



International Handbook on the Economics of Corruption

Edited by **Susan Rose-Ackerman**



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Susan Rose-Ackerman

*Henry R. Luce Professor of Jurisprudence (Law and Political
Science), Yale University, USA*

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Introduction and overview

Susan Rose-Ackerman

Corruption is a moral category that signifies putrefaction and rot. Commentators use the term to describe aspects of modern life that they find repugnant. They condemn violent video games that corrupt the morals of the young and bemoan the corruption of politics by pointing to the decline in civic virtue and public spiritedness. Under this broad interpretation, corruption does not necessarily involve a monetary quid pro quo. Rather, a vulnerable group – like children – or a respected institution – like the United States Senate – is at risk of falling from grace because of exposure to some feature of the environment, be it video games, television shows, sexually alluring human beings, or a society's general lack of grace and deference.

Economists are often uncomfortable making such moral judgments. The tools of the trade do not permit the analyst to distinguish between 'bad' and 'good' tastes, and the field has little to say about how tastes evolve over time. There is thus a basic tension between corruption as a field of study and economic analysis. Writing on corruption often stakes out a moral high ground, but economists are reluctant to sermonize about right and wrong. Yet in recent decades the economics of corruption has generated a wide range of productive research, both theoretical and empirical. This has happened largely by carving off the piece of the broader concept most susceptible to economic analysis – monetary payments to agents (both public and private) to induce them to ignore the interests of their principals and to favor the private interests of the bribers instead. The focus is not on tempting vulnerable populations. Nor is it on the moral vision of a nation's leaders. Instead, research concentrates on quid pro quo deals where ordinary people, business firms and public officials may behave corruptly if the economic rewards are high enough.

Some of the first studies were contrarian. Economists saw bribes changing hands, and their first instinct was to applaud rather than condemn. This reflects a typical economists' commitment – one might almost say a moral commitment – to using the price system if at all possible. In a well-functioning corrupt system government services go to the high bidders who value them most. Bribers pay officials for exemptions from costly rules that hamper the development of the private market. Although other scholars quickly showed that this perspective was radically oversimplified, the essential focus on bribes as prices and on the impact of corruption on

resource allocation remains central to economic studies of corruption. However, contemporary research demonstrates that corrupt payments do not usually further efficiency, at least if one takes a systemic view under which corrupt officials may redesign public systems to encourage bribery. Research also shows how illegal systems of bribe-prices undermine other public goals.

Corruption is also a legal category. All states have laws against bribery and fraud in the public sector and most regulate campaign contributions, campaign spending and conflicts of interest. Many states penalize commercial bribery and other types of corporate malfeasance. International and regional treaties seek to control cross-border bribery and facilitate law enforcement. The legal categories are much narrower than the broad use of the term ‘corruption’ in everyday speech, and, further, the law does not map perfectly onto the class of payoffs and quid pro quos that economists find harmful. From a policy point of view, the goals of economic research on corruption are both to isolate the economic effects of quid pro quo deals between agents and third parties and to suggest how legal and institutional reforms might curb the harms and improve the efficiency and fairness of government.

Contemporary research began with theoretical work that built on industrial organization, public finance and price theory to isolate the incentives for paying and receiving bribes and to recommend policy responses based on that theory. My 1978 book, *Corruption: A Study in Political Economy*, is an early example with its relatively straightforward application of economic concepts to the study of corruption. My raw material was case studies and newspaper reports of corrupt incidents. My own interest had been provoked by teaching courses in urban economics at a time when a series of scandals in US federal housing programs were undermining support for these policies. My insight was to notice that the programs had been unconsciously designed with incentives for corruption built in. Perhaps, I thought, the tools of economics could be used both to understand what programs were especially susceptible to corruption and to recommend ways to reduce these incentives.

My 1978 book was an attempt to achieve this goal, and its durability suggests that others found it useful. However, it largely relied on journalism to supply the facts because there were no statistical efforts to measure the harm caused by corruption. The closest were papers by Anne Krueger (1974) and Jagdish Bhagwati (1974) that sought to measure the volume of rent seeking and illegal transactions in international trade by making use of the two sets of books available internationally – in exporting and in importing countries. Fortunately, in recent years it has become possible to move beyond journalism. Although empirical work on a topic that involves

illegal activity remains difficult, a range of clever devices has been developed to generate quantitative estimates.

The main theoretical and empirical debates concern the relative importance of corruption in explaining low rates of growth in those poor countries that have been unable to escape from poverty traps. High perceived corruption and low growth rates are associated, but the causation can run from corruption to low growth or from low growth to corruption or, more likely, the causal arrow runs both ways, creating vicious or virtuous spirals. To complicate matters further, there are some cases of very corrupt countries that, nevertheless, have strong growth experiences.

It is a mistake, then, to assert that the main cure for corruption is economic growth. That claim reflects an overly simple view of the roots both of economic growth and of corruption. Corruption is not a uniform, stand-alone problem. Rather, it is a symptom that state/society relations operate in ways that undermine the fairness and legitimacy of the state and that lead to waste and the poor targeting of public spending. In highly corrupt countries even nominally pro-growth policies are likely to be sabotaged by the self-seeking behavior of government officials and of private individuals and businesses – both domestic and foreign. Even when growth does occur, insiders use their status to obtain disproportionate gains. It is wishful thinking to advise poor countries to grow as a cure for corruption. For most of them, that is simply not an option.

In countries that are less corrupt overall, economic growth can coexist with high levels of corruption in particular sectors, such as customs collection or the police. In those cases, some observers claim that corruption is simply irrelevant or may even facilitate growth. But growth is not the only social goal, and even when corruption seems consistent with growth, one can always locate policy alternatives that are superior to the corrupt status quo. I came to the field of economic development from a background in US domestic public policy, and it seems odd to me to hear that corruption should be ignored because the country in which it takes place has a high growth rate. In the United States, police corruption and government procurement fraud are not dismissed because the US economy is growing at a good rate. That kind of response is simply a category mistake: overall economic growth is not the only thing that matters.

Leaders in middle-income countries where corruption pervades some sectors should have the same attitude. Measures of economic growth are an insufficient measure of the quality of state/society relations and of the effectiveness of the public sector. These countries may have reasonably well-functioning governments and vibrant private sectors, but they still need to confront dysfunctional sectors where corruption undermines state legitimacy, harms private business and victimizes citizens.

This introduction first summarizes the economic framework that I continue to believe yields important insights into the causes and consequences of corruption (Rose-Ackerman 1999, 2004). This framework provides a background to most of the chapters in this volume, which simply take it for granted. Then I discuss the diverse approaches to empirical research represented on these pages and conclude with some thoughts on fruitful directions for future research.

Some contributions are theoretical; some, empirical; and some combine both aspects. Some seek simply to understand an aspect of the phenomenon; others go on to develop policy proposals. Part I includes two chapters by leading exponents of cross-country research on corruption and economic performance and a third that discusses the measurement issues raised by these studies. Part II concentrates on the relationship between particular institutional structures and corruption: the bargaining framework between firms and officials, the constitutional structure of democracies, decentralized government and bureaucratic hierarchies. It concludes with a critique of the conventional economic approach to corruption especially as applied to poor countries. Part III contains two chapters that, from quite different points of view, ask whether there is anything special about the countries in Europe and Asia that are making a transition from communism. Part IV reports the results of survey work and experiments that aim for insight into individual attitudes and behavior. Part V concludes the Handbook with chapters on individual sectors: government service delivery, taxation, public works, customs and healthcare.

1. Conceptual underpinnings

Corruption occurs where private wealth and public power overlap. It represents the illicit use of willingness to pay as a decision making criterion. In the most common transaction a private individual or firm makes a payment to a public official in return for a benefit. Bribes increase the private wealth of officials and may induce them to take actions that are against the interest of their principals, who may be bureaucratic superiors, politically appointed ministers, or multiple principals such as the general public. But illicit payments may sometimes flow in the reverse direction: those holding or competing for public office make cash payments to private individuals, firms or other officials to get benefits for themselves or their political parties. In both cases pathologies in the agency/principal relation are at the heart of the corrupt transaction.

I begin by differentiating between low-level opportunistic payoffs, on the one hand, and systemic corruption, on the other, that implicates an entire bureaucratic hierarchy, electoral system or overall governmental structure from top to bottom. I discuss each in turn.

Low-level corruption occurs within a framework where basic laws and regulations are in place, and implementing officials seize upon opportunities to benefit personally. There are several generic situations.

First, a public benefit may be scarce, and officials may have discretion to assign it to applicants. Suppose that superiors cannot observe payoffs but can easily check if any unqualified applicants receive the benefit. Then the qualified applicants with the highest willingness to pay and the fewest scruples will get the benefit in a corrupt system. This would seem the least problematic case from a welfare economics perspective. The payoff is a transfer, and the benefit goes to those who value it the most in dollar terms. The main problems are the transaction costs of corrupt deals and the elimination of qualified beneficiaries with high scruples. The obvious policy response is to sell the benefit legally. It is a good test of this strategy to ask whether any significant public policy goal would be violated by charging fees as a rationing device. For example, if a country has a limited supply of import licenses to allocate, selling them to the high bidder will usually be the efficient strategy. Related cases are transparent auctions for privatized firms and broadcast licenses or competitive bidding for contracts.

Second, consider the ways in which the first example is idealized. In particular, suppose that low-level officials are required to select only qualified applicants and that their exercise of discretion cannot be perfectly monitored. The overall supply may be scarce, as in the above example (for example, university places or government-subsidized apartments), or open-ended (for example, drivers' licenses, business firm registration, certificates of occupancy for new construction). In either case, the officials' discretion permits them to collect bribes from both the qualified and the unqualified. The level of corruption will depend upon the options for the qualified. For example, can they approach another, potentially honest, official? Incentives for payoffs will also depend upon the ability of superiors to monitor allocations. For example, a firm that builds a shoddy building may be able to hide the flaws, at least until it is tested in a fire or an earthquake. Government contracting and the sale of state assets also often fit this case. Superiors cannot perfectly monitor official behavior, so lower-level bureaucrats can collect bribes that permit contracts to be given to poorly qualified firms and that allow asset sales to bidders who do not provide the state with the highest return.

Third, the bureaucratic process itself may be a source of delay and other costs. In that case, incentives for corruption arise as applicants try to get to the head of the queue or otherwise get better service. To further exploit their corrupt opportunities, officials may create or threaten to create red tape as a means of extracting bribes. This strategy is plausible in many real-world applications because even honest officials need to take some time and trouble to process applications.

Turn next to cases in which officials can impose costs rather than benefits – for example, they seek to collect taxes or threaten citizens with arrest. They can then extract payoffs in return for overlooking the illegal underpayment of taxes or for tolerating illegal gambling and drug operations. More pathologically, they can demand payoffs in exchange for refraining from arresting them on trumped-up charges.

In general, low-level corruption can lead to the inefficient and unfair distribution of scarce benefits, undermine the purposes of public programs, encourage officials to create red tape, increase the cost of doing business and limit entry, and lower state legitimacy. (See Rose-Ackerman 1999: 7–88 for a more detailed treatment.) Note, however, that such corruption may have political benefits for incumbents. The bribes may be paid at the lowest level in the hierarchy, but they may be part of an organized system that is used to favor political allies and to build campaign war chests, and not only to obtain individual cash benefits. At that point, low-level corruption merges with high-level corruption.

‘Grand’ corruption shares some features with low-level payoffs, but it can be more deeply destructive of state functioning – bringing the state to the edge of outright failure and undermining the economy. I distinguish three varieties.

First, a branch of the public sector may be organized as a rent-extraction machine. For example, top police officials may organize large-scale corrupt systems in collaboration with organized crime groups, who are given a *de facto* monopoly on illicit activities. In practice, it may be difficult to know whether the police or the criminals have the upper hand. In the extreme, police may even arrest competing groups so as to maintain the dominant group’s monopoly. Policing is probably the most dramatic example here, but tax collection agencies and regulatory inspectorates, to name just two, can also degenerate into corrupt systems where high-level officials manage and share in the gains of their inferiors.

Second, a nominal democracy may have a corrupt electoral system, with money determining the outcome. Here there are many slippery slopes and difficult lines to draw. Political campaigns require funds from either public or private sources. Voters need to be persuaded to support particular candidates in one way or another, and corruption can enter in three ways. It can undermine limits on spending, get around limits on the types of spending permitted (that is, no direct *quid pro quos*), and subvert controls on the sources of funds. There is no agreement about what should count as ‘corrupt’ in this context. The extremes are clear, but the more subtle distinctions are hotly contested.

Third, governments engage in large projects and transfer assets in ways that have a significant effect on the wealth of domestic and foreign business

organizations. For example, they regularly contract for major construction projects such as highways and port improvements, allocate natural resource concessions, and privatize state-owned firms. High-level politicians can use their influence to collect kickbacks from private firms in all of these areas. The relative power of government officials and private interests may, in practice, be difficult to sort out. The extremes are kleptocracy, on the one hand, and state capture by powerful private interests, on the other. In some cases, concentrated power exists on both sides, and we have a bargaining situation similar to a bilateral monopoly in the private market (Rose-Ackerman 1999: 115).

These types of grand corruption can undermine state legitimacy and economic functioning. Most problematic is the case of bilateral monopoly, where a narrow set of powerful public and private figures controls the state. Some scholars dispute this claim. Using a market analogy, they observe that a monopolist seeks productive efficiency, and, in the presence of external effects and free riding, it is better to centralize power over resources. In Mancur Olson's term (1993), a 'stationary bandit' is better than a large number of 'roving bandits'. The evidence suggests, however, that most kleptocrats do not act like efficient monopolists. They are not that powerful. Far from choosing efficient projects that maximize monopoly profits, they need to buy off supporters. Given the risk of losing power, they often transfer their profits outside the country for safekeeping. The analogy to a private monopolist misses these aspects of kleptocratic government (Rose-Ackerman 1999: 114–24; 2003).

Some claim that deep cultural, historical and social factors are the fundamental determinants of corruption and also can explain the impact of corruption on economic growth and other variables. Several chapters in this Handbook point in that direction, and empirical evidence provides support for some, but not all, of these claims. Taking these results literally is a counsel of despair suggesting that countries cannot escape their history. If a country's 'culture' inexorably generates corruption, policy makers might as well give up on the reform project.

This seems overly dire. Of course, present-day realities, including existing institutions, are influenced by history and culture. Statistical work may find that settler mortality, colonial heritage, religion or distance from the equator is a good proxy for today's institutional structures. But this does not imply that a country with background conditions associated with corruption and low growth cannot change, although it does suggest that change may need to be more radical and far reaching than in other countries. The massive transformations that have occurred in Central Europe, the former Soviet Union, China and Vietnam demonstrate that change is possible and can occur quite rapidly. The transitions to democracy in Latin

America and Asia, however unfinished and rough-edged, demonstrate the same point. Furthermore, in countries where widespread corruption has gone along with a strong growth performance, one can seek to understand both why corruption did not hold back growth and whether corruption had a disparate impact on particular sectors and social groups who bear the brunt of the corrupt gains earned by others. Such research could provide a more nuanced approach to policy-oriented studies that aim to understand how government and private sector institutions affect economic outcomes and the legitimacy of the state.

2. Alternative approaches to understanding corruption

With this framework in mind, I summarize the contributions to this Handbook. Most of the chapters are by economists, but one thread that unites many of them is the importance of politics in understanding both the roots of corruption and the success or failure of alternative policy interventions. Reforms do not occur in a vacuum but are deeply affected by the political context in which they are implemented.

Corruption and poor governance around the world

Because of its prominence in the recent literature, I begin with two chapters by leading practitioners of cross-country research. The authors are Johann Graf Lambsdorff, the originator of the Transparency International (TI) Corruption Perceptions Index, and Daniel Kaufmann, Aart Kraay and Massimo Mastruzzi of the World Bank Institute, which has developed several governance indicators, including an index of control of corruption. Both datasets are tied to perceptions of corruption as reported mostly by the international business community and by experts in particular countries and regions. Thus the indices do not represent hard measures of corruption. It is, however, difficult to imagine how anyone could collect hard data that would be comparable across a wide range of countries. Although the two indices aggregate and report the data in rather different ways, the end results are similar. They are highly correlated; hence, from the point of view of statistical analysis, there is little difference between them. Both appear to capture, in a general way, the level of corruption as perceived by knowledgeable observers.

The TI and the World Bank indices have spawned a large number of studies. The data are obviously not a random and independent draw from the universe of all possible countries. Furthermore, conditions in one country may be affected by conditions in other countries, especially close neighbors, trading partners and former colonial powers. Even given these caveats, however, the broad empirical regularities are so striking that it is hard to dismiss them on technical grounds. Both Lambsdorff and

Kaufmann, Kraay and Mastruzzi make a persuasive case for the value of such work. The indices and the studies they have made possible have helped make corruption control part of the global debate on governance and growth. The results demonstrate that corruption is associated with harmful outcomes and support the claim that institutions matter for growth.

Lambsdorff's chapter reviews a broad selection of cross-country research on the causes and consequences of corruption. He reports on research that links costly regulation to corruption, but he points out that this finding provides only a partial explanation for cross-country differences. After all, some of the most honest countries in northern Europe also have very active regulatory states. The role of decentralization is ambiguous on both theoretical and empirical grounds (see also Bardhan and Mookherjee, this volume). Competitive pressures reduce corruption, but payoffs can also be used to buy relief from market pressures through laws that restrict entry and trade. The structure of government does seem to affect the integrity of government, but the connections are complex and the results sometimes contradictory (see also Kunicová, this volume). Cultural and social factors are related to a country's level of corruption; in particular, when family ties are very important, reported corruption is high. Geography also matters – a supply of valuable natural resources establishes the preconditions for corruption.

As Lambsdorff's survey shows, the consequences of corruption are difficult to distinguish from the causes because the causal arrow frequently appears to go both ways. Thus inequality is associated with high levels of corruption, but the econometric evidence on causation is mixed. Similar ambiguities arise in sorting out the link between poverty and corruption. Other consequences of corruption are a larger shadow economy, a smaller and less productive capital stock, and distorted allocations of public and private resources. Increases in the level of corruption are associated with falls in the rate of growth. Most of these results, however, could be flipped so that they are causes, not consequences. For example, an iterative process may operate where corruption limits growth and low growth encourages corruption.

As for policy, cross-country research cannot provide detailed anti-corruption programs, but Lambsdorff argues that the evidence suggests the value of reforms that streamline and simplify regulations and that encourage competition. Democracy appears to limit corruption but only if it produces vigorous competition for office and only in the long term. Other studies summarized by Lambsdorff find that increases in civil service salaries are not a sufficient policy response. A free press and an independent judiciary act as checks. According to Lambsdorff's own research, improvements in civil liberties and the rule of law improve productivity and

encourage capital inflows. His results suggest that country strategies should differ depending upon whether the state is most interested in productivity improvement or in attracting foreign capital. Bureaucratic and regulatory reforms are most important for raising productivity; the rule of law is central to efforts to attract foreign capital.

Kaufmann, Kraay and Mastruzzi take a broader approach and examine the association between indicators of governance and economic outcomes. Drawing information from a wide range of sources, the World Bank Institute has constructed six indices and made them available on its website. In addition to a measure of corruption control, the indices include: voice and accountability, political instability and violence, government effectiveness, regulatory burden and the rule of law. The authors argue that these perceptions-based data on governance do a better job of capturing reality than supposedly objective measures of the rules of the game. The data demonstrate the wide variation in the indices across regions and countries and the relatively modest changes over time.

The authors stress the margins of error associated with their data and urge that policy makers take them into account, especially if the data are used to determine eligibility for aid. Index values should not be used in a mechanical fashion to deny aid to those that fall below an arbitrary cutoff. Average values are not sufficient to make such judgments, and their use gives a false sense of precision to the exercise of selecting aid recipients. However, unless all the sources exhibit the same biases, they argue that one way to increase the precision of the data is to combine several sources into an index instead of relying on a single source. Nevertheless, the remaining margins of error need to be part of the information conveyed to policy makers, and the World Bank Institute is careful to include this information in the data they present.

Kaufmann, Kraay and Mastruzzi examine the issue of causation and recognize, with Lambsdorff, that it is a central concern for cross-country research. They study the issue econometrically and claim that the dominant direction of causation is from weak governance, including high corruption, to low growth. Under this view, which has theoretical as well as empirical support, the prescriptions of economists who urge countries to get their macroeconomic incentives right will not work unless the state has institutions capable of putting such policies into effect. Even if there is also a feedback mechanism from low growth to high corruption and from high growth to low corruption, the growth process cannot begin unless reasonably well-functioning institutions are in place.

The third chapter in this section, by Christopher Woodruff, asks whether the TI and World Bank indices based on perceptions might actually be superior to harder measures of bureaucratic inefficiency and the rule of law.

Woodruff considers the difference between formal, legal institutions such as constitutional provisions, electoral rules and formal judicial independence, on the one hand, and measures of how such institutions work in practice from TI and the World Bank, on the other. He points to the frequent gaps between the law on the books and the law as it functions in real life. In many countries, the relationship between the formal rules and reality may be so tenuous that perceptions may be superior to efforts either to examine the laws on the books or to document the red tape involved in particular transactions. Woodruff's arguments provide additional support for the use of perception-based indices.

In spite of its value in capturing broad empirical regularities, there are distinct limits to cross-country research. It assumes enough regularity in the phenomenon so that a single statistical model can cover the world. The relation between macro variables and corruption will indeed distinguish between very corrupt and very clean states. In the former, state failure is so pronounced that pro-growth policies cannot be carried out by the government. In the latter, the state is competent, and citizens support high taxes because their funds are used effectively to provide public services. But most countries fall in the middle range, and here the connection is less clear. Countries with similar rankings have very different business climates because corruption is concentrated in different sectors. Indices based on the perceptions of business investors may miss corruption experienced by ordinary people. Thus it is not surprising that in the middle of the distribution there is a wide range of possible links between corruption and growth. This fact counsels an emphasis on research at the sector and country levels.

The key issue is not the size of the payoffs or the amount of funds embezzled. It is, instead, their impact on the efficiency and fairness of state actions. Cross-country statistical work can point to a general set of situations where corrupt incentives are high. However, the diversity of corrupt incentives suggests that cross-country work, however valuable in raising consciousness about the problem, cannot be used to design reasonable responses. For the very worst cases the only hope may be a thorough overhaul of the state apparatus, but for the large number of countries in the middle that is not a viable or desirable option. Research needs to focus more carefully on where corruption is particularly harmful and on the structural relationships between particular institutions and corruption that undermines government functions. The remainder of the Handbook focuses on such research.

Corruption and institutional structure

In cross-country research, the actual mechanism that connects institutional measures to economic outcomes is a black box that can be theorized but

not tested. The chapters in Part II take one step inside the black box. They ask whether the specific nature of corrupt deals can help explain their impact and whether the levels and types of corruption can be explained by a country's institutional structure.

The first issue is discussed by Ray Fisman and Roberta Gatti. They demonstrate that when firms are uncertain about the bribe payment needed to get around a government-imposed cost, corruption is more costly to them than in more stable, predictable environments. This analysis ignores the possible social benefits of the rule that has been violated, but it does demonstrate that if a program is going to be corrupted, then it is better to minimize the transaction costs of the deal. This is, of course, not a defense of corruption, but it does help to explain the cross-country variation.

The remaining chapters consider the relationship between different institutional structures and corruption. The associations are often quite strong, but the causal arrow may go both ways – from institutions to corruption and from corruption to institutional choice.

Jana Kunicová reviews work that links constitutional structures and voting rules to reported perceptions of corruption. With more and more countries becoming democracies, at least in the nominal sense of having elections and alternations in power, Kunicová asks whether variations in the democratic framework matter. She makes an important distinction between corruption that enriches elected officials, on the one hand, and legal public spending programs with regionally concentrated benefits – ‘pork barrel’ politics – on the other. Only the former falls under her definition of corruption. She shows that presidential systems are more corrupt, on balance, than parliamentary democracies and that proportional representation systems are more corrupt than first-past-the-post systems. The worst systems combine strong presidents with proportional representation under which a powerful executive can negotiate with a few powerful party leaders to share the spoils of office.

Pranab Bardhan and Dilip Mookherjee analyze the complex links between decentralized government, corruption and government accountability. One simple view is that decentralization will limit corruption by making it easier for ordinary people to monitor government officials. However, some work, including the research summarized by Kunicová, finds that federal states are more corrupt than unitary ones. Moreover, there are conceptual reasons to doubt a strong connection between decentralized government and integrity. Smaller polities may contain more uniform groups of people, and politics may be less competitive, leading to increased corruption. Local elites may seize control of a town or village government but be unable to achieve the same goal in larger polities because of the greater collective action problems. A local kleptocracy may

be especially difficult to control in rural areas in poor countries where wealthy landlords exercise political power. Bardhan and Mookherjee provide a nuanced discussion of these issues, drawing on the experience of many countries as well as their own past work on India.

Ajit Mishra examines how incentive systems and monitoring procedures can limit or encourage corruption. He is particularly interested in alternative ways of organizing bureaucratic hierarchies to achieve effective deterrence. Governments provide services or impose costs on citizens and use lower-level officials to implement these programs. These officials generally have some discretion and have better information about the clients' characteristics than their superiors. In such cases, corrupt payments by clients to low-level bureaucrats can undermine the purposes of public programs. Payoffs can permit the payer to violate the law. Alternatively, the bureaucrat can extort money from a law-abiding person in return for *not* claiming that a violation has occurred. Monitoring of agents combined with rewards and punishments can limit payoffs, but corruption can seldom be completely eliminated. There are many ways to organize control processes, and Mishra evaluates some of the options.

If the probability of detection is a choice variable for officials, he shows that having a separate monitoring track is generally superior to a single hierarchy. Of course, if the whole hierarchy is corrupt, an internal promotion system, ostensibly designed to reward effective agents, can become a source of payoffs itself. Then even public officials who would be honest under most circumstances may either turn to corruption to maintain their position in the bureaucracy or become passive observers of the dysfunctional system. Mishra shows when and how incentive schemes and organizational structure can be combined to fight corruption, but he is sensitive to the real-world difficulties. Sometimes corruption can only be fought by changing the types of services delivered or by limiting discretion and reducing information requirements.

Finally Mushtaq Khan critiques the conventional economic analysis of corruption as applied to poor countries. The standard analysis assumes that corruption interferes with the enforcement of clear legal rules. But state interventions often have no legal basis in very poor and highly corrupt countries. Corruption is not designed to get around the rules; rather it determines the behavior of officials and political leaders in their absence. Khan argues that policy prescriptions taken from the experience of countries with strong laws and institutions are inappropriate for highly corrupt poor countries.

Corruption in weak states with low levels of per capita income is the result of two basic problems facing politicians. First, it is difficult or impossible to collect sufficient taxes to cover the demands on the state. Not only

is national income small, but also a smaller share of income can be taxed than in richer countries. At the same time, internal political conflict is often very high. Second, the productive capitalist sector is relatively small, and most people do not believe that their own well-being is tied to its success. Thus the redistributive demands expressed through populist politics and clientelism are likely to be more open-ended and unchecked than in countries with larger capitalist market sectors. Khan claims that, given these realities, political leaders try to achieve stability by transferring resources to the most powerful or dangerous factions through patron–client networks. This leads to widespread political corruption. These targeted transfers can sometimes produce political stability and hence further economic growth, but this does not happen in most cases. Reforms that promote greater transparency and fiscal accountability will have no impact. Economic growth that provides a larger tax base is necessary for success, but such growth may be held back by the corrupt status quo, and growth is only necessary, not sufficient. Popular pressure for reform is also required.

Khan's chapter thus ends Part II with an admonition to understand the underlying political and economic forces that produce corruption in different societies. Sometimes economic theory can explain the incidence and impact of corruption, and in such cases incentive-based measures derived from economic analysis can alleviate the problem. Other times, corruption arises from the underlying locus of political power and its interaction with the economic system. In such cases, institutional and incentive-based reforms must be part of a broader reform agenda. The case studies in Part V help clarify the contexts in which economic reform strategies are likely to succeed and those in which a more holistic approach is required.

Corruption in the transition from socialism

Corruption is a pervasive feature of the wide-ranging changes occurring in Central Europe, the former Soviet Union, China and Vietnam. Under socialism, corruption helped overcome some of the rigidities of a planned economy. During the transition, corruption played a different role: it was a response to the uncertainty and institutional weakness of the transitional states, and in China and Vietnam it continues to accompany efforts to liberalize the economy while maintaining Communist Party control. As the transition proceeds, countries have been more or less successful in limiting corruption and in creating well-functioning states and markets. Two chapters explore the link between corruption and regime change.

The first, by Alan Rousso and Franklin Steves, examines corruption trends in Central Europe and the former Soviet Union and links them to anti-corruption policies. They distinguish three policies: integrated anti-corruption programs, efforts to strengthen institutions of governance and

accountability, and the adoption of international anti-corruption conventions. Thus their focus is on explicit policies to limit corruption and increase accountability, not on the structural reform of programs to limit underlying corrupt incentives. They find that corruption levels have fallen in most countries in the region, but that explicit anti-corruption policies had little effect. These results, although preliminary and based on a small sample, present a challenge to the claim that corruption needs to be fought through explicit policies over and above efforts to promote economic growth. The challenge, however, may be less severe than a superficial examination of the results might suggest.

Under pressure from the European Union (EU), countries with prospects for EU membership were most likely to adopt anti-corruption policies. In general, these countries were the ones with the least serious corruption problems in the region. Those where corruption is deeply entrenched did little, probably because those with political power had little interest in reform. But perhaps the laggards did not suffer much from their passivity – even when they are adopted, these policies do not seem to explain why corruption declined. In interpreting Rousso and Steves's result, it is important to remember that those in the first round for EU accession did much more than adopt pro-growth policies. They also created relatively well-functioning democracies and adopted the EU's *acquis communautaire*, a body of law that sets the legal framework for the member states. Thus, the fall in corruption cannot simply be attributed to the countries' improved economic positions. Rather, these findings suggest that efforts to reform both the democratic character of the state and the way in which it delivers services are likely to be better approaches to corruption control than ones that concentrate on signing anti-corruption conventions and designing anti-corruption strategies that may only express lofty goals. However, the continuing extensive corruption and self-dealing in much of the Former Soviet Union suggest that the problems there cannot be solved either by stand-alone anti-corruption policies or by structural changes emphasizing economic incentives. The implications for policy-oriented research are twofold. In the countries of Central Europe that have joined or will soon join the EU, research can seek to discover how and why corruption declined in particular sectors and to understand the reasons why it remains prevalent in others. Reforms can then be targeted where they will do the most good. In Central Asia and Russia the role of patronage politics and cronyism needs to be better understood and connected to the weakness of democratic institutions. Policies that might, for example, limit corruption in healthcare or the police in Hungary would likely be entirely ineffective in Kazakhstan.

Jens Andvig's chapter focuses on the two most important countries in the post-socialist region – Russia and China. Andvig is critical of cross-country

work that includes China and Russia as two data points on a par with a multitude of smaller states. He emphasizes the need to understand each country at a deeper level that takes account of history – in particular, the role of Marxism and Maoism – in shaping present-day attitudes.

During the era of central planning, generations were taught to view a broad range of market transactions as ‘corrupt’. Yet suddenly, these transactions have been given the regime’s seal of approval. Andvig suggests that this has resulted in widespread moral confusion, particularly for the older generation. Some go too far and see all *quid pro quo* deals as legitimate. Others resist the new world of markets and disappearing safety nets and see the widespread growth of the price system as corrupt. Cross-sectional surveys that compare responses from transition countries fail to grapple with the impact of history on present-day attitudes.

Andvig’s focus on China and Russia generates another important question: why is widespread corruption consistent with high growth in China but seems to have retarded growth in Russia? To explain the difference between China and Russia, Andvig stresses the different roles of the Communist Party during the transition. In Russia it surrendered power and became an unimportant opposition party. In China, the Party is still in control and is trying to manage an economic transformation. The rapid collapse of central control in Russia led to widespread corruption and self-dealing as former officials and new capitalists struggled to gain advantage. In China the center has so far maintained control so that corruption, although widespread, is not associated with a breakdown of authority. It remains to be seen how these cases will work themselves out over time, but each provides a rich case for studies of the impact of the past on the present and of the consequences of rapid change on relationships between private and public power.

Surveys and experiments

Part IV asks how businesspeople and ordinary citizens experience and evaluate corruption. Three chapters are based on survey evidence, and one reviews experimental studies. Surveys help to capture the way corruption affects different parts of society and highlight the connections between corruption and government legitimacy. Experiments permit a more controlled assessment of human behavior, but they miss the nuance of real-world situations where subtle interpersonal cues may operate to encourage or discourage payoffs.

Jennifer Hunt concentrates on households’ actual experience with corruption. She tries to solve a pervasive problem with surveys. If people are asked to estimate the levels of corruption in public agencies, their answers are affected by their own experience. A public service may be reported to be

highly corrupt simply because people have more contact with that agency than with an even more corrupt agency that they seldom encounter. Detailed data from Peru permit Hunt to correct for this bias. She calculates the ratio of total bribes paid to usage rates and finds that the judiciary is the most corrupt institution, followed by the police. Forty-two percent of reported bribe revenues were paid to the judiciary, even though it represented only 2 percent of citizen interactions. The source of the problem appears to be the extensive delays in the court system due, in part, to the poor training of judges. Given the importance of the judiciary both in constraining the state and in enforcing private contracts, corruption in that institution may be especially damaging.

Corruption in the police is also troubling. Although the individual payoffs are not large, 37 percent of those who had an interaction ended up paying a bribe, compared with 17 percent for the judiciary and under 5 percent for most other agencies. Of course, the police can impose costs and coerce payoffs more effectively than can other agencies, so it is not surprising that payoffs are more frequent than in other public agencies.

Overall the proportion of interactions that involve bribery is partly a function of client characteristics and partly a reaction to the slow pace of honest service. Both bribe levels and bribery rates are higher when clients are frustrated by slow service. Hunt's study provides a solid foundation for setting reform priorities if the goal is to limit the impact of corruption on people's daily lives. If Hunt's research in Peru is confirmed in other countries, it argues in favor of policy initiatives that target judicial and police corruption and that concentrate on streamlining service provision to limit delays.

Rafael Di Tella and Robert MacCulloch focus on citizens' perceptions of high-level corruption or state capture rather than on citizens' day-to-day experience. They argue that those who perceive widespread corruption in a capitalist society are likely to find socialism relatively attractive. Citizens do not view corruption in the way suggested by some economists. They do not think of it as a way for business to get around illegitimate and inefficient state rules and regulations. Instead they view it as a way for business to avoid legitimate laws and to benefit at the expense of ordinary people. The authors show that corruption lowers public perceptions of the productivity of business, and as a result, those who believe that corruption is endemic tend to endorse left-wing solutions.

Di Tella and MacCulloch present a theoretical model of this phenomenon and then use survey data from Latin America to test its implications. They find that those who perceive that corruption is high tend to be on the left of the political spectrum; these people think that the distribution of income is unfair and that privatization has brought few benefits. Citizens do not view

regulations as devices created by officials to collect rents. The policy implication is clear: governments with a free-market agenda must make strenuous efforts to control corruption in business/government relations, and they need to communicate their actions effectively to the electorate.

In contrast with the household surveys discussed in preceding chapters, Tina Søreide reports on the attitudes and practices of firms engaged in international trade and investment. She surveyed businesspeople and embassy representatives from Norway – a country that consistently ranks among the cleanest in cross-country rankings. This permits her to test a commonplace complaint of developing countries; they blame multinational firms for pushing corrupt inducements on reluctant local politicians. Because payoffs require both a payer and a payee, each side must bear some of the blame, but it is useful to see how multinationals and Norwegian embassy staff view the situation. Søreide found that most embassy representatives and firms view corruption as a problem in many low- and middle-income countries. Two-thirds of the firms thought they had lost a contract because of corruption, and one-third had withdrawn from a particular country because of high levels of corruption. In general, they did not believe that tender procedures were adequate to deter corruption; in part, this was because many believed that firms could influence the outcome. As for engaging in corruption themselves, 17 percent admitted to making facilitation payments, and 15 percent thought that payments to agents had probably or likely been used for payoffs. Firms in the telecom/IT, energy and construction industries are most likely to report that corruption is part of the business environment.

Firms were asked how they would respond to corrupt demands. Although most disapproved of corruption, very few would complain about its impact. Many agreed with the statement that ‘corruption is part of the game’, and their silence in the face of corruption was frequently linked to a desire to maintain future business prospects. Politics and the profit motive interact to make corruption an entrenched problem in international business. If, as Di Tella and MacCulloch suggest, such corruption undermines support for capitalism among the general public, the patterns of behavior uncovered by Søreide can have serious consequences over time for the development of well-functioning market economies.

Finally, Klaus Abbink reviews experimental studies. These studies attempt to get around an obvious difficulty of other types of research – actual payoffs are seldom observed outside of explicit sting operations carried out by law enforcement. The experiments summarized in Abbink’s chapter provide an interesting twist on the large body of research on trust games. Under a common lab scenario, payoffs are highest if players completely trust each other, but strict rationality predicts that players will prove

untrustworthy to maximize short-term gains. Experimental results are usually somewhere in the middle. The twist is that in conventional games trust is a desirable trait to be applauded, but in corrupt situations trust permits illegal corrupt deals that are harmful for society. In the experiments the players (mostly university students) exhibit some trust, meaning that they are willing to make payoffs that are destructive of other goals. Players do not take into account the social losses of their actions but are strongly deterred by the possibility of punishment.

One issue of experimental design is whether the payoffs are described as ‘bribes’ or whether the language is kept neutral. In most experiments, there is no explicit mention of bribery. The players are only told about the costs of their actions for others, but their own payments were described in neutral terms. In one experiment, in contrast, subjects were told that the payments constituted bribes. Such framing had little effect on subjects’ behavior. Another experiment suggests the importance of honest high-level officials who create loyalty in their subordinates. Experiments abstract away from the real world in order to get clear-cut results. Policies, however, must be implemented in a messy reality. This suggests carrying out experiments not with students but with people facing corrupt incentives in their daily life. A pilot study that uses nursing students in Ethiopia as subjects suggests the potential of this approach. So far, the experimental results are fragmentary. More work is needed to refine experimental designs, explore framing effects, and connect this work to other types of research based on surveys, cross-country work and detailed sectoral analyzes.

Sectoral anti-corruption policies

How then should anti-corruption policies be designed? Recall that the goal is not to minimize bribes but to limit the overall social costs of corruption, taking into account the costs of anti-corruption programs themselves. The cross-country results using perception indices can raise consciousness, but they do not suggest concrete responses. Instead, one needs to examine the benefits and costs of particular policies directed toward the solution of particular problems in particular countries.

Several of the chapters summarized above have policy implications. For example, Hunt’s results imply that Peru should emphasize programs to improve the integrity of the judiciary and the police and to speed up the delivery of public services. Her methods could be applied elsewhere to set priorities. Di Tella and MacCulloch, and Søreide point to the need to target corruption in multinational business deals. Rousso and Steves conclude that anti-corruption programs that are directed at too high a level of generality will not have much impact. A number of chapters highlight the role of institutional structure in setting conditions under which corruption can flourish.

The final part takes a more microscopic view and collects studies that analyze particular sectors. They discuss government service delivery, tax collection, public works, customs and prescription drugs. Speaking broadly, these chapters suggest the importance of melding technocratic reform based on economic reasoning with a sophisticated understanding of the politics of systems that permit corruption to persist over time.

Ritva Reinikka and Jakob Svensson deal with the connection between accountability and corruption in the delivery of public services. They argue that inexpensive programs to deliver information to program beneficiaries can help undermine corrupt systems. They illustrate this point with a study of primary school financing in Uganda. In earlier work, they documented the severe leakage of central government funds as it was passed down to the grassroots – one dollar of central government funds only produced \$0.13 in budget for local schools. This finding galvanized public opinion, and central government officials took action. They introduced a simple, information-based strategy combined with better monitoring from the center. After the reform's introduction, one dollar expended by the center produced \$0.80 of local school funds, and school enrollment rose. Nearly 75 percent of the improvement can be explained by a newspaper campaign that allowed parents to know how much money their children's schools were supposed to obtain.

An information strategy cannot be effective on its own. In Uganda, parent-teacher groups at the village level used the information to monitor school spending. In other countries, more costly and complex interventions might be necessary. Even in Uganda, education may be a special case because it is a service used by school-age children on a daily basis, unlike, say, healthcare, where demand is more episodic, and sick and injured users are vulnerable to exploitation. Different villages also varied in their ability to obtain funds for their schools. Schools in better-off communities experienced less diversion of funds than poorer areas, presumably because parents were better organized and more assertive in the wealthier areas.

Where did the money go? Reinikka and Svensson suggest that the funds were diverted into patronage politics. Consistent with Khan's more general argument, the money was used to maintain the power of the local and regional leaders of the National Resistance Movement. After the reform, these politicians needed alternative sources of funds. Research should seek to discover what those were. Are other programmatic funds now being diverted to patronage?

Ugandan schools provide a 'best'-case scenario. Conditions were very bad *ex ante*, and once research revealed the shortfall, a centralized information provision policy, combined with better enforcement, made a big difference. This reform does not answer the question of how much

a country ought to spend on education, but it suggests that, with the reform, education spending will be more productive. It also illustrates how surveys that track public expenditures at two points (in the center and at the local level) can be used to uncover missing funds, raise public awareness, and spur reform even in a situation where the diversion of funds is due to political pressures to provide patronage. What began as a pure data-gathering enterprise developed into an effective reform tool in an otherwise inhospitable political environment.

Miriam Golden and Lucio Picci study public works in Italy and develop a method by which central governments can measure the extent of corruption and waste in different regions. They combine measures of the physical public capital stock in the Italian regions with measures of historical costs to produce estimates of the relative efficiency of public spending throughout Italy. Building on research that finds that corruption and waste go together, they assume that corrupt officials encourage wasteful projects as a way of generating rents. The physical data cover a range of government capital investments in 1997, including roads, railroads, hospital beds and number of school classrooms, combined into an index that is expressed as a ratio to the national average. Overall, the physical index favors the northern part of the country, and the financial index favors the south. The ratio of the two provides a rough measure of the relative levels of corruption and inefficiency.

Golden and Picci then tally the proportion of deputies charged with malfeasance in each region under the nationwide corruption investigations in Italy. The two measures are correlated. Regions with unproductive public spending tend to have more than their share of deputies accused of corruption. They conclude that political corruption is associated with waste and kickbacks in public contracts. In some regions politicians are much more likely to earn kickbacks and bribes than in others, and some of those gains are likely to be hidden inside the budgets for public works. If the political forces supporting corruption are strong, reform has to go beyond moves to introduce more competitive bidding and more central government oversight. As also suggested in Kunicová's chapter, reform may require changes in fundamental political structures and in the incentives facing elected officials.

The next two chapters examine reform efforts that target tax collection and the customs service. Odd-Helge Fjeldstad analyzes an effort to reform tax collection in Uganda through the creation of the Ugandan Revenue Authority (URA). His report complements studies of similar efforts in Latin America and Africa. The reform created a semi-autonomous agency with leaders of known integrity. The aim was to limit political interference and to get away from the constraints of the civil service system. In most cases

reforms initially produced gains in revenue collection and falls in corruption. But as with many initiatives, the gains could not be sustained over time.

The URA conforms to this pattern. After marked success in the first years after its creation in 1991, revenue is now falling as a share of GDP, and corruption is believed to be pervasive. Operating in a politically charged atmosphere, reformers struggled to create and sustain an independent agency outside of politics. One way to maintain independence is to use the influence of organizations or individuals outside of the country such as the World Bank, and this was an important aspect at the founding of the URA. Uganda also employed expatriate staff to maintain professionalism and integrity and to keep the URA separate from tribal and party politics. However, conflicts arose between the URA and the Ministry of Finance (MoF), leading to 1998 legislation that increased the influence of the MoF. This change increased the possibility of political influence even though the MoF claimed that it was only seeking to improve the expertise of the board.

Fjeldstad argues that the relatively high pay and generous bonuses paid to the staff were ineffective in deterring corruption. Apparently, employment in the relatively well-paying URA escalated workers' obligations to provide financial support for their extended families. Merely to stand still, they had to take bribes to fulfill their family responsibilities. Political interference and patronage also undermined reform goals. The tax law was complex and unclear and left room for widespread discretion. This encouraged people to use connections to get special treatment. A general belief that the system was corrupt and politicized reinforced cynical attitudes toward the payment of taxes, creating a vicious cycle. The deeply intertwined nature of tax collection and politics suggests that reform cannot succeed without strong leadership inside the country. Outsiders can help support insiders but cannot substitute for them. Reformers need to understand the underlying political dynamics that can sabotage proposals that otherwise seem consistent with principles of good public administration.

To avoid these political dynamics, it is sometimes possible to turn over an aspect of government operation to an organization located entirely outside the country. Dean Yang's chapter examines the most prominent real-world example – private pre-shipment inspection (PSI). PSI firms value imported goods before they leave their port of origin and then earn a fraction of the value of the imports. In general, the PSI firm receives about 1–2 percent of the value of imports inspected plus a minimum charge per shipment. The actual duties are collected by customs officials in the importing country on the basis of the information supplied by the PSI service. More than 50 developing countries have hired PSIs over the last two decades. At the aggregate level, these programs appear successful and cost effective. Countries implementing PSI programs experience large increases

in the growth rate of import duties. On average, import duties increase by 15–30 percentage points. Additional evidence suggests that reductions in corruption are the cause of these increases. PSI programs are accompanied by declines in underinvoicing and in misreporting of goods classifications in customs. PSI appears to be cost effective. Improvements in import duties in the first five years after program implementation were 2–3 times larger than program costs.

But success is not guaranteed, and the failures shed light on the conditions under which such programs are likely to succeed. Yang focuses on two countries: the Philippines and Colombia. He finds that when the increase in enforcement is only partial – in that PSI only addresses a subset of potential methods of avoiding import duties – then there can be substantial displacement to alternative methods.

