so, however, they need a plausible exit strategy so that external funds and experts can leave with some assurance that the program will continue. A condition of such projects should be a research component that measures progress (or its

[51] Examining the relationship between corruption incidence and perception-based data, Treisman (2007) finds that the perceptions-based indices are not as well correlated with incidence as would be expected, and many of the factors that predict high levels of perceived corruption do not explain levels of actual corruption. Other scholars have levied additional critiques. Kenny (2006) argues the CPI is a lagging, not leading, indicator of corruption scandals. Olken (2009) finds that although Indonesian villagers' perceptions of corruption correlated reasonably well with incidence, using the perceptions data would give misleading results for the explanatory power of variables like ethnic heterogeneity and social capital. Among other critiques, Seligson (2006) notes that the CPI may be influenced by stereotypes and factors unrelated to corruption, like economic performance.

opposite) by providing information on background conditions, tracking the design and implementation of the reform, and measuring outputs. Donors and country partners would try to quantify inputs and outputs in terms such as the speed and effectiveness of government activities, the satisfaction of citizens, and the distribution of benefits. Sometimes, as in a tax or procurement reform, one can quantify the benefits in terms of additional dollars collected or cost savings, but in other cases, such as more transparent government, the benefits take the form of greater citizen satisfaction and better government accountability. These factors are valuable in their own right and are associated with higher levels of growth and individual well-being, but the precise links from specific policy interventions to outcomes are not well-specified.

Recent discussions of how to allocate foreign assistance to developing countries sometimes conclude that some countries have such poorly functioning institutions that no external aid should be provided because so much of it will be lost. This represents not, as some say, an end to conditionality but is instead conditionality writ large—at the level of the country as a whole, rather than at the level of the program. The best mixture seems to be broad-based decisions about which countries to support with some share of aid taking the form of grants to improve government performance. Outsiders would not micro-manage individual projects, for example, to build roads, support education, provide health care. Instead, they would supply technical assistance that could involve them in a quite deep involvement with the details of government operations. In contrast, policies which try to isolate corrupt countries and individuals from the international community encourage their rulers to descend into paranoia and isolation and are ineffective ways to help the citizens of these countries who are the real victims of corruption. Real reform requires systemic policy initiatives. Corruption is a problem of institutional failure. A "clean hands" policy in which wealthy countries hold themselves aloof from tainted countries and individuals without doing anything actually to address the underlying problems will simply further divide the world into rich and poor blocs.

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