Yang's findings suggest broader lessons for anti-corruption efforts. In PSI programs, foreign inspectors provide additional information to higher levels of government while duty collection and enforcement remains in the hands of lower-level bureaucrats. As Mishra stresses, information is a key constraint on anti-corruption enforcers, and policies that find innovative ways to alleviate information constraints can have large returns in terms of reducing corruption. Private firms can generate information for anti-corruption efforts, but to be successful, anti-corruption reforms should be 'broad' in the sense of encompassing a wide range of possible loci of illegal activity. Otherwise, displacement to alternative methods can negate the original goals of the reform. Of course, it is also important that the PSI firms and their employees not be corruptible themselves. Some have alleged that PSI firms have paid bribes to obtain contracts over their competitors, and this behavior might raise the costs imposed on contracting countries even if the service itself is provided honestly.

The final chapter by Patrick Meagher studies the incentives for corruption in the selection and procurement of prescription drugs in Bulgaria. Basic structural features of the Bulgarian system virtually ensure widespread corruption. The vulnerabilities reflect problems likely to arise anywhere where political and market pressures bump up against technical rules meant to guide choices. His study highlights the importance of clear procedures and effective oversight in the design of public programs with large financial stakes. He demonstrates the difficulties facing emerging economies with untested democratic structures, limited resources and embedded conflicts of interest. The fundamental problems are not technical, but political.

Clearly, the financial stakes were high when pharmaceutical companies sought inclusion on the list of approved drugs and sought to exclude competitors. As in many emerging economies, conflicts of interest were prevalent.

Politicians had family interests in drug companies, and the institution approving drugs was not independent of these politicians. Of course, these conflicts of interest are not exogenous – the fact that the process is politicized gives drug companies an incentive to form alliances with those in political power. No outright bribes may be paid when the list is set. Rather, decisions are made out of the public eye that benefit both favored firms and their political allies. In addition to the passage of conflict-of-interest laws, Meagher recommends two solutions. First, the drug control agency should be genuinely independent of politics and should introduce more transparency and public justification into its procedures. Second, international standards, such as the World Health Organization's Essential Drugs List, should be used as a key reference point. Any proposal to deviate from that list should require the drug company to bear the burden of proof through an open process of justification before the agency.

3. Conclusion

This Handbook displays the richness and complexity of ongoing research on corruption, and demonstrates the value of disaggregating the problem to further understanding and to promote effective policy responses. Common patterns recur throughout the world and across sectors, so that lessons learned in one area have relevance elsewhere. But it is also essential to examine the structure of particular systems or sectors. The underlying economic incentives for corruption in such areas as public works, the police, the judiciary, tax and customs collection, and procurement are common throughout the world. Yet the incidence and severity of the problem vary widely. Effective policy cannot just concentrate on catching and punishing 'rotten apples'. Much has been made of the importance of moral leadership from the top, but this is not sufficient. Too much moralizing risks degenerating into empty rhetoric – or worse, witch hunts. Policy must address the underlying conditions that create corrupt incentives, or it will have no long-lasting effects. The sorts of structural and incentive-based policy responses that are outlined here – both the successes and the failures – can guide governments that are genuinely committed to reform.

Yet, the case studies suggest a word of caution. Clever technical solutions, based on economic incentives, may not be enough. If corruption is one of the pillars supporting a political system, it cannot be substantially reduced unless an alternative source of revenue replaces it. Powerful groups that lose one source of patronage will search for another vulnerable sector. Strong moral leadership is necessary but not sufficient. Tough political and policy choices need to be faced squarely. It is little wonder that effective and long-lasting corruption control is a rare and precious achievement. But it is not beyond the power of determined and intelligent political reformers.

In closing, I wish to thank those who helped me to put this volume together. Tara Gorvine, an editor at Edward Elgar Publishing, has been very helpful and supportive throughout the process of assembling and editing the volume. At Yale, Cathy Orcutt, my assistant, and Benjamin Billa, a student at Yale Law School, were both essential in preparing the final manuscript. Ben edited and commented on all the chapters, and Cathy put them in the form requested by Elgar. I am also, of course, very grateful to all the authors; they wrote an excellent and diverse set of chapters and accepted my requests for revisions with good spirit and an eye to deadlines. Producing an edited volume is truly a collective enterprise, and I was fortunate to have a group of authors who understood that fact. Thanks to them all.

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PART I

CORRUPTION AND POOR GOVERNANCE AROUND THE WORLD

1 Causes and consequences of corruption: What do we know from a cross-section of countries?

*Johann Graf Lambsdorff**

In recent years a growing body of empirical work has examined the causes and consequences of corruption. These investigations are mostly cross-country analyses, based on comparative assessments of the extent of corruption in various countries. Such assessments are sometimes compiled by private agencies to determine country risks, and the data gathered are sold to investors. Other sources are surveys of the general public or elite businesspeople. The data on corruption are thus based on subjective perceptions and expertise, and empirical work using these indices assumes that they are correlated with underlying real levels of corruption. With the exception of some micro-level studies, perceptions data are the only information available on corruption levels. Efforts to use objective data, such as convictions for corruption or abuse of office, suffer from inherent biases that undermine their validity and are not available across a large cross-section of countries.¹ Recognizing the limitations of perception-based indices, researchers have nevertheless been able to use them to significantly advance the study of corruption. These data allow empirical research on corruption to move beyond the anecdotal descriptions and purely theoretical considerations that previously dominated. This chapter reviews these studies and summarizes what we have learned.

The studies described here rely on several different sources that are all quite highly correlated. Many studies use the Transparency International Corruption Perceptions Index (TI-CPI), a composite index based on a variety of different elite business surveys and expert panels. Other studies use data from one or another of the underlying assessments, for example, the Institute for Management Development (IMD) and the World Economic Forum (WEF). Others rely on older sources such as the Business Environment Survey from 2000 developed by the World Bank and the University of Basel (WB/UB) or the Business International index (BI; described in Mauro 1995).² Kaufmann et al. (1999a) at the World Bank have calculated a composite index whose approach and results are close to the TI-CPI. Some research uses the Political Risk Service's International Country Risk Guide (PRS/ICRG). However, this source does not depict

corruption itself but, rather, the political instability that often results from corruption. As explained in personal correspondence, ICRG's editor-in-chief discouraged the use of this dataset as an indicator of levels of corruption. Even if levels of corruption remain unchanged, the indicator might give a country a worse score simply because the public becomes intolerant towards the corruption of the incumbent government, leading to political instability. Thus research that uses this index as the sole indicator of corruption needs to be interpreted with some skepticism.

1. The causes of corruption

Research on corruption is difficult because many causes of corruption also seem to be consequences of corruption. Feedback loops operate that make it hard to isolate the underlying causes. Nevertheless, much recent research has attempted to address these complexities and to draw some conclusions. Some causal factors can be manipulated to limit the incidence of corruption; others are background factors that need to be taken into account by policy makers. I discuss nine possible causes that have been prominent in recent research. They are the size of the public sector, the quality of regulation, the degree of economic competition, the structure of government, the amount of decentralization, the impact of culture, values and gender, and the role of invariant features such as geography and history.

Size of the public sector

Early economic work on corruption was sometimes tolerant of corruption, seeing it as a way around repressive government regulations. Recently, however, most economists have rethought that position and have become much less tolerant of corruption than their predecessors. Current research emphasizes the adverse welfare consequences of corruption. However, the remedies suggested frequently come straight out of economic orthodoxy without considering the necessary role of the state in modern society. Some analysts are critical of government *in toto* – if corruption involves a self-seeking government whose members attempt to enrich themselves, one needs to limit government power in order to constrain corruption. (See Becker 1994, and for a critical review, see Orchard and Stretton 1997.)

The argument that corruption can be contained by minimizing the public sector reflects economists' faith in the market and their distrust of politicians. At the macro level, however, the empirical findings provide little support for this proposition. There is little correlation between the overall size of the public sector and corruption. LaPalombara (1994: 338) does find an association, but he simply leaves out the Scandinavian countries by assuming them to be an exception. In contrast, Elliott (1997: 182–3) finds

that for a sample of 83 countries the size of the government budget relative to GDP decreases as levels of corruption rise. This is supported by Adsera et al. (2000) and Montinola and Jackman (2002). Gerring and Thacker (2005: 245–6) report insignificant results. Graeff and Mehlkop (2003) observe that corruption significantly decreases with government size in high-income countries.

Further complicating matters is the fact that regressing corruption on the government's budget (relative to GDP) might also be affected by reverse causality: corrupt governments have difficulty obtaining funding, be it through taxation or loans. This lack of resources then forces them to operate on a rather small budget. Another criticism of the hypothesis that larger government causes more corruption is provided by Husted (1999: 342, 350, 354). He argues that governments are larger in societies characterized by a greater acceptance of authority. Such acceptance would be a cultural determinant of both corruption and the size of the government budget.

Reflecting a general distrust of government, Boyko et al. (1996) suggest privatization as a means of reducing corruption and increasing efficiency at the same time. A downsized 'grabbing hand regime' would have fewer opportunities for milking the citizenry (Shleifer and Vishny 1998). However, although privatization may have its clear economic advantages, its impact on corruption is unclear. Corruption might just be shifted from the public to the private sector. The bribes formerly taken by public servants would then be requested by the private firms' staff. Privatization also does not provide a guarantee that the newly founded units are no longer serving politically motivated interests. Similarly, whether a downsized government is less capable of milking the citizenry is also questionable: privatized firms can be equally exposed to public interference and demands for bribes. What was formerly taken from state-owned enterprises can then be extorted from private firms. More often than not, private firms pay more in bribes than their well-connected state-owned counterparts (Lambsdorff and Cornelius 2000: 76–7). Finally, many transition economies experienced massive corruption in the privatization programs themselves. This may be another reason why downsizing the public sector does not help to reduce corruption, at least not during the transition period.

Given these results, a promising line of inquiry might focus on particular types of government expenditures and their potential to cause corruption. It has been suggested that redistributive activities are more vulnerable to corruption than other government functions. La Porta et al. (1999: 242) show a positive correlation between corruption and government transfers and subsidies relative to GDP. However, the variable correlates very closely with total government expenses, which, as mentioned above, depend on many factors.

Regulatory quality

Many economists point to one major cause of corruption: bad regulation. Ill-designed policies create corrupt incentives for policy makers, bureaucrats and the public in general. Under this view, it is not the size of government that is the problem, but rather, the details of programs and their administration. Reform should avoid complicated rules and those that are difficult to administer, and should design individual incentives to promote honest decisionmaking. From this perspective, some ‘good’ regulation can help contain corruption. For example, privatization in Eastern Europe involved bribery because there was too little ‘good regulation’; that is, too few legal requirements that restricted corrupt deals.

As a result, detecting bad regulation and misdirected state intervention can be helpful in identifying areas in which corruption is likely to occur. Bad regulation and corruption are quite often two sides of the same coin. When domestic firms are given preferential treatment in public tenders, this may induce corruption, but it may also be the outright result of strong private interests that capture public funds. In such cases, corruption causes bad regulations, and not the other way round. Quite striking is an example from Pakistan. The gold trade was formerly unregulated and smuggling was common. Shortly after Benazir Bhutto returned as prime minister in 1993, a Pakistani bullion trader in Dubai proposed a deal: in return for the exclusive right to import gold, he would help the government regularize trade – and make some further private payments. In 1994 a payment of US\$10 million to Ms. Bhutto’s husband was arranged. In November 1994, Pakistan’s Commerce Ministry wrote to the bullion trader, informing him that he had been granted a license to be the country’s sole authorized gold importer – a profitable monopoly position.³

If monopoly rights are given in exchange for bribes, corruption leads to market distortions. But those who argue that these monopoly rights should be abandoned as a way to get rid of corruption misunderstand the situation. At the core of the problem are criminally innovative politicians and businesspeople who collude to allocate these rights.

A final concern is that the difference between ‘bad’ and ‘good’ regulation is far from obvious. One criterion could be whether a regulation creates opportunities for corruption. But then the argument becomes circular and we have no causal theory of corruption. Overall, looking for ‘bad’ regulation provides some hints for detecting corruption, but falls short of an overarching approach to reform. Even regulations that have strong public justifications as responses to health, safety and environmental concerns can be subject to corrupt pressures. What appears ‘bad’ with respect to causing corruption may be ‘good’ with respect to other concerns.

Several studies support a close association between certain types of bad regulation and corruption. Broadman and Recanatini (1999) show that for a sample of transition economies in Europe and Central Asia, higher barriers to market entry lead to higher corruption. Djankov et al. (2002) are also concerned with the nature of entry regulation. They determine the number of procedures, time and official cost required for starting a new business for a cross-section of 71 countries. The authors find that these variables are strongly correlated with a country's level of corruption. Svensson (2005: 29) finds a positive correlation between corruption and the number of business days needed to obtain legal status. These results support the argument that entry regulation often does not serve to correct for market failure but brings about problems of its own.

Treisman (2000) finds that 'state intervention' tends to increase corruption. He measures state intervention using a subjective index compiled by the IMD. But as other explanatory variables enter into the regression, the relationship breaks down. The World Bank finds a correlation between corruption and a measure of policy distortion for 39 countries (World Bank 1997: 104, 168). Unfortunately, the study lacks a precise definition of policy distortions. Also, the robustness of the results is not tested by including further explanatory variables. Gerring and Thacker (2005) report a positive correlation between regulatory quality and absence of corruption. Ades and Di Tella (1997, 1999) provide a more detailed analysis of policy distortions. The authors use an index that measures 'the extent to which public procurement is open to foreign bidders' and another index that measures 'the extent to which there is equal fiscal treatment to all enterprises'. Even controlling for other explanatory variables, both variables significantly explain the level of corruption. This leads Ades and Di Tella to conclude that policy intervention causes corruption. However, they acknowledge that corruption may cause policy distortions, creating problems of simultaneity bias. Ades and Di Tella (1997) claim that their instruments for policy distortions ascertain the direction of causality. Certainly, policy distortions and corruption are quite often just two sides of the same coin. In this case, instruments have to carry a heavy burden.

Lambsdorff and Cornelius (2000) provide a simple correlation for a sample of 26 African countries. They show that corruption is positively associated with the degree to which 'government regulations are vague and lax'. These results are interesting in that they shift the focus away from the total burden of regulation to their application. Clear rules might present a burden to business but would not trigger as much corruption. However, the regressions are not controlled by further variables, nor are they extended to a broader sample of countries.

In a similar spirit, Gatti (1999) argues that a highly diversified trade tariff menu fuels bribe-taking behavior, whereas uniform trade tariff rates limit public officials' ability to extract bribes from importers. She reports a positive association between the standard deviation of trade tariffs and the level of corruption for a small sample of 34 countries. Causality may be difficult to ascertain because corrupt public servants may impose diversified tariffs so as to be in a better position to ask for bribes.

Lack of economic competition

Some researchers claim that corruption simply mirrors the absence of economic competition. On the one hand, competition among suppliers drives down prices. If procurement procedures are public, for example, the resulting rents for private firms decrease. As a consequence, when there is competition, public servants and politicians have less to 'sell' in exchange for bribes, reducing their motivation to seek payoffs. On the other hand, when competition is restricted, profits increase and politicians can take the opportunity to assign these profits – in exchange for a share. Although I tend to agree with this general association, the argument does not resolve conceptual disputes about whether restrictions on competition can in rare instances be beneficial and how to deal with natural monopolies. Moreover, the argument may suffer from reverse causality: the prospects of corrupt income may motivate private firms to pay bribes and politicians to offer market restrictions. The Pakistani gold case above illustrates this. Furthermore, competition may sometimes increase rather than decrease corruption. Where companies compete on quality rather than on price, competition may force firms into myopic behavior. Instead of cultivating a high-quality reputation, they might rather bribe inspectors to induce them to turn a blind eye to the delivery of substandard quality.

Several studies support an inverse relationship between competition and corruption. Henderson (1999) argues that corruption is negatively correlated with different indicators of economic freedom. This result is largely supported by Goldsmith (1999: 878) for a sample of 66 countries, where the regression is controlled for GDP per head, and by Paldam (2002) who includes further explanatory variables in a sample of 77 countries. Such arguments, however, might be tautological. The Heritage Foundation's Economic Freedom measure, for example, includes an assessment of corruption.

Ades and Di Tella (1995) test the influence of two other indicators of competition taken from the IMD survey. A subjective index of 'market dominance' measures the extent to which dominance by a limited number of firms is detrimental to new business development. Another index of 'anti-trust laws' measures the effectiveness of these laws in checking non-competitive practices. The authors conclude that the less competitive

a market environment, the higher will be the extent of corruption. However, the authors note the problems of causality and acknowledge that corruption may provide incentives for politicians to support monopolies.

One measure of competitive pressures is the integration of a country into the global economy. If competition reduces corruption, then increased openness to international trade and investment should go along with less corruption. A report in *Foreign Policy* (2001) indeed found that increased globalization is associated with less corruption. However, the study neither controls for other variables nor provides any insights into causality. Sandholtz and Gray (2003) report that the more international organizations a country belongs to and the longer it has been a part of the major international institutions, such as the United Nations, the General Agreement on Tariffs and Trade/World Trade Organization (GATT/WTO), and the International Monetary Fund (IMF), the lower its level of corruption. Furthermore, they report that corruption decreases with other factors of openness, such as international telephone minutes per capita and air freight per capita.⁴

Ades and Di Tella (1995, 1997, 1999) demonstrate that openness, defined as the ratio of imports to GDP, is negatively associated with corruption. They apply corruption data from the BI (in a cross-section of 55 countries) and the IMD (in a cross-section of 32 countries). With both approaches the results are robust to the inclusion of further explanatory variables. The authors conclude that international economic competition, measured by the degree of a country's openness, reduces corruption. A similar finding is reported by Sung and Chu (2003) and Gerring and Thacker (2005). However, Treisman (2000), using the same measure, did not find significant evidence for such an impact using the TI index. Apart from the mixed evidence, the measure of openness used in these studies is a distorted indicator of international competition. The variable depends to a large extent on the size of a country, measured for example by its total population. This is because large countries can compensate for a low ratio of import to GDP by more competition within their own country. Therefore, the usefulness of this variable is not beyond doubt.

Thus it is worthwhile developing other measures of openness. One such measure is the number of years a country has been open to trade, as assessed by Sachs and Warner (1995). Treisman (2000) and Leite and Weidemann (1999) provide evidence that this variable has a negative and significant impact on the level of corruption. Wei (2000a) seeks to disentangle the various ways in which openness affects corruption. He calculates a measure of 'natural openness' based on a country's total population and its remoteness from world trading centers. Both these measures tend to lower a country's openness, the former because large countries tend to trade less with the outside world, and the latter because transport costs make

foreign trade less attractive. These indicators are independent of a country's trade regime and thus are exogenous to a regression. He finds that natural openness lowers a country's level of corruption, arguing that this result indicates the helpful role of competition in reducing corruption.⁵ The residual openness (that is, the part which is not explained by country size and geography) is a measure of a country's trade regime and its policy decisions in favor of global competition. This variable has no significant impact on corruption levels, casting doubt on trade policy as a cause of corruption.

Graeff and Mehlkop (2003) relate corruption to the subcomponents of the index of Economic Freedom used by Gwartney and Lawson (2000) for a sample of up to 64 countries. Controlling for a variety of other variables, they find that many of these subcomponents are insignificant. An assessment of the legal security of private ownership rights, the viability of contracts, and the rule of law are found to lower corruption, particularly in rich countries. Interestingly, the freedom of citizens to own foreign currency bank accounts domestically and abroad is found to increase corruption, at least in the poorer countries. The authors conclude that not all aspects of economic freedom deter corruption because some regulation may increase the transaction costs of corrupt deals. In a related investigation, Neeman et al. (2003) argue that financial openness is detrimental to development because the income from corruption can be allocated abroad rather than being reinvested in a country.

Government structure

Some argue that democracy limits corruption through increased competition for political mandates. Competition for the political positions should enable societies to get rid of those performing particularly poorly. Leaders who care only about their personal income can be voted out of office. Candidates from the opposition can win elections by promising improvements (Rose-Ackerman 1978: 28). Incumbents can be held accountable for their actions, and voters can better identify and sanction self-seeking behavior. Competition may thus operate like an invisible hand, substituting a possible lack of benevolence among politicians with a mechanism that makes sure that public welfare is pursued. This is a standard argument in political economy at least since Schumpeter (1942).

Studies show that democracy reduces corruption, but not immediately. These improvements do not result from a lukewarm type of democracy or from democracy with little electoral participation. Before transforming authoritarian systems into half-hearted democracies, it is worthwhile considering whether any particular authoritarian system has established peculiar methods of honoring integrity and, if so, how these might be endangered during transition.

Paldam (2002) tests the impact of the Gastil index (Freedom House) for political rights, that is, democracy, on corruption. Although the correlation between these variables is high, in multivariate regressions the relationship breaks down as soon as GDP per head enters into the equation. Similar results are reported by many others (Goldsmith 1999; Sandholtz and Koetzle 2000; Persson et al. 2003). But Treisman (2000) finds a significant impact for a selection of 64 countries when he tests his sample for the impact of established democracies, those with a tradition for democracy going back to 1950. He argues that while the current degree of democracy is not significant, a long period of exposure to democracy lowers corruption. Gerring and Thacker (2004, 2005) provide significant results using the cumulative number of years a country has been democratic since 1900.

Montinola and Jackman (2002) employ broader measures of democracy; they use the composite Gastil index as well as assessments of the ability of opposition groups to organize and the effectiveness of the legislative body. They find a non-linear impact on corruption. As compared to autocratic regimes, moderate levels of democracy do not decrease corruption. Only after a certain threshold is passed do democratic practices inhibit corruption. Manow (2005) supports this finding with the help of more topical data. Manow concludes that corruption in medium-democratic regimes is even (slightly) higher than in totally authoritarian countries. Once this threshold is passed, he shows that democracy reduces corruption. Sung (2004) tests different functional forms for the relationship between corruption and democracy and finds that a cubic form best fits the data. This form reveals an ambiguous impact for countries scoring between 7 and 2 in the Freedom House index where 1 is the best possible score and 7 is the worst. Only the top score of 1 brings about decreased corruption. However, he fails to control for income per head, making it difficult to judge the robustness of the findings. Adsera et al. (2000) obtain significant results for electoral participation. Controlling for various variables, they find that countries with higher participation have lower levels of corruption.

Forms of democracy Because most countries presently have democratic structures in place, an important subject of research is to isolate the differences across constitutional structures and electoral systems.

One important constraint imposed on the executive branch of government is the power exerted by parliament. Parliament may sometimes follow its own self-seeking goals, but even in that case, its independence can limit the executive's self-seeking behavior. Empirical results show that parliamentarism tends to go along with lower levels of corruption, while systems with powerful presidents are perceived to be more corrupt.

Gerring and Thacker (2004) investigate the capacity of parliamentary systems to contain corruption, as opposed to presidential systems where policy-making power is divided between the legislature and the president. They find evidence that parliamentary systems are associated with less corruption. A similar result is reported by Lederman et al. (2001) and Panizza (2001). Kunicová (2005) reports the same finding for a sample of more than 100 countries controlling for a battery of further variables. She extends her analysis by introducing a dummy variable for presidents with term limits. She reports that presidentialism increases corruption significantly when it goes along with term limits. She argues that this is likely to result when incumbents have little to lose at the end of their term. In addition, she shows that corruption increases where presidents are more powerful, that is, where their range of power expands across both legislative and non-legislative functions. For a sample of 43 presidential countries she shows that corruption increases with this indicator of power. Kunicová and Rose-Ackerman (2005) investigate parliamentarism versus presidentialism and plurality voting versus proportional representation. The systems most prone to corruption are presidential systems with closed-list proportional representation (see Kunicová, this volume).

Adsera et al. (2000) obtain an unexpected positive impact for presidentialism on the control of corruption. This might result from their different quantification of presidentialism. This variable is no longer determined as a dummy variable, but takes on the values of 0 if the president is elected directly, 1 if the president is elected by the assembly, but has substantial powers, and 2 if the system is purely parliamentary. The different finding might also result from their inclusion of a variable on political instability, which increases corruption and could be associated with constitutional structure.

These results are disputed among political scientists, owing to an omitted variable bias. One missing variable is the quality of political parties (Shugart 1999). Presidentialism might be a second-best alternative in countries where political parties are not devoted to broad national interests. In this case, presidentialism might be a response, rather than a cause, of high levels of corruption.

Voting systems Competition among politicians is another factor thought to contain corruption. Competition may not only limit self-seeking among members of the government but may also force political leaders to tightly control subordinates. A contested ruler may be effectively pressured to ensure that bureaucrats or party members serve the public (Breton and Wintrobe 1975). A contested government may be held responsible not only for its own self-seeking but also for the bureaucratic corruption among its

various agents. Those politicians who are least able or willing to contain corruption at lower ranks may fear being ousted. The government will, therefore, be induced to monitor how well its members and the administration contribute to public welfare, thereby disallowing shirking, laziness and corruption.

But the power of competition should not be overestimated. Moe (1984: 762) argues that competition does not guarantee that inefficient programs will be eradicated and that dishonest politicians will be voted out of office. One reason for this may be that corruption subverts the selection process. Politicians with control over corrupt income may spend these resources in return for staying in power. Corruption and the power to allocate rents to supporters can be helpful instruments to guarantee political survival. Honest politicians have fewer such resources at their disposal and may perish as a result of competition for political positions (Buchanan 1993: 69). Those who can best trade in political assistance are in a prime position for survival. Even benevolent rulers may sacrifice their values for political support. Competition alone may be insufficient to ensure that benevolence among the leadership prevails. In this respect, recent empirical evidence on the impact of electoral systems on corruption is illustrative, demonstrating that electoral systems can enhance competition among candidates, but that the resulting effect on corruption might be ambiguous.

Persson et al. (2003) test the impact of electoral rules on corruption in a cross-section of more than 80 democracies. They argue that smaller voting districts, characterized by few representatives from each district, increase corruption because they impede the entry of new candidates. Small voting districts require increased efforts for a candidate or a political party to adapt to local requirements and needs, lowering competition among candidates and their accountability towards their constituency. In contrast, larger districts imply lower barriers to entry for new parties or new candidates, and this increased competition helps reduce corruption. They report a negative impact of the size of voting districts on corruption. However, this impact is significant only at a 10 percent significance level and is not robust throughout different specifications. Also Panizza (2001) and Damania et al. (2004) report less significant findings. Another, more significant finding by Persson et al. relates to party lists. The authors find that corruption is higher in countries whose parliamentarians are elected from party lists, rather than as individual candidates. The likely reason is that such election systems go along with less individual accountability. The authors suggest that Chile's strong score might be largely attributable to its electoral rules, which avoid small districts and limit party lists.

Chang and Golden (2004) criticize the simplified variable on party list voting in the approach by Persson et al. They argue that closed-list voting,

where voters only cast votes for parties, should be distinguished from open-list voting, where voters both select a party and rank candidates given the party's selection of candidates. They argue that the two types fare differently, depending on the size of the voting district. They find that, in the case of large voting districts, closed lists help to contain corruption, while in small voting districts open lists limit corruption. They point out that politicians need to amass (possibly illegal) resources to triumph over their opponents in open-list voting. This effect becomes stronger in large voting districts, suggesting why closed lists turn out to be superior.

Persson et al. (2003) observe a positive correlation between the size of the voting district and the prevalence of voting from party lists. A voting system tends to be characterized either by plurality rule, where seats are awarded to the individual candidates receiving the highest vote shares in small voting districts, or by proportional representation systems where political parties compete in larger voting districts. These large voting districts are preferable with respect to lowering corruption, but the prevalence of candidates coming from party lists increases corruption. They find that the latter effect is stronger, indicating that proportional election, even in large districts, increases corruption. This unfavorable finding on proportional representation is supported by Kunicová and Rose-Ackerman (2005). They find that electoral systems with proportional representation are associated with higher corruption than plurality rule. Westminster democracy is most capable of reducing corruption.⁶

All these findings are challenged by Manow (2005) who claims that political parties' influence in elections reduces corruption. He argues that a political party's time horizon is typically longer than that of individual candidates, suggesting that the malfeasance of a single party member brings about severe damage to the reputation of the political party. This explains parties' willingness to discipline their members. The favorable role often played by established political parties and their capacity in containing corruption, he argues, deserve to be reconsidered. Manow shows that the negative impact of party lists by Persson et al. breaks down when restricting the sample to more mature democracies or countries with a high level of political freedom (those that score between three and one on the Freedom House index).

An explanation to these contradictory findings might be found in Panizza (2001: 326, 336, 338). He employs an index on 'particularism' in regressions for 101 countries. This variable depicts the extent to which party control is undermined by individual politicians. The index includes measures of party influence, such as whether candidates run under party labels, whether votes relate to candidates or pools of candidates, and whether voters can voice preferences for parties or candidates. Panizza finds that this

variable has no linear impact on the level of corruption. However, he obtains a non-linear impact: countries with moderate party influence and individual candidates with limited power fare best. In the light of this non-linearity, the selected sample of countries can affect the results. For example, disregarding African, Latin American and Eastern European countries where elections are quite party centered and corruption is rife would yield results that are rather favorable to political parties, in line with Manow's findings. There is no simple right or wrong with respect to choosing the sample, and as a consequence, no iron-clad advice to be inferred from the existing studies of particularism.

Another omission from these studies is the system of campaign finance. Stratmann (2003) constructs an index of the strictness of campaign financing rules in 14 countries and observes that strictness goes along with higher levels of corruption. This surprising finding may relate to endogeneity and the lack of control variables. High levels of corruption may lead to the adoption of contribution limits so as to operate as a remedy. It may also indicate that if rules are too strict, campaign money is still provided by the private sector but that it takes corrupt and non-transparent forms.

Overall, competition for political positions can help avoid self-seeking, but more than just general elections are required to effectively reduce levels of corruption. Guaranteeing fairness and honesty during the electoral process is one crucial prerequisite for electoral competition to limit corruption, but this is precisely what may be in short supply. The precise technicalities of the voting system appear to have a complex impact on levels of corruption, but the pros and cons of alternative voting systems may be worthwhile to consider in the context of an individual country's reform strategy.

Decentralization

Decentralization could be a means of reducing corruption by bringing government closer to the people. But the alternative to a large centralized public sector is sometimes a weak local government that is captured by strong local players. It requires little imagination to see that such a regime may be equally unattractive to investors and that similar adverse effects on welfare are quite likely to arise. Empirical results on decentralization's effect on corruption are mixed and depend on how decentralization is measured.

Some authors observe a positive correlation between corruption and a country's size, measured by total population (Root 1999; Treisman 1999; Fisman and Gatti 2002). These correlations are robust to the inclusion of further variables. This might be taken as an indicator in favor of decentralization. Smaller countries or regions might be in a better position to establish a decent administration and to monitor their politicians.

Knack and Azfar (2003) argue that the correlation between corruption and population size results from sample selection problems. Ratings on corruption are only provided for those countries in which multinational investors have sufficient interest. These tend to be large nations and among the small nations only those which are well governed. Knack and Azfar conduct regressions for larger samples of countries and observe that the relation between corruption and population disappears. Damania et al. (2004) show in a sample of 69 countries that population density decreases corruption; it remains to be seen whether this finding survives the test for sample selection, as proposed by Knack and Azfar.

Huther and Shah (1998) and Fisman and Gatti (2002) suggest another way to measure the extent of decentralization. They interpret the share of subnational expenditures in total public spending as a measure of decentralization. In a sample of 80 countries, this index correlates positively with various measures of good governance. Huther and Shah report a correlation of decentralization with lack of corruption larger than 0.5. The approach by Fisman and Gatti makes use of the same variable on decentralization, but they test whether the outcome is robust to the inclusion of further variables. For a wide range of specifications they find that fiscal decentralization in government spending is significantly associated with lower corruption. The authors also suggest that corruption may be larger when spending is decentralized while revenue collection remains in control of the central government. They base their empirical findings on levels of corruption in US states. Arikian (2004) employs various measures of decentralization and observes a mostly insignificant relationship to corruption. A high ratio of non-central government employment to total government employment, however, seems to lower corruption.

Treisman (1999) takes a more direct approach to investigating the effect of decentralization, distinguishing between federal and centralized states. He reports insignificant evidence once other variables are included. Adsera et al. (2000) and Panizza (2001) also fail to obtain a significant impact. Damania et al. (2004) reports a significant impact of federalism in reducing corruption. On the contrary, Goldsmith (1999: 878), Kunicová (2005) and Kunicová and Rose-Ackerman (2005) claim that federalism increases corruption, even when controlling for GDP per head. In a more recent publication, Gerring and Thacker (2004) also support a significant adverse impact of federalism on corruption. They distinguish between non-federal semi-federal and federal states, and mix these characteristics with the extent of bicameralism. The authors find evidence against federal states and in favor of unitary governments.

Testa (2003) investigates differences between unicameral and bicameral systems. She shows for a cross-section of 43 democracies that bicameralism

lowers corruption in ethnolinguistically homogenous states. But bicameralism increases corruption in countries with a high level of ethnolinguistic fractionalization. She argues that bicameralism limits the impact of lobbying (and corruption) by doubling the number of legislators that a lobby must buy. However, in countries with high levels of fractionalization, legislators must seek compromises, and this situation may make them relatively inexpensive and receptive to influence. The extent of fractionalization is also investigated by Alesina et al. (2003). They show that countries characterized by ethnic, linguistic or religious fractionalization are rated worse by PRS/ICRG with respect to political instability which may, in turn, be associated with corruption.

As these results demonstrate, a simple economic 'recipe' like decentralization does not unequivocally ameliorate the problems of corruption. The pros and cons of decentralization are an important issue, but they are the wrong battleground if one aims at containing corruption. In addition to the fact that empirical results depend on how decentralization is quantified, cultural factors might further confuse matters. Certain cultural determinants may drive both decentralization and the absence of corruption. Countries characterized by civic cooperation and trust among people, as well as those with well-developed subnational units, may be in a position to decentralize and lower corruption at the same time.

Culture

In contrast to economists, sociologists often point to cultural causes. Among these, generalized trust, religion and acceptance of hierarchy play a crucial role. Countries with high levels of generalized trust, a large share of Protestants, and little acceptance of hierarchy are perceived to be less affected by corruption. Given the invariance of cultural variables over time, we have reason to believe that the causality runs from culture to corruption and not the other way around. At the same time, the findings provide little inspiration to reform. They suggest that superficial reform might be futile because societies may return to the culturally determined level of corruption. However, culture explains only a fraction of the variance of levels of corruption, leaving sufficient prospects that countries can change for the better even if their cultural preconditions are less favorable.

Another conclusion originating from the link between culture and corruption suggests that reform strategies should take into account cultural preconditions. Husted (1999) argues that effective measures to fight corruption are dependent on culture. Countries where power is distributed unequally and where hierarchy is accepted will require different treatment from others. In such countries, a top-down approach to anti-corruption may have better prospects as compared to a grassroots movement. In countries

where a strong desire for material wealth dominates, ethical training may not fall on fertile ground.

Some societies are characterized by a high level of trust among their people, while in others people tend to have more misgivings about each other. Investigating the consequences of such forms of 'social capital' has been made possible with data from the World Values Survey, which has surveyed 1,000 randomly selected people from each of an increasing number of countries since the 1980s. One question is: 'Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?'. La Porta et al. (1997: 336) argue that trust can be helpful in fighting corruption, since it helps bureaucrats to better cooperate with each other and with private citizens. In a sample of 33 countries, the authors show that trust correlates with lower levels of corruption, while controlling for GDP per head. This finding is corroborated by Adsera et al. (2000). Uslaner (2004) supports the negative association between trust and corruption. Concerned with causality, he claims that trust lowers corruption while the opposite causality is less robust. Björnskov and Paldam (2004) undertake a first attempt to construct time series with the TI data on corruption. Seeking explanatory variables, they find that trust is the only one with significant impact.⁷

The role of religion in contributing to the level of corruption is examined by La Porta et al. (1997: 337). The authors consider the Catholic, Eastern Orthodox and Muslim religions to be particularly hierarchical – and that such hierarchical forms of religion are detrimental to civic engagement, a factor which should help reduce corruption. For a same sample of 33 countries, the authors report a positive association between the percentage of population belonging to a hierarchical religion and corruption, controlling for other influences. La Porta et al. (1999: 251–2) reproduces this relationship for a larger selection of 114 countries. But here the relationship becomes rather weak as soon as GDP per head is included. Treisman (2000) finds a strong association between religion and corruption. He relates corruption to the percentage of Protestants in the total population in a sample of up to 64 countries and obtains a highly significant negative correlation, controlling for other variables such as GDP per head. This is corroborated by Lipset and Lenz (2000) and Gerring and Thacker (2005: 244–6). In contrast to these studies, however, Sandholtz and Gray (2003) claim that Protestantism loses significance both in larger samples and when one controls for a variety of indicators of openness. Paldam (2001) provides a more in-depth analysis of the impact of various religions. He identifies 11 different groups of religions and tests their impact on corruption, controlling for other variables. Although corruption is lower in countries with a large fraction of Reform Christianity and tribal religions, higher levels of

corruption prevail in countries with a large influence of Pre-Reform Christianity, Islam, Buddhism and Hinduism. However, the impact is significant only for Reform Christians (Protestants and Anglicans).

In line with the argument by La Porta et al., the idea that hierarchies contribute to corruption is supported by Husted (1999), who uses a totally different dataset. Based on surveys by Hofstede (1997), he employs variables relating to cultural values. One variable defined there is called 'power distance' and measures 'the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally'. This variable is shown to correlate positively with the level of corruption in a sample of 44 countries in various regressions, while controlling for other explanatory variables. As with this indicator, two further cultural variables correlate positively and significantly to the level of corruption. The first variable is the extent to which the quest for material success dominates over concern for quality of life⁸ and the second is the extent to which members of a culture feel threatened by uncertainty or unknown situations. Robertson and Watson (2004) largely reproduce these findings.⁹

Causation may, however, run from corruption levels to trust. Anderson and Tverdova (2003) investigate the impact of corruption on trust in civil servants and on the evaluation of the political system. For this purpose they employ survey data from the 1996 International Social Survey Program. They find that corruption significantly reduces trust in civil servants, as reported by respondents. Another finding relates to respondents' answers to the question: 'All in all, how well or badly do you think the system of democracy in (country) works these days?'. The authors find that this assessment is significantly worse in countries with high levels of corruption. They report that both these impacts are significantly attenuated among supporters of the incumbent political authorities.

Values

Other cultural variables relate to 'traditionalism'. Societies that cultivate secular-rational attitudes towards authority (that is, where impersonal values are more important as opposed to particularistic or family values) are perceived to be less corrupt, unlike those where traditional religious values dominate. Also, a high loyalty to one's family correlates with corruption – family interests can conflict with official duties. Where loyalty to one's kin is high, nepotism might emerge.

Sandholtz and Taagepera (2005) determine two cultural dimensions from the World Values Survey conducted between 1995 and 2001. A first dimension measures traditional versus secular-rational attitudes towards authority. A second dimension relates to survival versus self-expression.

This dimension measures the extent to which people are focused on personal and economic security or on personal self-expression and quality of life. The authors show that a strong 'survival' orientation contributes twice as much as a strong 'traditional' orientation to higher levels of corruption. Unfortunately, the authors do not explain clearly how these dimensions are determined. They also do not control for some standard variables, such as GDP per capita. In light of this, the significant result for tradition appears more interesting than the one for survival, which is likely to be far less significant once controlling for income per head. The higher level of corruption in post-communist countries, countries with a high level of 'survival', is also reported by Gerring and Thacker (2005: 245–6), who show that a socialist legal tradition increases corruption.

Lipset and Lenz (2000: 120) create a scale to measure 'familism' and then test the relationship between familism and corruption. Their data on familism measure first, the percentage of respondents from the World Values Survey agreeing that, regardless of the qualities and faults of one's parents, a person must always love and respect them; and second, the percentage of people who think that divorce is unjustifiable. In regression analysis, the measures of familism are positively related to corruption, even when controlling for per capita income.

Other investigations on values provide more inspiration for reform. Since corrupt deals cannot be legally enforced, they require trust among the partners that their favors will be reciprocated. This resembles a strategic type of trust that clearly differs from 'generalized trust' as assessed by the World Values Survey. Lambsdorff and Cornelius (2000) find that corruption is higher in countries where bribers are confident that favors will be reciprocated. A more detailed investigation of this relationship is provided in Lambsdorff (2002). Throughout various specifications and different indices of corruption, it is shown that opportunism among corrupt partners, although potentially troublesome to investors, reduces a country's level of corruption. Instrumental variable technique ascertains the hypothesized causality. The reform idea emanating from this finding is that in order to contain corruption, some of the confidence among corrupt partners must be destroyed. To the extent that this strategic type of trust is rather fragile, there is ample scope for containing corruption.

Gender

The role of social structure in advancing corruption has lately become of interest. One concern relates to gender. Male-dominated networks might encourage corruption. They might be set-up to advance particularistic interests at the expense of those of society at large. Improved women's rights may lower corruption. Once parliamentary debates embrace both sexes and

bureaucratic decisions are communicated across sexual boundaries, the resulting increased transparency may decrease corruption. Whether individual women are intrinsically less corrupt, as has been hypothesized by some authors, is beyond the scope of cross-country analysis. Testing such a hypothesis requires an analysis of female-dominated societies, of which we hardly have any in our sample. All we observe is that a better mix of sexes as opposed to male dominance appears to lower corruption.

Yet, there are reasons in support of reverse causality. Low levels of corruption may impose restrictions on male-dominated networks, and provide women with legal recourse and improved access to higher positions. Women's rights would be difficult to establish in corrupt countries, and they would contribute little by themselves to lower corruption.

Swamy et al. (2001) and Dollar et al. (2001) determine that the percentage of women in the labor force and in parliament have a negative effect on the level of corruption in a cross-section of up to 66 countries. The influence is large in magnitude, highly significant, and robust throughout a large variety of regressions, controlling for various variables. These findings are in line with some micro evidence reported by Swamy et al. and suggest that policies designed to increase the role of women may help lower the level of corruption. Similar results are reported by Sung and Chu (2003).

However, female participation and corruption might both be driven by other factors. Sung (2003) shows that the impact of gender on corruption decreases considerably once controlling for further variables such as rule of law, press freedom and democracy. He concludes that it is largely these institutions that simultaneously help women and integrity, rather than female participation lowering corruption.

Geography and history

Besides cultural preconditions, some geographic and historical variables can foster corruption. Abundance of natural resources, high levels of corruption among neighboring states, and a large distance to the world's major trading centers significantly increase corruption. These are unchanging features of countries. Such findings might provide societies with a benchmark for the level of corruption that is achievable through reform programs.

Ades and Di Tella (1999) and Leite and Weidemann (1999) argue that abundance of natural resources creates opportunities for rent seeking and gives rise to corruption. Both studies measure the first variable as a country's exports of fuels and minerals as a share of GNP. Throughout various specifications this variable is found significantly to increase the level of corruption. These results are robust to the inclusion of various explanatory variables, different samples of countries, and the use of different indicators of corruption. A similar finding is reported by Kunicová (2002).

Montinola and Jackman (2002) employ a dummy variable for OPEC (Organization of Petroleum Exporting Countries) member states, which relates to abundance of oil. This variable also significantly increases a country's level of corruption. Another study by Gylfason (2001) argues that the abundance of natural resources can be measured by the proportion of the labor force employed in primary production. He reports a positive association of this proxy with corruption, controlling for income per head.

Sandholtz and Gray (2003) show that countries surrounded by corrupt neighbors exhibit higher levels of corruption. Neighbors may share similar cultural affinities and norms; attitudes towards corruption may spill over from one country to another due to strong regional exchange. Gerring and Thacker (2005) observe that corruption decreases with a country's distance from the equator. Ades and Di Tella (1999) provide evidence that corruption increases with a country's distance from the world's major trading centers. In this connection I have already discussed Wei's (2000a) study which comes to the same conclusion.

Finally, some studies suggest that a country's colonial heritage has an impact on present-day political realities, including corruption levels. Variables measuring colonial heritage are sometimes used as control variables in studies investigating the causes of corruption. See, for example, Treisman (2000) and Swamy et al. (2001). According to Treisman, former British colonies exhibit lower levels of corruption than do other countries, controlling for the level of income per head and various other variables, such as the existence of a common law system. This result is reproduced by Swamy et al.¹⁰ Countries that were never colonies are no different from those that were colonies of countries other than Great Britain. However, analysis of this connection is very limited. These studies are not primarily intended to investigate the impact of colonialism on corruption. Following anecdotal evidence this impact is likely to be negative. To arrive at sound conclusions, analysis should go beyond the use of dummy variables and take into consideration more detailed characteristics of colonial rule.

2. The consequences of corruption

There are many causes of corruption, and some of these causes may also be consequences. Thus I have already mentioned some possible consequences of corruption in the previous section. However, an important body of work emphasizes consequences. Here too, however, the direction of the causal arrow is often contested. I begin with work that claims that corruption helps generate inequality. Next I discuss the impact of corruption on overall productivity and investment. The section concludes with a consideration of the distortions that corruption introduces into the public and the private sectors.

Inequality

Particular attention has been paid to corruption's effect on the inequality of income. However, corruption is also likely to result from inequality, which suggests containing inequality as a method for lowering corruption.

Gupta et al. (2002) investigate the impact of corruption on income inequality, as measured by the Gini coefficient. They find a significant correlation between corruption and income inequality in a cross-section of 37 countries, while taking into account various other exogenous variables. When controlling for GDP per head, this impact remains significant at a 10 percent level. The authors test various instrumental variables to determine that the causality runs from corruption to inequality. They also find evidence that corruption increases inequality in education and land distribution. Because these variables contribute to income inequality (and are controlled in the first regression), the overall impact of corruption on income inequality is likely to be even stronger. Gymiah-Brempong (2002) also finds a correlation between corruption and inequality of income for a sample of African countries. Li et al. (2000) find this effect is stronger the higher the level of corruption.

Gupta et al. study (2002) investigates the income growth of the bottom 20 percent of society. Controlling for various influences, they report that increases in corruption exert a significant and negative impact on this variable. However, research on actual trends in levels of corruption has not really started, and the current perceptions data may not relate well to changes in real levels. Taking this into account, suggests that the results should be viewed with some skepticism.

Husted (1999: 342–3) questions whether the causality actually moves from corruption to inequality, arguing that inequality also contributes to high levels of corruption. This is also suggested by Swamy et al. (2001). Moreover, both variables might be driven by cultural determinants. A society where the public accepts authority and has low levels of accessibility to those high up in hierarchy may be one with high levels of both inequality and corruption (Husted 1999).

You and Khagram (2005) provide evidence for reverse causality. They argue that the poor are not able to monitor and hold the rich and powerful accountable, enabling the latter to misuse their position for private gain. Using the technique of instrumental variables, the authors show that inequality increases corruption. This effect is found to be stronger in democracies: the rich and the powerful can oppress the poor in autocratic regimes while in the context of democracy they must employ corruption when seeking to maximize their wealth. Their results hold, controlling for a battery of control variables. Considering that causality can go both ways, the authors conclude that societies can fall into vicious circles of inequality

and corruption. One part of this vicious circle concerns social norms and tolerance towards corruption. A country's level of inequality increases the likelihood that respondents to the World Values Survey regard cheating on taxes and accepting bribes as justifiable types of behavior.

Productivity measures

If corruption acts not as grease but as sand in the gears of the economic system, it may lower the productivity of resources. As a consequence, both the level of GDP and the rate of economic growth could be affected.

GDP per capita To ascertain the overall adverse effect of corruption on productivity, attempts have been undertaken to link corruption to income per capita. There is no doubt about a strong correlation between GDP per head and corruption. But there is equal agreement that no unambiguous causality can be derived from this. Researchers attempt to solve the problem of endogeneity by using instruments, that is, variables that affect only corruption but not directly income per capita. Given that income and corruption are so highly intertwined, these instruments must carry a heavy burden. Not all readers can easily be convinced that a chosen instrument satisfies these requirements. Because of this, many researchers have preferred to relate corruption to variables other than income per head, where endogeneity issues appear less pressing.

One reason why causality might run in both directions is that, although corruption is likely to lower GDP per head, poorer countries lack the resources to fight corruption effectively (Husted 1999: 341–2; Paldam 2002). A simple regression would not provide a causal link between corruption and GDP, but would report some correlation of unknown origin. Additionally, cultural determinants are likely to drive both.¹¹

One attempt to disentangle this simultaneous relationship is provided by Hall and Jones (1999). In regressing output per worker on an indicator of social infrastructure, which includes a measure of corruption, the authors address a variety of potential simultaneity problems. One of them is related to the fact that the indicator of corruption is based on perceptions. If countries at an equal stage of development differ in the extent of corruption, perceptions are undisturbed and may be particularly informative. But if countries differ widely in their development, perceptions may be overshadowed by these differences and be less reliable. The idea advanced by the authors is that these problems of simultaneity can be solved by using instrumental variables techniques. The approach by Hall and Jones (1999) is applied by Kaufmann et al. (1999b: 15) and Wyatt (2002) to the relationship between corruption and GDP per capita. Results indicate a significant adverse impact running from corruption to GDP per capita. However, the

results must be taken with a grain of salt because the instruments carry such a heavy burden. Crucial to their validity is that they affect corruption but have no direct effect on GDP per capita. Given that corruption and GDP per capita are highly intertwined, whether such a requirement has been met is difficult to ascertain.

In this spirit, instead of using GDP per capita I determine the ratio of GDP to capital stock as a proxy for a country's average capital productivity (Lambsdorff 2003a). The capital stock is determined by a perpetual inventory method. One motivation for this approach is that reverse causality is less likely to be a problem. A significant negative impact of corruption on this ratio is found in a cross-section of 69 countries, controlling for the total capital stock and for various other variables. The results are robust to the use of different indicators of corruption, sample selection and endogeneity issues. I conclude that a 6-point improvement in integrity on the TI index – for example, an increase in Tanzania's level of integrity to that of the United Kingdom – would increase GDP by 20 percent.

GDP growth Given the empirical difficulties in relating corruption to income per capita, other studies seek to ascertain the influence of corruption on the growth of GDP. Early results were ambiguous, but more recent investigations seem to show that corruption lowers growth.

Knack and Keefer (1995) find that a variable of institutional quality developed by PRS, which incorporates corruption among other factors, exerts a significant negative impact on the growth of GDP. Tanzi and Davoodi (2001) provide evidence for corruption (measured by the TI-CPI) lowering growth for a cross-section of 97 countries. Brunetti et al. (1998: 369) as well as Li et al. (2000) produce insignificant results. Abed and Davoodi (2002: 507) obtain insignificant results for a cross-section of 25 transition countries when including an index of the success of structural reforms. Mauro (1995) finds a slightly significant impact in a bivariate regression. But as soon as the ratio of investment to GDP is included as an explanatory variable, this impact disappears.¹² Ali and Isse (2003) find that corruption lowers growth. They carry out tests for Granger-causality, failing to observe that most data on corruption are not valid for time-series analysis.

Anoruo and Braha (2005) employ panel data to investigate the impact of corruption on growth for 18 African countries. In their study, corruption significantly reduces growth, even when controlling for the ratio of investment to GDP. However, given that the data on corruption are valid for cross-sections but less so for time-series analysis, the finding must be viewed with caution. Another approach is provided by Wedeman (1997). Based on simple cross-tabulation of growth and corruption he observes many corrupt countries exhibiting high growth rates. He concludes that certain

kinds of corruption might have more significance for growth rates than the overall level of corruption as such. Rock and Bonnett (2004) provide supportive evidence. They show that corruption has an overall adverse impact on growth, but that it increases growth in the large East Asian newly industrializing economies. The authors speculate that the rather stable exchange of government promotional privileges for bribes may explain this East Asian paradox. In sum, earlier investigations provide mixed evidence on the relationship between corruption and growth of GDP.

More recent investigations suggest that corruption lowers growth. Making use of data on corruption provided by PRS, Mauro (1997) produces significant results at a 95 percent confidence level. Leite and Weidemann (1999: 24) and Poirson (1998: 16) also report a significant negative impact. Gymiah-Brempong (2002) reports an adverse impact of corruption on growth in African countries.

Mo (2001) finds a significant adverse impact of corruption on growth between 1970 and 1985 for a cross-section of 45 countries. As in the above studies, standard control variables are included such as initial GDP per head, population growth and political rights. He modifies the regression by successively including further explanatory variables. In particular these are the ratio of investment to GDP, the level of political stability (measured by the number of assassinations per million population per year and the number of revolutions), and human capital formation (measured by average schooling years). By adding these variables the impact of corruption on growth becomes insignificant. Mo traces this to the multicollinearity of corruption with these variables and argues that the results help to identify the channels by which corruption affects growth. He finds that more than half of corruption's impact occurs via its effect on political stability, more than 20 percent via its impact on the ratio of investment to GDP, another 15 percent via its adverse impact on human capital formation, and the insignificant rest from direct causation.

In a similar spirit, Pellegrini and Gerlagh (2004) trace the impact of corruption on GDP growth to the ratio of investment to GDP and to a country's openness. Méon and Sekkat (2005) also detect an adverse impact of corruption on growth. This impact survives the inclusion of a variable on the ratio of investment to GDP. The impact becomes even stronger in countries with low quality of governance. Indicators of governance quality include 'rule of law', 'government effectiveness' and 'lack of violence'. The results by Méon and Sekkat contradict the 'grease the wheels' view of corruption, which postulates that corruption may help compensate for bad governance.

Although there is some evidence that corruption lowers GDP growth, the theoretical reason for such an impact remains open to question. If we

regard the absence of corruption as a factor of production similar to other aspects of social capital, we can see how corruption would affect income per capita. This suggests that growth of GDP would not be explained by absolute levels of corruption but by changes in these levels. In an unpublished study, I use responses to a 1998 WEF survey question on whether corruption has decreased in the past 5 years to explore this possibility. This variable better explains the growth of GDP than absolute levels of corruption. Because issues of endogeneity are difficult to assess, these are not iron-clad results.

Overall, the link between corruption and GDP or the growth of GDP has its empirical and theoretical weaknesses. Given this state of affairs, researchers have sought alternative variables that might be responsive to levels of corruption but that are less likely to be by themselves a cause of corruption. These investigations examine both the public and private sectors. On the public side, studies have looked at the distortion of budget allocations and the quality of public investments, services and environmental regulations. In the private sphere, studies have focused on the distortion of markets in international trade, aid and lending, stocks and human capital, as well as at the creation of underground economies, which both distort private markets as well as undermine government effectiveness.

Investment

Corruption may have an impact on the economy by reducing a country's capital stock. The major reason for this reduction is the low credibility of policy. A strong ruler who is devoted only to self-enrichment is the harshest example of this situation. Such a ruler is unable to make credible commitments.

Start-up investments are often sunk and cannot be redeployed if investors are disillusioned about the institutional environment of a country. Railroads cannot be moved, pipelines cannot be relocated, and real estate cannot possibly be used in a different region. Politicians and bureaucrats may misuse their positions once investments are sunk. They may delay necessary permits and hold up investors until offered a bribe. Governments with a reputation for corruption find it difficult to commit to trustworthy, non-extortionate policies and to convince investors of their dedication. As a result of such failures, both domestic and incoming foreign direct investments ought to deteriorate with corruption.

Overall impact A standard assumption is that countries with a better investment climate achieve higher ratios of investment to GDP. An adverse effect of corruption on this variable is found throughout a variety of studies, in line with our expectations (Knack and Keefer 1995; Mauro 1995,

1997; Brunetti et al. 1998: 369; Brunetti and Weder 1998: 526–8; Campos et al. 1999; Gymiah-Brempong 2002; Rock and Bonnett 2004). Some authors, however, question whether the ratio of investment to GDP validly depicts the attractiveness of the overall investment climate.¹³ A better measure for a country's attractiveness may be its ability to attract foreign direct investment (FDI).

In an early study, Wheeler and Mody (1992) did not find a significant correlation between the size of FDI and the host country's risk factor – which includes corruption among other variables and is highly correlated with corruption. Another insignificant finding is reported by Alesina and Weder (1999). The data on FDI refer to 1970–95. But both awareness of corruption and levels of FDI increased considerably after 1995. The insignificant finding should thus not be overrated. Equally inconclusive are regressions provided by Okeahalam and Bah (1998) and Davidson (1999), but for a small sample of countries. Méon and Sekkat (2004) obtain no significant impact of corruption on inflows of FDI for a small sample of Middle Eastern countries.

More recent studies provide evidence that corruption deters foreign investors. Focusing on bilateral flows between 14 source and 45 host countries in 1990 and 1991, Wei (2000b) detects a significant negative impact of corruption on FDI. He finds that an increase in the corruption level from that of Singapore to that of Mexico is equivalent to raising the tax rate by over 20 percentage points.¹⁴ Aizenman and Spiegel (2003) find a negative impact of corruption, measured by the BI data, on the ratio of FDI to total capital accumulation. The coefficient is robust to the inclusion of other independent variables. Lambsdorff and Cornelius (2000) show an adverse impact of corruption on the ratio of FDI to GDP for African countries. Abed and Davoodi (2002: 523) obtain a negative impact of corruption on the US dollar per capita value of FDI for a cross-section of 24 transition countries. Doh and Teegen (2003) show that investments in the telecommunications industry are adversely affected by the extent of corruption. Smarzyska and Wei (2000) provide evidence in a similar vein, showing that corruption reduces firm-level assessments of FDI in Eastern Europe and the former Soviet Union. An increase in corruption from the (low) level in Estonia to the (high) level in Azerbaijan reduces the probability of foreign investment by 15 percentage points.

Henisz (2000), who uses the Conference Board Manufacturers database, provides a similar result. This source is a collection of data on foreign market entry for more than 1,000 US corporations. Henisz finds that a variable on 'unexpected' corruption deters market entry. The variable on 'unexpected' corruption is the difference between 'actual' corruption as measured by PRS/ICRG and 'expected' corruption as determined by data

on the political system. Given the unusual design of the data, the results may need to be taken with some skepticism.

Habib and Zurawicki (2001, 2002) also provide evidence of corruption deterring foreign direct investments. They find the impact of corruption on FDI to be larger than that on local investment. They conclude that foreign investors are more sensitive to corruption than their local counterparts. In sum, the evidence of an impact of corruption on FDI now appears sufficiently well established to argue in favor of a significant negative effect.

Fons (1999) reports a significant correlation between the TI index and Moody's country ceiling ratings. This variable relates to the default risk for debt obligations issued by a national government. Fons argues that poor transparency and high levels of corruption increase credit risks. In a more systematic investigation, Ciocchini et al. (2003) show that countries perceived as more corrupt pay a higher risk premium when issuing bonds. Hall and Yago (2000) provide evidence for a small sample of countries that corruption increases sovereign bond spreads, making it more costly for countries with high levels of corruption to obtain loans. Wei and Sievers (1999) report a correlation between corruption and weak bank supervision. Those holding deposits or granting loans to banks are likely to react to allegations of corruption and withdraw their engagement. As a consequence of these findings a negative impact of corruption on a country's capital inflows seems likely.

I investigate the impact of corruption on total net capital imports in Lambsdorff (2003b). In a cross-section of 64 countries, corruption is shown to decrease capital inflows at a high confidence level, controlling for various explanatory variables such as GDP per capita, domestic savings rates and raw material exports. These results are robust to the use of alternative indices of corruption, tests of linearity and issues of sample selection. An increase in Tanzania's level of integrity to that of the United Kingdom is found to increase net annual capital inflows by 3 percent of GDP.

Overall, the empirical finding is robust throughout a variety of studies. Although the reaction of domestic investments is difficult to ascertain for theoretical reasons, foreign investments are significantly deterred by corruption, and this impact is large in magnitude.

Composition of investments Although the overall adverse impact of corruption on investment is clear, studies show that some types of investment suffer more than others. For example, Wei (2000c) and Wei and Wu (2001) also suggest that corruption reduces FDI, but they find no impact of corruption on bank loans. Countries affected by high levels of corruption thus rely more on bank loans. Similar findings are reported by Straub (2003). This distortion might reduce economic welfare because loans can be

withdrawn more easily in the case of economic problems. This makes corrupt countries more vulnerable to currency crises.

Another strand of research concerns firms' entry mode decisions. Smarzynska and Wei (2000) observe the impact of corruption. Faced with corrupt requests, investors prefer joint ventures with local partners to wholly owned subsidiaries because local partners might be better acquainted with local (corrupt) practice. This effect prevails where a simple production technology is employed. For more sophisticated technologies, investors would fear the leakage of technological know-how to opportunistic and corrupt local partners. In line with this reasoning, the preference for joint ventures in corrupt countries does not carry over to the case where firms operate with sophisticated technologies.

Uhlenbruck et al. (2005) investigate data for the telecommunications industry. For a sample of 220 telecommunications development projects in 64 emerging economies, they show that firms adapt to a country's level of corruption by avoiding wholly owned subsidiaries and joint ventures and preferring non-equity modes of entry that allow for short-term contracting such as management contracts or 'build-own-transfer' arrangements. The authors do not find a significant difference between joint ventures and wholly owned subsidiaries. Employing the findings by Smarzynska and Wei (2000), this might be due to the high level of technological sophistication prevalent in the telecommunications industry.

Habib and Zurawicki (2001, 2002) investigate whether all investors are deterred equally. Referring to bilateral FDI data, they find that investors coming from countries with a high perceived level of corruption are deterred less when entering a corrupt host country than are their 'cleaner' competitors. Investors from countries with little corruption prefer host countries that also have low levels of corruption. This might relate to the psychological distance separating the home and the host countries. Organizational or moral issues might be at play, because investors with local experience with corruption might be less scrupulous and know better how to arrange corrupt deals.

Different types of corruption and investments Different types of corruption may lead to different investment outcomes. According to the World Bank (1997: 34): 'There are two kinds of corruption. The first is one where you pay the regular price and you get what you want. The second is one where you pay what you have agreed to pay and you go home and lie awake every night worrying whether you will get it or if somebody is going to blackmail you instead'. This idea is picked up in the survey by the World Bank and the University of Basel. In addition to overall levels of corruption, the respondents were asked about the predictability and absence of

opportunism among officials. These questions sought to determine, first, whether the costs of corruption are known in advance, and second, whether, after making the payment, the service is delivered as promised. The resulting impact of these variables on the ratio of investment to GDP is investigated by the World Bank (1997).

For a sample of 39 industrial and developing countries the World Bank shows that, for a given level of corruption, countries with more predictable and less opportunistic corruption have higher investment rates. This approach is extended and elaborated further by Campos et al. (1999) using a cross-section of 59 countries. While controlling for GDP per head and secondary school enrollment, the authors find that low predictability, high opportunism and the overall level of corruption reduce the ratio of investment to GDP. The authors conclude that the nature of corruption is also crucial to its economic effects.

However, as argued above, the good thing about unpredictability and opportunism might be that it acts as a deterrent to corruption. Reforms that attempt to divest corruption of its unpredictability are, therefore, often misguided because increased levels of corruption might result where promises of corrupt reciprocity become credible.

In Lambsdorff (2005a) I employ seven subcomponents of corruption for a sample of 102 countries that appear in the 2003 Global Competitiveness Report of the WEF. The second principal component depicts 'grand' political corruption in government policy making and in judicial decisions as opposed to the petty corruption found in such areas as connections to public utilities and the acceptance of loan applications. The results show that grand corruption deters foreign investors less than petty corruption. This might result from the smaller organizational costs of grand corruption, from investors' insider status that permits them to profit from deals with high-ranking politicians, or from the willingness of politicians to enforce large transnational deals even when they involve corruption. The study claims that investors are not deterred by unpredictable corruption but by petty corruption. However, their preference for grand corruption is obviously not in the public interest – investors may carry out corrupt projects that provide few benefits for a country's citizens while, at the same time, enriching their leaders.

Public sector

Bureaucratic corruption leads to the misallocation of public resources. Public servants are appointed on the basis of nepotism or bribes, without regard to their efficiency or capacity. Once corruption is embedded in the bureaucracy, public servants create artificial bottlenecks as a means to extort 'speed-money'. These bottlenecks are likely to reduce productivity

and service quality. Bribe-seeking public servants are likely to prefer projects that provide a good base for kickbacks rather than those that benefit the public. Corrupt officials in public procurement tend to prefer bidders who are better connected and more skilled in arranging hidden payments instead of those who provide quality goods and services at reasonable prices. Corruption in hiring leads to the selection of applicants who are inclined toward corruption, rather than those who supply high-quality work at reasonable wages. I begin with a discussion of the way corruption distorts budget allocation and then assess the impact of corruption on the quality of public services.

Budget allocation distortions Because of the need to conceal illicit payments, some goods are preferred to others. Customized goods present better opportunities to arrange for hidden payments than off-the-shelf products. Shleifer and Vishny (1993) report on a bottle-making factory in Mozambique that needed a new machine for fixing paper labels onto the bottles. A simple machine could have been bought for US\$10 000, but the manager wanted a more sophisticated version for ten times that price. Since there was only one supplier of this machine, this provided sufficient room for overinvoicing and a kickback to the manager. Winston (1979: 840–41) argues that the risk associated with corruption increases with the number of transactions, the number of people involved, the duration of the transaction, and the simplicity and standardization of the procedure. Because the risk does not clearly increase with the value of a transaction, large, one-shot purchases create a more efficient base for a kickback. This biases the decisions made by corrupt public servants in favor of capital-intensive, technologically sophisticated and custom-built products and technologies. Inexpensive off-the-shelf products are disregarded. The most visible signs of the adverse impact of corruption are ‘white-elephant projects’ – projects that totally disregard public demand or that are wrecked shortly after completion.

Mauro (1997) thus suggests that corruption may increase public investment, although the subsequent regressions provide no significant evidence. Tanzi and Davoodi (1997) and Esty and Porter (2002) find significant evidence for overinvestment in public infrastructure as a consequence of corruption. Given the limitations of the corruption data and the mixed results obtained, however, the evidence for this link appears to be rather poor.¹⁵

However, there is convincing evidence that corruption lowers government spending on education. This result is analyzed in Mauro (1998), the argument being that other expenditures offer public servants better opportunities to collect bribes. Mauro’s results hold for various specifications, yet suffer somewhat from the low explanatory power of the regressions.

Esty and Porter (2002) and Gupta et al. (2002) confirm the finding. Similar considerations suggest that expenditure on the maintenance of capital projects is too low, particularly when a corrupt government can better extract bribes from new investments (Tanzi and Davoodi 1997).

Corruption may also lead to higher spending on the military. Mauro (1998) provides rather insignificant evidence on this link. Gupta et al. (2001) investigate this relationship more intensively, basing the regressions on four different sources for corruption and up to 120 countries during 1985–98. They claim that corruption is significantly associated with higher military spending and higher arms procurement (as a share of either GDP or total government spending). The evidence from cross-section regressions is significant and robust.

Public sector quality Besides preferring the wrong firms and projects, corruption reduces productivity as a result of reduced effort by the bureaucracy and the reduced quality of public investments (Bardhan 1997; Rose-Ackerman 1999). The effort level of public servants suffers from adverse incentives, because low levels of effort increase the willingness and the need of the private sector to pay speed-money. The quality of investments will suffer from corruption because control mechanisms, required to guarantee the contracted quality level, can be circumvented. Several studies suggest a link between corruption and the quality of government investments, services and environmental regulations.

Tanzi and Davoodi (1997) examine the impact of corruption on the quality of investments. Referring to panel data on corruption for 1980–95, the authors suggest that corruption lowers the quality of infrastructure as measured by the condition of paved roads and power outages. They support their hypothesis by reporting highly significant statistical results.¹⁶ Isham and Kaufmann (1999) and the World Bank (1997: 39) present an alternative approach. They correlate the economic rate of return on World Bank-financed projects with indicators of institutional quality and find a positive association between these variables.

Gupta et al. (2001) show that countries with high levels of corruption are associated with inefficient government services and a low quality of public healthcare provision, as subjectively assessed by respondents. Such subjective assessments may certainly relate to respondent's impressions rather than reality. The authors therefore extend their investigation by including more objective proxies for the quality of government services: child and infant mortality as well as the percent of low-birthweight babies in total births as a proxy for the quality of public healthcare provision, and student dropout rates as a proxy for the quality of public education. All these variables react significantly to levels of corruption. Child mortality rates in

countries with high levels of corruption are about one-third higher than in countries with low corruption; infant mortality rates and the share of low-birthweight babies are almost twice as high; and student dropout rates are five times as high.

Welsch (2004) investigates the poor quality of environmental regulation as a result of corruption for a cross-section of more than 100 countries. The author argues that corruption increases pollution. This is attributed both to corruption's direct impact, reducing the effectiveness of environmental regulation and to an indirect impact, through which corruption lowers income.¹⁷ Significant results are found for ambient pollution of air and water. These results hold, controlling for income per head. Pellegrini and Vujic (2003) employ survey data on environmental policy stringency for the agriculture sector. In regressions for up to 41 countries the authors observe that corruption reduces stringency directly, as well as via its impact on income per capita. Damania et al. (2004) show that compliance with international environmental agreements is lower in countries with high levels of corruption. The former variable is based on responses to a survey by the WEF relating to the following claim: 'compliance with international environmental agreements is a high priority'. For a sample of 61 countries these findings survive the inclusion of a variety of variables.

In line with these findings, Esty and Porter (2002) provide evidence that highly corrupt countries tend to have lower levels of environmental quality. Smith et al. (2003) investigate the impact of corruption on biodiversity, arguing that corruption limits the success of conservation projects. They show that countries with high levels of corruption tend to experience decreases in the population of elephants and black rhinoceroses, a lower variety of species, and a reduced total coverage of forest.

Private sector

At the center of empirical investigations on the private sector is whether corruption 'greases the wheels' by enabling private businesses to avoid bureaucratic delays, or whether it throws 'sand in the wheels' by lowering the security of property rights and misallocating resources. Investigating the impact of corruption on the exchange between private firms and public institutions provides a method for disproving the notion that corruption greases the wheels. Kaufmann and Wei (1999) present one such approach. The authors compare survey respondents' assessments of corruption levels with the time that managers must waste with bureaucrats. The resulting regressions do not relate to a cross-section of countries but compare firm-specific responses, resulting in thousands of observations. The authors produce a highly significant positive association for various specifications of the regressions.¹⁸

Some firms, especially those from relatively non-corrupt countries, lack the skills necessary to carry out corrupt transactions. As a result they lose market shares or prefer to operate in countries with low levels of corruption. Likewise, aid donors and equity investors may take into account corruption levels in assessing where to deposit their funds. Corruption levels in a given country may also affect individual decisions relating to human capital by altering the expected value of certain careers.

Distortion of markets Beck et al. (1991) investigate whether corruption distorts international trade. They find that corruption had a small negative but significant impact on the export competitiveness of the United States – suggesting that the US may behave more responsibly in international trade. Similar conclusions are reported by Hines (1995), showing that after 1977 US aircraft exports to countries perceived to be corrupt decreased. He also shows that US investors differed from others in preferring to locate their FDI in less corrupt countries after 1977. Hines relates this to the imposition of the Foreign Corrupt Practices Act (FCPA). A related effort is undertaken by Wei (2000b) to find out whether Japan has a tendency to invest more in corrupt countries, the implication being a possibly higher Japanese propensity to pay bribes. But the author did not find any differences between the investment pattern of Japan and the United States. Hines's findings would also not suffice to claim a competitive disadvantage of the USA because they could just as well indicate that competitive advantages in corrupt marketplaces before 1977 had been neutralized thereafter.

In order to address this question adequately in a broad study, in Lambsdorff (1998) I examine bilateral trade data between 1992 and 1995 for the leading 18 exporting and 87 importing countries. Controlling for common languages, geographic distance, export composition and trade blocs, I conclude that Belgium, France, Italy, the Netherlands and South Korea have competitive advantages in countries perceived to be corrupt. Disadvantages exist for Australia, Sweden and Malaysia. The USA also has significantly less market share in corrupt countries than the first group of countries. I conclude that these disparities can be explained by differences in exporters' willingness to offer bribes, and that the results indicate that exporting countries must share part of the responsibility for the level of bribery in international trade. Lambsdorff (2000) updates this study, including more countries and trade data. Although the underlying model is modified somewhat, the above-mentioned results are largely reproduced.

On the export side, Méon and Sekkat (2004) show a significant negative impact of corruption on the size of manufactured exports to GDP. Successful economies are able to adjust rapidly from primary-sector-intensive to manufactures-intensive exports; this success is impeded by

corruption. The authors' use of the TI data as panel data, however, is questionable.

Results relating aid and loans to corruption are mixed, with some studies showing a positive relationship between corruption and aid, and some suggesting that certain countries and organizations are more likely to give money to corrupt countries than others. Alesina and Weder (2002) investigate whether corrupt governments attract or deter aid from OECD countries. The authors make use of a variety of different measures of corruption and probe different samples of countries. Testing for various specifications of the regressions, they do not find evidence that foreign donors discriminate against corrupt countries. Quite the contrary, some results suggest that corrupt countries are even more apt to attract foreign aid from OECD countries. Alesina and Weder also investigate bilateral aid flows. Scandinavian countries and Australia have a significant tendency to avoid providing aid to corrupt countries. At the opposite extreme is the US, where a significant negative coefficient on the corruption variable indicates that the US tends to favor corrupt countries in providing aid.

In a similar spirit, Sandholtz and Gray (2003) investigate how corruption affects lending by multilateral donors. They show that IMF credit in the late 1990s is influenced positively by a country's level of corruption. This must certainly not imply negligence towards corruption at the IMF. It may point to the prevalence of payments crises in countries with higher levels of corruption. However, a similar influence is not encountered for World Bank loans.

Evidence suggests that international equity investors may place a low value on firms from corrupt countries. Lee and Ng (2004) show that firms from countries scoring badly in the CPI are valued less by international investors. This valuation is measured either by the ratio of firm's price to book value or price to earnings ratio. The authors control their regressions for a variety of variables, business sectors being one of them. They relate their findings to the risks associated with corruption and the higher rate of return requested by investors from firms operating in more corrupt countries. A decrease of corruption by one point of the CP Index increases the valuation of stocks of the respective firms by roughly 10 percent.

Also of interest is the distortion corruption imposes on human capital. Corruption is a form of rent seeking behavior where human capital is allocated to redistributive tricks rather than productive activities. Seeking loopholes in public laws or searching for windfall profits due to preferential treatment by public decision makers distracts students from studying engineering, for example, since alternative disciplines such as law better equip them for future challenges. Tanzi and Davoodi (2001) determine the ratio of college enrollment in law relative to college enrollment in

engineering in 1980, and report a significant impact of the level of corruption. Corrupt societies, they show, produce more lawyers.

Underground economies and tax cheating Corruption can distort private sector activities by giving rise to a shadow economy. This type of response both distorts the private sector and reduces the effectiveness of the government. Citizens will attempt to circumvent the extortionate corruption of the political elite by operating off the books. However, corruption also complements the unofficial economy. Corrupt tax inspectors can help firms and individuals to evade taxes. They might turn a blind eye to underreporting and to goods that are traded in the underground economy. The police, prosecutors and inspectors could likewise be bribed to not enforce laws restricting the shadow economy (Choi and Thum 2005). Thus corruption might augment the unofficial economy. Johnson et al. (1998: 391) show for a cross-section of countries that corruption enlarges the underground economy. More recently, Goel and Nelson (2005) report a positive impact of an index of the black market on corruption. This index by the Heritage Foundation embraces activities such as smuggling, piracy of intellectual property, and the presence of black market transactions. While there are various theoretical reasons for this impact, reverse causality may exist, for example because corruption in the form of overinvoicing in public procurement is easier in countries where official prices depart from those on the black market.

Another related consequence of corruption is reduced government revenues. Tanzi and Davoodi (1997), Johnson et al. (1998) and Friedman et al. (2000) provide evidence that countries with high levels of corruption tend to have a lower collection of tax revenues in relation to GDP, controlling for income per head.

Tanzi and Davoodi (2001) further investigate this evidence with a focus on the composition of tax revenues, assuming that different types of taxes respond differently to corruption. They claim that a 1-point increase in corruption is associated with a 1.5 percentage point decline in total revenue relative to GDP, and a 2.7 percentage point decline in the ratio of taxes to GDP. Thus, taxes suffer more than other revenues. Above, direct taxes suffer more from corruption than indirect taxes, suggesting that countries with high levels of corruption should rely more on indirect taxation – a feature that seems to be in line with current practice. Ghura (2002) supports this finding for 39 countries in Sub-Saharan Africa. He controls his regressions for a variety of explanatory variables, differences in the tax base being one of them. Given his usage of PRS data, however, the usual caveats apply. Hwang (2002) provides further support for the finding that corruption lowers domestic tax revenue as well as total government revenue as a ratio of GDP. In contrast, however, he finds that corruption increases the

proportion of government revenues that is obtained from taxes on international trade, such as import and export duties. He suggests that this may relate to corruption increasing with protectionist policies.

Building on the insight that corruption increases the size of the unofficial economy, Al-Marhubi (2000) argues that the optimal level of inflation should increase with corruption, because the larger the size of the unofficial economy, the easier it is to raise government revenue by increasing the money stock (seigniorage) rather than by distortionary taxation. He provides evidence for corruption increasing inflation for a cross-section of countries. His results hold in a variety of specifications. Braun and Di Tella (2000), however, argue in favor of reverse causality: they suggest that inflation tends to go along with a higher price variation. This increases the costs for monitoring agents, suggesting that moderate levels of an agent's corruption will be condoned. As a result, inflation increases corruption. The authors provide empirical evidence, however only for the PRS data. Gerring and Thacker (2005) support this finding with more valid data. Also Goel and Nelson (2005) provide support for a positive association between inflation and corruption. They argue that inflation lowers public salaries and increases the need for supplementary income. Overall, it appears difficult to disentangle the puzzle and to ascertain the direction of causality.

3. Reform proposals

Theoretical studies discuss a large array of reform measures. Only a few of them, however, have been subject to empirical research. For example, although penalties are assumed to deter corrupt behavior and play a major role in theory, related empirical studies are still lacking. The difficulty of finding cross-country comparable data on penalties is one reason for the absence of such studies. Research on legal standards is also rare.

Nevertheless, the research reported above on the causes of corruption does suggest how reformers might focus their energies to limit the damage caused by corruption. Cross-country research suggests that it is not the overall size of government that matters but the nature of government programs and regulations. Thus regulations that create corrupt incentives should be redesigned, not necessarily abandoned, and policies to promote competition and openness to foreign trade and investment could limit corruption. Corruption may be limited by policies that engage more women in politics. Devolving government responsibilities to lower levels of government does not seem to be a generally desirable solution. Some evidence suggests that the form of government affects the level of corruption, but at this point the results are too contested to provide clear guidance.

Some cross-country research has an explicit policy focus. In this section I review a few such studies that consider the impact of civil service wage

policy, press freedom and the judiciary. Nevertheless, cross-country research provides only rough guidance on where to set priorities with little detail on which reform programs to implement.

Official wages

High salaries provide office holders with prospects of a future income premium that would be lost if they lose their job. Also, the intrinsic motivation of public servants may increase with salary. Thus, some propose that civil service salaries be the focus of reform. However, the empirical evidence in support of such policies is poor.

Evans and Rauch (2000) investigate the impact of merit-based recruitment on corruption in 35 developing countries. Higher values in the merit-based recruitment index are associated with a greater proportion of higher-level officials in the core economic agencies who are either in possession of a university degree or who enter the civil service through a formal examination system. Controlling for income, this index is negatively associated with corruption.

Van Rijckeghem and Weder (2001) examine the extent to which the level of public sector salaries is linked to the amount of corruption. They argue that low salaries force public servants to supplement their incomes illicitly. At the same time, high salaries are a premium that is lost if a public servant is caught and fired. In a small sample of 31 developing countries, they find a significant negative correlation between higher civil service wages (relative to manufacturing wages) and corruption levels. Doubling the civil service wage will improve the corruption index on the order of 1 point of the TI index.¹⁹ The authors also point out that the association may be driven by reverse causality: corrupt countries tend to have a poor budgetary performance or may subscribe to the view that civil servants earn sufficient income from corruption, prompting them to reduce civil service pay. Such endogeneity problems diminish the prospects of fighting against corruption by increasing wages. Even disregarding these issues, pay increases are a costly approach to fighting corruption.

Other studies provide poor results for the impact of wages on corruption. Treisman (2000), Swamy et al. (2001) and Manow (2005) investigate the ratio of average government wages to per capita GDP, controlling for a variety of other influences. The results are ambiguous and mostly insignificant, depending on the indicator for corruption employed and the inclusion of control variables.

Press freedom

Another more promising candidate for reform relates to the freedom of the press. More than the fear of being prosecuted and sentenced, politicians

may be deterred by the danger of tarnishing their reputation. Although political reporting may not necessarily be fair and impartial, it nonetheless induces public office holders to refrain from corruption. One basic precondition for a press to contain corruption is its freedom and independence. Indeed, demonstrated by the empirical studies, substantial evidence supports a negative correlation between corruption and press freedom. Thus, reform aimed at improving the quality, freedom and independence of the media is influential in reducing corruption.

By regressing various indices of corruption on indicators of press freedom, Brunetti and Weder (2003) show that a free press effectively deters corruption. The press freedom variables consist of 'laws and regulations that influence media content', 'political influence over media content', 'economic influence over media content' and 'repressive actions', as compiled by Freedom House. These four separate indices and an aggregate index of press freedom all correlate negatively with the level of corruption in various specifications. This negative association between freedom of the press and corruption is confirmed by Lederman et al. (2001). Sung (2002) also reports this result, albeit without controlling for income per capita. A free press appears to be a solid deterrent to corruption. Brunetti and Weder (2003) corroborate these findings by using alternative indicators of corruption, providing us with additional confidence. Corrupt authoritarian regimes may restrict press freedom, suggesting that part of the causality may run the other way. Nevertheless, Brunetti and Weder (2003) show that their findings survive the use of instruments, claiming that a good share of the causality runs from a free press to less corruption. Adsera et al. (2000) employ data on daily average newspapers per person. These figures vary from 0.7 daily copies per person in Hong Kong to 0 in Mauritania. They show that the number of newspapers per person is negatively associated with corruption, particularly in democracies.

The judiciary

A high quality judiciary acts as a deterrent to corruption. Even in the dismal case where verdicts can be bought and judges bribed, a judiciary might still reduce corruption. As long as the judiciary is independent, courts endanger the corrupt transactions of a country's elite. In contrast, in some countries politics has a strong influence on the judiciary, making it possible for big fish to escape prosecution. In some cases the judiciary might even operate in favor of corrupt elites by enforcing their corrupt deals. Empirical evidence supports the claim that judicial independence lowers corruption. This result should also hold for the independence of prosecutors. But more than just changing laws is necessary; *de facto* independence is the key. Reform proposals should certainly not overlook the

possibility that freeing the judiciary from corruption is also an important contribution to reform.

An approach by the World Bank (1997: 104, 168) focuses on the quality of the judiciary. Controlling for other explanatory variables, an index of the predictability of the judiciary from WB/UB significantly influences the level of corruption in 59 countries.

Ades and Di Tella (1996) propose a correlation between corruption and the independence of the judicial system. Sung (2002) also reports this result, albeit without controlling for income per capita. Damania et al. (2004) show that corruption diminishes with a composite index of diverse indicators including people's tendency to abide by the rules of society, perceptions of violent and non-violent crimes, predictability and efficiency of the judiciary, and the enforceability of legal contracts. Given the broad definition of this variable and its potential endogeneity, however, the coefficient could be biased upward.

Voigt et al. (2004) investigate the impact of prosecutorial independence on corruption. They measure independence with the help of a questionnaire sent to supreme court judges, law professors, lawyers and anti-corruption activists. The authors distinguish between *de jure* independence (for example, life tenure, appointment and promotion by others than politicians, lack of executive power to substitute prosecutors working on a specific case) and *de facto* independence (dependence would be assumed, for example, in a case of forced retirement, frequent changes in legal foundations, and decreasing budgets of prosecutors). They find that *de facto* independence decreases corruption, and relate this to the disciplining effect on the executive and other influential politicians. Surprisingly, they find that *de jure* independence increases corruption. *De jure* reform might be futile in some cases, but that it would increase corruption is counterintuitive. One possible explanation relates to endogeneity. Rather than *de jure* independence affecting corruption, corruption may bring about *de jure* independence. The more pervasive corruption is among the executive, the greater the willingness to pay lip service to prosecutorial independence.

4. Outlook

Cross-country research on corruption provides a broad assessment of the causes and consequences of corruption. It highlights the considerable economic and social costs of corruption, suggesting the value of efforts to limit its impact. Although this type of empirical research cannot confront the complex reality on the ground in individual countries, it can provide general guidance for reformers seeking to determine where to concentrate their efforts. In spite of difficult issues of causation and the

presence of feedback loops, the results suggest that neither a simple focus on macroeconomic aggregates nor an emphasis on law enforcement can provide a long-term solution. Corruption arises from problems with the underlying institutional structures of state and of society, and that is where policy must be directed.

The importance of studying the underlying structural and social causes of corruption suggests that future research should depart from the uni-dimensional assessment of corruption characteristic of most cross-country research. One promising avenue is to find out whether different types of corruption have different consequences. For example, there is strong evidence that corruption reduces the quality of public services and the productivity of public projects. In a study that explores the impact of corruption on productivity, Lambsdorff (2003a) finds that the impact of corruption on productivity falls when controlling for bureaucratic quality (an index depicting the strength, expertise and autonomy of the bureaucracy). This suggests that productivity is reduced because corruption goes along with bureaucratic inefficiency. Attempts to increase productivity must therefore address corruption through public sector reform aimed at improving the integrity and efficiency of the bureaucracy. Direct attacks on corruption through the criminal law are not sufficient. A complementary study investigates how corruption affects capital imports (Lambsdorff 2003b). The coefficient on corruption falls when indices are added to control for countries' traditions of law and order (an index depicting the soundness and acceptance of political institutions, existence of a strong court system and provisions for an orderly succession of power) or the extent of civil liberties (this index by Freedom House embraces freedom of expression and belief, personal autonomy as well as human and economic rights). This suggests that investors are deterred by corruption because it undermines a country's legal and civic tradition.

If borne out by future work, such findings have implications for anti-corruption strategies. Public sector reform aimed at increasing bureaucratic quality should take priority if countries seek to increase productivity. This can be addressed by a 'top-down' approach where political elites determine the agenda. But this approach will be insufficient if a country seeks to attract capital inflows. Foreign investors appear to favor an alert public that can effectively address the malfeasance of the political class. Civil liberties and the rule of law are salient. Reform must involve civil society and independent courts as a means to tie politicians' hands.

The provision of more disaggregated data on corruption is on the agenda of Transparency International. Such data will enable countries to be compared to determine where grand, political corruption dominates and where corruption is mainly of the petty variety. Then many of the results

presented in this chapter can be revisited with this more detailed data. Additional insights into reform strategies might also arise as panel data on corruption become increasingly available. A first set has recently been assembled (Lambsdorff 2005b). The analysis of panel data provides us with tools that can shed light on the question of causality and on the usefulness of recent reform approaches. Thus the research summarized in this chapter is merely the starting-point for a more disaggregated pattern of research that seeks to unpack the complex reality behind the existing cross-country indices of corruption.

Notes

- * I am grateful to L. Bajec, M. Nell, P. Manow, S. Rose-Ackerman, M. Schinke and S.U. Teksoz for helpful comments and to Benjamin Billa for editorial assistance.
- 1. Goel and Nelson (1998), Fisman and Gatti (2002) and Glaeser and Saks (2004) employ objective data on the number of public officials convicted for abuse of public office in various states of the USA. They assume that high conviction rates are an indicator of actual high levels of corruption. However, conviction rates may not reflect levels of corruption but rather may indicate the quality of the judiciary. Glaeser and Saks defend the data on the grounds that they refer to federal prosecutors' charges and convictions, not those of the local judiciary. They report that conviction rates decrease with income and education. Goel and Nelson show a significant relationship between conviction rates and the real per capita total expenditures of the local government, arguing that state intervention and public spending give rise to rent-seeking activities and hence corruption. Still, if federal prosecutors are in need of local assistance, the data would be biased by the quality of local institutions.
- 2. For a description of these sources, see Lambsdorff (2004).
- 3. *The Straits Times*, Singapore, 1 February 1998, 'Paper trails points to illicit Bhutto hoard', and 2 June 1998, 'The scandals'.
- 4. Responding to the criticism by Knack and Azfar (2003) reported below, Sandholtz and Gray (2003) show that their results are not affected by sample selection criteria.
- 5. The finding by Knack and Azfar (2003), cited above, cast doubt on Wei's conclusion. They argue that the correlation between population size and corruption is merely an artifact of sample selection. The 'natural openness' by Wei would be affected by this criticism, because it depends on population size.
- 6. This result survives the inclusion of dummy variables for British colonialism and British legal origin. However, they point out that the effects of electoral rules are rather small as compared to that of other variables.
- 7. As has been repeatedly pointed out, the time-series value of the TI data is diminished because of annual changes in the composition of sources. Bjørnskov and Paldam (2004) refer only to ordinal changes in the data over time, that is, whether a country improves in rank relative to others. Due to this approach, it might be possible that one-shot changes that are of a purely methodological nature play a minor role as compared to actual trend information.
- 8. This variable is called masculinity–femininity. I avoid this misleading term.
- 9. Robertson and Watson also claim that changing levels of FDI affect corruption because they produce an unexpected surplus to local business, which resorts to corruption as a means of sharing in the opportunities for profit. Although the theoretical reasoning may require further consideration, FDI tends to vary considerably over time, and the changes from 1998 to 1999 employed by the authors may not be a solid measurement.
- 10. Lederman et al. (2001), however, disagree. In their regressions the British legal tradition did not lower corruption. This may relate to their use of the PRS data on corruption.

11. The same problem emerges when correlating corruption with human capital. Svensson (2005: 27–30) shows a positive association between corruption and the average number of years in school. But he points out that causality is likely to run both ways.
12. Mauro thus argues that the impact of corruption on growth is largely via its impact on the ratio of investment to GDP.
13. This criticism is due to general equilibrium repercussions. The ratio of investment to GDP is taken as an indicator on the overall level of investment and the attractiveness of a country for investors. But a reduction of the capital stock (as induced by corruption) will have negative repercussions on the level of GDP. In the case of constant returns to capital, GDP falls proportionately and no impact on the ratio should be observed. Moreover, corruption is likely to impact negatively on the productivity of capital. This impact suggests a positive association between the ratio of investment to GDP and corruption: high levels of corruption lower productivity. With the given capital stock a lower GDP will be produced, suggesting that the ratio of investment to GDP may even increase.
 Another impact of corruption on the ratio of investment to GDP would result from its potential impact on the ratio of capital to labor. Producers may prefer a large labor input rather than sink their investment in a corrupt environment. But the opposite will occur if investors can profit from corruption. Investments may present a better opportunity to extract money as opposed to smaller labor contracts, and the ratio of capital to labor is likely to increase with corruption, see Mauro (1997), Tanzi and Davoodi (1997) and Alesina and Weder (1999: 8). In sum, the impact of corruption on the ratio of capital to labor is ambiguous.
14. A further contribution by Wei (1997) argues that arbitrariness, in addition to the overall level of corruption, harms capital inflows. As those who pay bribes have no legal recourse, contracts obtained through bribery cannot be enforced. This is why corruption, while not necessarily more expensive, is more harmful than taxes. Wei derives a measure of arbitrariness from the survey by the WEF. Although the question posed relates to the overall level of corruption, Wei argues that the variance in the replies represents a form of arbitrariness. This can be considered valid if the insecurity among respondents about the true costs of bribes is reflected in the variance. Arbitrariness, thus defined, significantly enters into the regressions on FDI. But it is doubtful whether arbitrariness is adequately measured by this variable. The variance among respondents could also reflect heterogeneous conditions in a country or be related to subjective difficulties among respondents in judging the right score on the questionnaire. Arbitrariness may be better measured by the predictability of corruption, for example, as determined by WB/UB.
15. Tanzi and Davoodi use the PRS corruption data for 1980–95, data which have the conceptual difficulties noted above.
16. My own regressions for a cross-section of countries using the TI-CPI 2001 did not produce significant results. This sheds some doubt on the robustness of the findings. Also, the corruption index used by Tanzi and Davoodi (1997) is the PRS data. The usual caveats apply.
17. An adverse impact on emissions cannot be found. The author suggests that this may be because corruption adversely affects the truthful reporting of this data.
18. An indicator of the predictability of corruption from the survey by WB/UB has also been introduced into the regressions. Higher levels of predictability were found to reduce the time managers waste with bureaucrats.
19. This study employs the PRS corruption data, which brings with it the problems I noted above. The authors refer to a 0.5-point improvement in a corruption index by the Political Risk Service. This index has about half the standard deviation of the relevant subsample of countries in the TI index.

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2 Measuring governance using cross-country perceptions data

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I often say that when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind. If you cannot measure it, you cannot improve it.

(Sir William Thomas Kelvin)

Today there is widespread consensus among policy makers and academics that good governance and strong institutions lie at the core of economic development. The intellectual foundations for this view are not new, and go back at least to the seminal work of Douglass North and earlier. What is new is that over the past 10 years there has been an explosion of careful empirical work that has documented a strong causal link running from better institutions to better development outcomes. Figure 2.1 summarizes the main results from several recent cross-country empirical studies. On the horizontal axis we graph a measure of institutional quality capturing the protection of property rights (the ‘Rule of Law’ indicator is described in more detail below). On the vertical axis we plot real GDP per capita, and we have normalized both variables to have a mean of zero and a standard deviation of one. The country-level data in the figure illustrate the strong correlation between governance and per capita incomes. This recent research has gone beyond the simple correlation shown in the figure to identify a strong causal impact of governance on development. The upward-sloping lines capture several estimates of the causal impact of governance on per capita incomes that have been isolated in recent studies¹ using various techniques. The striking observation that emerges from Figure 2.1 is that the estimated causal impact of institutions on economic development is large: a realistic one-standard deviation improvement in governance would raise per capita incomes in the long run by a factor of two to three. Such improvement in governance corresponds, for instance, to the improvement from the levels of Somalia to those of Laos, or from Laos to Lebanon, or from that of Lebanon to Italy, or from Italy to Canada.

A key factor enabling this line of recent research and informing policy discussions related to governance has been the availability of more and

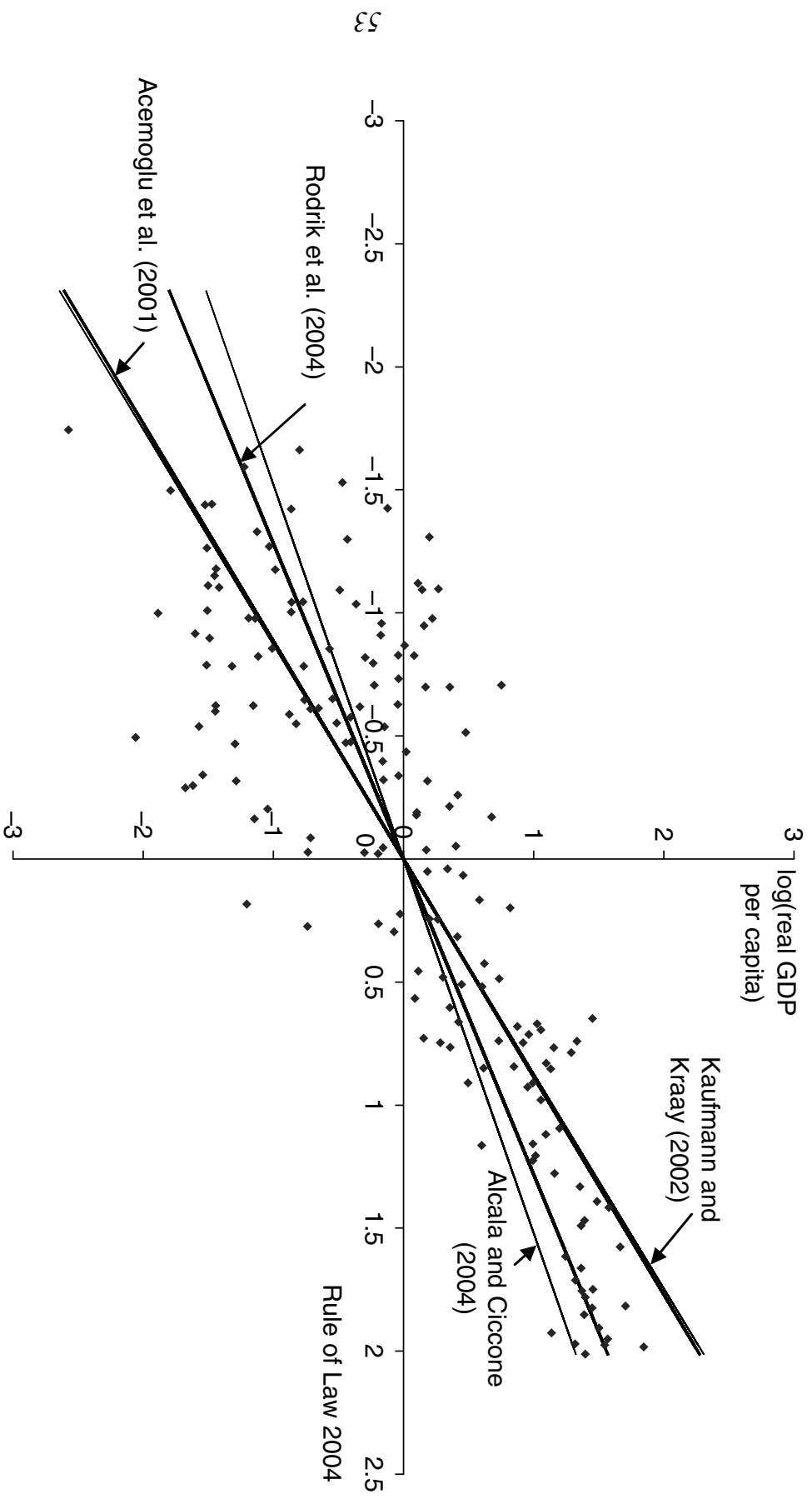


Figure 2.1 The development dividend of good governance

better cross-country and within-country data on governance and institutional quality. One such measurement effort has been our work since the late 1990s to construct a dataset of aggregate cross-country governance indicators using subjective data on perceptions of governance from a large number of data sources. In Section 1, we report on the latest update of our governance indicators, which measure six dimensions of governance over the 1996–2004 period and spanning 209 countries and territories. The indicators are based on several hundred individual variables measuring perceptions of governance, drawn from 37 separate data sources constructed by 31 different organizations.

Reformers in many governments, aid donors, members of civil society and investors increasingly recognize governance as key for development. This in turn has increased the demand for monitoring the quality of governance both across countries and within countries over time. For example, one of the eligibility criteria for the US government's new aid program, the Millennium Challenge Account (MCA), is that a country must score above the median of all potentially eligible countries on the 'Control of Corruption' indicator described in this chapter.² One of the messages from our work is that it is important when employing such measures to take into account the inevitable uncertainty associated with estimates of governance. An attractive feature of our approach to measuring governance is that it allows us to quantify the precision and reliability of our estimates of governance. Over time the addition of data has improved the precision of our governance indicators. However, the margins of error associated with estimates of governance are not trivial, and need to be taken into account when comparing governance across countries.

The same margins of error also complicate the measurement of changes over time in governance, an issue of obvious concern to many policy makers. In Section 2 we present new results on how to assess the statistical significance of changes over time in our measures of governance. We find that although many of the observed changes over time in our governance indicators are too small to signal statistically or economically meaningful changes in governance, there are countries where there have been substantial changes in governance, both improvements and declines. We also find that the likelihood of observing significant changes increases substantially with the length of the time period under consideration. Importantly, in examining some of our underlying data sources we also find that there is no evidence of changes in global averages of governance worldwide. Although our aggregate indicators are scaled to have the same mean and standard deviation in each period and thus only track relative changes in governance over time, the absence of trends in global averages suggests that there is little difference between these relative and absolute changes in governance.

In Section 3 we discuss several issues that arise when using perception-based data to measure governance across countries. We first note that often subjective data is the only type of information available for various dimensions of governance, and that the quality of subjective data on governance has improved over time. We also note that the margins of error we emphasize in our work are not unique to the perceptions data we use to construct our aggregate governance indicators: measurement error is pervasive among all measures of governance and institutional quality. An advantage of our measures of governance is that we are able to be explicit about the accompanying margins of error, whereas these are most often left implicit with objective measures of governance. To remedy this we provide a simple calculation which suggests that margins of error in objective indicators of governance are at least as large as those we report for our subjective indicators. We also investigate in more detail discrepancies between subjective and objective measures of very specific dimensions of the regulatory environment. We show that firms' survey responses about their tax burden and the ease of starting a new business reflect not only the *de jure* regulations governing these issues, but also the overall institutional and governance environment in which these regulations are applied. Finally, we show that concerns about the importance of ideological biases in subjective governance assessments are relatively unimportant. These findings emphasize the importance of relying on a full range of measures of governance, and not exclusively on either subjective or objective measures, when assessing the quality of governance across countries.

We began by noting that there is widespread consensus among academics and policy makers that governance is important for economic development. But this view is not without its critics. In Section 4 we address two prominent lines of such criticism. The first argues that the strong positive correlation observed between subjective measures of governance and per capita incomes does not reflect a causal impact of governance on development, but rather is mostly due to 'halo effects' – respondents rating countries might provide good governance scores to richer countries simply because they are richer. While this is certainly a possible source of bias, we show that it is unlikely to lead to a significant upward bias in the correlation between income and governance. The second line of criticism is implicitly based on the view that the observed correlation between governance and per capita income largely reflects an important causal effect running from incomes to governance: as countries get richer, institutional quality will improve. This view has led some observers of the poor development performance of countries in Sub-Saharan Africa to argue that the on average poor governance of countries in the region should be 'discounted' because per capita incomes in the region are also low. However, we argue that existing evidence does not

support a strong causal channel operating in this direction – most of the correlation between governance and per capita incomes reflects causation from governance to per capita incomes. In light of this we suggest that it would be inappropriate to divert attention from the weak average governance performance of the region simply because the region is poor. While we focus on Africa because of the recent emphasis in the aid community on the region, the fallacy of discounting the extent of misgovernance in a country or region due to low incomes applies more generally to any setting with poor governance and low incomes.

1. Updated governance indicators for 1996–2004

In this section we briefly describe the update of our governance indicators for 2004, as well as some minor backward revisions to the indicators for 1996–2002. Our basic methodology has not changed from past years, and a detailed discussion can be found in Kaufmann et al. (2004), and in the working paper version of this chapter (Kaufmann et al. 2005). We construct measures of six dimensions of governance:

1. *Voice and Accountability*: measuring political, civil, and human rights.
2. *Political Stability and Absence of Violence*: measuring the likelihood of violent threats to – or changes in – government, including terrorism.
3. *Government Effectiveness*: measuring the competence of the bureaucracy and the quality of public service delivery.
4. *Regulatory Quality*: measuring the incidence of market-unfriendly policies.
5. *Rule of Law*: measuring the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence.
6. *Control of Corruption*: measuring the exercise of public power for private gain, including both petty and grand corruption, or ‘state capture’.

Our estimates of governance are based on a large number of individual data sources on perceptions of governance. These data sources consist of surveys of firms and individuals, as well as the assessments of commercial risk rating agencies, non-governmental organizations (NGOs), and a number of multilateral aid agencies. For the 2004 round of the governance indicators, we rely on a total of 352 individual variables measuring different dimensions of governance. These are taken from 37 different sources produced by 31 different organizations. A full list of the data sources, as well as a detailed description of how individual perceptions measures are assigned to our six dimensions of governance, can be found in Kaufmann et al. (2005).

Our data sources reflect the views of a very diverse group of respondents. Several of our data sources are surveys of individuals or domestic firms with first-hand knowledge of the governance situation in the country. These include the World Economic Forum's Global Competitiveness Report, the Institute for Management Development's World Competitiveness Yearbook, the World Bank's Business Environment Surveys, and a variety of global polls of individuals conducted by Gallup, Latinobarómetro and Afrobarómetro. We also capture the perceptions of country analysts at the major multilateral development agencies (the European Bank for Reconstruction and Development, the African Development Bank, the Asian Development Bank, the UN Economic Commission for Africa, and the World Bank), reflecting these individuals' in-depth knowledge of the countries they assess. Other data sources from NGOs (such as Amnesty International, Reporters Without Borders, and Freedom House), as well as commercial risk rating agencies (such as Economist Intelligence Unit (EIU) and DRI McGraw Hill (DRI)) base their assessments on a global network of correspondents typically living in the country they are rating.

We combine the many individual data sources into six aggregate governance indicators. The premise underlying this statistical approach should not be too controversial – each of the individual data sources we have provides an imperfect signal of some deep underlying notion of governance that is difficult to observe directly. This means that as users of the individual sources, we face a signal-extraction problem – how do we isolate the informative signal about governance from each individual data source, and how do we optimally combine the many data sources to get the best possible signal of governance in a country based on all the available data? We approach this question using a statistical method known as an unobserved components model, which allows us to extract the common dimension of unobserved governance from the many individual data sources at our disposal. Details on this statistical approach can be found in Kaufmann et al. (2005). The main advantage of this approach is that the aggregate indicators are more informative about unobserved governance than any individual data source. Moreover, the methodology allows us to be explicit about the precision – or imprecision – of our estimates of governance in each country. As we discuss in more detail throughout this chapter, this imprecision is not a consequence of our reliance on subjective or perceptions data on governance, but rather is an issue that should be squarely addressed in all efforts to measure the quality of governance.

The full dataset of our aggregate governance indicators is available on the web at www.worldbank.org/wbi/governance/govdata/. These indicators are constructed to have a mean of zero and a standard deviation of one in each period. Actual scores range from approximately –2.5 to 2.5. In Figure 2.2

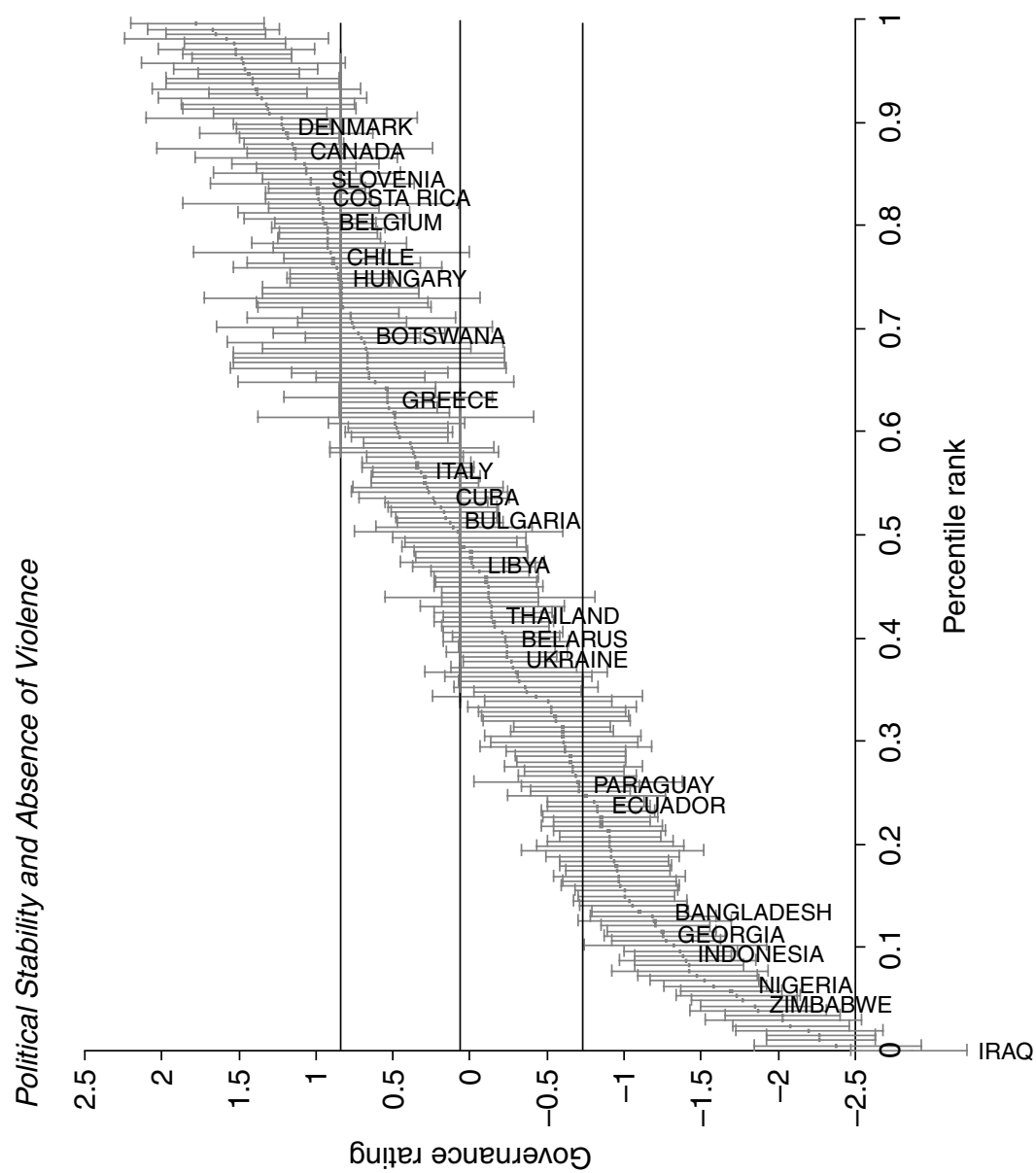


Figure 2.2a Margins of error of governance indicators: political stability and absence of violence

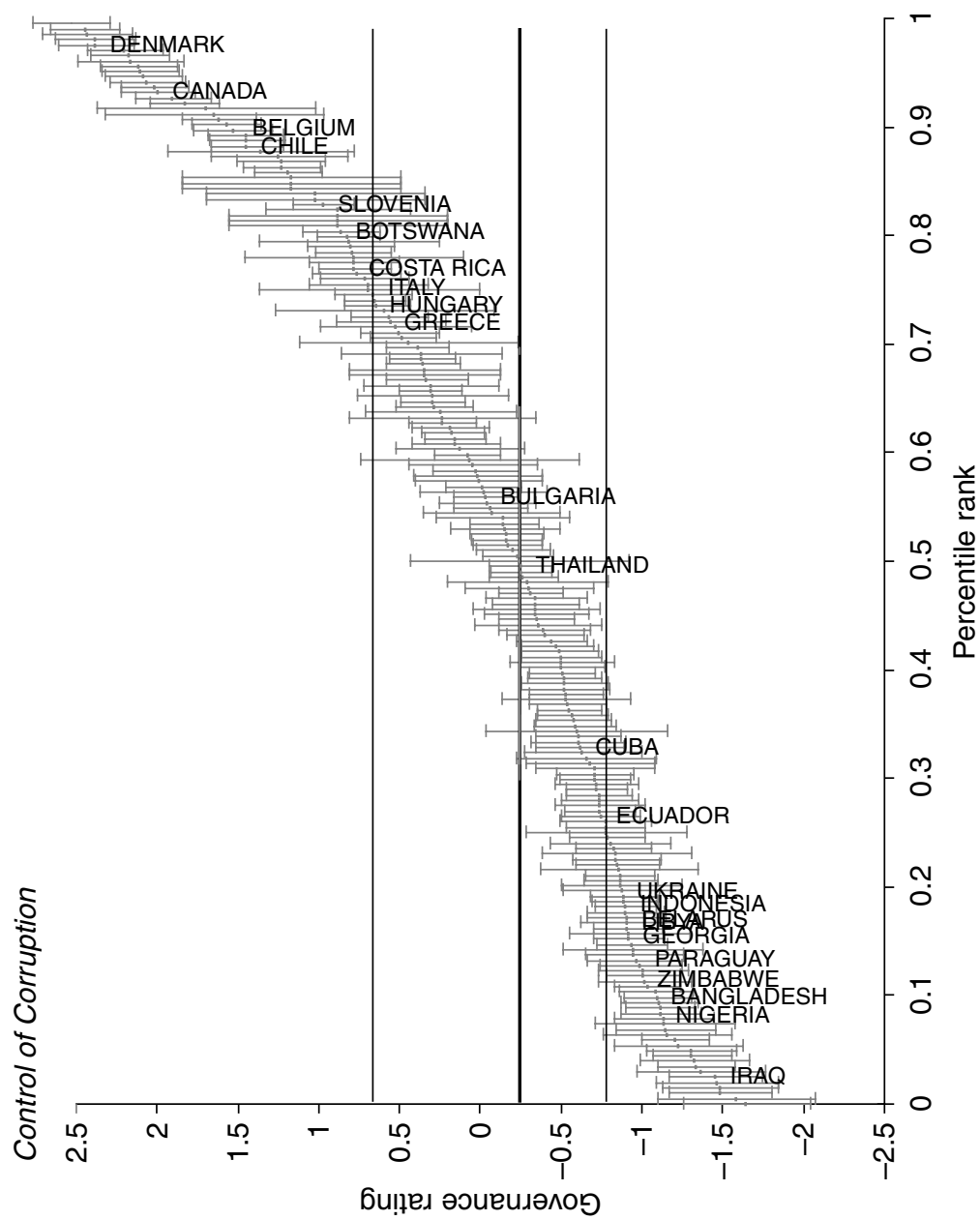


Figure 2.2b Margins of error for governance indicators, 2004: control of corruption

we provide a visual overview of the data for two dimensions of governance: Political Stability and Absence of Violence, and Control of Corruption. We order countries in ascending order according to their point estimates of governance in 2004 on the horizontal axis, and on the vertical axis we plot the estimate of governance. The vertical line for each country shows the statistically likely range for the value of governance for each country, as captured by a 90 percent confidence interval. The size of these confidence intervals varies across countries, as different countries appear in a different number of sources with different levels of precision. An important feature of this figure is that the confidence intervals are substantial relative to the units in which governance is measured. As a result, many of the small differences in estimates of governance across countries are not likely to be statistically significant at reasonable confidence levels. For many applications, instead of merely observing the point estimates, it is more useful to focus on the *range* of possible governance values for each country.

In Figure 2.3 we illustrate the changes over time in our estimates of governance in individual countries, for two selected governance indicators over the 1996–2004 period. In both panels, we plot the 2004 score on the horizontal axis, and the 1996 score on the vertical axis. We also plot the 45-degree line, so that countries above this line correspond to declines in the quality of governance, while countries below the line correspond to improvements in governance. Most countries are clustered quite close to the 45-degree line, indicating that changes in our estimates of governance in these countries are relatively small over the eight-year period covered by the figure. A similar pattern emerges for the other four dimensions of governance (not shown in Figure 2.3), and, not surprisingly the correlation between current and lagged estimates of governance is even higher when we consider shorter time periods.

However, our estimates of governance do change substantially for some countries in some periods. In Figure 2.3 we have labeled those countries for which the change in estimated governance over the 1996–2004 period is sufficiently large that the 90 percent confidence intervals for governance in the two periods do not overlap. Although not a formal test of statistical significance, we shall show later that this is a useful rule of thumb for identifying statistically and practically important changes in governance. For example, from 1996 to 2004, countries like Côte d'Ivoire, Zimbabwe, Nepal and the Central African Republic show substantial declines in the Voice and Accountability measure, among others, while countries like Argentina and Sierra Leone deteriorate on Regulatory Quality, and Zimbabwe, Cyprus, Israel and Moldova decline on Control of Corruption. Compare this with countries like Latvia and Bahrain that show substantial improvements in Control of Corruption, and Croatia, Nigeria and Bosnia and Herzegovina that improved in Voice and Accountability.³

In the working paper version of this chapter (Kaufmann et al. 2005), we investigated in more detail the factors underlying the changes in our estimates of governance. We find that for large changes in governance in either direction, there is a reassuringly high degree of consensus among our underlying data sources for each country as to the direction of the change. For a typical large change in governance, over 80 percent of the data sources available for that country move in the same direction as the aggregate indicator. Moreover, although the number of sources for our governance indicators has increased markedly over time, we show that this addition of new sources does not appear to have very substantial effects on the changes over time in the governance estimates. Taken together, this evidence suggests that for large changes in governance we can have a good deal of confidence that it is mostly driven by changes in the underlying sources on which the aggregate indicators are based. In contrast, we should be much more cautious in our interpretation of many of the smaller changes in our aggregate governance indicators.

It is important to note that our aggregate indicators are measured in relative units, since we have scaled them to have a mean of zero in each period. This opens the possibility that although many countries do not display large changes over time in their relative positions, it may be the case that there are broad-based improvements in global averages of governance that are not being picked up by our indicators. In order to determine how important this concern is, we have gone back to our underlying data sources and selected a subset of them for which we can track over time a similar specific concept of governance for a common set of countries.

In Table 2.1 we summarize trends in world averages in a number of our individual data sources. Most of the sources in this table are polls of experts, with data extending over the whole period, 1996–2004. Only one of them, the Global Competitiveness Survey (GCS), is a survey with sufficiently standard format to enable comparisons over this period of time. The first five columns present the average across all countries of each of the sources in each of the years. The underlying data have been rescaled to run from zero to one, and for each source and governance component, we report the score on the same question or average of questions that we use in the aggregate indicator. The next five columns report the standard deviation across countries for each source. The final column reports the *t*-statistic associated with a test of the null hypothesis that the world average score is the same in 1996 as in 2004.

The picture that emerges from Table 2.1 is sobering. There is very little evidence of statistically significant improvements in governance worldwide. The 22 eight-year changes reported here are divided exactly in half into 11 improvements and 11 declines in global averages. There are nine cases of

Political Stability and Absence of Violence (horizontal axis: 2004, vertical axis: 1996)

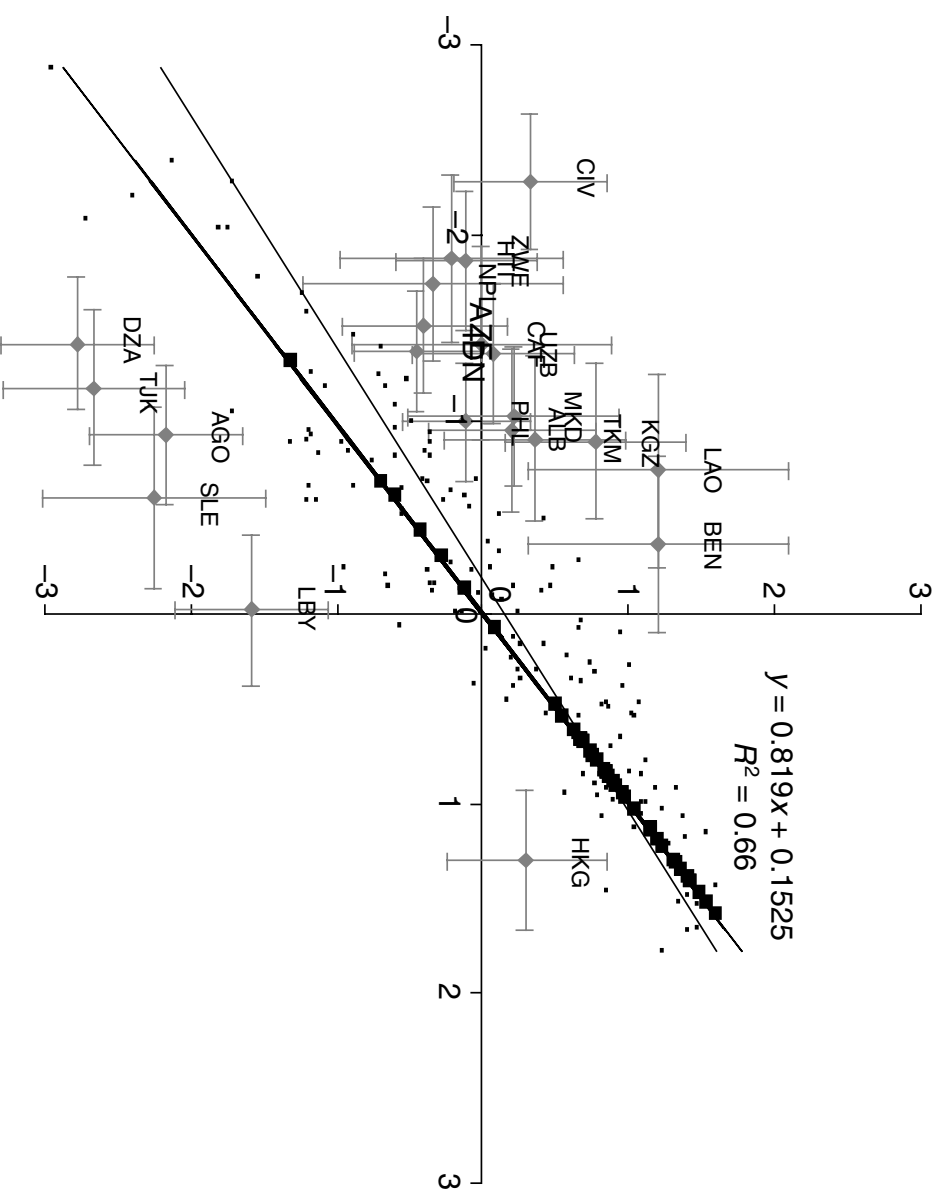


Figure 2.3a Changes over time in governance indicator 1996–2004: political stability and absence of violence

Control of Corruption (horizontal axis: 2004, vertical axis: 1996)

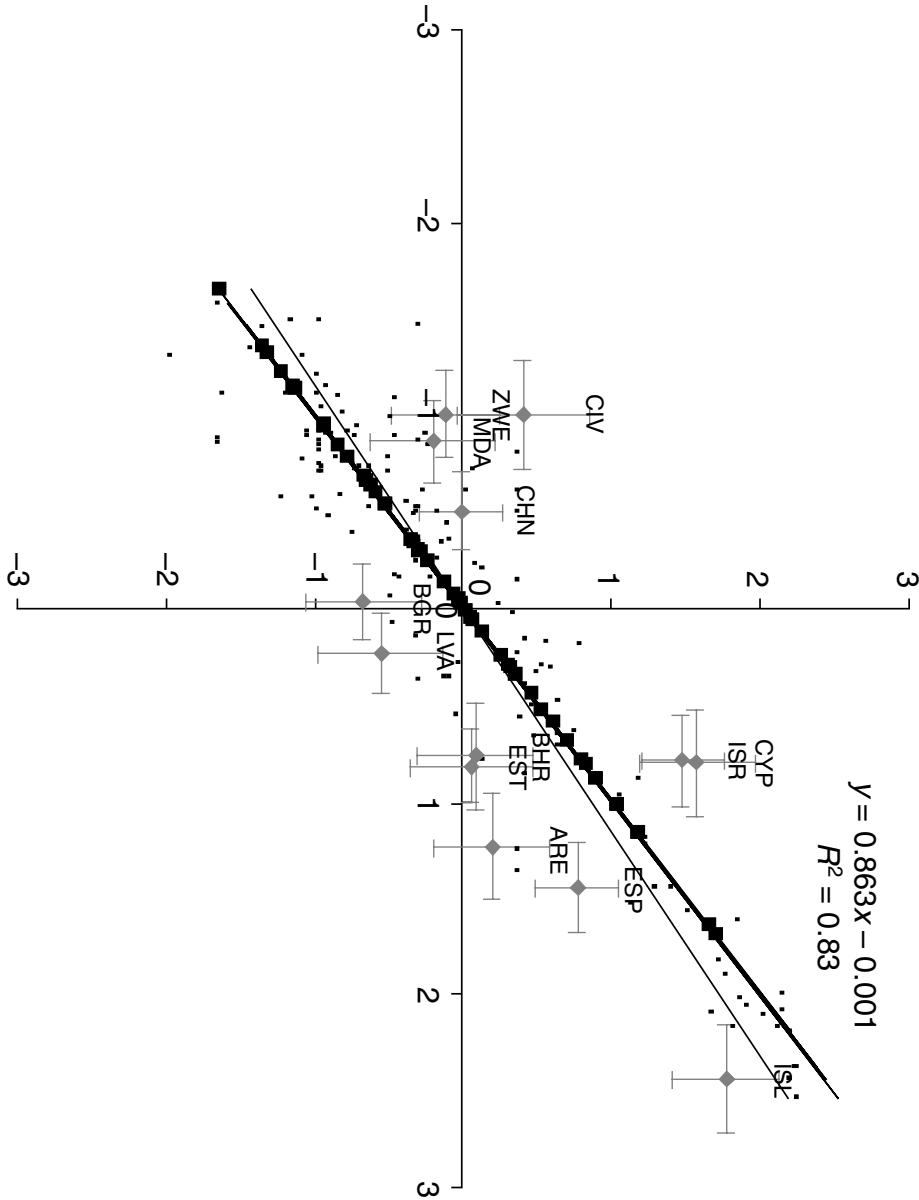


Figure 2.3b Changes over time in governance indicators, 1996–2004: control of corruption

Table 2.1 Global trends in governance, 1996–2004

[Quasi-balanced sample] * * * * * †													
	# of countries	World average					Std dev. across countries					<i>t</i> -statistic for mean difference 1996–2004	
		1996	1998	2000	2002	2004	1996	1998	2000	2002	2004		
<i>Voice and Accountability</i>													
EIU	115	0.41	0.42	0.42	0.46	0.46	0.30	0.32	0.31	0.28	0.28	1.5	
PRS *	140	0.63	0.63	0.63	0.63	0.65	0.25	0.27	0.27	0.26	0.26	0.7	
GCS **	88	–	–	–	0.49	0.51	–	–	–	0.14	0.14	–	
FRH (PR + CL)	190	0.56	0.58	0.58	0.60	0.62	0.34	0.33	0.33	0.33	0.33	1.7	
FRH (Press Freedom)	188	0.54	0.53	0.54	0.55	0.53	0.24	0.26	0.25	0.25	0.25	–0.2	
WMO	186	–	–	–	0.55	0.53	–	–	–	0.26	0.22	–	
<i>Political Stability</i>													
EIU	115	0.54	0.51	0.56	0.54	0.56	0.29	0.30	0.30	0.28	0.26	0.7	
PRS *	140	0.78	0.71	0.73	0.75	0.75	0.15	0.20	0.17	0.14	0.13	–1.5	
GCS **	88	0.73	0.74	0.63	0.66	0.67	0.14	0.16	0.18	0.17	0.13	–2.5 [–2.4]†	
WMO	186	–	–	–	0.67	0.56	–	–	–	0.24	0.20	–	
<i>Government Effectiveness</i>													
EIU	115	0.39	0.45	0.44	0.38	0.38	0.30	0.24	0.24	0.29	0.30	–0.2	
PRS *	140	0.63	0.66	0.57	0.64	0.62	0.19	0.12	0.11	0.17	0.15	–0.4	
GCS **	82	0.48	0.52	0.53	0.54	0.55	0.22	0.28	0.27	0.24	0.23	1.9 [2.8]†	
WMO	186	–	–	–	0.56	0.55	–	–	–	0.23	0.22	–	
<i>Regulatory Quality</i>													
EIU	115	0.42	–	–	0.51	0.55	0.25	–	–	0.25	0.23	4.3	
GCS **	82	0.43	0.44	0.38	0.31	0.35	0.15	0.15	0.16	0.14	0.13	–3.4 [–3.0]†	

WMO	186	–	–	–	0.58	0.61	–	–	–	0.25	0.17	–
HERITAGE ***	155	0.50	0.48	0.49	0.50	.050	0.30	0.31	0.31	0.29	0.28	0.0
<i>Rule of Law</i>												
EIU	115	0.47	0.50	0.48	0.52	0.52	0.27	0.30	0.30	0.26	0.26	1.4
PRS *	140	0.72	0.62	0.65	0.62	0.63	0.23	0.26	0.23	0.24	0.24	–3.4
GCS **	82	0.67	0.63	0.57	0.51	0.51	0.18	0.24	0.25	0.22	0.22	–4.6 [–2.9]†
WMO	186	–	–	–	0.58	0.57	–	–	–	0.23	0.20	–
HERITAGE ***	155	0.50	0.48	0.46	0.44	0.44	0.30	0.31	0.31	0.29	0.28	–1.8
QLM	115	0.45	0.45	0.46	0.46	0.45	0.29	0.29	0.30	0.30	0.30	0.1
<i>Control of Corruption</i>												
EIU	115	0.35	0.34	0.33	0.35	0.35	0.31	0.32	0.31	0.32	0.33	0.2
PRS *	140	0.59	0.51	0.47	0.41	0.42	0.21	0.21	0.21	0.19	0.19	–7.2
GCS **	82	–	0.66	0.69	0.64	0.66	–	0.29	0.25	0.22	0.21	0.0 [–0.1]†
WMO	186	–	–	–	0.52	0.54	–	–	–	0.27	0.20	–
QLM	115	0.39	0.40	0.40	0.40	0.38	0.29	0.29	0.29	0.29	0.29	–0.2

Notes:

All variables are scaled to run from 0 to 1.

* PRS country coverage in 1996, 129 countries, all other periods 140.

** GCS country coverage in 1996: 58; in 1998: 59; in 2000: 75; and in 2002 and in 2004: 82.

*** Heritage country coverage in 1996, 137; all other periods 155.

† Values in square brackets for GCS report *t*-stats for fully balanced sample from 1996 (same 52 countries).

Key:

EIU = Economist Intelligence Unit

PRS = Political Risk Services

GCS = Global Competitiveness Survey

FRH = Freedom House

WMO = World Markets Online

statistically significant changes at the 10 percent level or better (t -statistics greater than 1.64 in absolute value), and these are split between three improvements and six declines. It is not clear how much importance ought to be ascribed to these trends in world averages. On the one hand, these statistics represent the only information we have on trends over time, and so they should be taken seriously. On the other hand, it is clear that there is substantial disagreement among sources about even the direction of changes in global averages of governance. For now, we cautiously conclude that we do not have evidence of any significant improvement in governance worldwide and, if anything, the evidence is suggestive of a deterioration in key dimensions such as Regulatory Quality, Rule of Law and Control of Corruption.

2. Interpreting differences in governance across countries and over time

In our description of the data in the previous section we emphasized the importance of measurement error in our governance indicators. In this section we first use the specific example of the Control of Corruption eligibility criterion for the US Millennium Challenge Account to illustrate the importance of margins of error for cross-country comparisons of governance indicators. We also show how the presence of margins of error affects the conclusions we can draw about the statistical and practical importance of observed changes over time in governance.

Cross-country governance comparisons and the MCA

As an illustration of the importance of margins of error in governance comparisons, consider the eligibility criteria for the US MCA. Countries' eligibility for grants from the MCA is determined by their relative positions on 16 different measures of country performance. One of these is our Control of Corruption indicator, where countries are required to score above the median among all potentially eligible countries in order to qualify for MCA funding. As we have noted elsewhere, this procedure risks misclassifying countries around the median because the margins of error for such countries often includes the median score. In contrast, for countries near the top and the bottom of potential MCA beneficiaries, we can be quite confident that they do in fact fall above and below the median, respectively.

Table 2.2 illustrates the role of margins of error in this calculation. We focus attention on the set of 70 countries identified as potential MCA beneficiaries for the 2005 fiscal year.⁴ For these countries, we calculate the median score on our Control of Corruption indicator for 2004. Next, using our governance estimates and their accompanying standard errors, for each country we calculate the probability that the country's level of corruption falls above the median for this group. The results of this calculation are

Table 2.2 *Classifying countries for the MCA*

Probability of being above the median is:	Control of Corruption			WMO 2004	DRI 2004	GCS 2004
	2004	2000	1996			
<i>Number of countries</i>						
Below 10%	17	15	16	10	5	3
Below 25%	24	24	19	17	11	6
Between 25% and 75%	20	20	18	38	11	12
Above 75%	26	25	15	15	12	12
Above 90%	23	22	11	6	7	8
Total number of countries	70	69	52	70	34	30
<i>Proportion of countries</i>						
Below 10%	0.24	0.22	0.31	0.14	0.15	0.10
Below 25%	0.34	0.35	0.37	0.24	0.32	0.20
Between 25% and 75%	0.29	0.29	0.35	0.54	0.32	0.40
Above 75%	0.37	0.36	0.29	0.21	0.35	0.40
Above 90%	0.33	0.32	0.21	0.09	0.21	0.27
Average standard error	0.18	0.25	0.35	0.41	0.42	0.44

summarized in the first column of Table 2.2. For 17 poorly performing countries, about one-quarter of the sample, there is less than a 10 percent chance that corruption in these countries actually falls above the median. For another 23 countries, or about a third of the sample, we are quite confident that corruption in these countries falls above the median, with a probability of at least 90 percent. In contrast, for the remaining 30 countries, the probability that they fall above the median is somewhere between 10 and 90 percent, and so we have less confidence that these countries are correctly classified. If we relax our standards of significance to 25 and 75 percent, we find that only about 20 countries out of 70, or 29 percent of countries fall in this zone of uncertainty.⁵

This example illustrates the importance of taking margins of error into account when making governance comparisons across countries. Our aggregate governance indicator is able to identify with a fairly substantial degree of confidence groups of countries where the probability that corruption is above or below the median is large. But at the same time there remains an intermediate group of countries where we can be less confident that they are correctly classified as being ‘good’ or ‘bad’ performers based on their point estimates of governance alone.

It is also important to note how this example illustrates the benefit of aggregating many sources of data on corruption. The remaining columns

of Table 2.2 perform the same calculations, but relying on successively less precise measures of governance. The second and third columns use our own Control of Corruption indicators for 2000 and 1996. These indicators cover fewer countries, and because they rely on a smaller set of sources available at the time, the margins of error for individual countries are higher than in 2004 (see the standard errors reported in the last row). In 1996, for example, 35 percent of the countries for which data are available fall in the intermediate category where the probability that they fall in the top half of the sample is between 25 and 75 percent – as opposed to only 29 percent of countries falling in this grey area with the 2004 indicator. The last three columns of the table show the same information for three of our individual sources, World Markets Online (WMO), DRI and GCS. These individual sources have substantially higher margins of error than our aggregate indicators, and in the case of DRI and GCS, also cover substantially fewer countries. In addition, we see that there is greater uncertainty about country rankings when relying on just a single indicator – for GCS, for example, the fraction of countries falling in the intermediate category rises to 40 percent. This illustrates the benefit of relying on aggregate indicators, which are more informative than individual indicators when trying to classify countries according to their levels of governance.

Margins of error and changes over time in governance

It is useful to begin our discussion with the simplest possible example of how measurement error impacts our interpretation of changes over time in observed governance indicators, both subjective and objective. Suppose that we have only one source of governance data observed at two points in time, and we want to make inferences about how governance has changed in a country. To keep notation as simple as possible, we suppress country subscripts and write the observed data at time t , $y(t)$, as the sum of true unobserved governance in that period, $g(t)$, and an error term capturing measurement error:

$$y(t) = g(t) + \varepsilon(t), t = 1, 2. \quad (2.1)$$

As a choice of units, we assume that true governance has mean zero and standard deviation one, and that the error term has zero mean. For simplicity we assume that the variance of the error term is the same in both periods and is equal to σ^2 . Note that σ^2 is the noise-to-signal ratio in the observed governance data (the ratio of the variance of the error to the variance of unobserved governance). We also allow for the possibility that both governance and the error term are correlated over time, with correlations ρ and r , respectively. Finally we assume that both governance and the error term are

normally distributed. With these simplifying assumptions, consider the problem of making inferences about the change in unobserved governance, $g(t) - g(t - 1)$, conditional on observing data $y(t)$ and $y(t - 1)$ in the two periods. Using the fact that unobserved governance and the data are jointly normally distributed, we can use the properties of the multivariate normal distribution to arrive at the following expressions for the mean and variance of the change in governance, conditional on the observed data:⁶

$$E[g(t) - g(t - 1)|y(t), y(t - 1)] = \frac{(1 - \rho) \cdot [y(t) - y(t - 1)]}{1 + \sigma^2 \cdot (1 - r) - \rho}$$

$$V[g(t) - g(t - 1)|y(t), y(t - 1)] = \frac{2 \cdot (1 - \rho) \cdot (1 - r) \cdot \sigma^2}{1 + \sigma^2 \cdot (1 - r) - \rho}. \quad (2.2)$$

It is natural to use this conditional mean as our best estimate of the change in governance, and the conditional variance as an indicator of the confidence we have in the estimate. This is in fact exactly analogous to how we obtain estimates of levels of governance and associated standard errors using the unobserved components model.

To interpret these expressions, consider first the case where there is no persistence in governance or in the error terms, that is, $\rho = r = 0$. In this case, our estimate of the change in governance is simply $[y(t) - y(t - 1)] / (1 + \sigma^2)$. In particular, we should take the observed change in the single source and scale it down by a factor of $1 / (1 + \sigma^2)$ to reflect the fact that the data measures governance with error. It is also clear from equation (2.2) that the higher is ρ , the more we should discount observed changes in governance. Intuitively, if we knew that governance changes very slowly over time, then any observed change in the data is more likely to reflect changes in the error term, and so we should discount this observed change more heavily. In the limit where governance is perfectly correlated in the two periods, we would know for sure that any change observed in the data must reflect only fluctuations in the error term, and so we would completely discount the observed change in the data. That is, our estimate of the change in governance would be zero regardless of the observed change in the data.

The effect of persistence in the error terms works in the opposite direction: we should scale down the observed change in the data by less the larger is the correlation over time in the error terms. Again the intuition for this is simple – if we know that the error with which a given source measures governance is persistent over time, then any observed change in the source is likely to understate the true change in unobserved governance. As a result our best estimate of the change in governance will be larger than the observed change in the data. Interestingly, if the correlation in unobserved

governance and the error term are equal to each other, that is, $\rho = r$, then these two effects offset exactly and the discount applied to the observed change in governance is $1/(1 + \sigma^2)$.

How much confidence should we have in the statistical significance of the change in unobserved governance based on the observed data? Suppose that we observe a change in the indicator equal to k standard deviations of the changes in this variable, that is, $y(t) - y(t-1) = k \cdot \sqrt{2 \cdot [1 + \sigma^2 \cdot (1 - r) - \rho]}$. Does this signal a significant change in governance? In order to test the null hypothesis that the change in governance is zero, we can construct the usual z -statistic associated with this hypothesis, that is, the ratio of the mean of the change in governance conditional on the data to the square root of the conditional variance, which simplifies to:

$$z = \frac{E[g(t) - g(t-1) | y(t), y(t-1)]}{\sqrt{V[g(t) - g(t-1) | y(t), y(t-1)]}} = \frac{k}{\sigma} \cdot \sqrt{\frac{1 - \rho}{1 - r}}. \quad (2.3)$$

Not surprisingly, the observed change in the data is more likely to signal a significant change in unobserved governance the larger is the observed change in the data (that is, the larger is k), and the lower is the signal-to-noise ratio in the data (that is, the smaller is σ). And building on the intuitions above, the observed change in the data is also more likely to signal a significant change in unobserved governance the lower is the persistence in unobserved governance, ρ , and the higher is the persistence in the error term, r .

Figure 2.4 puts some numbers to this simple calculation. We graph the number of standard deviations of the observed change in the data, k , on the horizontal axis, and we plot the z -statistic in equation (2.3) on the vertical axis for different values of the key parameters. We set $\sigma^2 = 0.36$, as this is the median value for the noise-to-signal ratio across all of the individual data sources we use to construct our six governance indicators in each of the five periods. In an earlier paper we argued that the noise-to-signal ratio in objective measures of governance is likely to be at least as large as this.⁷ The solid upward-sloping line traces out the z -statistic as a function of k for this value of the noise-to-signal ratio, but assuming that the correlation in governance and the error term are zero, that is, $\rho = r = 0$. The z -statistic is greater than the 90 percent critical value for changes in the observed data that are more than one standard deviation away from the mean change. This suggests that if there is no persistence in governance or in the error terms, quite a large proportion of observed changes in individual governance indicators would in fact signal a significant change in unobserved governance. In fact, if changes in the observed governance indicator are

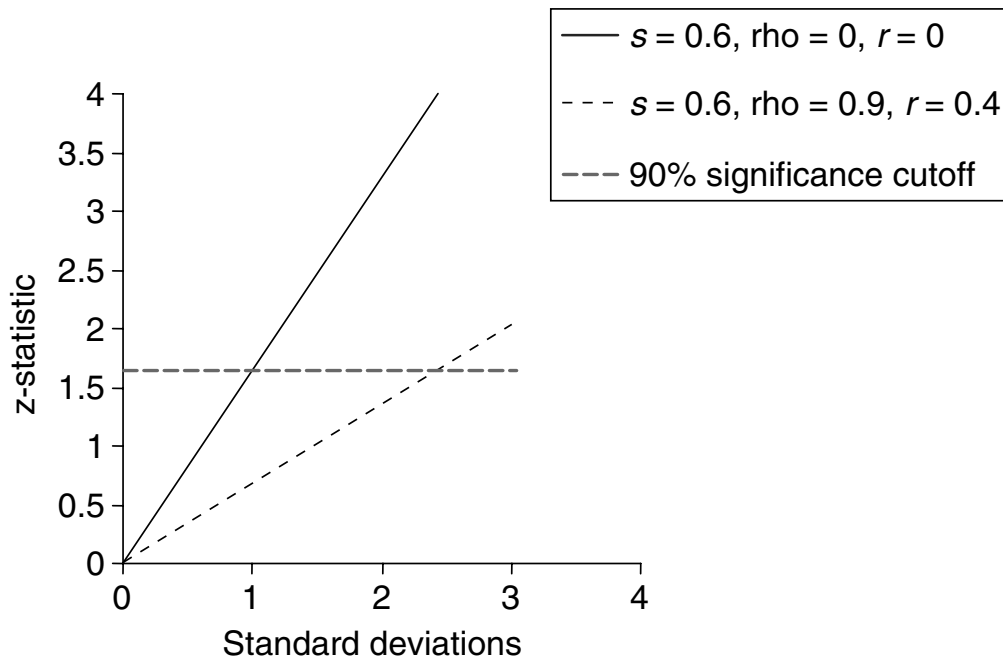


Figure 2.4 *Significance of changes in individual measures of governance*

approximately normally distributed, the largest one-third of all absolute changes would signal changes in governance that are significant at the 90 percent level.

The dashed upward-sloping line corresponds to the more empirically relevant case where there is persistence in both governance and the error terms. The line is drawn for the same noise-to-signal ratio as before, and in addition we assume that the correlation of unobserved governance over time is $\rho = 0.9$ and the correlation in the error term is $r = 0.4$. In the next section we show how these parameters can be estimated using our governance data, and find that these values are typical ones. In particular, we shall see shortly that unobserved governance tends to be highly persistent over the eight-year period spanned by our dataset, and although the error terms are also typically positively correlated over time they are much less so than governance. Based on the intuitions developed above, this suggests that much larger observed changes in governance indicators would be required to signal statistically significant changes in unobserved governance. This is exactly what we find. The dashed line crosses the 90 percent critical value at $k = 2.5$, indicating that only those observed changes in the data more than 2.5 standard deviations away from the mean would signal a statistically significant change in governance. Again, if changes in the observed governance indicators are normally distributed, this would imply that only the top 1 percent of all absolute changes

would correspond to significant changes in governance. This in turn suggests that drawing conclusions about changes in governance based on changes in individual governance indicators should be done with an abundance of caution.

In Appendix 2A we extend the discussion above to the case of aggregate governance indicators. The basic insights from this discussion of changes in individual indicators also carry over to changes in aggregate governance indicators. Just as we found that aggregate indicators are more informative about levels of governance than individual indicators, so changes over time in aggregate indicators can be more informative about trends in governance than changes in individual indicators. And as suggested in the discussion above, there is a tension between persistence in governance and persistence in measurement error in the aggregate indicators. The greater is the former, the more cautious we should be about observed changes in governance. And the greater is the latter, the more likely it is that observed changes in indicators of governance signal significant changes in true governance. As shown in the appendix, we find that the simple rule of thumb we proposed above – that changes in governance are significant if the 90 percent (or 75 percent) confidence intervals in the two periods do not overlap – does a fairly good job of identifying changes that are statistically significant using more formal criteria.

3. Subjective and objective measures of governance

In this section we address a number of issues that arise in using subjective or perception-based data to measure governance across countries. We begin by discussing why subjective data is often either the only type of data available to measure governance or else adds valuable insights over available objective measures. We next emphasize that margins of error are not unique to the subjective measures of governance that we construct, but are pervasive in all efforts to measure governance. We present some simple calculations which show that margins of error in objective measures of governance are comparable to those we present for our subjective measures. We then turn to a deeper investigation of one source of discrepancy between subjective and objective indicators, which is that the latter tend to emphasize *de jure* rules on the books while the former tend to pick up the *de facto* reality on the ground. We finally briefly describe an earlier effort of ours to quantify the importance of ideological biases in subjective measures of governance in which we found that they were small.

Perceptions matter

In this subsection we discuss some of the advantages of the subjective or perception-based measures of governance we use to construct our aggregate

governance indicators. The primary reason for choosing subjective measures is that for many of the key dimensions of governance, such as corruption or confidence in the protection of property rights, relevant objective data are almost by definition impossible to obtain.

Consider corruption for example. Because corruption is by nature an illegal activity, direct measures of its prevalence do not exist. A variety of indirect measures are possible, but none is without difficulty. For example, relying on the frequency of references to corruption in the media will reflect not only the prevalence of corruption, but also the extent to which the press are free and objective in their coverage of events. Similarly, relying on prosecutions or conviction rates in corruption trials will to no small extent reflect the competence and independence of the police and judicial system, and thus will not exclusively reflect the prevalence of corruption itself. Finally, in recent years a handful of papers have attempted to measure corruption by looking for patterns in objective data that can only be consistent with corruption. For example, Di Tella and Schargrodsky (2003) document variation in the procurement prices paid for very homogeneous medical inputs such as syringes across hospitals in Buenos Aires as an indicator of corruption in procurement. Along similar lines, Golden and Picci (2003) carefully document differences between existing stocks of public infrastructure and past flows of infrastructure spending across Italian regions, interpreting this gap as a measure of procurement corruption. While these last two papers represent important and interesting developments in measurement, cross-country measures of corruption based on this idea are not available – nor are they likely to be, given the major data requirements for this kind of exercise.

For some other dimensions of governance, objective measures may be available, but nevertheless still suffer from two related weaknesses. For Voice and Accountability, for example, it is possible to use objective data on the presence of elections to measure democratic participation. However, it is well known that there is a great deal of variation across countries in the extent to which the outcome of elections actually reflects the will of the voters. Measuring the extent to which elections are subverted, through intimidation, manipulation, or sheer fabrication of results, brings us quickly back to the realm of more subjective or perception-based data. This is just one example of the important distinction between *de jure* and *de facto* situations regarding governance across countries. Countries may have extensive formal protections of property rights codified in their legal system that are honored only in the breach. For example, most countries in the world now have formal independent anti-corruption commissions, but their effectiveness varies greatly.

More generally, subjective perceptions of governance often matter as much as the legal reality. For example, on the basis of firms' perceptions of

the undue influence of powerful firms on the political decisionmaking process – influencing laws, policies and regulations – Hellman and Kaufmann (2003) develop a measure for ‘crony bias’, or unequal influence across firms. The authors find a consistent pattern in which perceived unequal influence has strongly negative impact on the firm’s assessment of public institutions, which in turn affects the behavior of the firm towards those institutions. Crony bias at both the firm and the country level is associated with lesser use of the courts by the firms to resolve business disputes, lower enforceability of court decisions, lower levels of tax compliance and higher levels of bribery. Thus, the evidence suggests that the inequality of influence not only damages the credibility of institutions among less (politically) powerful firms, but also affects the likelihood that they will use and provide tax resources to support such institutions, thereby perpetuating the weakness of such institutions and likelihood of capture by influential private actors.

Finally, in recent years the economics and comparative political economy literature has generated a profusion of results linking a variety of objective measures of the structure of institutions to a range of governance outcomes. A non-exhaustive list of examples includes the links between decentralization and corruption; the effects of the structure of the legal system on financial market development; the effect of checks and balances in the political system on regulatory and fiscal performance; the effects of democratic institutions on a wide range of socioeconomic outcomes; and many others. While this literature has served to greatly expand our understanding of the deep institutional determinants of development, the objective measures of institutional quality and/or the historical determinants on which they rely do not lend themselves well to the construction of aggregate governance indicators like ours. The basic reason is that these indicators typically do not have normative content on their own, but only in the context of a particular empirical analysis linking these variables with a particular outcome. For example, while measures of decentralization may be correlated with the incidence of corruption across countries, generally the explanatory power of this variable is not sufficiently strong that decentralization could be considered to be a reasonable proxy for corruption.

None of this is to suggest that the subjective data on which we rely are problem free. We have already discussed the relative strengths and weaknesses of polls of experts and stakeholder surveys in measuring governance. Beyond this, a generic problem with many perception-based questions about governance is that they can be vague and open to interpretation. For example, a well-crafted question to enterprises on corruption asks them for the estimated share of bribes in revenues expended annually by firms like theirs, and similarly another focused ‘experiential’

question probes into the percentage of the firm's management time spent dealing with government officials on red tape. By contrast, generalized opinion questions such as a citizen's perception of the overall tolerance of the population to corruption are less informative for our purposes. Nowadays we can increasingly rely on more specific, better crafted, and, to an extent, experiential questions, thanks to improvements that have taken place over time. For instance, in contrast with the mid-1990s, the GCS survey of firms contains much more specific questions to the firm about corruption and governance, and some are of a quantitative and experiential nature (such as percentage of senior management time spent with public officials). Similarly, Business Environment and Enterprise Performance Survey (BPS) includes many detailed questions unbundling governance to very specific components and quantifying phenomena such as the percentage of bribes paid yearly as a share of revenues.

Margins of error are not unique to subjective data

We have argued that one of the strengths of the governance indicators reported in this chapter is that we are able to construct explicit margins of error associated with our estimates of governance for each country. However it is worth emphasizing that these margins of error are not unique to subjective or perception-based measures of governance, but are also present – if not explicitly noted – in most other measures of institutional quality, or in any other socioeconomic indicator for that matter. One need only consider the range of 'preliminary' estimates of basic objective variables such as real GDP growth produced in industrial countries with high-quality statistical systems to realize that measurement error in objective data is in fact pervasive and should be taken seriously.⁸

Consider, for example, the recent interest in constructing objective measures of governance that do not exclusively rely on perception-based data sources as we do, but rather on objective and quantifiable data. Several of these are described in Knack and Kugler (2002). They argue that variables such as the waiting time required to obtain a telephone line, and the number of telephone faults can serve as proxies for public administrative capacity. The reliance of the government on trade taxes can serve as a proxy for the (in)ability of the government to broaden its tax base. The volatility in budgetary expenditure shares, and similarly, the volatility of revenue shares, is indicative of a volatile and unpredictable policy environment. They also draw on a number of other measures of institutional quality pre-existing in the literature. Clague et al. (1996) argue that the fraction of currency in circulation that is held in the banking system is a good proxy of the extent to which individuals in a country can be confident that their property rights are protected. Finally, in a series of papers, Djankov et al. (2002, 2003)

compile cross-country data on the number of administrative procedures required to start a business, and the number of legal procedures required to collect an unpaid debt. These measures capture the complexity of the regulatory and legal environment.

Although most of these measures can, in principle, provide an accurate measure of the specific underlying concept to which they refer, their usefulness as a measure of broader notions of governance depends on the extent to which the specific concept they are measuring corresponds to these broader ideas of governance. For example, the number of procedures required to start a business may not be a good indicator of the complexity or burden of regulation in other areas. Similarly, the willingness of individuals to hold currency in banks reflects their confidence in a very particular set of property rights (*vis-à-vis* banks, and banks *vis-à-vis* the government), but may not necessarily capture other dimensions of property rights protection, such as confidence in the police and judicial system.

This is of course not surprising, nor should it be considered a drawback of such measures – all of which are necessarily imperfect proxies for broader notions of governance. However, it does mean that one should consider seriously the margins of error for objective indicators as well, to the extent that these are used as proxies for broad concepts of governance such as the ones we measure using subjective data in this chapter.⁹ Although these margins of error are generally not made explicit for objective indicators, a simple calculation can give a sense of their order of magnitude. Suppose that we have two noisy indicators y on a common unobserved concept of governance, g , that is, $y_i = g + \varepsilon_i$, $i = 1, 2$. Then if we normalize the variance of the unobserved measure of governance to be one, the correlation between the two observed indicators will be $\rho = [(1 + \sigma_1^2) \cdot (1 + \sigma_2^2)]^{-1/2}$. Suppose that indicator 1 is one of our subjective governance indicators, for which the variance of the measurement error, σ_1^2 , is known, and that indicator 2 is one of the objective indicators described above. Then from the observed correlation between the two indicators, we can infer the variance of measurement error in the objective indicator, σ_2^2 .

The results of this calculation can be found in Table 2.3. The rows of Table 2.3 correspond to the various objective governance indicators discussed above. In the first two columns, we identify the objective indicator, and the subjective aggregate governance indicator which best corresponds to it. In the third column we report the correlation between the subjective and the objective indicator, using our 2002 governance indicators. The next three columns report the implied standard deviation of measurement error in the objective indicator, under three assumptions: (A) that our estimate of the standard deviation of measurement error in the subjective indicator

Table 2.3 Imputed margins of error for objective governance indicators

Objective indicator	Corresponding subjective indicator	Absolute value of correlation	Implied margin of error for objective indicator			Actual margin of error for subjective indicator
			(A)	(B)	(C)	
Telephone wait time	GE	0.56	1.43	0.88	0.58	0.21
Phone faults	GE	0.32	2.92	1.47	1.00	0.21
Trade tax revenue	GE	0.50	1.68	1.00	0.67	0.21
Budgetary volatility	GE	0.50	1.68	1.00	0.67	0.21
Revenue source volatility	GE	0.49	1.71	1.01	0.67	0.21
Contract intensive money	RL	0.57	1.39	0.86	0.57	0.19
Contract enforcement	RL	0.40	2.25	1.22	0.82	0.19
Regulation of entry	RQ	0.50	1.67	1.00	0.66	0.22
Aggregate objective indicator	GE	0.73	0.88	0.60	0.39	0.21

Notes: This table reports the margins of error for objective indicators implied by the observed correlation between objective and subjective indicators, as discussed in Section 4 in the text.

Key:

GE = Government Effectiveness

RL = Rule of Law

RQ = Regulatory Quality

is correct, (B) that the subjective and objective indicators have the same standard deviation of measurement error, and (C) that the standard deviation of measurement error in the subjective indicator is twice as large as that in the objective indicator. Finally in the last column we report the actual standard deviation of measurement error, computed as the average across all countries of the country-specific standard errors in our governance indicators.

The results in Table 2.3 are quite striking. For all indicators, and for all three sets of assumptions, the implied standard deviation of measurement error in the objective indicators is very high relative to the corresponding standard deviation of the subjective governance indicators. Under the benchmark assumption (A) which takes seriously the margins of error we have computed for our governance indicators, we find that the implied margin of error for the objective indicators is between seven and 15 times larger than that of the subjective indicators. This clearly exaggerates the difference in precision between subjective and objective indicators because we are comparing a single objective indicator with an aggregate of several subjective measures and, as discussed earlier, we should expect aggregation to improve precision. But this is only part of the story. For the GE and RQ indicators, we have a median of six sources per country, while for RL we have a median of eight sources. This can explain why the standard deviation of measurement error of the objective sources might be $\sqrt{6} = 2.4$ to $\sqrt{8} = 2.8$ times higher than that of the corresponding subjective indicators, but still cannot explain all of the difference in the precision of the indicators that we see. Similarly, the last row in Table 2.3 reports the correlation of GE with an aggregate of all the objective indicators. In this case, the benefits of aggregation would be roughly comparable for the two indicators, with a median of five sources per country for the objective indicator and a median of six sources per country for GE. Nevertheless, we find that the implied standard deviation of measurement error is still four times as large for the objective indicator as it is for the subjective one.

Assumptions (B) and (C) are designed to be more favorable to the precision of the objective indicators. Assumption (B) discards the information in the margins of error that we have constructed for the subjective indicator, and simply makes the neutral assumption that the subjective and the objective indicators have the same standard deviation of measurement error. This reduces the implied standard deviation of measurement error for the objective indicator relative to the benchmark assumption (A), but it remains large at 0.6 for the composite objective indicator, and higher for the individual indicators. Assumption (C) weights things even further in favor of the objective indicators, assuming that the objective indicator is twice as precise as the subjective indicator. In this case, we continue to find

very substantial estimates of the standard deviation of measurement error, on the order of 0.4 and higher for individual objective indicators.

This simple calculation underscores and helps to quantify the intuitive notion that all governance indicators, not just the subjective ones we have constructed, are subject to non-trivial margins of error, and that care should be taken in making governance comparisons based on any such measures. In addition, wherever possible, it is desirable to construct explicit margins of error to aid in these comparisons.

De jure and de facto governance indicators

A recurrent theme in this chapter is that individual sources of governance data are imperfect and provide only noisy signals of unobserved governance. In the previous subsection we saw that part of this measurement error is due to the fact that all specific subjective and objective measures of governance are imperfect proxies for the broader concepts of governance that they are used to measure. In this subsection we turn to a different source of measurement error arising from the distinction between *de jure* and *de facto* measures of governance. Consider for example the very useful ‘Doing Business’ (DB) project of the World Bank, which has compiled objective measures of various dimensions of the regulatory environment across countries by interviewing law firms around the world about formal rules and regulations in their countries. As with the subjective measures of ease of business entry, there are gaps between this specific dimension of regulation and the overall quality of the regulatory environment. Interestingly, as we are about to see, there are systematic differences between even very specific subjective and objective measures, which reflect the sometimes wide gap between the *de jure* rules on the books and their *de facto* application.

We consider two measures of the *de facto* environment facing firms taken from the survey of over 8,000 firms in 104 countries carried out by the World Economic Forum in 2004 as an input to their Global Competitiveness Survey (GCS). These two variables capture firms’ assessments of the ease of starting a business, as well as their reported tax burden.¹⁰ We then match these with two closely-related *de jure* measures from other sources. For ease of starting a business, we draw on the DB project at the World Bank discussed above. From this dataset we take the number of days required to start a business. For perceptions of the tax burden, we have independently collected statutory tax rates by sector and size of firm for each of the countries in the sample. We then assign these tax rates to individual firms and average these up to the country level to obtain measures of the statutory tax burden.¹¹ Figure 2.5 plots the change between 2003 and 2004 in the *de jure* and *de facto* measures of business entry. The changes are uncorrelated.

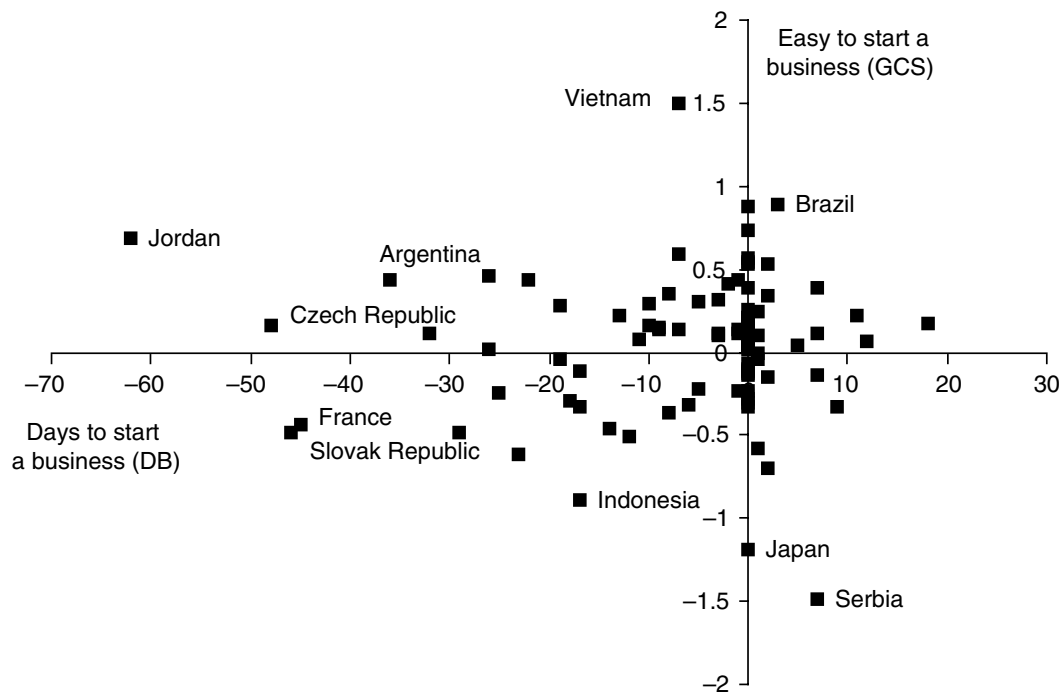


Figure 2.5 *Changes in measures of ease of business entry, 2003–2004*

We begin the statistical analysis with simple ordinary least squares (OLS) regressions of perceptions of ease of starting a business on the corresponding objective measure (first column of Table 2.4). Not surprisingly, the objective measure enters negatively and is highly statistically significant with a t -statistic of more than five, indicating that firms perceive it to be more difficult to start a business in countries where the number of days required to do so is large. More interesting for our purposes is the observation that the R -squared of the regression is very modest, at only 0.23. We cannot say at this point whether this results reflects measurement error in the subjective or the objective measure. One hypothesis, however, is that the objective measure fails to capture the extent to which the formal requirements to start a business are altered by the presence of corruption or other forms of informality in their application. To investigate this possibility we add our aggregate measure of Control of Corruption to the regression.¹² We find that this variable enters positively and highly significantly, indicating that perceptions of the ease of starting a business are significantly better in countries with less corruption, even after controlling for the *de jure* rules governing business entry. Once we add corruption, the coefficient on the *de jure* rules falls by half, and its significance also drops to the 10 percent level. Moreover the adjusted R -squared of the regression doubles to 0.44, indicating substantial explanatory power for this additional variable.

There is, however, an obvious difficulty with this result. It could well be the case that firms' responses to the question regarding business entry are non-specific, in the sense that they will provide low responses if their assessment of the overall business environment is negative. This generalized dissatisfaction could account for the significance of the corruption variable, rather than any effect of corruption on the enforcement of business entry procedures. We address this possibility in the next three columns. One test for this problem of non-specificity is to ask whether unrelated objective measures of the business environment also predict perceptions about ease of entry. We do this in the third column by adding the objective tax burden question to the regression. If firm responses reflect generalized dissatisfaction, we might expect this variable also to enter significantly, yet it does not. In the fourth column we instead add firms' responses to a question about the overall regulatory environment that they face. Again we find that corruption remains highly significant, and in this case the general question about regulation is also highly significant. This suggests that while non-specificity of responses may be a concern, it does not fully account for the significance of the corruption measure in the previous specifications. Interestingly, in both specifications, we find that the coefficient on the objective entry measure becomes larger and more significant as we add these control variables. Finally, we note that all these results go through when we put all four variables in the regression.

The second and third panels of Table 2.4 reveal interesting differences between developing countries on the one hand, and OECD and newly industrialized countries on the other. In the developing-country sample, the results described above go through for the most part. However, it is interesting to note that the magnitude and significance of the objective measure is in general smaller in the developing-country sample, and larger in the industrial-country sample, while the converse is true for the corruption variable. Taken together these results suggest that firm perceptions of the ease of starting a business depend on both *de jure* rules, as well as the institutional environment in which those rules are applied. Moreover, the relative importance of *de jure* rules seems to be higher in industrial than in developing countries. More broadly, the lesson from this simple exercise is that it can be misleading to rely exclusively on either perceptions of *de facto* governance or objective measures of the *de jure* rules.

We perform the same sequence of regressions using the question on perceptions of tax burdens from GCS as the dependent variable. The results are broadly similar to those discussed above and are reported in the continuation of Table 2.4. In the full sample of countries, we find that perceptions of tax burdens are strongly correlated with our *de jure* measure of statutory tax rates. While in the full sample of countries we do not find corruption to enter

Table 2.4 De jure and de facto measures

	1	2	3	4	5
Dependent variable is GCS '04: 'Easy to Start a Business?'					
<i>All countries</i>					
No. of days to start business (DB '04)	-1.18 5.46**	-0.43 1.87*	-0.47 1.96*	-0.60 4.33***	-0.59 4.19**
Corporate Tax Rate			-0.01 1.06 0.45		0.01 0.69 0.18
Control of Corruption (2002)		0.47 6.14***	0.45 5.84***	0.18 2.80***	0.18 2.81***
Administrative Regulations (GCS '04)				0.75 9.86***	0.77 9.05***
Observations (no. of countries)	81	81	81	81	81
Adjusted R-squared	0.23	0.44	0.44	0.71	0.71
<i>Developing countries</i>					
No. of days to start business (DB '04)	-0.49 1.44	-0.32 0.95	-0.29 0.86 0.01	-0.49 2.42**	-0.47 2.25**
Corporate Tax Rate			0.66 0.53 3.08***		0.01 0.73 0.22
Control of Corruption (2002)		0.50 3.30***	0.53 3.08***	0.19 1.48 0.83	0.22 1.67 0.82
Administrative Regulations (GCS '04)				8.76***	8.73***
Observations (no. of countries)	56	56	56	56	56
Adjusted R-squared	0.01	0.19	0.18	0.57	0.57

<i>OECD + newly industrialized countries</i>							
No. of days to start business (DB '04)	−0.97	−0.53	−0.57	−0.73	−0.74		
	3.29**	1.65	1.88*	3.41***	3.33***		
Corporate Tax Rate			−0.04		0.00		
			1.92*		0.09		
Control of Corruption (2002)		0.75	0.62	0.29	0.29		
		2.85***	2.38**	1.28	1.25		
Administrative Regulations (GCS '04)				0.64	0.65		
				4.44***	3.51***		
Observations (no. of countries)	25	25	25	25	25		
Adjusted R-squared	0.18	0.36	0.46	0.69	0.67		
Dependent variable is GCS '04: 'How Heavy is Overall Tax Burden?'							
<i>All countries</i>							
No. of Days to start business (DB '04)			−0.96		−0.27		
			0.46		0.15		
Corporate Tax Rate	0.29	0.28	0.27	0.18	0.18		
	2.37**	2.29**	2.22**	1.58	1.55		
Control of Corruption (2002)		−0.77	−0.96	0.58	0.52		
Administrative Regulations (GCS '04)		1.27	1.19	0.91	0.62		
				−4.29	−4.28		
				3.91***	3.91***		
Observations (no. of countries)	81	81	81	81	81		
Adjusted R-squared	0.09	0.09	0.08	0.24	0.23		
<i>Developing countries</i>							
No. of days to start business (DB '04)			−2.06		−1.46		
			0.68		0.54		

Table 2.4 (continued)

	1	2	3	4	5
Corporate Tax Rate	0.11 0.71	0.02 0.15	0.01 0.09	0.03 0.16	0.02 0.11
Control of Corruption (2002)		-2.66 1.78*	-2.80 1.88*	-1.59 1.07	-1.71 1.16
Administrative Regulations (GCS '04)				-2.93 1.62	-2.87 1.60
Observations (no. of countries)	56	56	56	56	56
Adjusted R-squared	0.00	0.04	0.03	0.09	0.08
<i>OECD + newly industrialized countries</i>					
No. of Days to start business (DB '04)			0.96 0.35		2.37 0.93
Corporate Tax Rate	0.63 4.59***	0.64 4.43***	0.64 4.52***	0.33 3.56***	0.32 3.90***
Control of Corruption (2002)		0.47 0.23	0.78 0.32	2.63 1.70	3.49 1.94*
Administrative Regulations (GCS '04)				-5.15 4.54***	-5.38 4.89***
Observations (no. of countries)	25	25	25	25	25
Adjusted R-squared	0.47	0.45	0.42	0.65	0.65

Notes:

DB refers to 'Doing Business' study, GCS refers to Global Competitiveness Survey.

* Denotes significance at the 10% level.

** Denotes significance at the 5% level.

*** Denotes significance at the 1% level.

significantly, it does in the developing-country sample where we might expect corruption to matter more for perceptions of the tax burden. As before, we address the possibility that the tax burden question captures generalized dissatisfaction rather than a specific concern with taxation by including the objective measure of days to start a business, and we find that the corruption variable remains significant. Also consistent with our priors, we find that differences in statutory tax rates have much stronger explanatory power for perceptions of tax burden in the industrial-country sample. Although the overall results are not quite as strong as for the business-entry example discussed above, the picture that emerges is qualitatively quite similar.

In sum, the results suggest that assessments of governance should not be based solely on objective measures of the *de jure* situation. We have seen that firms' perceptions of the ease of starting a business and the weight of their tax burden depend not only on the *de jure* regulations that they face, but also on the environment in which these regulations are applied. Laws and regulations are often adopted but their implementation is subverted due to prevailing informal mechanisms. In these settings the essence of how policies and regulations are actually implemented may frequently be missed by objective indicators. This is not to say, of course, that firm-based surveys of perceptions are devoid of margins of error and related challenges. Rather, the results we have shown emphasize the importance of relying on a range of measures to assess governance and on recognizing that no single measure is a perfect proxy for governance.

Potential ideological biases

We conclude this section by briefly addressing the critique that subjective data from polls of experts may reflect the ideological tendencies of the institutions compiling the performance ratings. Our assumption has been that this is not a major concern for the sources on which we rely. This is because we find a very high degree of correlation among most of our sources, which is difficult to reconcile with a systematic ideological bias present in certain sources. In a previous paper (Kaufmann et al. 2004) we nevertheless took this possibility seriously and investigated the extent to which the differences in assessments across sources are related to observable measures of the ideology of the government in power in each country.

We approached the question as follows. Our identifying assumption was that surveys of firms or individuals are not tainted by ideology, since they reflect the views of a large number of respondents in each country. In contrast, it is possible that the views of a smaller number of raters affiliated with a particular institution may reflect the ideology of that group. We can therefore identify the effects of ideology by looking at the correlation across countries between the ideology of the government in power, and the

difference in the percentile ranks assigned to countries by a poll of experts and a survey of individuals and firms. We implemented this idea using the World Business Environment Survey (WBS) for 2000 and an independently available indicator variable that takes on the value 1 if the government in power is left-of-center, 2 if it is center, and 3 if it is right-of-center.¹³ The coefficient on the ideology variable was intended to capture the extent to which a given poll of experts rates countries with left- or right-wing governments systematically differently from a survey.

The results of the regressions confirm that most sources are not affected by ideological bias. Only one source, Heritage Foundation, was found to assign relatively higher scores to countries with right-of-center governments than the corresponding surveys. However, it is worth emphasizing that this ‘ideology bias’ is fairly modest in magnitude. The coefficient estimates indeed indicate that a country with a right-of-center government would get between 7 and 10 percentile points higher than a center government. Moreover, in all cases, the ideology variable in a statistical sense explains only a trivial fraction of the difference in assessments between polls and surveys, suggesting that the importance of ideological biases in polls is quite small overall.¹⁴

4. Interpreting governance–income correlations

We began this chapter by noting the strong consensus that governance matters for economic development. An important part of the evidence in support of this view comes from providing a causal interpretation of the strong observed positive correlation between governance and per capita incomes across countries. But there are alternative interpretations of this correlation. We first consider – and discount – the interpretation that these strong correlations are a consequence of ‘halo effects’, that is, an upward bias in perceptions of governance in rich countries simply because they are rich. We also discuss – and refute – the argument that the weak governance performance of countries in Africa should be discounted in some sense because these countries are poor.

Halo effects

Perception-based measures of governance such as the ones we develop here are potentially subject to a number of biases. One common critique is that perceptions of governance are biased upwards in rich countries because respondents view the development success of the country in question as evidence that institutional quality is good. This type of bias is sometimes referred to as a ‘halo effect’.¹⁵ This in turn implies that part of the observed high correlation between per capita incomes and governance spuriously reflects this bias.

To formalize the idea of halo effects, suppose that we can write our observed estimates of governance, g^* , as the sum of true governance, g , and an error term, u :

$$g^* = g + u. \quad (2.4)$$

The essence of the halo effect argument is that this error term u is correlated with per capita incomes, y . The relevant question then is the extent to which this spurious correlation can account for the high observed correlation between measured governance and per capita incomes. Intuitively, it should be clear that in order for halo effects to substantially account for the correlation between incomes and measured governance, it must be the case that the correlation between the error and income is large. Perhaps less obviously, it must also be the case that the variance of the error term is large relative to the variation in governance. Otherwise, even if the error term is strongly correlated with income, the fact that it accounts for little of the variance in measured governance means that it will have little impact on the correlation between measured governance and per capita income. Our argument in a nutshell is that for reasonable assumptions on the importance of measurement error, this measurement error would have to be implausibly highly correlated with per capita incomes in order to constitute a significant source of bias.

To formalize this intuition, we decompose the observed correlation between measured governance and per capita income into a term reflecting the true correlation between governance and income and a term attributable to the halo effect:

$$\text{CORR}(g^*, y) = \sqrt{1-s} \cdot \text{CORR}(g, y) + \sqrt{s} \cdot \text{CORR}(u, y) \quad (2.5)$$

where $s = V[u]/V[g^*]$ is a measure of how noisy the governance indicator is. Note also that the correlation between measured governance and per capita income that we see in the data is around 0.8.

To understand this expression, suppose that the true correlation between governance and income were zero, so that all of the observed correlation between income and governance is due to the second term capturing halo effects. This consists of the actual correlation of the error term with per capita income, which is multiplied by the square root of the share of the variance in governance due to the error term. Suppose that the governance indicator is very noisy so that the share of the variance approaches one. Then the correlation of the error term with per capita income must be equal to the observed correlation in the data. Suppose, however, that the

governance indicator is at least somewhat informative, so that s is less than one. In order to match the observed correlation in the data, the halo effect correlation in the error term must be even larger than the 0.8 observed in the data. This example illustrates how the importance of halo effects in accounting for the observed correlation between governance and per capita income depends on both the strength of the halo effect itself, as well as the relative importance of measurement error in the governance indicator.

This example is extreme because we have assumed that the true correlation between governance and income is zero. We now relax this assumption and revisit the question of how strong halo effects need to be to account for the observed correlation between measured governance and per capita income of 0.8. We do this with the help of Figure 2.6, which graphs the strength of the halo effect, that is, $\text{CORR}[u, y]$, on the vertical axis, against the share of the variance in governance due to the residual, that is, s , on the horizontal axis. The different lines on the figure correspond to different assumptions for the true correlation between governance and income. We have already discussed the intuition for the case where this correlation is zero, shown as the highest line in the figure. If the share of the variance in governance due to measurement error is one, the halo effect correlation must be equal to 0.8. As we move to the left and the governance indicator becomes more informative, the required correlation increases.

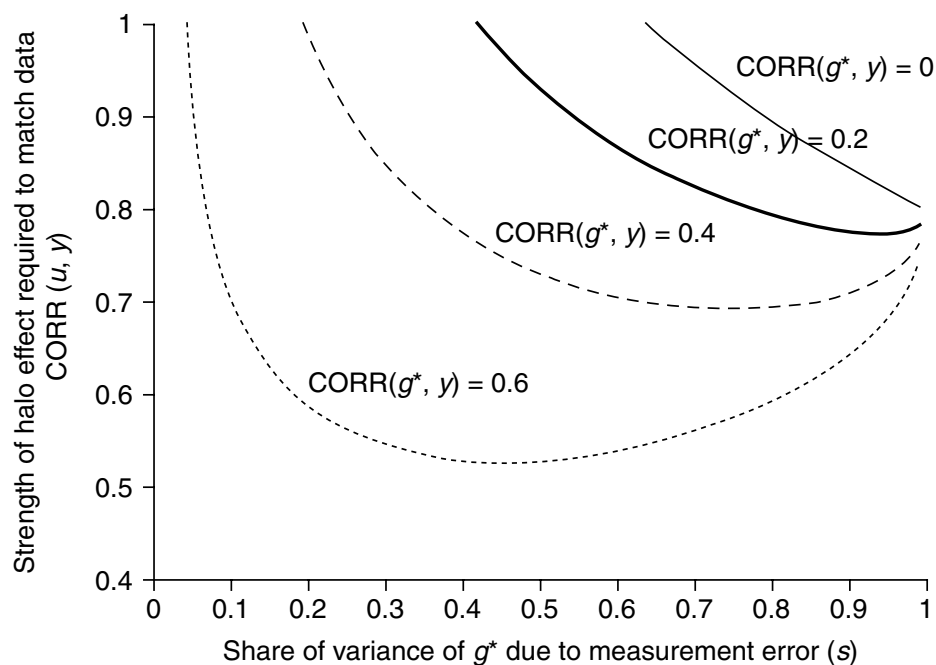


Figure 2.6 *Halo effects*

The lines corresponding to successively higher true correlations between governance and income fall everywhere below the first series. This is because once we allow for some correlation between true governance and income, the halo effect needed to account for the correlation between observed governance and income is weaker. Interestingly, however, even if the true correlation is quite substantial at 0.6, the lowest line in Figure 2.6 tells us that halo effects must still be quite considerable, with a correlation of at least 0.5, to match the observed data.¹⁶ This lower bound occurs for intermediate values of the share of the variance of governance due to measurement error. It is also interesting to ask what a reasonable value for this share might be, in order to pin down more precisely how strong the halo effects must be. One way to do so is to consider the standard errors of the governance estimates, which average around 0.25 as compared with the standard deviation of measured governance of 1. This suggests that the share of the variance of governance due to the error term is in fact quite small at $s = 0.25^2 = 0.06$. For this low variance share, the halo effect correlation would need to be 0.9 in order to match the observed data. If the true correlation between governance and income were much lower, for example at 0.4, then even if measurement error in governance were perfectly correlated with per capita income it would not be possible to generate the observed correlation between governance and per capita incomes.

This strong conclusion is driven by the assumption that measurement error accounts for a relatively small portion of the variation in observed governance. As a result this measurement error needs to be very highly correlated with incomes in order to match the data. One could argue that we are understating the importance of measurement error by relying on the estimated standard errors from our governance indicators. After all, these are based on the assumption that measurement error is uncorrelated across different sources of governance data. However, if halo effects are important, the measurement error in individual sources will be correlated not only with per capita income, but also with other sources. This in turn would imply a greater imprecision of the governance estimates. To capture this possibility, suppose that the standard error of the governance estimates were twice as large as what we actually have, at 0.5.¹⁷ This implies $s = 0.25$, and for this value of s we can see from Figure 2.6 that the halo effect correlation would still need to be very high at almost 0.6 in order to match the data.

In summary, these results suggest to us that although halo effects may well be present in perception-based measures of governance, these effects need to be implausibly strong in order to impart a substantial upward bias in the correlation between measured governance and per capita incomes.

Moreover, it is worth noting that there may well be other factors offsetting such halo effects. One is the tendency of survey respondents in developed countries to be particularly critical of their own institutions.¹⁸ It is also worth noting that some cross-country polls of experts deliberately apply higher standards to rich countries when assessing their governance.¹⁹ Overall, then, we do not think that halo effects are a significant source of bias in the correlations between governance and per capita incomes in our data.²⁰

Controlling for income in governance comparisons

In a recent paper, Sachs et al. (2004) have argued that weak governance is not a major factor in Africa's poor growth performance. The argument is that, once we control for per capita income, countries in Sub-Saharan Africa do not have particularly poor governance indicators. This point is illustrated in Figure 2.7, which plots our 2004 Rule of Law measure (on the vertical axis) against the logarithm of real per capita GDP in the mid-1990s (on the horizontal axis). Note that the per capita income variable has been rescaled to have mean zero and standard deviation of one, as the governance indicator has. A striking observation from this graph is that over half (27 out of 46) of the countries in Sub-Saharan Africa actually fall above the simple OLS regression line. At first glance, this appears to lend credence to the argument that governance in Africa is on average what one might expect given the region's low income levels.

However, it is misleading to conclude from this simple figure that Africa's governance performance is reasonable given its per capita income. This interpretation of the figure is valid only to the extent that the OLS regression line would capture a causal relationship from higher income to better governance. But a large body of research indicates that there is substantial causation in the other direction as well – better governance leads to higher incomes. Moreover, the magnitude of the estimated effect of governance on per capita incomes in the long run is large.²¹ Available estimates suggest that a one standard deviation improvement in governance would lead to a two- to threefold difference in income levels in the long run. A one standard deviation change in governance would correspond to, for example the difference between Kenya and Turkey on our 2004 Rule of Law indicator. This means that the simple OLS relationship will exaggerate the positive effects of income on governance because it also reflects the strong effect in the opposite direction, from governance to incomes. In order to compare governance in Sub-Saharan Africa to what might be expected given income levels, we need to first isolate these two directions of causation, so as to be able to focus in particular on the causal effect of income on governance.

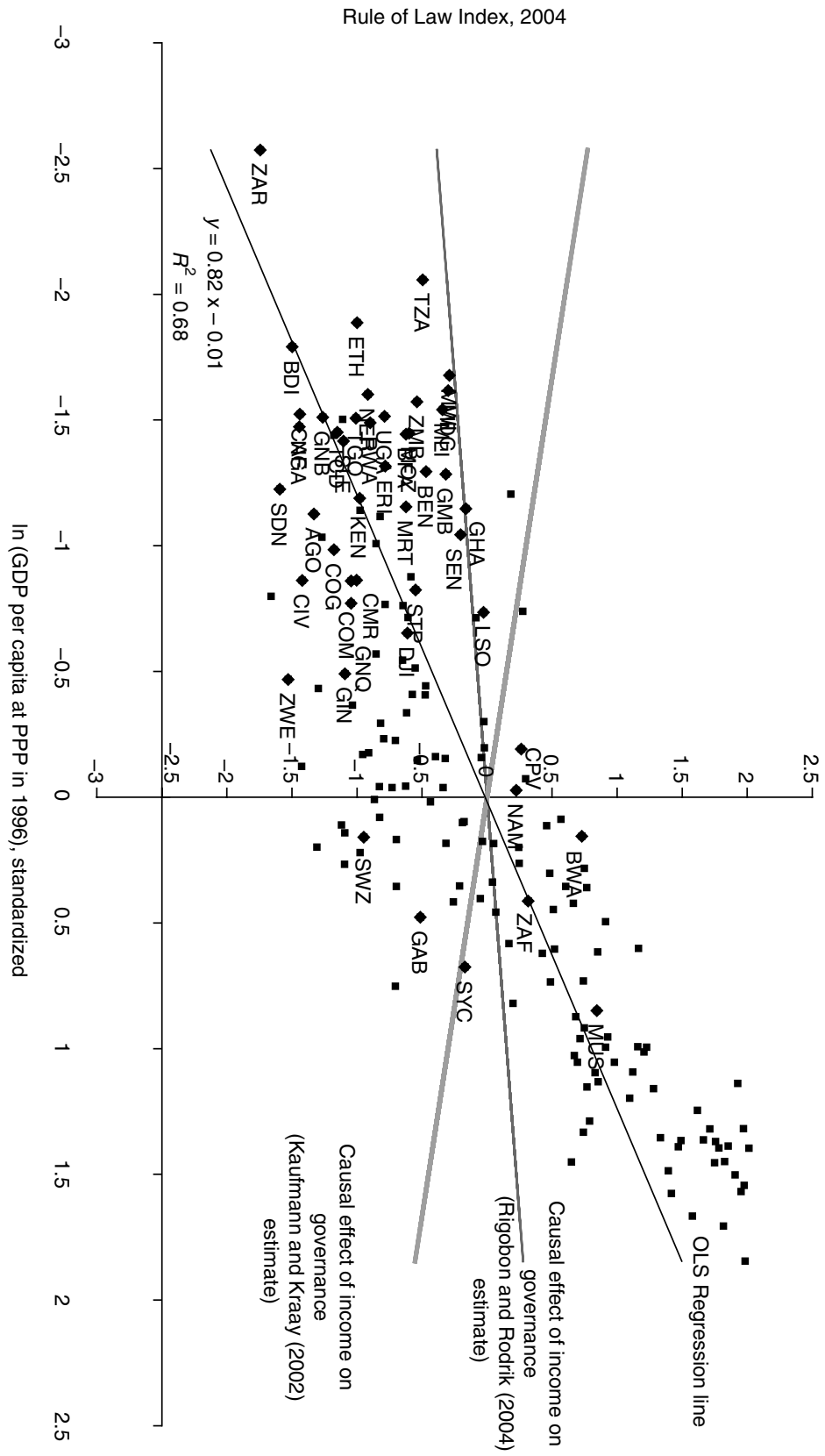


Figure 2.7 Governance and per capita incomes in Africa

The lines in Figure 2.7 show two alternative estimates of the causal effect of income on governance. The (slightly) upward-sloping one comes from Rigobon and Rodrik (2004). They study the causal relationships between per capita income, democracy, rule of law, openness to international trade, and geography, using identification through heteroskedasticity to isolate the causal effects.²² As expected, this line is substantially flatter than the OLS regression line, consistent with the intuition that the latter relationship overstated the true causal effect of incomes on governance. This flattening has important consequences for our conclusions about the quality of governance in Africa controlling for income levels. Once we isolate this much weaker effect of income on governance, we find that only seven out of 46 countries in the region fall above the regression line: Ghana, Lesotho, Cape Verde, Namibia, South Africa, Botswana and Mauritius. In contrast, the vast majority of countries in Africa have governance that is worse than their income levels would predict.

The weakly downward-sloping line presents another estimate of the effect of income on governance, coming from Kaufmann and Kraay (2002). In that paper we used a different approach to identification and found a zero or even negative impact of income on governance. Although this finding may be somewhat extreme, it leads to the same conclusions regarding the quality of governance in Africa – now only six out of 46 countries in the region fall above the regression line, indicating governance levels better than what per capita incomes would predict.

Overall this evidence suggests that it would be inappropriate to discount the governance performance of countries in Sub-Saharan Africa based on their low income levels. The reason is simple. The only way to justify such a discount is to argue that higher incomes exert a positive causal effect on governance. But available evidence suggests that the causal impact of incomes on governance is small. Rather, the observed correlation between governance and per capita incomes primarily reflects causation in the other direction: better governance raises per capita incomes.

5. Conclusions

There is by now broad consensus among academics and policy makers alike that good governance matters for economic development. There is also growing awareness in the aid community that good governance matters for the effectiveness of development assistance. In the light of these facts it is important to be able to measure levels and changes over time in governance across countries. This chapter summarizes our recent work to construct aggregate governance indicators which seek to provide such information. Relative to previous years, these indicators reflect a significant expansion of our underlying dataset of several hundred

individual variables measuring perceptions of governance, drawn from 37 separate data sources.

In our work we have emphasized the difficulty of measuring governance. We have argued that one of the strengths of our composite governance indicators is that they can be more informative than individual data sources – on average the aggregation reduces the margin of error by about one-half. Further, given the increasing number of separate data sources now at our disposal to construct these aggregate indicators, we find that the margins of error of the latest period under measure are smaller than in earlier periods. However, these margins of error, even in our most recent aggregate indicators, still remain substantial, and thus all our previous cautionary suggestions regarding interpretation continue to apply.

At the same time, we have emphasized that these margins of error are not unique to perception-based measures of governance, but are an important feature of all efforts to measure governance. In fact, we have argued that, for the purposes of measuring governance, there are few alternatives to the subjective, experiential data on which we rely. Even in cases where objective indicators of governance are available, we have noted that these too have implicit margins of error, and we have provided calculations indicating that these margins of error are on the same order of magnitude as those associated with our subjective aggregates. We have also provided evidence that the type of perceptions data on which we rely provides insights into governance that are difficult to obtain from more objective or quantifiable measures. For example, we have shown that firms' perceptions of the difficulty of starting a new business, or of their tax burdens, do not depend solely on the relevant legal framework governing business entry and taxation, but are also influenced by the degree of corruption in their country. This suggests that not only formal rules matter, but also the institutional environment in which these rules are applied and enforced. Thus, wherever objective data on governance or investment climate are collected, a comprehensive analysis of governance and institutional change ought to be complemented by data from the reports of the economic agents on the ground, such as firms or users of services, which inevitably will contain an element of subjectivity. Finally, to corroborate the relevance and validity of using subjective data, we have also empirically investigated, and for the most part discounted, the importance of ideological biases in the perceptions data from polls of experts on which we rely.

Policy makers are often particularly interested in *trends* in institutional quality: is governance improving or worsening over time in a particular country? As we have emphasized in our work, the presence of measurement error in all types of governance indicators, including our own, makes assessing trends in governance a challenging undertaking. In this chapter we developed a formal statistical methodology, as well as a simple rule of

thumb, for identifying changes in governance that are likely to be statistically and practically significant. Over the eight-year period from 1996 to 2004 spanned by our governance indicators, we find that in about 5 to 7 percent of countries we can be confident (at the 90 percent significance level) that governance has changed substantially. And at a lower 75 percent significance level, roughly 20 percent of all observed changes stand out as significant. Importantly, we show that there is a great deal of agreement among our many data sources about the direction of change in governance in these countries. Overall this reminds us that while change in institutional quality often takes place haltingly, gradually, or not at all, there are also countries where one can point to sharp improvements or deteriorations even over a fairly short eight-year period. Significant and rapid institutional change, while not the norm, is feasible and does take place in practice.

Finally, we have discussed two important issues that arise in interpreting the strong positive correlation between governance and income levels. Some observers have argued that these positive correlations are substantially due to ‘halo effects’ – perceptions of governance in rich countries are good simply because the countries are rich. We have argued that such halo effects would need to be implausibly large to account for cross-country correlations between governance and incomes.

We have also considered the frequently heard argument that poor levels of governance should be significantly discounted where the country is poor. Put differently, to what extent does it make sense to ask whether a country is well or poorly governed *given* its income level? This issue is often raised in the context of Sub-Saharan Africa, where too many countries are both very poor and very poorly governed. We make the simple observation that in order to answer this question, it is necessary to isolate the causal impact of income levels on governance. Simply relying on the observed correlation is inappropriate, as much of this reflects strong causal effects running from governance to per capita incomes. While identifying the effects of income on governance is difficult, the few available estimates suggest that this feedback effect is minimal. As a result, there is little basis on which to argue that the poor governance performance of many countries in Sub-Saharan Africa should be discounted simply based on low income levels.

In conclusion, it is important to keep some perspective on this contribution. While these aggregate governance indicators have been useful for eight years in providing a general snapshot of the countries of the world for various broad components of governance, and while their margins of error have declined over time, they remain a rather blunt instrument for specific policy advice at the country level. As we have argued in the past, these aggregate indicators need to be complemented with in-depth in-country governance diagnostics, based on micro surveys of households, firms and public

officials within the country. The lessons learned from these combined aggregate and micro datasets do point to the importance of moving concretely to the next stage of governance reforms in Africa and elsewhere. These lessons are, among others, to stress reforms to increase transparency (such as natural resource revenue transparency mechanisms, disclosure of assets of politicians, voting records of parliamentarians, political campaign contributions and fiscal accounts), to alter incentives in institutions so as to increasingly focus on prevention and deterrence (rather than overly relying on prosecutions), and to work more closely with other key actors outside the public sector as well, such as the heretofore neglected private sector.

Notes

- * This chapter is substantially based on our earlier paper 'Governance matters IV: governance indicators 1996–2004', www.worldbank.org/wbi/governance/pubs/govmatters4.html. We refer the interested reader to this paper for more details on our governance indicators and the underlying data. We would like to thank S. Radelet for excellent feedback, and M. Levy, G. Dunn, A. Karatnycky, R. Fullenbaum, A. Williamson, A. Bellver, S. Weber, D. Cingranelli, D. Richards, R. Writer, M. Wolkers, C. McLiesh, M. Gibney, C. MacCormac, M. Seligson, E. Kite, E. Hart, T. Sealy, D. West, M. Carballo, F. Ndukwe, M. Lagos, A. Lopes-Claros, R. Coutinho, S. Mannan and D. Cieslikowsky for providing data and answering our numerous questions. The support and collaboration of the World Economic Forum, the US State Department and the Netherlands government is appreciated. The views expressed here are the authors' and do not necessarily reflect those of the World Bank, its executive directors, or the countries they represent.
- 1. These are Acemoglu et al. (2000), Kaufmann and Kraay (2002), Alcalá and Ciccone (2004), and Rodrik et al. (2004).
- 2. This is just one example. Others include the use of the World Bank's Country Policy and Institutional Assessment (CPIA) ratings to determine the allocation of highly concessional lending in low-income countries, and the use of our indicators by the Netherlands development agency for monitoring governance in countries where it is active.
- 3. Focusing on the shorter 1998–2004 period (which has a larger country overlap) also yields a number of countries that have undergone large changes, such as the decline exhibited in Control of Corruption, Government Effectiveness and Rule of Law for West Bank/Gaza, Ivory Coast, Zimbabwe and Eritrea, and the deterioration in Voice and Accountability in Nepal, Kyrgyz Republic and Russia. The Slovak Republic, Croatia, Serbia, Bulgaria, Madagascar and Colombia all realized improvements over this period in Control of Corruption, as did Rwanda, Sierra Leone, Angola, Turkey, South Africa and Senegal in Political Stability/Violence.
- 4. See www.mcc.gov/ for details on the MCA eligibility criteria.
- 5. We first performed these MCA-related calculations in late 2002, shortly after the announcement of the initial MCA eligibility criteria. At that time, using the older version of our 2000 Control of Corruption indicator, we found that 23 out of 61 countries (or 38 percent of countries) fell in this intermediate zone. This much higher proportion of intermediate countries reflected the fact that the old version – the 2000 Control of Corruption indicator – relied on substantially fewer data sources than we now have available to us for both 2000 and 2004.
- 6. The simple example here is a special case of a more general model we discuss below.
- 7. See Kaufmann et al. (2004).
- 8. The discussion in this subsection is taken from Kaufmann et al. (2004). The calculations involving the governance indicators here are based on the 2002 indicators that were the latest available at that time.

9. These margins of error should of course also reflect measurement error in the raw data on which they are based – for example, the non-trivial measurement error in macroeconomic variables such as the money supply or the composition of public expenditures.
10. For the past number of years, collaboration between the World Bank Institute (WBI) and the World Economic Forum (WEF) has resulted in an in-depth coverage of governance in the survey, and in the WBI contribution of a governance chapter for each GCR. For details on the data we use for the text described above, and the related coverage of these governance issues at the micro-level, see the Governance chapter in the GCR 2004, at www.worldbank.org/wbi/governance/pubs/gcr2004.html.
11. The main source for the effective tax rates was the PricewaterhouseCoopers report 'Corporate taxes: worldwide summaries (2003–2004)', covering 85 of our sample of 104 countries. As some countries have differential tax rates, to map the country-level data from the report to the individual firm-level data from the GCS we used, in addition to country criterion, individual characteristics such as size, sector and whether the firm exports or not. For those countries for which the report has no information we used the country average calculated by KPMG in their 'Corporate tax rate survey'.
12. Recognizing that the dependent variable is one of many individual data sources entering in the regression, we lag the corruption measure and use the 2002 version.
13. Taken from the database of political institutions constructed by Beck et al. (2001).
14. See Kaufmann et al. (2004) for a more thorough discussion and for presentation of regressions results.
15. A recent statement of this critique can be found in Glaeser et al. (2004), who assert that much of the correlation between subjective measures of governance and levels of development is attributable to this type of bias.
16. We do not consider higher values for the true correlation than 0.6. This is because we are trying to see the extent to which halo effects might result in an observed correlation of 0.8 which is substantially higher than the true correlation. If the observed correlation and the true correlation are close to each other, then the halo effects argument becomes unimportant empirically.
17. In Kaufmann et al. (1999, Table 5), we show that the estimated margins of error would be roughly twice as large if we assume that the correlation of error terms across sources is 0.5 instead of 0.
18. For treatments of these effects in survey data, see Kaufmann and Wei (1999) and Hellman et al. (2000).
19. For example, in our discussions with Political Risk Services (PRS), we learned that this source penalizes rich countries that in their view have the resources to reduce corruption but fail to do so.
20. It is of course possible that halo effects are associated with countries' recent growth performance, rather than with income levels. We can use the analysis of this section to consider this case as well. The main insight is that since the correlation between recent growth and governance is typically fairly modest, growth-related halo effects would not need to be as large in order to impart a proportionately larger bias to this correlation.
21. See, for example, Hall and Jones (1999), Acemoglu et al. (2000), Kaufmann and Kraay (2002), Alcalá and Ciccone (2004), Rigobon and Rodrik (2004) and Rodrik et al. (2004).
22. We use their specification excluding democracy, which implies that a one standard deviation increase in log per capita GDP improves Rule of Law by 0.14 standard deviations. They use a different measure of Rule of Law for the mid-1990s taken from Knack and Keefer (1995). However, its correlation with our Rule of Law indicator is above 0.8, so we can reasonably use the estimated coefficient from this paper with our governance indicator, suitably standardized. Note also that in the system of equations estimated by Rigobon and Rodrik (2004) the conditional expectation of governance given per capita income also reflects the indirect effects of income on openness, which in turn affects the Rule of Law. However, these estimated indirect effects are so small that our conclusions are essentially unaffected by ignoring them.

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Appendix 2A Statistical significance of changes in aggregate indicators

In this appendix we extend the discussion in Section 2 to the problem of making inferences about changes over time in country governance based on our aggregate indicators. We develop a two-period version of the unobserved components model that we have used to construct the aggregate indicators in each period. We then use it to be more precise about the statistical significance of changes over time in our estimates of governance.

Let $y(j, k, t)$ denote the governance assessment provided by individual data source k in period t for country j . We use a two-period version of the unobserved components model to express this observed data as a linear function of unobserved governance in country j at time t , $g(j, t)$, and an error term capturing the various sources of measurement error that we have been discussing, $\varepsilon(j, k, t)$:

$$y(j, k, t) = \alpha(k, t) + \beta(k, t) \cdot [g(j, t) + \varepsilon(j, k, t)]. \quad (2A.1)$$

The intercept and slope parameters $\alpha(k, t)$ and $\beta(k, t)$ vary by data source and over time. As in our single-period model we assume that unobserved governance and the error terms are normally distributed with mean zero. We maintain the identifying assumption that unobserved governance and all the error terms are mutually independent, that is, $E[g(j, t) \cdot \varepsilon(j, k, s)] = 0$ for all sources k and periods t and s , and $E[\varepsilon(j, k, t) \cdot \varepsilon(j, m, s)] = 0$ for all sources k different from m and for all periods t and s . We also maintain as a choice of units that the variance of unobserved governance is one in each period, that is, $E[g(j, t)^2] = 1$ for all t . Our only substantive new assumption relative to the basic one-period unobserved components model that we use to construct our governance indicators is that unobserved governance is correlated over time, as are the error terms, that is,

$$E[g(j, t) \cdot g(j, t-1)] = \rho,$$

and

$$E[\varepsilon(j, k, t) \cdot \varepsilon(j, k, t-1)] = r_k \cdot \sigma(k, t) \cdot \sigma(k, t-1),$$

where ρ and r_k are the correlations over time of governance and the error term in source k , respectively.

Next let $y(j, t)$ denote the $K \times 1$ vector of observed data for each country; $\alpha(t)$, $\beta(t)$, $\sigma(t)^2$ and r denote the $K \times 1$ vectors of the parameters in period t ; and let $B(t)$, $\Sigma(t)$ and R denote $K \times K$ matrices with the vectors $\beta(t)$, $\sigma(t)^2$ and r on their diagonals. Then using the properties of the multivariate normal distribution, the joint distribution of unobserved governance in the

two periods in a country, conditional on the observed data for that country is normal with mean and variance:

$$E \begin{bmatrix} g(j, t) \\ g(j, t-1) \end{bmatrix} \middle| y(j, t), y(j, t-1) = \begin{pmatrix} \mathbf{1}' & \rho \mathbf{1}' \\ \rho \mathbf{1}' & \mathbf{1}' \end{pmatrix} \Omega^{-1} B^{-1} \begin{pmatrix} y(j, t) - \alpha(t) \\ y(j, t-1) - \alpha(t-1) \end{pmatrix}$$

$$V \begin{bmatrix} g(j, t) \\ g(j, t-1) \end{bmatrix} \middle| y(j, t), y(j, t-1) = \begin{pmatrix} 1 & \rho \\ \rho & 1 \end{pmatrix} - \begin{pmatrix} \mathbf{1}' & \rho \mathbf{1}' \\ \rho \mathbf{1}' & \mathbf{1}' \end{pmatrix} \Omega^{-1} \begin{pmatrix} \mathbf{1}' & \rho \mathbf{1}' \\ \rho \mathbf{1}' & \mathbf{1}' \end{pmatrix} \quad (2A.2)$$

where B is a block-diagonal matrix with $B(t)$ and $B(t-1)$ on the diagonal, and $\mathbf{1}$ is a $K \times 1$ vector of ones. The covariance matrix Ω has the following block form:

$$\Omega = \begin{pmatrix} \Omega_{11} & \Omega_{12} \\ \Omega_{21} & \Omega_{22} \end{pmatrix},$$

with $\Omega_{11} = \mathbf{u}' + \Sigma(t)$, $\Omega_{12} = \Omega_{21}' = \rho \mathbf{u}' + \mathbf{R} \Sigma(t)^{1/2} \Sigma(t-1)^{1/2}$, and $\Omega_{22} = \mathbf{u}' + \Sigma(t-1)$.

The conditional mean and variance in equation (2A.2) are just the two-period generalizations of the estimates of governance and their precision based on the one-period unobserved components model (see equations (2) and (3) in Kaufmann et al. 2004). In fact, if we set $\rho = r_k = 0$ for all sources k , then we recover exactly the estimates of governance that we had before. The advantage of this two-period formulation is that we now have specified the joint distribution of governance in the two periods for each country, conditional on the observed data in the two periods. Since we have modeled the joint distribution over the two periods of governance, we can base inferences about governance in the two periods, as well as changes in governance, on this joint distribution. We also note that the discussion of inference about changes over time in governance based on individual indicators in the previous section is just a special case of this more general formulation.²

We implement this two-period model using our actual dataset, over the 1996–2004 period. We restrict attention to a balanced set of sources that are available in both periods for the two indicators. In order to implement this calculation, we need to have estimates of the parameters of the model in both periods (the α s, β s and σ s), as well as estimates of the correlation over time of the errors in the individual sources (the r s) and the correlation of unobserved governance itself, ρ . We obtain these parameters in two steps. First, we estimate the one-period unobserved components model in 1996 and in 2004, to obtain estimates of the α s, β s and σ s. We refer to this as the ‘static model’ estimates. We also retrieve the estimates of governance

and standard errors from the static model, to use as a basis for comparisons with the two-period model. Second, we calculate the correlation over time of these static estimates of governance as an estimate of ρ . In this second step we also insert the estimated parameters of the static model into equation (2A.1) and retrieve estimates of the errors in the sources in the two periods as residuals. The correlation over time in these estimated residuals serves as our estimate of the correlation in the errors. We then insert all the estimated parameters, together with the data, into equation (2A.2) to obtain our final estimates of governance in the two periods conditional on the data, as well as the variance–covariance matrix of these estimates. We refer to these as the ‘dynamic model’ estimates.

Table 2A.1 summarizes the results of this calculation for the six governance indicators. In the top panel we present some summary statistics to aid in the comparison of governance estimates based on the single-period, or static model, and the two-period, or dynamic model. In the first two columns we report the correlation between the estimates of governance based on the static and dynamic models, in the two periods, 2004 and 1996. These correlations are virtually one for all six indicators in both periods, suggesting that our estimates of the governance levels do not change very much if we take into account persistence in governance and in the error terms. The third column reports the correlation of the change over time in the estimates of governance according to the two models. In light of the high correlations in levels between the two models, it is not very surprising that the correlation of changes is also very high, averaging 0.93 across the six indicators.

The next two columns of Table 2A.1 report the average absolute change in the governance estimates for the static and dynamic models. These changes are roughly half as large in the dynamic model as in the static model, averaging 0.17 and 0.32, respectively. The reason why the dynamic model gives much smaller estimates of the change in governance over time is because the estimated persistence in governance is quite strong relative to the estimated persistence in the error terms. Averaging across the six indicators, the persistence in unobserved governance is estimated to be 0.89. This is more than twice as large as the persistence in the error terms, which averages 0.42 across all sources and indicators. Based on our intuitions from the simple example above, we should expect to find substantially smaller estimates of the change in governance when we take this pattern of persistence into account, and this is in fact what happens.

The bottom panel of Table 2A.1 summarizes the consequences of this persistence for inference about changes in governance. Formally our objective is to test the null hypothesis that the change in unobserved governance is zero conditional on the observed data. We begin by calculating the

z -statistic associated with this hypothesis for each country, using the static and dynamic models. For the static model, we simply take the absolute change in our estimate of governance, and divide by the square root of the sum of the variances of the estimate of governance in the two periods. For the dynamic model, we calculate the variance of the change in governance as the sum of the estimated variances in the two periods, minus twice the estimated covariance between the two periods. The square root of this variance becomes the denominator of the z -statistic for the dynamic model. The average z -statistics are smaller in the dynamic model than in the static model, again consistent with the intuitions developed above. For the static model, the z -statistics average 0.82, as opposed to 0.59 for the dynamic model. This in turn implies fewer statistically significant changes in governance based on the dynamic model, as reported in the next two columns. The average number of significant changes at the 10 percent level falls by half from 21 to 10 once we take persistence into account.

Although a relatively small number of changes in the aggregate indicators signal statistically significant changes in unobserved governance, it is worth noting that the proportion of significant changes is much higher for the aggregate indicator than it is for individual indicators. Recall that only the top 1 percent of changes in an individual indicator with typical persistence in unobserved governance and the error term would be significant at the 90 percent level. This is not because individual indicators do not register large changes for individual countries – in fact frequently they do so. Rather, it is because the margins of error associated with changes in individual data sources are large. In contrast, for the aggregate indicators we find that between 5 and 7 percent of all changes signal statistically significant changes in governance at the same significance level, reflecting the greater precision of the aggregate indicators. This illustrates the benefits of aggregation for assessing changes over time, as well as levels, of governance.

Finally, it is useful to compare the statistically significant changes in governance identified by the dynamic model with the ‘large’ changes in governance we identified in Section 2 using a very simple rule of thumb. We begin by identifying all changes in governance based on the static model for which the 90 percent confidence intervals in the two periods do not overlap, as per the rule of thumb. Note that this is a more stringent condition for identifying significant changes in governance than the t -tests for the static model we have just discussed.³ On average, there are nine significant changes in governance per indicator according to this rule of thumb applied to the simple static model, as compared with 10 in the dynamic model. There is a remarkable degree of overlap between the significant changes identified by the rule of thumb and the dynamic model. On average, eight of the nine changes identified by the rule of thumb are also significant in the dynamic model.

Table 2A.1 Persistence and inference about changes in governance over time

Summary statistics							
	Correlations			Mean absolute changes		Persistence	
	Levels, 2004	Levels, 1996	Changes, 1996–2004	Static	Dynamic	Governance	
						Average for source errors	
VA	1.00	0.99	0.96	0.27	0.14	0.93	0.39
PV	0.99	0.99	0.98	0.44	0.30	0.78	0.39
GE	0.99	0.99	0.93	0.27	0.11	0.92	0.35
RQ	0.99	0.99	0.93	0.36	0.21	0.86	0.36
RL	0.99	0.99	0.88	0.23	0.12	0.94	0.53
CC	0.99	0.99	0.92	0.33	0.16	0.89	0.50
Average	0.99	0.99	0.93	0.32	0.17	0.89	0.42

Consequences of persistence for inference						
	Mean <i>t</i> -statistics		Number significant at 90%		Rule of thumb	
	Static	Dynamic	Static	Dynamic	Number significant	Also significant in dynamic model
VA	0.85	0.57	26	13	12	12
PV	0.91	0.78	21	18	14	14
GE	0.69	0.41	12	1	1	1
RQ	0.86	0.63	25	14	11	9
RL	0.73	0.55	16	7	7	5
CC	0.90	0.58	26	7	10	7
Average	0.82	0.59	21	10	9	8

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Key:
 VA = Voice and Accountability
 PV = Political Stability and Absence of Violence
 GE = Government Effectiveness
 RL = Rule of Law
 RQ = Regulatory Quality
 CC = Control of Corruption

Moreover, comparing the second- and third-last columns of this panel, it is clear that the dynamic model turns up very few significant changes not identified by the rule of thumb. Although the simple rule of thumb and the more formal model turn up more or less the same set of significant changes in governance, it is important to note that the magnitude of these changes is substantially smaller in the formal dynamic model.

In summary, we have developed a dynamic version of the single-period unobserved components model that we have used to construct our aggregate governance indicators. The advantage of specifying a dynamic version of the model is that it allows us to make formal statistical inferences about changes in unobserved governance based on our changes in the composite governance indicators. But this advantage comes at a cost. The two-period model is substantially more complicated to implement, particularly when the set of underlying data sources is not the same in both periods. Given that the number of data sources we use has expanded substantially over time, this is a significant limitation. Fortunately, however, we have seen that using a simple rule of thumb for identifying large changes over time in our static or single-period estimates of governance corresponds quite closely to formal inference regarding the significance of changes in governance. Because of this, we continue to use the single-period unobserved components model to construct the aggregate governance indicators in each period, and recommend using the simple rule of thumb that 90 percent confidence intervals do not overlap for identifying changes in governance that are likely to be statistically significant.

Notes

1. To obtain equation (2A.2), note that the $(2\mathbf{K} + 2) \times 1$ vector $[g(t), g(t-1), y(t), y(t-1)]'$ is normally distributed with mean $(0, 0, \alpha(t), \alpha(t-1))$ and variance–covariance matrix \mathbf{V} with the following block form:

$$V_{11} = \begin{pmatrix} 1 & \rho \\ \rho & 1 \end{pmatrix}, V_{12} = \begin{pmatrix} \nu' & \rho\nu' \\ \rho\nu' & \nu' \end{pmatrix} \mathbf{B} \text{ and } V_{22} = \mathbf{B} \mathbf{\Omega} \mathbf{B}'.$$

Standard results for the partitioned multivariate normal distribution imply that the distribution of governance conditional on the observed data is normal with mean and variance given by equation (2A.2).

2. To see this, set the number of sources $\mathbf{K} = 1$ and assume that $\alpha(t) = 0$, $\beta(t) = 1$ and $\sigma(t) = \sigma$ for this one source. Equation (2.5) then gives the conditional mean and variance of the level of governance in the two periods based on this single source. The expected change in governance conditional on the data is then just the difference between the conditional means in the two periods, and the conditional variance of the change is just the sum of the variances in the two periods less twice the covariance.
3. Requiring 90 percent confidence intervals not to overlap is equivalent to requiring the absolute change in estimated governance to be larger than the sum of the standard errors in the two periods. This sum is always larger than the square root of the sum of the squares of these standard errors.

3 Measuring institutions

Christopher Woodruff

Institutions are ‘the rules of the game in a society, or more formally, [the] humanly devised constraints that shape human interaction’ (North 1990, p. 3). In an abstract sense, there is a great deal of agreement on this definition. A perusal of recent literature suggests, however, that there is much less agreement on how to measure institutions empirically. How much better or worse are the economic institutions in the United States than those in France? Does the difference in institutional quality affect explain differences in economic outcomes between the two countries, and if so, how much of the difference?

Much work has been done and some progress has been made in recent years to identify the causal impacts of institutions on growth. Pathbreaking work by Mauro (1995), Knack and Keefer (1995), and others identified a correlation between measures of expropriation risk and corruption on the one hand, and economic outcomes on the other. The question then turned to one of causation. Does corruption cause negative outcomes, or do negative outcomes lead to more corruption? On this front, the work of Acemoglu et al. (2001) and Engerman and Sokoloff (2000) is particularly significant. These authors address the issue of causation by looking for deep historical differences that affected the formation of institutions in colonies of the European powers – mortality rates in the case of Acemoglu et al. and inequality driven by scale economies in the case of Engerman and Sokoloff.

But there is not yet universal agreement that these papers measure institutions properly. Glaeser et al. (2004) argue that the majority of the current measures of institutions used in the literature are measures of outcomes rather than institutions. Motivated by the example of North and South Korea, Glaeser et al. claim that the empirical measures of institutions used in the literature ‘cannot be plausibly interpreted as reflecting durable rules, procedures or norms that the term “institutions” refers to’ (p. 274). They suggest that differences in institutions are more properly measured by ‘objective institutional rules’, which essentially come down to differences in the structure of constitutions – judicial review, terms of appointments of supreme court justices, and the like. Glaeser et al. show that these measures have little relationship to aggregate economic outcomes. I shall revisit this argument in Section 1.

A separate issue is that even if we accept the evidence that institutions cause growth, we know little about which institutions are fundamental in this process. One problem, as we shall see when we look at the data later in this chapter, is that the various measures of institutions are very highly correlated. This makes separating the effect of different institutions extremely difficult. There are a few recent attempts to isolate the specific institutions which are responsible for better outcomes, including an important attempt to ‘unbundle’ institutions by Acemoglu and Johnson (2005), who examine the effect of broad property rights institutions and narrow contracting institutions, finding that only the former are important for economic outcomes. I discuss this effort in more detail in Section 3, because it illustrates many of the challenges involved in measuring institutions.

The intention of this chapter is to examine the various measures of institutions which have been used in the literature. Section 1 discusses three methods of measuring institutional quality which have been proposed in the literature. The measures can be divided according to several criteria. Some measure formal institutions, some measure a combination of formal and informal institutions; some are broad measures of property rights, others are narrow measures of specific institutions; some are based on impressionistic surveys of legal experts, academics or businesspeople, and others are based on an analysis of laws and constitutions. Are all of these measuring the same thing? Clearly they are not, but that may not matter if the measures are all sufficiently correlated with one another.

Examining the correlations between measures of institutions commonly used in the literature in Section 2, we find that measures using a common measurement method are generally highly correlated. This is less true when we compare measures using different measurement methods. Does this matter? That is, do measures produced with different measurement methods produce different empirical results? In Section 3, I show that they do, using both an example and evidence from the literature. In fact, I argue that the different methods of measuring institutions are actually measuring something different. The literature is generally consistent in telling us that formal institutional structures have little effect on outcome, while informal institutions – how laws are enforced – do matter.

Section 4 concludes.

1. The meanings and measurements of institutions

Empirical measures of institutions can be divided along several dimensions. Here I discuss the distinction between formal and informal institutions and between broad and narrow institutions. Usually, the measure of formal institutions will be ‘hard’ while measures of informal institutions will be ‘soft’. Hard measures are based on written documents which are

verifiable and not subject to judgment. Soft measures are impressions of experts or participants in an economy. Two questions that should be asked of any measure are: what are we measuring and what is left out?

A clear discussion of and rationale for measuring formal institutions is provided in Glaeser et al. (2004), who argue that we should focus on measuring institutions through 'objective institutional rules'. They discuss several examples of this approach, including differences in electoral laws (proportional representation versus majoritarian elections) and judicial independence. On the latter, Glaeser et al. use two measures of judicial independence developed in La Porta et al. (2004). One of these relates to the term of appointment of judges to the supreme court. The second relates to judicial oversight of legislation.

These are clearly hard, objective measures of constitutional differences. As a result, they are not subject to the criticism that their measure is influenced by the outcomes they are meant to predict. Experts, for example, may judge a country to be more corrupt after an economic crisis, but the measure of the term for which supreme court justices are elected cannot be similarly affected. The other critical issue – endogeneity caused by reverse causation or unmeasured differences – can be overcome by proper instrumentation. We shall see in Section 2 that many differences in political institutions are highly correlated with legal origin. Using this instrument, Glaeser et al. show that the connection between these measures and economic outcomes is not strong.

Measuring institutions through formal, hard, measures resolves issues of subjective bias. But, how complete a picture of the institutional environment do these measures capture? Take the example of Peru and judicial independence, as measured by La Porta et al. (2004). These data on judicial independence are based on the length of the terms of supreme court and administrative court judges, the supreme court's control over administrative courts, and the power of administrative judges. Peru receive a perfect score of seven according to these measures, which were captured in 1995, during the Fujimori administration. Constitutionally, it was a perfect place for an independent judge. As McMillan and Zoido (2004) colorfully point out, the reality was somewhat different. In fact, Peru's judicial opinions were available for purchase, and the sales agent was Alberto Fujimori's right-hand man. Clearly something remains uncaptured in the picture of the institutional environment painted by the hard measures of constitutional design.

If formal measures of institutions involving an analysis of constitutions leave something out, what are the alternatives? One answer is that the institutional environment varies both in the formal laws that govern interactions and in the way in which formal laws and rules are implemented and

enforced in a country or region. I refer to the differences in the way in which laws are enforced as differences in the informal institutions which govern a country. As the Peru example makes clear, there is unquestionably something fundamental about the institutional environment which is not captured by the formal measures. From an empirical point of view, the existence or importance of differences in informal institutions is only part of the question. The other part is whether it is possible to develop a measure of informal institutions which is independent of the outcomes we are trying to explain.

Social scientists have used several measurements which capture both differences in formal constitutional arrangements and differences in informal institutions. The most commonly used measures of this sort are those derived from the opinions of panels of experts – academics, practitioners or consultants. Examples of these are the Political Risk Services (PRS) measures of country risk, including the widely used risk of expropriation measure, Transparency International's index of corruption, and the World Bank's World Business Environment Survey.

How do these measures differ from the measures of constitutional differences previously discussed? Take the example of indices produced by PRS, a consulting firm providing information to investors such as multinational firms. PRS produces various measures of investment risk. One which has been widely used is expropriation risk (Knack and Keefer 1995; Acemoglu et al. 2001), which measures the likelihood that a private investment will be captured by the state. A private investor's ability to protect an investment depends partly on the formal institutional structure of a country – constitutional rules governing the independence of the judiciary, for example. But expropriation risk depends on how the constitution is implemented and how laws are enforced as well – that is, on informal institutions. Expropriation risk, then, measures a combination of formal and informal institutions. Assuming that the endogeneity issues can be properly dealt with, these measures will allow us to determine the effect of the overall institutional quality on economic outcomes.

At one extreme we have hard measures of formal institutions and at the other, soft measures which represent a mixture of formal and informal institutions. There are also measures which fall between these two extremes – that is, they are 'harder' than these impressionistic measures, but softer than the constitutional measures. Here I shall discuss two of these. The first is one which has been widely used in the economics and political science literature, the Polity IV measure of constraint on the executive. The description of this index in the Polity IV manual indicates that it measures the independence of the legislature and judiciary from executive control. One can justify a focus on constraint on the executive because the executive

is in the best position to unilaterally divert the power of the state for his or her own gain.¹ There are two potential issues with the Polity IV measure. The first is pointed out by Glaeser et al. (2004), who argue that although the measure has the appearance of being a hard measure based on constitutional differences, it should be viewed as a measure based on expert opinion. Glaeser et al. view the constraint on the executive as representing a measure of outcomes rather than institutions. They point to rapid changes in the constraint index unaccompanied by any changes in the country's constitution – for example, following elections during the 1990s in Haiti or Peru.

The second issue with the Polity IV measure is that the diversion of the state's power can occur at all levels of government, while the Polity IV measure applies to the executive. In practice, this may be less of a concern where the measure focuses on the independence of the judiciary. Institutions which constrain the executive are also likely to constrain lower-level authorities.

The measure of the constraint of the executive is clearly harder than the impressionistic measures from consulting firms and surveys. But the measure still has some impressionistic components. Another important set of measures of the institutional environment which might be placed in a similar position along the hard–soft line are those associated with the World Bank's 'Doing Business' project. These include formal indicators of the costs of entry, labor regulations, contract enforcement and other aspects of running a business. While most of the Doing Business measures are developed by law and consulting firms, they are intended to be comparable measures of the time and cost required to take certain well-specified actions. For example, contract enforcement is based on responses from lawyers to questions related to a very well-specified situation: the collection of a debt representing 200 percent of GDP per capita, in the capital city, where the plaintiff is 100 percent in the right, and so on. So although based on surveys, these measures are harder than those from other surveys.

As with the formal constitutional measures, we might ask whether the Doing Business indicators fully capture the relevant institutional environment. One answer to this question is anecdotal: on legal formalism, Vietnam scores somewhat better than either France or Germany. One doubts whether there are many businesspeople who would rather trust their fate to courts in Vietnam than to courts in France or Germany. A more balanced answer comes from the analysis undertaken by Djankov et al. (2003), who show that formalism is a highly significant determinant of broader measures of the enforceability of contracts, the impartiality of the legal system, and so forth.² Although they do not report the *R*-squares for their regressions, it is clear that formalism explains only a part of the broader

measures of the effectiveness of the legal system, and that these broader measures of the ability to enforce contracts are affected by factors other than legal formalism, such as ethnic fractionalization.

A final issue worth noting is the time over which measures are available. Empirical studies of the impact of institutions on economic outcomes did not become the subject of academic investigation until the first part of the 1990s. Even though consulting firms were publishing indicators before that time, most measures of institutions used in the literature go back no earlier than 1980. The IRIS-3 dataset, compiled by Knack and Keefer (1995), covers the 1982–97 period. The Heritage Foundation has produced the Freedom Index, and its components, annually since 1995. Mauro (1995) uses *Business International* data from 1980 to 1983. A few indices have been created retroactively. One notable example of this is the Polity IV data, which extend back to 1800.

2. Consistency across sources

How closely correlated are the various hard and soft measures of the institutional environment? We examine that question here using a variety of measures commonly used in the literature. If the measures are all very highly correlated, then perhaps differences in methodologies are not empirically important. We divide the measures into three categories: broad property rights and corruption; the legal and regulatory environment; and constitutional differences determining political institutions. We also examine correlations between these variables and three variables which have most commonly been used as instruments: settler mortality, English legal origin and distance from the equator.

The most varied set of measures relates to what we might think of as broad property rights. How well does the state protect investments of private individuals? In the short run, the state has an incentive to use its power to expropriate. What constrains it from doing so? The current measures of choice for broad institutions are the risk of expropriation developed by PRS, and the Polity IV measure of constraints on the executive. The political economy literature (see Persson et al. 2003; Gerring and Thacker 2004; and Kunicová and Rose-Ackerman 2005) uses indices of corruption from Transparency International (TI) and the World Bank (WB, Kaufmann et al. 2002). Mauro's early paper in this literature used Business International's (BI) corruption perceptions index. The correlations among these five variables are shown in the top half of Table 3.1.

The three indices of corruption – TI, WB and BI – are all very highly correlated, with correlations of 0.77 or higher. The index of risk of expropriation appears to be measuring something very similar. The correlations between expropriation risk and the corruption measures are also generally

quite high – above 0.70 in the case of the TI and WB indices. Constraint on the executive, which is constructed in a different way from the other indices, does appear to be measuring something different from the pure perceptions indices. The correlations between constraint on the executive and the measures of corruption range from 0.45 to 0.55.

Table 3.1 includes six measures of political institutions used in recent papers. The first two, unitarism (anti-federalism) and parliamentarism are from Gerring and Thacker (2004). Unitarism measures the degree of centralization of power.³ District magnitude and proportional representation are the political measures used by Persson et al. (2003). These are measures of electoral rules, with district magnitude representing how close the electoral system comes to single-member districts and proportional representation reflecting the use of party lists as opposed to direct election of members of the legislature. Finally, judicial independence and constitutional review by the judiciary are taken from La Porta et al. (2004). A higher value for judicial independence indicates that supreme court and administrative justices are appointed for longer terms, while judicial review indicates the constitutional right of the judiciary to review the constitutionality of the country. Each of these, then, represent quite formal measures of political institutions, based on constitutional differences rather than expert opinions.

Of the formal measures of political institutions, only parliamentarism is strongly correlated with broad measures of property rights, and even in this case, the correlation is 0.57 or lower. The formal measures of political institutions are clearly measuring something quite different from the measures of broad institutions. Note that the formal measures of judicial independence and judicial review are only very weakly correlated with constraints on the executive. This could be, as Glaeser et al. argue, because the Polity IV indices measure something very different from formal constraints on the executive, and should therefore be viewed as endogenously constructed indices. Alternatively, the lack of correlation may suggest that the appointment terms and constitutional reviews of laws are poor measures of the power of the judicial branch, or that the power of the judicial branch is not the most important constraint on the executive branch.

Finally, Table 3.1 includes three instruments for institutions most often used in recent literature. Settler mortality is strongly correlated with distance from the equator (0.56), and somewhat correlated with English legal origin (0.32). With the exception of parliamentarism, English legal origin is more closely associated with formal political measures, and distance to the equator and settler mortality are more closely associated with the broad property rights and corruption measures.

Table 3.2 replaces the measures of broad institutions with measures of the quality of the legal system and the regulatory environment. Some of these

Table 3.1 Correlations of measures of broad institutions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Political risk	Const. on exec.	Corrupt. percept.	WB corrupt.	BI corrupt.	Unitarism	Parliament.	Prop. rep.	Dist. mag.	Judicial indep.	Const. review	Settler mortality	English legal	Distance equator
<i>Measures of broad institutions</i>														
Political risk index														
Constraints on executive	0.37													
Corruptions perception index	0.76	0.55												
World Bank corruption index	0.74	0.52	0.94											
Business International corruption index	0.55	0.45	0.82	0.77										
<i>Measures of political institutions</i>														
Political unitarism	-0.33	-0.23	-0.04	-0.08	0.07									
Parliamentarism	0.43	0.54	0.54	0.57	0.32	-0.04								
Proportional representation	-0.21	0.40	0.20	0.15	0.18	0.05	0.08							
District magnitude	-0.23	0.26	0.22	0.16	0.19	0.13	0.11	0.83						
Judicial independence	0.31	0.15	0.23	0.25	0.23	0.06	0.29	-0.17	-0.18					
Constitutional review	-0.15	0.11	-0.16	-0.18	-0.12	-0.26	-0.07	-0.16	-0.13	0.07				

<i>Instruments</i>										
Log settler mortality	-0.65	-0.52	-0.71	-0.64	-0.55	<i>0.34</i>	-0.56	0.02	0.02	-0.21
English legal origin	0.38	0.04	0.13	0.15	0	-0.17	<i>0.22</i>	-0.54	-0.56	0.49
Distance from equator	0.49	0.51	0.81	0.81	0.72	0.03	0.52	0.18	0.15	0.24
										-0.07
										-0.56
										-0.13

Note: Correlations significant at the 0.01 level shown in bold; correlations significant at the 0.05 level shown in italics.

Sources by column: (1) Acemoglu and Johnson (2005); (2) Polity IV database; (3) Transparency International from Gerring and Thacker (2004); (4) Kaufmann et al. (2002); (5) Mauro (1995); (6) and (7) Gerring and Thacker (2004); (8) and (9) Persson et al. (2003); (10) and (11) La Porta et al. (2004); (12) and (13) Acemoglu and Johnson (2005); (14) Levine et al. (2000).

Table 3.2 Correlations of measures of legal/regulatory institutions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	WB legal	Heritage	DB	DB	BI red	WB	DB	DB
			check	eviction	tape	regulatory	employ.	collective
<i>Measures of legal/regulatory institutions</i>								
Heritage property rights	0.91							
Doing Business check index	-0.43	-0.47						
Doing Business eviction index	-0.34	-0.35	0.86					
BI red tape	0.76	0.74	-0.39	-0.34				
World Bank regulation	0.84	0.80	<i>-0.25</i>	<i>-0.13</i>	0.70			
Doing Business employment laws index	-0.43	-0.47	0.58	0.43	-0.43	-0.36		
Doing Business collective bargaining index	<i>-0.16</i>	<i>-0.22</i>	0.46	0.44	<i>-0.26</i>	<i>-0.19</i>	0.49	
WB corruption index	0.91	0.87	-0.47	-0.35	0.77	0.75	-0.45	<i>-0.14</i>
<i>Measures of political institutions</i>								
Political unitarism	<i>-0.08</i>	<i>-0.14</i>	<i>0.02</i>	<i>0.06</i>	<i>0.08</i>	<i>-0.03</i>	<i>0.04</i>	<i>-0.01</i>
Parliamentarism	0.59	0.59	-0.44	-0.31	<i>0.28</i>	0.46	-0.38	<i>-0.10</i>
Proportional representation	<i>0.13</i>	<i>0.05</i>	0.31	0.31	<i>0.09</i>	<i>0.21</i>	0.32	0.35
District magnitude	<i>0.16</i>	<i>0.08</i>	0.32	0.32	<i>0.14</i>	0.30	0.33	<i>0.29</i>
Judicial independence	<i>0.31</i>	0.38	-0.36	-0.38	<i>0.33</i>	<i>0.29</i>	-0.48	-0.35
Constitutional review	<i>-0.01</i>	<i>0.02</i>	<i>0.16</i>	<i>0.13</i>	<i>-0.09</i>	<i>0.01</i>	<i>0.05</i>	<i>0.29</i>
<i>Instruments</i>								
Log settler mortality	-0.66	-0.59	<i>0.34</i>	<i>0.24</i>	-0.59	-0.50	0.45	<i>0.19</i>
English legal origin	<i>0.17</i>	0.23	-0.57	-0.50	<i>0.08</i>	<i>0.13</i>	-0.59	-0.58
Distance from equator	0.84	0.74	-0.44	-0.32	0.64	0.64	<i>-0.28</i>	<i>-0.09</i>

Notes: Correlations significant at the 0.01 level shown in bold; correlations significant at the 0.05 level shown in italics.

Sources by column: (1) and (6) World Bank Governance Indicators; (2) Heritage Foundation website; (3) and (4) Djankov et al. (2003); (5) Mauro (1995); (7) and (8) Botero et al. (2004); (9) Kaufmann et al. (2002); (10) and (11) Gerring and Thacker (2004); (12) and (13) Persson et al. (2003); (14) and (15) La Porta et al. (2004); (16) and (17) Acemoglu and Johnson (2005); (18) Levine et al. (2000).

(9)			(12)	(13)	(14)	(15)	(16)	(17)
WB	(10)	(11)	Prop.	Dist.	Judicial	Const.	Settler	English
corruption	Unitarism	Parliament.	rep.	mag.	indep.	review	mortality	legal
<hr/>								
-0.08								
0.57	-0.04							
0.15	0.05	0.08						
0.16	0.13	0.11	0.83					
0.25	0.06	0.29	-0.17	-0.18				
-0.18	-0.27	-0.07	-0.16	-0.13	0.07			
-0.63	0.34	-0.56	0.02	0.02	-0.21	0.15		
0.15	-0.17	0.22	-0.54	-0.56	0.49	-0.07	-0.32	
0.81	0.03	0.52	0.18	0.15	0.24	-0.07	-0.56	-0.13
<hr/>								

measures are derived from impressionist surveys – the Heritage Foundation measure of property rights and the World Bank measure of rule of law – and others are based on procedural differences – labor regulations and contract enforcement from the Doing Business series. Here, there is a clear divide between the impressionistic measures of legal and regulatory quality on the one hand, and the Doing Business measures on the other. For example, the WB measure of legal institutions is correlated with the Heritage legal measure and the WB and BI measures of regulatory environment at levels of

between 0.76 and 0.91. The correlations with the Doing Business measures of legal and regulatory efficiency range from 0.16 to 0.43. The strongest correlates with the Doing Business measure of contract enforcement are the Doing Business measures of labor regulation, and vice versa.

The correlations on Table 3.2 also indicate that the Doing Business measures are more closely associated with the measures of formal political institutions, and English legal origin, while the impressionistic measures of legal and regulatory efficiency are more closely associated with settler mortality and distance from the equator. As with the broad measures of institutions on Table 3.1, among the measures of political institutions, only parliamentarism is consistently associated with the impressionistic measures.

Table 3.2 also includes one of the corruption measures, as representative of the quality of broader institutions. There is an extremely high correlation between the World Bank's corruption measure and the World Bank and Heritage measures of legal institutions (0.91 and 0.87, respectively). The correlations between the corruption measure and the various impressionistic regulatory measures are only slightly weaker. Again, the correlations between corruption and the Doing Business measures are much lower.

Overall, the data on Tables 3.1 and 3.2 suggest that there is a divide between hard measures of institutions, based on constitutional differences and formal procedures, and soft measures of institutions, those with a stronger impressionistic component. Constitutional differences in elections, appointment of judges and so forth, are strongly correlated with the Doing Business measures of procedural formalism and with English legal origin. The impressionistic measures of broad institutions and legal/regulatory institutions are highly correlated with one another and with settler mortality and distance from the equator. These measures are more weakly correlated with formal constitutional differences. Interestingly, the formal constitutional measure which is most strongly correlated with the measures of broad institutions and the impressionist measures of the legal and regulatory environment – parliamentarism – is also the formal measure most highly correlated with settler mortality and distance from the equator.

3. What do we know about which institutions matter?

Empirically, why does it matter how institutions are measured? One answer to this question begins with a specific reference to current efforts to 'unbundle' institutions (Acemoglu and Johnson 2005).⁴ Acemoglu and Johnson examine the impact of two distinct measures of institutions – broad property rights and narrow contracting institutions – on income per capita and other macroeconomic outcomes. As in their earlier work, they focus on

countries which were formerly colonies of European powers. Their clever idea is to identify separate instruments for the two institutional variables. Key to their strategy is that the instruments separate along institutional lines. They show that settler mortality and indigenous population density in 1500 affect their measures of broad institutions, but not their measures of contracting institutions, and that English legal origin affects contracting institutions but not broad property rights institutions. Using these instruments to address the endogeneity of both institutional variables at the same time, they conclude that broad measures of property rights cause economic outcomes, but narrow measures of contracting institutions do not.

Is this the correct conclusion to reach from the data? In their paper, broad institutions are measured using the PRS index of expropriation risk or the Polity IV measure of constraint on the executive. Contracting institutions are measured by legal formalism – indices of the number of procedures needed to collect on a bounced check or to evict a derelict tenant from a rental property which were developed in Djankov et al. (2003). The measure of expropriation risk clearly measures some combination of formal institutional factors and the informal institutional environment. As Glaeser et al. (2004) point out, the Polity IV measure of constraints on the executive often changes even without changes in formal constitutional constraints. Thus, the constraint on the executive should also be seen as measuring a combination of formal and informal institutions.

As the correlations in Table 3.2 indicate, the legal formalism indices developed in Djankov et al. (2003) do not measure quite the same thing. The indices are based on a combination of measures on the number of steps involved in prosecuting a claim, the channels for appearing and so forth. As discussed above, Djankov et al. do show that formalism is a highly significant determinant of broader measures of the enforceability of contracts, but also that these broader measures of the ability to enforce contracts are affected by factors other than legal formalism, such as ethnic fractionalization. In this sense, legal formalism should be viewed primarily as a measure of formal institutional structure, while the broader measures of enforcement of contracts are combinations of formal and informal factors.

There are therefore two dimensions along which the measures of institutions used by Acemoglu and Johnson vary. The first is that expropriation risk is a measure of broad property rights while legal formalism is a measure of narrow contracting. The second is that their measures of broad property rights measure both formal constitutional differences and informal institutional differences, while legal formalism is more purely a measure of formal institutions. There are also, then, two alternative interpretations for the finding that the property rights measures enter significantly in outcome regressions while the contracting institutions do not. The first is that given

by Acemoglu and Johnson, that broad institutions are more important than narrow institutions. The second is that informal institutions (and anything else that might be bundled into the impressionistic measures) are more important than formal institutions.

One way to differentiate these two interpretations is to replace the legal formalism measure with a broader measure of the functioning of the legal system. Table 3.3 shows results from an exercise which begins by reproducing (nearly) the regressions in Acemoglu and Johnson's Table 4.⁵ The first three columns of the table measures broad property rights with the index of expropriation risk, while the second three columns use the index of constraints on the executive. Columns 1 and 4 reproduce the results from Acemoglu and Johnson. The second and fifth columns report ordinary least squares (OLS) regressions replacing the legal formalism measure of eviction with the Heritage Foundation's Property Rights index. The Heritage index measures the 'efficiency within the judiciary, and the ability to enforce contracts'. That is, it is a broader measure of the legal institutional environment, constructed in a manner similar to the expropriation risk index. Using the Heritage measure of contracting institutions, both property rights and contracting institutions are significant in OLS

Table 3.3 Regressions on log per capita income

	IV original	OLS	IV	IV original	OLS	IV
Average protection against risk of expropriation	1.09 (0.21)	0.32 (0.10)	2.76 (2.44)			
Constraint on the executive				0.75 (0.18)	0.21 (0.06)	0.80 (0.33)
Legal formalism (eviction measure)	0.39 (0.17)			0.05 (0.18)		
Heritage Foundation index of quality of legal system		-0.43 (3.00)	2.63 (3.23)		-0.57 (0.11)	0.13 (0.54)
First-stage results						
Log settler mortality	-0.72 (0.15)		-0.72 (0.15)	-0.94 (0.21)		-0.94 (0.21)
English legal origin	0.39 (0.34)		0.39 (0.34)	0.39 (0.46)		0.39 (0.46)
Log settler mortality	0.18 (0.12)		0.48 (0.11)	0.13 (0.12)		0.46 (0.11)
English legal origin	-1.98 (0.27)		-0.54 (0.24)	-1.90 (0.26)		-0.50 (0.24)
Number of observations	42	42	42	41	41	41

Note: Standard errors in parentheses. Bold indicates significance at the 0.10 level or higher.

regressions. Moreover, the two instruments no longer separate in the first-stage regression. The log of settler mortality enters significantly in both first-stage regressions. In the second stage of the IV regression using expropriation risk to measure broad institutions (Column 3), neither institutional variable enters significantly. When constraint of the executive is used instead (Column 6), expropriation risk enters significantly and the contracting environment does not. But, we should interpret these results with much caution given the lack of separation of instruments in the first stage.

The results in Table 3.3 suggest that the Acemoglu and Johnson regressions might more appropriately be read as indicating that formal institutions have little effect on broad economic outcomes, while informal institutions have a more significant effect. This makes the results consistent with those found by Glaeser et al. They also follow a pattern in the empirical work in the literature: measures of institutions which are found to have significant effects on broad economic outcomes are almost without fail measures which are based on measures incorporating a mixture of formal and informal institutions.

If one accepts this interpretation, then the Acemoglu and Johnson results are consistent with those of Glaser et al.: formal institutions do not matter. Is there, then, any evidence that formal constitutional differences affect economic outcomes? The answer is at least a tentative yes. The best evidence in support of a formal institutional effect is provided by Persson and Tabellini (2003). They examine the effect of political institutions on two output measures – output per worker and total factor productivity. The most robust results come from their measures of district magnitude (having districts with multiple seats is better) and the use of party lists (less is better). They also find that these same variables are significant when measures of corruption are used as the dependent variable. Less robust results show that presidential systems are associated with lower output per worker than parliamentary systems.

Acemoglu (2005) challenges the Persson and Tabellini results on several grounds. The most important of Acemoglu's criticisms relates to endogeneity issues. The issue in this case is not so much reverse causation as missing variables. In Acemoglu's words: 'political institutions are equilibrium outcomes, determined by various social factors that are not fully controlled for in the empirical models' (p. 1033). Although Persson and Tabellini do present results in which political institutions are instrumented, the instruments are subject to some criticism. I will not repeat Acemoglu's critique here. But an example of one of the issues is the use of ethno-linguistic fractionalization as an instrument. Ethno-linguistic fractionalization is a measure which is certainly affected by the quality of a country's education system, which is itself a determinant of output per worker. This

is not the only instrument which fails the exclusion restriction. In spite of these issues, however, Persson and Tabellini's work suggests that there may well be a connection between formal institutional measures and broad economic outcomes.

The work of Persson and Tabellini and that of other researchers suggest that one specific channel through which political institutions affect economic outcomes is through their effect on the level of corruption. This argument has theoretical as well as empirical support. An early theoretical argument connecting political institutions to the level of rent seeking was made by Myerson (1993).⁶ In addition to the work of Persson and Tabellini, several other recent papers have focused on the link between political institutions and corruption. Most of these have used broad measures of the latter – either the TI index of corruption perception or an index developed by Kaufmann et al. (2002) at the World Bank. They differ in their choice of right-hand-side variables. Gerring and Thacker (2004) focus on the presidential/parliamentary divide and the degree to which power in the country is centralized – a combination of the extent of federalism and the structure of the national legislature, as described above. They find that higher degrees of centralization (less federalism) and parliamentary systems are associated with lower levels of corruption. Persson et al. (2003) and Kunicová and Rose-Ackerman (2005) focus on electoral rules. Persson et al. find that a higher percentage of single-member districts and a larger percentage of legislators elected through party lists are both associated with higher levels of corruption. Kunicová and Rose-Ackerman use the Kaufmann et al. measure of corruption and show that the results from these first two papers hold even when they are in regressions which control both for electoral rules similar to those used by Persson et al., and for federalism and presidentialism, as in Gerring and Thacker.⁷

Again, none of these papers addresses endogeneity concerns in a satisfactory manner, but they do connect empirical evidence with theory. At present this appears to be the most promising area for isolating the effects of specific formal institutions. The measures of corruption shown in Table 3.1 do appear to stand up to the Acemoglu–Johnson instruments.⁸ If in fact formal political institutions do affect the level of corruption, then this is an important step in identifying specific institutions which can be changed and which affect economic outcomes. There are other possibilities, of course. One is that corruption has two components, a growth-benign component which is affected by the formal institutional structure, and a growth-hampering component that is not. In that case, even a change which reduced corruption might not have the expected effect on output.

Although measures which isolate formal institutions are beginning to appear with more frequency in the literature, measures which isolate

informal institutions are much more challenging to develop. Most indicators of institutional quality which capture the enforcement of laws are based on impressionistic surveys of judges, lawyers or academics. These might reasonably be expected to be influenced both by formal laws and the efficiency with which those laws are enforced. Laeven and Woodruff (2005) use cross-regional data from a single country – Mexico – to isolate the impact of informal institutions. Mexico is an interesting case in this regard, because a single political party controlled all branches of state and federal government for a period of over 70 years. Hence, the formal laws governing economic relationships were very homogeneous at the end of this period of one-party rule. As a result, perceived differences in institutional quality reflect differences in the enforcement of laws rather than differences in laws themselves. Laeven and Woodruff show that higher-quality informal institutions – instrumented with historical indigenous population and prevalence of high-scale economy crops – are associated with larger firm sizes.

4. Conclusions

The past ten years have produced many studies providing credible evidence that the quality of institutions has a causal effect on broad economic outcomes. But which institutions? And what are the policy changes which will improve the quality of the institutions which do matter? From a policy perspective, it is unfortunate that the strongest evidence we have relates to the impact of informal institutions on broad economic outcomes. Informal institutions result from particular equilibria largely determined by history. As a result, they are likely to be the most difficult to change. One cannot propose that countries change their history or relocate further from the equator.

The project of unbundling institutions is critically important to developing more practical policy prescriptions. This work has begun from two different perspectives. First, Acemoglu and Johnson have attempted to unbundle institutions by identifying distinct and separable instruments. Second, Persson, Tabellini and others have begun looking for specific political institutions, and specific channels through which those institutions affect outcomes. Neither of these lines of research has reached the point of providing definitive evidence. As we have seen, the Acemoglu and Johnson unbundling is subject to alternative interpretations. And the political institutions to corruption channel, while quite credible, is not yet convincing in its handling of endogeneity issues.

One of the striking features of the correlations shown in Tables 3.1 and 3.2 is that variables closely associated with English legal origin rarely stand up to instrumentation, while those associated with settler mortality and distance from the equator are much more likely to do so. This would suggest

that parliamentarism is most likely to stand up to instrumenting. But finding a significant result for one of many measures of political institutions should leave us a little worried.

We need not all agree on a single correct measure of institutions to use, because the various indices are measuring different phenomena. But we should realize that these measures on the one hand are measuring different forms of institutions, and on the other, are correlated with one another. These two attributes makes the challenge of unbundling institutions quite difficult. Indeed, the challenge of identifying the impacts of specific formal institutions on economic outcomes is a daunting one. Almost any cross-country or cross-regional study will be subject to the criticism that a measured institution is correlated with other measured or unmeasured institutions. We may quickly reach the limits of what can be said with this approach.

The alternative to the broad cross-regional study is to examine the effects of more-focused policy changes. We are beginning to assemble evidence from ‘policy experiments’ which show that, at the micro level, changes in formal structures do result in changes in economic outcomes (Reinikka and Svensson 2004; Olkun 2006). These micro studies may, when aggregated together, be able to provide guidance on which specific institutions have larger effects on the economy, and what the overall effect might be. The micro studies are also a source of evidence on how difficult combating corruption is. Both Di Tella and Schargrotsky (2003) and Yang (2005) examine cases where changes in incentives led not to the elimination of corruption, but to its diversion. But perhaps by replicating policy experiments in countries with different institutional environments, we will learn something more definitive about how the institutional environment affects incentives.

Notes

1. The Polity IV constraint measure includes some reference to the judiciary, but focuses mainly on the legislature as the constraining power. For example, the users’ manual describes the highest level of executive constraint as follows:
 - (1) A legislature, ruling party, or council of nobles initiates much or most of the important legislation.
 - (2) The executive (president, premier, king, cabinet, council) is chosen by the accountability group and is dependent on its continued support to remain in office (as in most parliamentary systems).
 - (3) In multi-party democracies, there is chronic ‘cabinet stability’.

The national legislature is less likely than the judiciary to provide constraints on lower-level executives, for example, mayors.

2. Djankov et al. use various measures from the World Bank’s World Business Environment Survey and the measure of contract enforceability from the Business Environment Risk Intelligence service.

3. Gerring and Thacker define unitarism on a scale of 1–5. Five is non-federal, 4 is semi-federal and 3 is federal. They then subtract one if the legislature is weakly bi-cameral and two if the legislature is strongly bi-cameral. Federalism is measured from 1–3, with 1 representing a presidential system, 3 a parliamentary system and 2 a semi-presidential system.
4. I choose the Acemoglu and Johnson paper as an illustration of what I believe is a more general point. I am not trying to pick on this particular paper. Indeed, it is only because they have been so careful in citing the sources for their data that the exercise I carry out here is possible.
5. I have one fewer observation than Acemoglu and Johnson do when I use the legal formalism measure based on eviction. I have 5 more observations when I use the measure based on checks, and the results are further from those in the original paper. I therefore focus on the eviction measure, though the story is similar when the checks measure is used. The regressions use the average value of the Heritage index for the 1995–2004 period. However, the results are almost identical if the average over the 1995–99 period and 2000 log GDP per capita are used instead.
6. Persson et al. (2003) and Kunicová and Rose-Ackerman (2005) review the theoretical literature.
7. Among these papers, only Persson et al. discuss endogeneity issues. Reverse causation, which is clearly an issue when one considers the effect of corruption (or other institutional measures) on aggregate economic outcomes, is less clearly a problem in measuring the effect of political institutions on corruption. Concerns with endogeneity caused by unmeasured factors causing both the choice of political institutions and growth are a more serious issue in this case.
8. They are highly significant in an IV regression of the form used in Table 4 of Acemoglu and Johnson (2005). Given the correlation between these measures and the measure of risk of expropriation, this is not surprising.

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PART II

CORRUPTION AND INSTITUTIONAL STRUCTURE

4 Bargaining for bribes: the role of institutions

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Much time and effort has been devoted to assessing the extent of corruption across firms, industries and countries, and the effects that bribery has on various social and economic outcomes. The correlation between the level of corruption and growth has been firmly established at the cross-country as well as at the firm level, indicating that a high level of corruption has a negative impact on economic development. For example, early work from Mauro (1995) shows that corruption is strongly associated with lower growth at the country level, while Svensson (2003) reached similar conclusions using data from firms in Uganda.

Among the set of countries where corruption is perceived to be rampant, there nonetheless has been tremendous heterogeneity in the level of economic performance over the past several decades. For example, parts of Southeast Asia have thrived, while Sub-Saharan Africa has stagnated. Many nations in both regions are perceived to be very corrupt. This evidence leads to the question – largely unexamined in the economics literature thus far – of whether there exist institutional and social features that mitigate the growth-retarding effects of corrupt government. In this chapter, we develop a simple bargaining framework to examine the factors that influence the efficiency with which corrupt transactions between entrepreneurs and public officials take place.

Modeling the interaction between public officials and private agents as a negotiation is not new to the economics literature (see Rose-Ackerman 1999 for a summary). However, the main approach has traditionally been to identify how bribe amounts are determined (in this context, how the ‘pie’ is shared). For example, Svensson (2003) investigates how outside options (as proxied by a firm’s fixed assets) affect entrepreneurs’ bargaining power and, eventually, the bribes they have to pay. Here, we focus instead on the role of frictions associated with the bargaining process and on the social costs of corruption – in the deadweight loss sense – rather than on simple transfers of wealth from firms to bureaucrats.

The relatively sparse existing work in this area has studied corruption as efficient grease of the bureaucratic system. For example, Huntington (1968) characterizes bribes as a form of personalized de-regulation; Lui (1985)

presents a queuing model where bribes reflect the opportunity cost of time. Conversely, Myrdal (1968) discusses the possibility that corrupt officials might deliberately cause administrative delays to attract more corruption. In this vein, Kaufmann and Wei (2000) develop a model where effective harassment is endogenous and, as a result, bribe payers are forced to cope with greater harassment. None of these approaches, however, identifies the institutional set-ups in which corruption is more or less efficient, and, as such, the literature provides limited guidance to economists or policy makers on the institutional features that might be effective in reducing the distortionary costs associated with corruption.

Our contribution to the existing literature is twofold. First, we lay out a simple framework to describe the nature of negotiations between a corrupt bureaucrat and a bribe-paying firm, and consider how these negotiations will be affected by a parameter that measures bargaining frictions. Thus, we provide a link between the literatures on the nature of corruption and the structure of institutions, an area of research that has flourished in recent years.¹ At the core of our investigation is the question of whether there are conditions that minimize the deadweight loss from bribery; that is, the extent to which corruption is more or less 'efficient' in different environments. We then examine the predictions of the model using firm-level, cross-country data (from the World Business Environment Survey) that provides information on firms' relations with government agents, as well as data on the quality and features of institutions across countries. Our results suggest that bargaining frictions are lower when firms report a lower level of uncertainty surrounding the bribery process. Further, we find that these frictions matter for firms' growth. Additionally, we investigate whether there are country-level characteristics that are associated with more certainty surrounding the bribery process.

Note that our results examine only one narrow component of the broader question of bribery's costs and benefits. Even predictable bribes may be socially damaging, since they undermine the social benefits of regulation. Our concern here is the efficiency of bribe transactions, not the overall desirability of corruption.

The rest of this chapter proceeds as follows. In Section 1, we develop a simple illustrative bargaining model of bribery and then describe the data utilized (Section 2). Section 3 presents the empirical results. Section 4 concludes with a discussion of implications and issues for future research.

1. Theoretical framework

In this section we develop a simple descriptive bargaining model of bribery. We consider, as an illustrative example, a bargaining situation where firms must deal with a number of bureaucratic regulations at a cost of $2r$ per

regulation.² Obvious examples include compliance with labor safety standards and environmental impact regulations. Firms differ in the number of regulations, n_f , they must comply with, based on individual circumstances. To further simplify, we consider a decentralized model where the firm is engaged in a series of bilateral negotiations with government officials, each of whom may force the firm to comply with the regulatory requirements or pay a bribe to circumvent those requirements.

In each bilateral negotiation, we assume that the regulation may be costlessly circumvented by the bureaucrat, so that a surplus of $2r$ is created by joint agreement to avoid the regulation. The standard Stackelberg bargaining solution has the two parties splitting this benefit, so that the bribe will be r . However, in order to reach this agreement, a non-trivial amount of time may be spent negotiating this payment. We assume that, depending on different institutional features, some bureaucratic systems will have an easier time pricing these payments, and therefore the time cost will be lower. Finally, we allow for the intuition that firms paying numerous bribes will have economies of scale. We thus describe the time spent with bureaucrats, T_f , as $\alpha g(n_f)$, where $\alpha \in (0, 1]$ is a parameter that reflects frictions in the bargaining process, with 0 indicating minimum frictions, and $g(\cdot)$ captures economies of scale in bargaining and is such that $g' > 0$ and $g'' < 0$.

In this highly stylized framework, it follows immediately that the time firms spend in bureaucratic hassle is an increasing function of the level of bribes paid, B_f , since each is a positive function of the number of regulations that the firm wishes to circumvent:

$$B_f = n_f r$$

$$T_f = \alpha g(n_f).$$

The reduced-form relation between bribery and time with bureaucrats is then simply:

$$T_f = \alpha g\left(\frac{B_f}{r}\right). \quad (4.1)$$

This example illustrates that, by simply adding negotiating frictions and a firm-specific vulnerability to regulatory hassle, bribes paid are positively correlated with time spent with bureaucrats. This is a straightforward and mechanical result of the model specification where all individual bribes are equal in magnitude (that is, there are no ‘volume discounts’ in bribe payments) and each bribe requires additional time. More interestingly, the presence of the bargaining friction parameter, α , indicates that this correlation

should be weaker under institutions that allow for a relatively efficient negotiation process. Hence, our main intuition for the empirical analysis below is that institutional structures that allow for a relatively clear pricing of bribes should be characterized by a weaker association between bribery and time spent with bureaucrats. Bargaining frictions may reflect a number of elements in the bribery negotiation. For example, individuals from similar ethnic or geographic origins may have a common language or frame of reference that facilitates mutual understanding. Repeated interaction between particular business owners and bureaucrats may further smooth this process. In the empirical work below, we shall focus specifically on the frictions generated by uncertainty over the amount to be paid in the bribe negotiation. In a regression framework, we can capture this effect by running a specification like (4.2) below:

$$Time_f = \beta_1 * Bribe_f + \beta_2 * Uncertainty_f + \beta_3 * Bribe_f * Uncertainty_f + \varepsilon_f \quad (4.2)$$

where $Bribe_f$ is a measure of bribe payments by firm f , $Time_f$ measures the amount of time the firm spends with bureaucratic hassles, and $Uncertainty_f$ reflects uncertainty over the amount of bribe to be paid. Beyond our basic interest in understanding the nature of extralegal relations between bureaucrats and firms, we wish to examine whether a relatively inefficient negotiation between the two parties results in slower economic performance. We therefore consider a specification closely paralleling (4.2), where we replace $Time$ by the firm's future growth:

$$Growth_f = \beta_1 * Bribe_f + \beta_2 * Uncertainty_f + \beta_3 * Bribe_f * Uncertainty_f + \varepsilon_f \quad (4.3)$$

As a final step, we shall also consider the determinants of country-level uncertainty over the bribe payment by looking at the country characteristics that predict average uncertainty by country, that is:

$$Avg(Uncertainty_c) = f(Country\ Characteristics) + \varepsilon_c \quad (4.4)$$

2. Data

To conduct the empirical exercise, we use data from the World Business Environment Survey (WBS), a firm-level survey carried out in 1999 and 2000 across 61 countries. About 100 firms were interviewed in each country.³ The survey includes basic background information on firms' characteristics, including number of employees, previous years' sales, and sector. More importantly, it includes a variety of questions relating to 'extralegal payments' to government officials. Among these are the percentage of senior management's time spent dealing with government officials ($TIME$) coded

from 1 to 6;⁴ the amount of ‘irregular payments’ paid to government officials, as a fraction of total sales (*BRIBE*), coded similarly from 1 to 6; and the extent to which firms know in advance how much these ‘irregular payments’ will be (*ADPY*), coded from 1 to 6, with 6 indicating maximum uncertainty. In short, these three variables are calibrated so that higher numbers are more undesirable than lower numbers.

Because we are also interested in the effect of the bribe transaction on economic outcomes, we also define a pair of variables relating to the firm’s level of growth. Firms were asked to assess their expected growth rate in sales for the subsequent three years (*INCSALES*). Because the distribution of future growth projections has very long tails, we consider two transformations of the raw data that place lower weight on outlying observations. First, we consider an indicator variable denoting whether sales are projected to increase (*INCSALES**D*). Second, to preserve the information on how much sales are projected to change, we consider a log transformation of the following form:

$$LINC\text{SALES} = \text{sgn}(INCSALES) * \log(|INCSALES|)$$

This variable has the property of being monotonic in *INCSALES*, but is a much more compressed distribution.

A number of recent contributions have systematized measures of institutional quality across countries. In particular, Djankov et al. (2003) compile a measure of legal formalism across countries reflecting the extent to which the court process is governed by rules rather than discretion in evicting a tenant (*FORMAL1*) and collecting the payment for a bounced check (*FORMAL2*). We use a comprehensive measure obtained by simply adding these two measures together (*FORMAL*).

We also investigate in this context the role of the legal origin of a country. This variable was introduced in the literature by La Porta et al. (1998) and includes three indicators that classify the legal origin of the company law or commercial code of each country.⁵ The three classifications of legal heritage are English (common law), French (civil law) and socialist.

Summary statistics for both our firm- and country-level variables are reported in Table 4.1.

3. Results

Our most basic specification relates time spent with bureaucrats to the level of bribes paid:

$$TIME_{fc} = \alpha_c + \beta_1 * BRIBE_{fc} + \varepsilon_{fc}, \quad (4.5)$$

where subscripts *f* and *c* index firms and countries, respectively.

Table 4.1 *Sample statistics*

Region	Variable	Obs.	Mean	Std dev.	Min	Max
Middle East and North Africa	<i>BRIBE</i>	70	2.60	1.60	1.00	6.00
	<i>ADPY</i>	70	2.79	1.58	1.00	6.00
	<i>TIME</i>	65	1.88	1.22	1.00	6.00
	<i>FORMAL</i>	1	7.39	—	—	—
Eastern Europe and Central Asia	<i>BRIBE</i>	1592	3.17	1.22	1.00	6.00
	<i>ADPY</i>	1592	3.43	1.54	1.00	6.00
	<i>TIME</i>	1518	2.71	1.40	1.00	6.00
	<i>FORMAL</i>	23	7.61	1.02	7.03	9.12
East Asia	<i>BRIBE</i>	686	2.91	1.50	1.00	6.00
	<i>ADPY</i>	686	3.26	1.60	1.00	6.00
	<i>TIME</i>	636	2.50	1.56	1.00	6.00
	<i>FORMAL</i>	3	7.74	1.15	5.56	10.00
South Asia	<i>BRIBE</i>	82	3.37	1.48	1.00	6.00
	<i>ADPY</i>	82	2.84	1.34	1.00	6.00
	<i>TIME</i>	74	3.03	1.32	1.00	6.00
	<i>FORMAL</i>	1	7.52	—	—	—
Latin America	<i>BRIBE</i>	878	2.41	1.41	1.00	6.00
	<i>ADPY</i>	878	2.86	1.56	1.00	6.00
	<i>TIME</i>	847	1.64	1.12	1.00	6.00
	<i>FORMAL</i>	19	9.48	1.99	3.53	11.82
Europe and North America	<i>BRIBE</i>	245	1.82	1.17	1.00	6.00
	<i>ADPY</i>	245	4.29	1.37	1.00	6.00
	<i>TIME</i>	225	2.09	1.26	1.00	6.00
	<i>FORMAL</i>	7	6.91	1.83	4.1	10.09

Notes: As *FORMAL* is measured at the country level, the number of observations indicate the number of countries per region for which the variable is available in the WBES subsample. For the other variables, we indicate the total number of observations (firms*countries).

In a model where bribes reflect the opportunity cost of time, we expect a negative correlation between bribes and time spent with bureaucrats (Lui 1985). Similarly, to the extent that bribing corresponds to a form of personalized deregulation, bribes will buy less hassle from bureaucrats (Huntington 1968). In our framework, the correlation between bribes and time would reflect the time spent bargaining with officials. However, we are aware that *TIME* and *BRIBE* may both reflect the result of an underlying latent susceptibility to bureaucratic hassle (which would predict a positive correlation). Similarly, as pointed out by Kaufmann and Wei (2000),

Table 4.2 Time spent with bureaucrats and bribery levels

	(1)	(2)	(3)	(4)
Dependent variable	<i>TIME</i>	<i>TIME</i>	<i>TIME</i>	<i>TIME</i>
<i>BRIBE</i>	0.149 (10.22)**	0.172 (10.93)**	0.066 (1.86)	0.072 (1.93)
<i>BRIBE*ADPY</i>			0.028 (2.82)**	0.031 (2.97)**
<i>ADPY</i>			−0.123 (3.95)**	−0.130 (3.94)**
Constant	1.825 (47.07)**	1.581 (27.90)**	2.324 (19.81)**	2.160 (16.01)**
Dummies for firm size	No	Yes	No	Yes
Dummies for sectors of activity	No	Yes	No	Yes
Observations	4863	4431	3425	3163
Number of code	61	61	61	61
<i>R</i> -squared	0.02	0.04	0.03	0.05

Note: Results are obtained with country fixed-effects estimates. Absolute value of *t*-statistics in parentheses. * significant at 5%; ** significant at 1%.

a positive relation might be the outcome of a game where bureaucratic hassle is determined endogenously.

The estimated relationship between time and bribing is positive in the WBES sample. The sign and coefficient of bribing are robust to using country fixed-effect estimation and adding standard firm-level controls (Table 4.2, columns 1 and 2). We then include in the regression the variable *ADPY*, which measures the extent to which firms know in advance how much these irregular payments will be, and interact it with bribes:⁶

$$TIME_{fc} = \alpha_c + \beta_1 * BRIBE_{fc} + \beta_2 * BRIBE_{fc} * ADPY_{fc} + \beta_3 * ADPY_{fc} + \varepsilon_{fc}. \quad (4.6)$$

We find that higher uncertainty strengthens the positive relation between *BRIBE* and *TIME*; that is, $\beta_2 > 0$. The size and the significance of the interaction effect are robust to including controls for firm size and sector of activity dummies (Table 4.2, columns 3 and 4). Note that the Kaufmann–Wei model does not make any strong predictions regarding these interaction terms. However, the two models are by no means mutually exclusive, so we cannot interpret these results as a strict rejection of the endogenous regulation model. Rather, we interpret them as evidence of the efficiency-enhancing effect of reduced uncertainty in firm–bureaucrat negotiations.

The overall correlation between uncertainty and time spent with officials is negative, which is puzzling in the light of our description of the bribery negotiation process. This might reflect unobservable firm-specific effects, such as the frequency of interactions with bureaucrats – firms that seldom have contact with bureaucrats are less likely to know in advance the customary size of unofficial payments. This is not inconsistent with our underlying hypothesis that increased uncertainty reduces bribe efficiency, but does suggest an alternative channel through which uncertainty may be attenuated – frequent bribe payers have a better understanding of the bribe-paying process, and their bribe transactions are thus executed with greater efficiency. Additionally, we highlight that our findings should be viewed as preliminary and part of an effort to encourage further thinking on the relative merits of different forms of bribery, rather than a causal test of our model.

Although the relation in (4.6) is interesting in its own right, we are additionally concerned with the ultimate impact on economic outcomes. We therefore run an alternative specification to (4.6), replacing *TIME* with our measures of firm growth as the outcome variables:

$$Growth_{fc} = \alpha_c + \beta_1 * BRIBE_{fc} + \beta_2 * BRIBE_{fc} * ADPY_{fc} + \beta_3 * ADPY_{fc} + \varepsilon_{fc}. \quad (4.7)$$

Table 4.3 reports the results, using *INCSALESD* and *LINCSALES* as measures of growth. First, we show the results without the interaction term and confirm that there exists a negative relationship between reported bribes paid and projected growth. The interaction term is added in columns (5) to (8), where we find that the negative relationship between bribes and growth is generated primarily by firms that report uncertainty in the bribery process.

The preceding analysis leads naturally to the question of whether there are specific institutional features that reduce the uncertainty associated with bargaining frictions. Any element to the legal or regulatory structure which creates *predictability* may have this effect. We focus on the variable *FORMAL*, compiled from Djankov et al. (2003), which reflects the level of discretion in legal systems around the world. In this case, a high value of *FORMAL* is reflective of a rule-based system. We suggest that such systems will more easily ‘price’ bribes, since procedures are more formalized, rather than subject to discretion. We also consider the effect of legal origin, based on analogous reasoning. As described in La Porta et al. (1998), civil law systems are more procedural (rather than discretionary), which may create greater predictability in the context we investigate.⁷ We emphasize, however, that *any* set of institutional structures that lead to greater predictability in

Table 4.3 *Bribes, firm growth, uncertainty, and time spent with bureaucrats*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	<i>INCSALES</i> <i>SD</i>	<i>INCSALES</i> <i>SD</i>	<i>LINCSALES</i>	<i>LINCSALES</i>	<i>INCSALES</i> <i>SD</i>	<i>INCSALES</i> <i>SD</i>	<i>LINCSALES</i>	<i>LINCSALES</i>
<i>BRIBE</i>	(0/1) -0.007 (2.34)*	(0/1) -0.008 (2.50)*	-0.056 (1.90)	-0.078 (2.43)*	(0/1) 0.010 (1.19)	(0/1) 0.009 (1.03)	0.094 (1.25)	0.089 (1.08)
log value of sales in \$US	0.001 (0.76)	0.001 (0.82)	0.001 (0.05)	0.009 (0.55)	0.002 (1.11)	0.003 (1.33)	0.019 (1.02)	0.034 (1.58)
<i>BRIBE</i> * <i>ADPY</i>					-0.004 (1.96)*	-0.004 (1.70)	-0.046 (2.10)*	-0.046 (1.98)*
<i>ADPY</i>					0.010 (1.42)	0.010 (1.29)	0.095 (1.45)	0.096 (1.36)
Constant	0.925 (48.35)**	0.935 (44.00)**	2.624 (14.85)**	2.731 (13.86)**	0.862 (25.73)**	0.871 (23.64)**	2.098 (6.80)**	2.192 (6.47)**
Dummies for firm size	No	Yes	No	Yes	No	Yes	No	Yes
Dummies for sector of activity	No	Yes	No	Yes	No	Yes	No	Yes
Observations	5071	4621	3574	3249	3553	3283	2537	2340
Number of countries	60	60	60	60	60	60	60	60
R-squared	0.01	0.02	0.01	0.02	0.03	0.02	0.01	0.01

Notes: Absolute value of *t*-statistics in parentheses. * significant at 5%; ** significant at 1%. *LINCSALES* = $\text{sgn}(\text{INCSALES}) * \log(\text{INCSALES})$.

Table 4.4 What institutional arrangements help make payments more predictable?

	(1)	(2)	(3)
Dependent variable	(mean) <i>ADPY</i>	(mean) <i>ADPY</i>	FORMAL
legor: <i>FR</i>	−0.425 (2.00)*		3.296 (7.99)**
legor: <i>SO</i>	0.250 (1.25)		2.024 (5.37)**
Log GDP per capita	0.258 (3.27)**	0.290 (3.84)**	−0.137 (1.33)
<i>FORMAL</i>		−0.067 (1.53)	
Constant	1.471 (2.24)*	1.556 (1.98)	6.914 (9.39)**
Observations	59	47	63
<i>R</i> -squared	0.34	0.31	0.54

Notes: Robust *t*-statistics in parentheses; * significant at 5%; ** significant at 1%. legor: *FR* is an indicator variable for countries of French legal origin, and legor: *SO* stands for socialist legal origin. English legal origin is the omitted category.

Source: Log GDP per capita is from WDI (2004).

the firm–bureaucrat negotiation may lead to this effect. To examine these country-level relations, we consider the country-level determinants of average uncertainty (*ADPY*). These results, presented in Table 4.4, do indeed suggest that both increased formality of the legal system and proceduralism inherent in systems of French origin generate greater predictability. We view this as suggestive evidence that some legal and institutional arrangements may attenuate the growth-retarding effects of corruption by reducing the bargaining frictions associated with bribe payments.⁸

This brings into question some of the prevailing wisdom regarding the supremacy of common law systems that has been promoted recently in the law and economics literature. We do not propose a reversal of this perspective. Rather, we wish to highlight that there may actually be beneficial effects from the clear and formal delineation of legal systems under civil law systems, which facilitate an orderly market for bureaucratic favors. Thus, while there may be advantages in the flexibility afforded by the precedence-based system of common law, the precision of definition in civil law systems may also have advantages – given that corruption exists, civil law may allow for a more orderly form of bribery.

4. Conclusions and role for future research

This chapter investigates the role of institutions in shaping the nature of extralegal transactions between bureaucrats and entrepreneurs. In particular, we ask whether there are institutional and social factors that mitigate the growth-retarding effects of corrupt practices. We first develop a simple bargaining model of corrupt transactions, where each firm is subject to a firm-specific set of regulations. Then, using firm-level data across countries, we characterize some salient aspects of the bargaining process underlying illicit transactions between public officials and firms. The data suggest that there is a positive correlation between bribery and the time that a firm's management spends with public officials – which we interpret as the time spent bargaining to circumvent regulations. This correlation is attenuated if the firm reports that it knows in advance the amount of illegal payments required. We find that there is substantial variation across countries in the extent to which firms know the amount of illicit payments necessary to do business, and that this is correlated with the legal origin of countries. In particular, the association between bargaining time and bribe paid gets stronger when we move from French- to British-origin legal systems.

There are interesting policy implications to this analysis. In particular, our model and results suggest that potential policy interventions must consider the effect on both the level *and* efficiency of bribe transactions. For example, anecdotal evidence suggests that a continued relationship between public officials and private agents provides fertile ground for the flourishing of corruption (see, for example, the discussion in Tanzi 1995). On this basis, anti-corruption strategies in many countries have included, among others, regular rotation in public officials' posts.⁹ However, if new officials disrupt the status quo, leading to greater bargaining frictions and price uncertainty, the resulting distortionary costs could outweigh the benefit of reduced corruption. The extent of this trade-off has not been investigated so far.

This work can be extended along several other dimensions. In particular, it seems worth investigating what is the 'value' of bribery (that is, what services informal payments can actually buy for firms). For example, it will be useful to estimate the impact of one unit of unofficial payments on the effectiveness of delivery of public service, as measured, for example, by the number of days needed to hook up a telephone line. In this context, we expect the value of corruption to be a function of the local institutional set-up (measured, for example by the extent of autonomy of local authorities) and of the prevailing bribery practices (as captured, for example, by the average level of unofficial payments in the region).

We add a final cautionary note to the interpretation of our results: costly regulations may have social benefits. Therefore, even predictable bribes that permit the avoidance of regulations may be socially damaging. For example,

if bribery allows firms to efficiently and quickly purchase production permits that allow firms to circumvent environmental regulations protecting the public good, private efficiency is enhanced at society's expense. Our purpose is to contribute to a fuller accounting of the costs and benefits of corruption by illustrating that the efficiency implications of bribery differ across institutional arrangements; we do not mean to imply that corruption is beneficial under particular regime types.

Notes

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- 1. See, for example, Acemoglu et al. (2002) for a recent take on the institutionalist perspective.
- 2. In order to illustrate our basic intuition more clearly, we do not consider regulations that directly involve time costs (as distinct from money). The model is easily extended to allow for them.
- 3. Note that since no comparable question about bribery was asked of firms in Africa, African countries could not be included in our sample.
- 4. Corresponding to the following categories: 0, up to 5 percent, between 6 and 10 percent, between 11 and 15 percent, between 16 and 20 percent, above 20 percent.
- 5. La Porta et al. (1998) have five classifications; we omit German and Scandinavian legal origin since we only have a single observation with each of these classifications.
- 6. Note that *APDY* is coded 1 (always know the amount to be paid) to 6 (never know), so that higher values of the variable indicate more uncertainty.
- 7. This interpretation has been criticized for providing an overly simplistic description of the differences between legal regimes.
- 8. We do not have an altogether satisfying explanation for the positive association between GDP and uncertainty. This correlation might reflect unobserved heterogeneity indicating that in richer countries (where bribing is infrequent) uncertainty on bribes amounts is higher.
- 9. See, for example, Ali (2000) for the role of public official rotation in Singapore's anti-corruption effort, and Krushelnycky (2003) for a more recent example from Ukraine.

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5 Democratic institutions and corruption: incentives and constraints in politics

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Democracy is widely believed to have a constraining effect on political corruption. As conventional wisdom has it, elections should give voters the means to do away with their corrupt leaders. However, we do not always observe this outcome. In some democracies voters keep electing and reelecting politicians who continue to steal from them. As *The Economist* wrote, ‘Russian voters, like voters elsewhere, will not put up indefinitely with corrupt leaders who keep them poor. Sadly, they have little experience with anything else.’¹ Yet reelecting corrupt incumbents does not seem to be confined to Russia or other new democracies with weak economies. Just before the 2002 presidential election in France, the incumbent president, Jacques Chirac, and his party were embroiled in a web of corruption scandals, including inflated housing contracts, fictitious jobs, use of public funds for personal expenses and vote rigging in previous elections.² Despite the abundant evidence, Chirac simply refused to admit the existence of the scandals. Former president of France, Valéry Giscard d’Estaing, observed bitterly:

Chirac can have his mouth full of jam, his lips can be dripping with the stuff, his fingers covered with it, the pot can be standing open in front of him. And when you ask him if he’s a jam eater, he’ll say: ‘Me, eat jam? Never, Monsieur le president!’³

Denying wrongdoing despite abundant evidence is not uncommon. However, what was surprising in this case was that the opposition Socialist Party failed to seize upon these issues to build momentum for its own candidate, Lionel Jospin. None of the eight remaining candidates made much of the incumbent’s corruption either. As a result, corruption did not become a major issue in the campaign, the Socialists did not manage even to get into the runoff, and Jacques Chirac was reelected in 2002.

Perhaps French voters simply did not care about Chirac’s sleazy dealings, or maybe they were cynical enough to believe that any elected official would engage in graft to some extent, and therefore had no reason to expect that Chirac’s opponents would behave any better. However, in either case, voters’ beliefs and their ability to vote the corrupt incumbent

out of office are shaped by the institutions that govern the political process. France is a presidential system where the government's chief executive is directly elected in a run off system.⁴ Voters' decision making here differs in non-trivial ways from that in parliamentary systems where the chief executive is a prime minister, who is usually a leader of the strongest party.

For example, in Germany in 1999, after a campaign finance scandal broke out around Helmut Kohl, the former chancellor and leader of the Christian-Democratic Union (CDU), his party lost the election. As Angela Merkel, secretary-general of the CDU said in the wake of the scandal, 'Never again can Kohl lead the CDU as a chancellor candidate in a federal election . . . [Kohl's confession] is a tragedy for Helmut Kohl, a tragedy for the CDU'.⁵ In contrast to the French case where the opposition was silent about the corruption scandals, the CDU's main opponent, the Social Democratic Party (SPD), seized the opportunity to criticize the CDU. Just a week after Kohl's confession, the SPD's leader and new German chancellor, Gerhard Schroeder, accused the CDU of bringing Germany to the brink of bankruptcy, proclaiming that 'the only thing they fixed up was their party accounts'.⁶ Voters responded forcefully by strengthening the SPD's position in both houses of the German parliament.

The purpose of contrasting the French and German cases is to motivate the set of questions that this chapter addresses. Why in some democracies, and not in others, are voters more likely to do away with corrupt politicians? Beyond cultural, historical and socioeconomic explanations, is there something in the nature of political institutions – electoral rules, executive–legislative relations, federal or bicameral structure – that constrains politicians' malfeasance and/or allows the voters to detect and punish it more easily? What do we, as social scientists, know about the effects of democratic institutions on corruption, both theoretically and empirically? Finally, what are the most interesting questions that remain unanswered by the extant social science research?

As a starting-point of the analysis, it is important to acknowledge that the term 'corruption' subsumes many activities – from bribery, kickbacks and the embezzlement of public funds, through special-interest legislation and illegal campaign finance, to vote-buying and electoral fraud. Section 1 discusses some of the most important types of corruption that are likely to be influenced by the design of democratic institutions. Section 2 focuses on the institutions themselves, and Section 3 reviews theoretical work that analyzes the effects of institutions on various types of corruption. Section 4 is devoted to the empirical evidence: first, a discussion of different attempts to measure corruption across countries or over time, followed by a review

of the available large-*n* results. Finally, Section 5 summarizes what we have learned so far and outlines the remaining unanswered questions.

1. Varieties of corruption

The term ‘corruption’ is used in different contexts to describe a multitude of activities. In analytical studies, it most often stands for *corrupt political rent seeking* (Kunicová and Rose-Ackerman 2005). It refers only to acts committed by public officials while holding office. The perpetrators, be they elected officials or appointed bureaucrats, ‘misuse public office for private gain’ (Sandholtz and Koetzle 2000; Treisman 2000; Lambsdorff 2002; Kunicová 2005a; and others). This standard definition implies several aspects of corruption. First, ‘misuse’ means that it is a deviation from moral and legal standards sanctioned by the people. Being exposed as corrupt is thus costly for a public official, for he/she will likely be prosecuted and, in the case of elected officials, will also suffer electoral (popularity) costs. Second, this definition implies that a corrupt official pockets some personal gains. Direct embezzlement of funds, bribery and kickbacks are straightforward examples of corrupt political rent seeking that abound in political life around the globe. However, consider the case of Helmut Kohl, who was accused of accepting secret donations for his party. Although admitting ‘some mistakes’, Kohl claimed that what he did was in the interest of the party. The investigation was completed in July 2002, and no evidence of Kohl’s personal enrichment was found. There was certainly a breach of the law, and Kohl was ordered to pay a fine of DM 300,000. His party, the CDU, was charged €21 million and suffered electoral costs (Hildebrandt 2005).

Undoubtedly, Kohl’s case is an example of a corrupt act by an elected official, although it does not fall comfortably into the realm of corrupt political rent seeking. Rather, it belongs to the class of acts that are better described as ‘illicit campaign finance’. In these cases, the corrupt actors are politicians who pursue their electoral goals by illegal means. It involves stuffing a party’s or a candidate’s campaign war chests with money from secret donors, often in exchange for favorable policies or legislation after winning office (Golden and Chang 2006). At the extreme end of the spectrum, we observe ‘state capture’ (Hellman et al. 2003; Slinko et al. 2005; Yakovlev and Zhuravskaya 2005). This term was coined in the context of new democracies transitioning to the market economy and refers to the situation in which influential firms or special interests ‘buy’ laws and policies. Consequently, the policy and legal environment are shaped to the captor firms’ explicit advantage, at the expense of the rest of the enterprise sector and other interests in the society. Note that in the world of state capture, one can no longer make a distinction between money collected in order to be reelected or for personal gain. Yet in either case, by engaging in illicit

campaign finance or in letting the state be captured by special interests, elected officials cease to be the agents of their constituencies and become the agents of their influential donors.⁷

However, in systems with periodic elections, politicians seeking reelection need not only collect money for their campaigns, they must also collect votes. Vote getting can be plagued by corruption that is analytically distinct from the types considered above. Let us first consider legitimate tools for winning votes. By enacting policies that serve their constituencies, politicians fulfill their electoral promises and show their competence in exercising control rights over the public resources that were entrusted to them by voters.⁸ This can be done in many ways, some of them more efficient or equitable than others. What are usually referred to as ‘pork-barrel policies’ (Ferejohn 1974; Wilson 1986; Kunicová and Remington 2005), or geographically targeted benefits, may introduce economic distortions and inequities, but these are not illicit or covert and do not constitute corruption (see Kunicová and Rose-Ackerman 2005). Yet we can think of other forms of particularism that move closer to the corrupt side of the spectrum, from ‘patronage’ (providing material support, at any time during the electoral cycle, to individuals or communities in exchange for political support) to outright ‘vote buying’ (offering particularistic material rewards to individuals or families at election time, see Schaffer forthcoming). Although patronage borders on illegality, vote buying is certainly against the law and represents a type of ‘electoral corruption’. A peculiar feature of vote buying is that it involves the politician and the voter, much like a briber and a bribee, as two sides of a corrupt transaction. Other types of electoral corruption – ballot stuffing and electoral fraud – do not corrupt the voter in a direct way, but do distort the entire democratic process.⁹

In sum, in systems with periodic elections, politicians can engage in corruption while in office or while seeking office. Once politicians hold office, they can engage in corrupt rent seeking, which amounts to the misuse of public office for private material gain. Yet in order to win office, politicians need money and votes. They may attempt to acquire both via corrupt means, such as illicit campaign finance, vote buying, or electoral fraud. The rest of this chapter asks how the design of democratic institutions may affect each of these types of corruption. But before we can draw this link, attention needs to be paid to the democratic institutions themselves and to the channels through which these institutions may affect economic and political outcomes.

2. Design of democratic institutions

The main forms of democratic institutions that concern us here are: (i) executive–legislative relations that result from presidential or parliamentary

form of government; (ii) electoral rules, especially the distinction between proportional representation and plurality rule, and the underlying district magnitudes;¹⁰ and (iii) federalism and bicameral structure.

Presidentialism and parliamentarism

The literature on the consequences of choosing a presidential over a parliamentary form of government mostly developed during the ‘third wave’ of democratization when the new democracies chose their constitutional structures. In 1978 and later in 1990, Juan Linz stressed ‘the perils of presidentialism’ and the superiority of a parliamentary government (Linz et al. 1978; Lifz 1990). Although this argument has been challenged and later modified (Horowitz 1990; Shugart and Carey 1992; Cheibub and Limongi 2002), the accepted stylized facts do suggest that parliamentary democracies outperform presidential ones on a number of key indicators, most notably regime survival. Matthew Shugart and John Carey (1992) characterize the distinguishing features of pure presidentialism as follows. First in presidential systems, the origin and survival of the executive and legislative branches is separate; second, the executive has constitutional authority to execute the laws; and third, the chief executive exercises full control over the cabinet.

There is some disagreement in the academic community on how and whether these core institutions generate divergent consequences under each regime. Furthermore, some scholars point to other differences between regimes that might generate different outcomes. For example, Adam Przeworski and his co-authors (2000) argue that the ‘smaller’ institutions are responsible for the differences in performance between the regimes. To counter this argument, Kent Eaton and David Samuels (2002) introduce two dimensions along which they explore the differences between presidentialism and parliamentarism: ‘executives’ unilateral powers’ (such as veto, budget, decree, agenda and other formal powers) and ‘separation of purpose’ between the executive and the legislature (degree to which the executive and the majority of the legislature respond to the same constituencies and pressures). Eaton and Samuels go on to show that:

1. presidentialism promotes institutions that strengthen unilateral executive power and separation of purpose between branches;
2. ‘the core institutional differences between regime types are necessary and sufficient causes of differences in political and economic output’ (p. 4);
3. comparable arrangements of non-core institutions (for example, district magnitude and thus party fragmentation, bicameralism, federalism) generate greater differences under presidentialism.

There is a new and growing literature exploring the effect of these variables on policy outcomes in terms of ‘veto players’. The pioneering work of George Tsebelis (1995, 2002) argued that the number of veto players in a system is a function of particular institutional characteristics (separately elected president, federalism, bicameralism) as well as the number of parties. Tsebelis focused on policy change as a dependent variable and argued that as the number of veto players increases, so should policy stability. Josephine Andrews and Gabriella Montinola (2004) have attempted to apply the veto player argument to corruption, contending that as the number of veto players increases, corruption in the system should decrease.¹¹ However, Shyh-Fang Ueng (1999) presents a formal model in which, given the same culture, a political institution with veto players to counterbalance its multi-party legislature enables its legislative coalitions to extract larger amounts of bribes from interest groups than one without such counterbalancing veto players.

Issues concerning the salience of these models are not purely empirical. Recall Eaton and Samuels’s (2002:5) third hypothesis, namely that the same configurations of non-core institutions (for example, district magnitude and thus party fragmentation; bicameralism; federalism) have ‘a greater impact under presidentialism, thus generating additional differences in political output’. Thus, differences in regime performance due to variables such as electoral rules, bicameralism or federalism may be a function of differences in regime type to begin with, since the presence and importance of these variables is associated with presidentialism. Thus, it might be a theoretical misspecification to lump all the institutions together under the rubric of veto points.

Electoral rules and district magnitude

Consider the following stylized categories of electoral rules: plurality systems with single-member districts and two kinds of proportional representation (PR) systems – closed and open list (CLPR and OLPR, respectively). Under a closed-list system, party leaders rank candidates, and voters only cast votes for parties. Under an open list, voters both select a party and rank candidates given the party’s selection of candidates. In contrast to PR systems, voters under plurality rule both cast their ballots for specific candidates and elect a single representative from their district of residence. Note that one of the main differences between plurality and PR systems is district magnitude, which refers to the number of candidates elected in a district. Plurality rule usually goes along with single-member districts, which means that a country is divided into a multitude of districts, each of which elects a single candidate. In contrast, PR systems tend to have large, often national, districts, electing the entire legislature in one or

a few districts. Of course, there are differences among PR systems in terms of district magnitude (see Golden and Chang 2006; Persson et al. 2003), but the basic comparison is that under PR district magnitude is larger than under plurality rule.

As Ronald Rogowski (1998) notes, students of politics have disputed the relative advantages of proportional versus majoritarian electoral systems since at least the 1860s (Bagehot 1867; Hare 1889; Hermens 1941; Rae 1971; Powell 1982; Lijphart 1984). The early stage of the debate focused on why one system should be normatively preferred over another. The proponents of PR deemed it more encompassing and representational (and therefore inherently more democratic), while its critics argued that it makes any agreement on policy issues difficult to achieve precisely because it includes many actors with different preferences in the policy making process.

Since the 1950s, the debate over the relative merits of PR versus plurality rule has focused on the effect of electoral rules on well-defined political and economic variables, establishing the following stylized facts. PR systems are associated with larger numbers of political parties (Duverger 1954; Rae 1971, Powell 1982; Riker 1982; Lijphart 1984, 1999; Taagepera and Shugart 1989; Cox 1997); party-centered, as opposed to personalistic, political systems (Carey and Shugart 1995; Wallack et al. 2003); more cabinet instability (Powell 1982; Lijphart 1984); higher voter turnout (Beyme 1985); less violence (Powell 1982); greater openness to trade (Rogowski 1989); bigger government deficits and/or higher rates of inflation (Roubini and Sachs 1989; Grilli et al. 1991; later challenged by Lijphart 1984 and 1999, and by Crepaz 1996a, 1996b); corporatism and central bank independence in OECD countries (Anderson 2001); higher price levels in OECD countries (Rogowski and Kayser 2002); and more profit padding by commercial banks (Rosenbluth and Schaap 2003). This generation of literature suggested two apparent trade-offs to be prevalent in PR systems: on the politics side, more representation in exchange for more political instability, and on the economics side, more gains from trade and lower price levels in exchange for higher budget deficits and inflation.

The newer literature moves away from discussing possible trade-offs and notes that PR has worked remarkably well in some types of societies while failing in others. More specifically, Rogowski (1998) notes that PR seems to have performed well in small, open and advanced societies (most notably Scandinavian countries), while performing very badly in larger, less-developed or more competitive systems (Powell 1982; Katzenstein 1985; Eichengreen 1992). Rogowski then provides one possible underlying mechanism that differentiates societies in which PR works better from those for

which plurality is more suitable. According to his argument, PR induces the most vote buying and distortionary pork and patronage where voters' preferences are highly volatile, while it works in exactly the opposite direction in societies with stable voters' preferences. However, more thorough empirical work needs to be done to substantiate these interesting and provocative theoretical claims.

Federalism and bicameralism

The term 'federalism' has been used in different contexts to refer to different institutional arrangements. The most basic definition, however, is that provided by Riker (1964): a state is considered federal if it has at least two levels of government and each level is formally guaranteed (for example, in a constitution) at least one area of action in which it is autonomous. There is some disagreement among scholars as to whether formally federal constitutions are necessary and/or sufficient conditions to classify a polity as federal – Elazar (1987) argues in favor of looking at its constitution to determine whether a state is federal, while Wheare (1963) contends that this is not sufficient and that the practice of government matters just as much. In either case, there are multiple dimensions of federalism that might have policy effects. Daniel Treisman (2002) identifies the following four features of federalism that might affect the quality of government broadly defined:

1. number of tiers of government;
2. decision making and fiscal decentralization – subnational autonomy and taxing/expenditure;
3. electoral decentralization – subnational tiers with locally elected executives; and
4. checks and balances – for example, a regionally elected upper chamber that can block legislation in the lower chamber.

The last point directly interacts federalism with bicameralism. However, bicameralism might have independent effects as well. Some have argued that bicameralism outperforms unicameralism in terms of producing more responsive, accountable and effective governance (Carey 1978; Money and Tsebelis 1992; Tsebelis and Money 1997), while others have noted that bicameral systems are also prone to legislative instability and deadlock due to the excessive checks and balances (Riker 1992; Tsebelis 1995). Also note that some bicameral states use different electoral rules to elect upper and lower chambers, which together with federalism and executive–legislative organization may produce further institutional interaction effects on economic and political outcomes. Let us now examine the

existing theoretical perspectives on the possible links between these institutions and the varieties of corruption described in the previous section.

3. Institutions as incentives for and constraints on corruption: theoretical perspectives

Recall that we have distinguished two broad classes of malfeasance by politicians: corruption while holding office and corruption while seeking office. Given that these are analytically distinct activities, institutions may also affect them in distinct ways. The basic premise is that they affect politicians' incentives and constraints to engage in graft.

Corruption while holding office

Consider first the effect of electoral rules on corrupt political rent seeking. The usual departure point is the 'career-concern' model (Holmström 1982), according to which, electoral accountability differs across electoral rules. In plurality systems, voters cast their vote for a specific candidate, who may or may not be affiliated with a party. Thus, there is a direct link between re-election and performing well in office, and the politician is directly accountable to his/her constituency. In contrast, in party-list systems, voters vote for parties, which 'black-box' their candidates (this is especially true in the CLPR systems). The candidates are not accountable directly to voters, but rather to party leaders, who control the rankings on the party lists. The link between the political career and reputation with voters is therefore more tenuous than in plurality systems, which should lead to higher corruption in PR systems.

A different model is put forward by Roger Myerson (1993), who argues that competitive pressures are higher under PR and will lead to lower corruption. Under PR, entry barriers are low so that multiple parties are common; under plurality rule, when Duverger's law holds, only two major parties will compete in each district. Assuming that politics is multidimensional, voters will not be able to vote out corrupt rent seekers if honest candidates, whom the voters might like on other issues as well, find it difficult to enter into the competition for public office. Note that the underlying characteristic here is the district magnitude: more competition in large districts should constrain rent seeking. Persson et al. (2000, 2004) further develop and build on this model.

Jana Kunicová and Susan Rose-Ackerman (2005) take issue with this line of reasoning, arguing that it neglects the incentives to uncover corruption. They present a theoretical framework in which those electoral systems that give political actors stronger incentives and ability to monitor corruption of politicians in office will be most conducive to limiting corruption. Thus, corruption control is not simply about the competition for office and a

wider choice that voters have; it is about the likelihood of exposing corrupt incumbents, which in turn should constrain their rent seeking. The two classes of political actors that have incentives to expose corruption are opposition parties and voters themselves.

How do the incentives of political opponents to expose corrupt incumbents vary across electoral systems? While a plurality system with single-member districts will often produce only two parties, one opposition party with a credible chance of winning the election ought to be sufficient to give the incumbent an incentive to limit self-dealing. Under plurality rule, coalition governments are unlikely unless many regional parties exist. Because the election is an all-or-nothing affair, the stakes are high for the challenger. This gives the party out of power an incentive to uncover and publicize information that undermines the incumbent's integrity. Under PR, coalitions are common, and in many countries parties do not sort themselves into two stable blocs. Instead, a party currently in opposition may expect to form a coalition with one or more of the incumbent parties some time in the future. If this is so, opposition politicians may want to form a coalition with a party currently in power. In such a case, they have little incentive to expose the corruption of politicians whom they might need to collaborate with in the future. The lack of a clear alternation between fixed groups of parties deters inter-party monitoring.

Furthermore, if a politician uncovers scandals under plurality rule with two parties, the benefits flow to them and to their parties. Under PR, even if the party that uncovers the scandal is especially rewarded at the polls for its vigilance and integrity, the scandal provides marginal benefits for all opposition parties. This could produce a race in which opposition parties compete to reveal a scandal, but under plausible conditions, everyone may keep quiet if the cost of uncovering malfeasance is high and/or if the scandalmonger is punished by being excluded from future coalitions.¹² Recall the French presidential elections in 2002 described above: Chirac's multiple opponents did not attempt to capitalize on the existing corruption allegations against the incumbent, which may be indicative of such mechanisms at work.

Voters may also have varying incentives to expose their corrupt leaders. Plurality rule scores the highest of the three stylized electoral systems on both the voter incentives and their ability to monitor rent extraction. Districts with small numbers of voters somewhat mitigate the collective-action problems of voters and make it easier for them to observe the behavior of individual legislators – likely participants in most corrupt deals in such systems. At the opposite extreme, under CLPR, collective action problems are likely to be more serious, and voters find it difficult to observe the behavior of party leaders – the primary locus of corrupt deals in CLPR. Because OLPR systems share features of both CLPR and plurality

systems, they occupy an ‘intermediate’ category in monitoring corrupt self-enrichment.

What are the theoretical linkages between constitutional structures and corrupt rent seeking? Torsten Persson and Guido Tabellini (2000) construct a model in which presidential systems allow less rent extraction by politicians because they have more checks and balances, as well as more intense political competition. In contrast, Kunicová (2005b) argues that presidential systems are more susceptible to corruption. In most presidential systems, US-style checks and balances are absent, and instead, presidents have many legislative and non-legislative powers that virtually make them ‘elected autocrats’. In addition, legislatures have less oversight over the executive in presidential systems due to separation of powers and fixed term in office. Kunicová and Rose-Ackerman (2005) integrate presidentialism into their monitoring framework and argue that monitoring by opposition and voters is made more difficult by presidential constitutional structure. In addition, they examine possible theoretical interactions between electoral rules and presidentialism. If presidents need to cooperate with the legislature to pass corrupt statutes, then these deals should be least costly to negotiate and most likely to avoid detection in CLPR presidential systems where parties are relatively stronger than in OLPR and plurality systems. In addition, it should be easier to assure the silence of the opposition in CLPR systems where party leaders can discipline rank-and-file party members.

Finally, the theoretical linkages between federal structure and corrupt rent seeking are shrouded by even more controversy. One way to make sense of competing arguments is to divide them by the dimension of decentralization that they choose to model. Consider first the effect of ‘multiple tiers of government’. Andrei Shleifer and Robert Vishny (1993) argue that this should increase rent seeking due to an externality: elected officials and bureaucrats will ‘overgraze the commons of bribes’ across the competing levels of government. Kunicová (2005a) observes that when the multiple levels of political contestation are present, there are more actors who have access to rents and therefore the incidence of corruption may be higher, though not necessarily the aggregate diverted resources. Second, the effect of ‘checks and balances’ might also be complex. Wilson (1970) argues that this should increase corrupt rent seeking due to ‘the need to exchange favors to overcome decentralized authority’. Tsebelis’s (1995, 2002) veto point argument, however, suggests that checks and balances will mean that a status quo, be it corrupt or clean, will be locked in, so we cannot make an unconditional prediction. Note that this is the same argument that can be made about the effect of bicameralism on rent seeking (see Tusalem 2005). Finally, as for the ‘fiscal and decision-making decentralization’, Montinola

et al. (1995) argue that interjurisdictional competition should discipline local governments and hence decrease rent seeking. Hongbin Cai and Daniel Treisman (2004), on the contrary, construct a model in which, due to exogenous differences among units that comprise a federation, resources are diverted from the poorest regions and rents pocketed by politicians.

In sum, theories of the effect of democratic institutions on corrupt rent seeking have arrived at contradictory predictions. As for electoral rules, Myerson's model predicts that PR systems should be better at limiting corruption due to lower barriers to entry into political competition. On the other hand, Holmström's career-concern model, as well as Kunicová and Rose-Ackerman's theory of monitoring constraints on rent extraction, lead us to believe that plurality rule should be better at constraining corruption among officeholders. This should be so because under plurality rule, corrupt opportunities for personal gain will be concentrated in just those political actors who are best able to be monitored by voters, and the two-party system that frequently results will give opponents an incentive to uncover scandals at any level. Presidentialism increases political competition and has better checks and balances in Persson and Tabellini's model, while being more prone to corruption due to extensive presidential powers and lack of legislative oversight in Kunicová's model. Finally, as for federal structure, it also seems to have theoretically ambiguous effects on rent seeking even after accounting for the type of decentralization. Thus, reconciling these competing theories is largely an empirical question.

Corruption while seeking office

Although most theoretical work on the effects of political institutions on corruption concentrates on corruption while holding office, there are several new and important contributions that attempt to disentangle the effects of some of the same institutions on various forms of electoral corruption, including illicit campaign finance, vote buying and state capture.

Miriam Golden and Erik Chang (2005) focus on explaining 'transactions that are used to raise monies illegally for political campaigns'. They draw on the 'personal vote' literature (Carey and Shugart 1995) and argue that in those systems where incentives to cultivate personal vote are present, candidates need more individual campaign funds to advertise their candidacy. Illicit campaign finance is thus an illegal variant of the search for the personal vote, while pork-barrel spending and distribution of other targetable benefits represent the legal side of the same coin. Thus, in OLPR, where incentives to cultivate personal vote rise with district magnitude as there is more competition among individual candidates, corruption should increase as district magnitude increases. On the other hand, in CLPR there is little incentive for a personalistic vote to begin with, and those incentives decrease as the district

magnitude rises, hence corruption should decrease with district magnitude. The authors do not consider plurality rule, but according to their theoretical framework, it ought to be most prone to illicit campaign finance due to the largest incentives to cultivate personal vote.

Allen Hicken (forthcoming) concentrates on vote buying as the phenomenon of interest, but builds on the same ideas of personal vote as Golden and Chang to understand the institutional incentives. According to his line of reasoning, the main incentives that encourages vote buying are candidate-centered electoral rules that weaken party identities and programmatic goals. Again, to build personal networks of support, candidates may rely on the mixture of licit and illicit strategies. Yet Hicken's contribution is an attempt to understand when buying votes becomes comparatively advantageous to the legal forms of particularism. He argues that certain cultural, socioeconomic and institutional conditions have to be met, most notably 'traditions of gift giving, easy access to government largesse, and wide spread poverty'. Thus, the prediction here is that conditional on these factors, those electoral rules that encourage personal vote should create an environment most conducive to vote buying.

Sarah Birch (2005) is interested in electoral corruption in general, be it vote buying or outright electoral fraud such as ballot stuffing, and attempts to understand the incentives that different electoral rules give politicians to engage in it. She gives three reasons why plurality rule should be more conducive to such corruption than PR. First, due to the winner-take-all nature of plurality systems, politicians have more to gain from individual efforts to corrupt elections. Second, voters will find it easier to attribute blame for unattractive forms of corruption (ballot stuffing, electoral fraud) to parties, while the 'attractive' forms of corruption (particularistic gifts, vote buying) are more easily attributable to individual candidates. Third, the cost of engaging in malfeasance should be lower in plurality, as the number of votes that must be changed in order to change the outcome of the election is typically smaller in plurality than in PR.

On balance, it appears that in comparison with the attempts to understand the incentives and constraints on rent seeking, there is a remarkable agreement in both hypothesized causal links and predictions about the effects of electoral rules on corruption while seeking office. The expectation is that those systems that encourage personal vote and engender candidate-centered politics will also be conducive to more electoral corruption. Besides the effect of electoral rules, there is little theoretical literature on the link between electoral corruption and any other institutions. As discussed in Section 2, a related phenomenon to electoral corruption is state capture. Pranab Bardhan and Dilip Mookherjee (2000) explore the effects of federalism on capture, and find that electoral decentralization makes this

problem worse. In essence, interest groups are more cohesive at the local level, hence they are better positioned to finance politicians' favors or 'buy' laws. Thus, public services are more likely to be replaced by private transfers in electorally decentralized states.¹³

4. Empirical regularities

Given the theoretical controversies surrounding the effect of democratic institutions on corruption, attempts have been made to settle them empirically. The basic problem, of course, is the scarcity of accurate measures of corruption across countries and over time. Measuring the varieties of corruption is no simple feat, given the clandestine and illicit nature of the phenomenon. But even if we could measure it directly, major conceptual issues arise. For example, how would one ideally conceptualize and compare the total level of corruption across countries – by considering the number of corrupt officials (incidence or pervasiveness of corruption), by measuring the number or volume of bribes, or by measuring the total amount of diverted resources? Note that these may, but need not necessarily, move together: corruption might be concentrated at the top echelons of power, involving only a handful of powerful corrupt individuals who by diverting huge amounts of resources amass spectacular wealth (for example, the Philippines under Marcos's rule or Mobutu's Zaire), or it may be widespread with petty bribery being commonplace, though the amount of diverted resources may be much less.

Although these problems are far from settled, in recent years social scientists have developed several large-*n* measures of corruption that allow one to test some of the theories reviewed in the previous section. There are two basic classes of these measures: 'subjective' indices based on perceptions of corruption, and 'objective' measures that record the incidence of corruption-based legal cases against politicians. Subjective indices may be based on surveys of households and businesses or depend on expert ratings. The two best-known and most widely-used indices from Transparency International and the World Bank mix both types, but are dominated by expert surveys. In most of the underlying expert surveys, in each country 'well-placed observers' (such as foreign businesspeople or investigative journalists) are asked how corrupt public officials are in a given country, and their responses are aggregated in some way to produce a corruption perception score for that country. Note that this measure covers both elected officials and the appointed bureaucrats. In addition, it covers perceptions of corruption, and hence might be closer to measuring the prevalence of corrupt transactions rather than to the amount of diverted resources.

Objective measures are not as common, but a few of them have been collected (for example, Golden n.d. for Italy, Welch and Hibbing 1997 for the US). They usually measure the number of corruption cases filed in country

x in year t against a particular type of public official, usually legislators. An attractive feature of such a measure is that it allows the researcher to differentiate corruption by actor. On the other hand, of serious concern is the possibility that the measure itself might be endogenous to the level of corruption in the system. Those systems that are most corrupt are unlikely to have independent judiciaries that would be free to prosecute high-level politicians, so it is unclear how to interpret high numbers of legal cases in a given country-year.

Of course, perhaps the most serious problem for the purposes of testing the theories of the impact of institutions on types of corruption is that the measures seldom allow one to differentiate between varieties of corruption. Thus, the theories about the effect of institutions on corrupt political rent seeking are often tested using the same data as the theories about electoral corruption. Keeping these caveats in mind, let us turn to the existing evidence for and against the hypotheses derived in the previous section.

Corruption while holding office

All of the empirical studies in this category use subjective corruption perception indices. Presidential systems tend to be associated with higher levels of perceived corruption (Gerring and Thacker 2004; Kunicová 2005a), controlling for a multitude of economic, historical and geographic factors. Kunicová (2005a) also shows that more extensive presidential powers as well as term limits lead to higher corruption. Kunicová and Rose-Ackerman (2005) test the interaction effects between electoral rules and constitutional structures and find that presidential systems together with CLPR are associated with the highest levels of perceived corruption. However, Persson and Tabellini (2003) show that on a smaller sample of old and established democracies, presidential systems tend to do better than parliamentary ones on corruption control. However, once the entire sample is used, the relationship is reversed.

As for electoral rules, plurality outperforms PR in terms of being associated with lower perceived corruption (Persson et al. 2004; Persson and Tabellini 2003; Kunicová and Rose-Ackerman 2005). It is difficult to say anything definitive empirically about the difference between CLPR and OLPR, largely because of the scarcity of OLPR cases. There is also some evidence that larger district magnitudes constrain corruption, but also that the percentage of legislators elected on the party lists increases it (Persson et al. 2004).

The empirical effects of federalism on corruption have been comprehensively explored by Treisman (2002). He finds that states with multi-tiered governments have higher perceived levels of corruption, as do the states with higher competition among subnational units (operationalized as the

size of the first-tier units). However, he obtains no significant empirical results on other dimensions of federalism, including fiscal and electoral decentralization. Yet Raymond Fisman and Roberta Gatti (2002), using a different dataset, found that fiscal decentralization decreased corruption. Other cross-country studies (Goldsmith 1999; Treisman 2000; Gerring and Thacker 2004; Kunicová and Rose-Ackerman 2005) have investigated the relationship on a more aggregated level, and found that perceived corruption is higher in constitutionally federal states.

Corruption while seeking office

There are considerably fewer empirical studies that concentrate on the effect of political institutions on electoral corruption than focus on their link to political rent seeking. Among the existing few empirical findings, Golden and Chang (2005) confirm their hypothesis that corruption increases in OLPR with increasing district magnitude, while it decreases in CLPR under the same conditions. They reach the same conclusions using corruption perception indices as well as district-level objective measure for Italy.

Birch (2005) tests her theories about electoral corruption on a new dataset that codes the election observation reports by the Organization for Security and Cooperation in Europe (OSCE) across 26 post-communist countries and finds that plurality systems do worse than PR systems in controlling electoral corruption. While assembling and using this dataset is a huge step forward in attempts to measure the varieties of corruption, there are still some limitations in these findings. First, the sample is very restricted, so it is unclear whether some selection bias is introduced. Second, a large proportion of these countries use various mixed electoral systems, which have been suggested elsewhere to be more than just sums of their parts (for example, Shugart and Wattenberg 2001), and therefore might have independent effects.

While electoral fraud and vote buying has been a hot topic recently, most of the existing work focuses on attempts to estimate the extent of electoral irregularities, especially in Russia and Ukraine (Sobyanin and Sukhovolskiy 1995; Myakgov and Ordeshook 2005; Myakgov et al. 2005). The effect of political institutions remains largely unstudied. A step in this direction is new work by Erik Herron and Paul Johnson, who attempt to understand the effect of the 'special polling stations' on vote theft in Ukraine's 2002 parliamentary elections. Ukraine is an interesting case to study because it elects half of the members of its parliament, *Verkhovna Rada*, by proportional representation, while the other half is elected in single-member districts. Using precinct-level data from over 30,000 polling stations, Herron and Johnson (2005) assess fraud as an explanation for voting results in both PR and single-member district elections. The institutional variable of interest in this case is election rules that guarantee voting

rights, through the use of special polling precincts or other provisions to citizens unable to come to the polls. The authors find that the voting outcomes are ‘unusually high’ for incumbents and ‘unusually low’ for opposition in such precincts. Having tested for several alternate hypotheses, they conclude that special polling stations seem to be conducive to vote theft. However, more work should be done to try to understand whether such vote theft is more likely in PR or single-member district races.

5. Unanswered questions

As this chapter demonstrates, institutional effects on corruption have generated a considerable amount of interest and controversy among scholars. However, this area of inquiry is still relatively new, and thus many questions remain unanswered.

On the theoretical front, there has been more work about the effects of institutions on corrupt political rent seeking than on electoral corruption. As a consequence, the theoretical ideas about incentives and constraints on rent seeking resulting from different institutional arrangements are better developed and more solid. Still, we do not fully understand the role of political parties in these models. Is there a role for intra-party discipline if a party’s reputation is at stake, or do free-rider problems and collusion prevent it?

In addition, although there have been some attempts to explore the interactions among some of the institutions, notably constitutional structures and electoral rules, many interesting interactions remain unstudied. For example, how does bicameralism, which uses different electoral rules to elect different chambers, constrain or induce corrupt rent seeking? Also, how does the existence of a free press, independent magistrates or a strong judiciary interact with electoral rules, constitutional structures or federalism in exposing corrupt incumbents?

Furthermore, we do not know much about endogeneity issues. Do some countries choose a particular institutional arrangement because there are more potential corrupt rents accessible given such arrangement? The adoption of mixed electoral systems in many post-communist democracies, as well as the adoption of presidential systems, would be an appropriate case to study.

Finally, perhaps the most important and understudied issues are the institutional effects on electoral corruption. For example, is there something about presidential elections that makes them particularly vulnerable to electoral corruption? Is it more prevalent under federal systems? How exactly do electoral rules and district magnitudes incite or inhibit vote theft? The answers to these questions will largely depend on our ability to construct progressively better measures that get at the heart of the various forms of corruption, especially distinguishing political rent seeking from electoral fraud.

Notes

1. *The Economist*, 3 September 1999.
2. For a review of these scandals and the existing evidence, see Hildebrandt (2005).
3. *The Guardian* (London) (2002), 'How to succeed in politics without really lying: the charmed career of Jacques Chirac'.
4. More accurately, the French system can act as either presidential or parliamentary depending on whether the president's party controls the majority in the legislature. The president of the Republic is elected for a seven-year term in a runoff system. The president then appoints a prime minister, who selects a cabinet. Since the cabinet faces a vote of confidence, this is only a binding constraint if the president's party does not control the parliament. France's president is not simply a ceremonial head of state: he presides over the Council of Ministers, promulgates the acts of parliament, and is commander in chief of the armed forces. The extent of presidential *de facto* powers also depends on whether his party controls the National Assembly: if this is the case, then the prime minister becomes a mere 'fuse' that is replaced when the administration becomes unpopular. On the other hand, if the president's party does not have the majority in the legislature, a period of 'cohabitation' ensues, in which the president still directs the foreign policy, but needs to consult with the minister of foreign affairs.
5. *Agence France Press*, 1999a, 'German conservative leader calls on Kohl to reveal secret donors'.
6. *Agence France Press*, 1999b, 'Schroeder slams Kohl at opening of party congress'.
7. The concept of corruption as a breach of an implicit contract between voters, the principal, and their agent, the politician, was pioneered by Rose-Ackerman (1978); see also Rose-Ackerman (1999) and Kunicová and Rose-Ackerman (2005).
8. The relationship in which voters entrust control rights over resources to the politicians is modeled by Kunicová (2005a).
9. On electoral fraud in presidential elections in Russia and Ukraine, see Myagkov et al. (2005).
10. District magnitude refers to the number of representatives elected from the district. Thus, single-member districts are those that elect only one representative, while multi-member districts elect several. At the other end of the spectrum, there are national districts where the entire legislature is elected in a single district.
11. The authors then twist the argument to imply that presidential systems have fewer veto points than parliamentary systems and hence should be more corrupt, which is rather different from the original concept of the veto players as used by Tsebelis (1995).
12. For formal arguments about the interaction between incumbents and opposition in the context of a corruption game, see Kunicová (2005a) and Kunicová and Mattes (2005).
13. For an analysis of the Russian case, see Slinko et al. (2005).

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6 Decentralization, corruption and government accountability

*Pranab Bardhan and Dilip Mookherjee**

The impact of government decentralization on economic performance and growth is a hotly contested issue. Waves of decentralization occurred in many developing countries over the past few decades, following the demise of a development paradigm in which centralized states played a leading role (see, for instance, case studies of decentralization covering over half the world's population in Bardhan and Mookherjee 2006b). The trend toward greater decentralization has been motivated by disenchantment with previous centralized modes of governance, owing partly to a perception that monolithic government breeds high levels of rent seeking, corruption and lack of accountability of government officials. An important research question, therefore, concerns the effects of decentralization on corruption. Can decentralization be a useful institutional reform to reduce corruption, or might corruption increase as political power shifts downward?

Opinions on this matter vary widely. Although authors in some contexts provide an optimistic assessment of the effect of decentralization on corruption, others claim that the effects are insignificant, ambiguous and context dependent, with some at the opposite extreme arguing that decentralization seriously worsens problems of corruption. The arguments on both sides are grounded in theory and econometric analyses, including cross-country regressions and other types of statistical exercise. The definitions of decentralization and corruption used in these analyses differ widely, as do underlying assumptions and the specific country experiences studied. The purpose of this chapter is to provide an overview of the literature on this subject, make an effort to provide a common framework to identify key sources of disagreement, and appraise what has been learned so far.

It is useful at the outset to identify potential disagreements in the use of the terms 'corruption' and 'decentralization'. The theoretical literature alerts us to many different ways of measuring corruption, and the definitions used may affect the conclusions drawn from empirical studies or normative policy exercises. Should corruption be measured by total bribes, or some per capita measure (for example, relative to the number of

potential bribe givers or bribe takers, or the level of economic activity in the sector or economy in question)? Waller et al. (2002, p. 700), for instance, show in a theoretical model that alternative measures of bribery produce different results when one studies the link between the number of vertical bureaucratic layers and corruption. A single bribe-setting monopolist (compared with a chain of successive monopolists) sets a lower bribe rate per investment project, which raises the volume of investment enough that total volume of bribes increase. Use of total volume of bribes as a measure of corruption rather than the per project rate will result in entirely different correlations with private investment.

Moreover, should corruption be measured by bribes alone, or should it also include costly efforts made by citizens to influence the design or application of laws in their own self-interest? This might include contributions by interest groups to politicians or costs incurred by citizens to evade laws. Shouldn't corruption also include forms of political corruption, where some special groups use unusual forms of influence over policy makers to receive preferential treatment? Bardhan and Mookherjee (2006c) argue that measures of corruption that focus only on bribes and exclude such forms of special-interest capture provide a misleading impression of the true welfare effects of decentralization. In their theoretical model, decentralization results in the replacement of bribes charged by central government bureaucrats with elite capture of local governments. Bribe-based corruption measures decline while at the same time economic efficiency and equity also decline.

Even where a focus on bribe-based measures of corruption is reasonable, a single-minded focus on corruption may be too narrow, since there may be other conflicting goals of policy. Numerous theoretical analyzes of corruption (for example, Besley and McLaren 1993; Mookherjee and Png 1995; Mookherjee 1997; Acemoglu and Verdier 1998; Chand and Moene 1999; Waller et al. 2002) have shown that optimal policy design may not involve minimizing corruption, since that may imply too large a sacrifice of other welfare goals (for example, raising fiscal revenues, or environmental regulation). Minimization of corruption in many instances would require closing down the government altogether, which almost nobody would be prepared to argue is the right 'solution'.

Accordingly, broader notions of welfare seem more appropriate yardsticks than corruption measures, even if one emphasizes governance and accountability against other channels more conventionally studied by economists. As Qian and Weingast (1997), Bardhan (2002) and Bardhan and Mookherjee (2005, 2006b, 2006c) argue, the new 'second-generation' literature on federalism focuses on the accountability and incentives of government officials, in contrast to the traditional literature on

fiscal federalism which stressed the role of preference heterogeneity for public goods, and interjurisdictional externalities. The traditional approach, principally designed with developed-country contexts in mind, abstracted entirely from issues of government accountability by assuming that politicians and government officials act benevolently on behalf of citizens. In developing countries, problems of governance are pervasive and so the effects of decentralization on governance are likely to be first order. In any case, the focus on accountability is natural for those interested in corruption, broadly interpreted. The key question is whether decentralization acts as a disciplining device for government officials.

Another source of ambiguity concerns the notion of decentralization. The literature on federalism traditionally focuses on regional or provincial governments one step below the national government, but much of the recent wave of decentralization in developing countries concerns the empowerment of lower-level governments at the municipal or village level. Moreover, at any given level of government, many different notions of decentralization can be relevant: for example, (i) of *authority* over legislation or implementation of local regulations, composition of government spending and delivery of public services; (ii) of *finances*, that is, setting and collecting taxes, borrowing from higher-level government or markets, and allocating expenditures on local services; (iii) of *democracy*, that is, whether local government officials are elected by local residents or appointed by higher-level governments. In some countries (such as China) there is devolution of economic responsibilities (items (i) and (ii)) but not much political decentralization (item (iii)); in others (such as most parts of India) it is the opposite. Treisman (2002) argues that other dimensions of decentralization may also be relevant, such as the creation of checks and balances between different governments, either at the same level via horizontal (interjurisdictional) competition, or across different vertical levels (for example, power of local governments over central government and vice versa).

Decentralization seems to have different effects in different countries. For instance, Qian and Weingast (1997), and Jin et al. (1999) argue that decentralization was an important contributing factor to rapid economic growth in China since the early 1980s. In contrast, Blanchard and Shleifer (2000) argue that local governments retarded growth in Russia in the 1990s. Both sets of authors seem to agree that the effects of government decentralization have differed substantially between China and Russia. In the context of Brazil and India, the effects of decentralization are likely to vary substantially across different regions (Baiochhi 2005; Chaudhuri 2005). Robert Wade (1997) argues that decentralization of delivery of irrigation services is associated with superior performance of Korea compared with India. In

contrast, Tendler (1997) argues that decentralization of municipal health services in Ceara, Brazil caused poor performance. Taken together, this research suggests that outcomes may be highly context specific.

In Section 1 we describe relevant theoretical literature concerning the different channels through which decentralization can impact corruption and accountability. Section 2 reviews the results of cross-country regression analyzes. Section 3 discusses empirical evidence on the effects of interjurisdictional competition where one of the distinctive accountability mechanisms for local governments is the possibility that mobile factors, such as firms and investors, may relocate ('exit'). We then turn our attention to the evidence on the other key accountability mechanism ('voice'): local democracy, an especially relevant factor for the treatment of consumers and workers and the delivery of public services. Finally, Section 4 concludes with a summary of the main lessons that we draw from this literature.

1. Conceptual issues

Numerous arguments have been advanced by political philosophers, political scientists and theoretical economists for the various effects of decentralization on government accountability. Abstract principal-agent models of contracting hierarchies in firms (see, for example, Melumad et al. 1992, 1995, 1997 and Mookherjee (forthcoming) for a general survey) elucidate some of the basic trade-offs involved in the delegation of decision making: decisions are made on the basis of better (local) information, but they are made by an agent whose incentives differ from those of the principal, thus leading to a 'loss of control' or an 'abuse of power'. Hence, the overall effect depends on the relative importance of these two problems, which boils down to the extent of interest conflict between the principal and the agent, and on the means available to the principal to control the agent (for example, via monitoring and contracting). This literature explains why the effects of decentralization are likely to be ambiguous and context dependent. A related approach discussed by Cremer et al. (1995) and Seabright (1996) is based on incompleteness of contracts, where it is argued that the allocation of control rights acquires meaning in a world where comprehensive contracts cannot be written in advance. Information available at the local level cannot be communicated for use in decision making at the central level, so decentralization can lead to better-informed decisions concerning taxation or expenditure allocations. In addition, much information possessed by citizens helpful in evaluating government officials is not verifiable, and therefore cannot be used to control the behavior of officials via contractual means. Local democracy then becomes a means for citizens best placed to evaluate the performance of officials, to decide who should be appointed or fired.

In addition to internal democratic pressures, corresponding roughly to Albert Hirschman's notions of 'exit' and 'voice', the effects of fiscal decentralization on government accountability depend also on discipline arising from external competitive pressures. Below we discuss in some detail these two sources of accountability pressure.

Interjurisdictional competition

If factors of production are mobile between jurisdictions then different local governments can compete with one another to attract them. This reduces the monopoly power enjoyed by government officials with regard to local laws, regulations and bribes. Poor governance manifested by high levels of corruption and low provision of necessary infrastructure can cause mobile factors to exit to other jurisdictions with better services and less predatory local governments. The archetypical argument of this form of intergovernmental competition is made by Brennan and Buchanan (1980), who characterize all governments as Leviathans, with no mechanism for accountability apart from such competition and constitutional restrictions on the powers of governments to tax and regulate. Edwards and Keen (1996) and Arikian (2004) provide more recent formalizations of this argument, based on less draconian assumptions about the objectives of government officials (that is, they are assumed to maximize a weighted average of their own corrupt earnings and the utility of local citizens). The benefits of competition in these models resemble those of Bertrand price competition among rival producers of a homogeneous undifferentiated good. It underlies the view expressed by economic historians that an important contributing factor to declining municipal corruption in the United States during the turn of the previous century was the expansion of the American frontier and development of railroads, which raised the elasticity of the local revenue base to bribe (or tax) rates, thus reducing the capacity of government officials to extract rents (Menes 1999, 2006).

A similar argument for the beneficial effect of competition for mobile factors on the incentives of non-corrupt governments is provided by Qian and Weingast (1997) and Qian and Roland (1998). According to their theory, the crucial incentive problem stems from the inability of governments to commit to not bailing out financially troubled state-owned enterprises, commonly referred to as 'soft budget constraints'. This causes great fiscal strain, reducing the ability of governments to provide required infrastructure for private investors. The opportunity cost of bailouts is then underprovision of infrastructure, resulting in reduced private investment. However, if local governments have to compete with one another to attract private investors, this raises the opportunity costs of bailouts. Hence, decentralization serves as a useful precommitment device which hardens

budget constraints for governments. Central governments are less subject to competition for mobile investors – they compete only *vis-à-vis* foreign locations – hence the outcomes of centralization are inferior.

However, other theoretical perspectives generate opposing results concerning the way competition for mobile factors affects corruption. Cai and Treisman (2004b) point out that the argument for benign effects of competition depends on the implicit assumption of the homogeneity of jurisdictions with regard to the productivity of the factors concerned. With sufficient heterogeneity across jurisdictions the race for mobile factors can be highly uneven, and the worst-endowed regions can end up with less business-friendly policies and higher corruption. With capital immobility governments will have some incentives to provide business services, owing to their ability to tax business profits. With free capital mobility, all capital can flow out of backward regions. Knowing that they cannot compete, the governments of these regions will give up on pro-business policies and focus instead on predation as the only source of rents. The result will be weaker discipline and growing polarization of government services across regions.

A different argument is offered by Cai and Treisman (2004a), who posit that increasing competition for capital can exacerbate interjurisdictional externalities. Local governments have incentives to attract investors away from other regions by offering them opportunities to evade central government taxes and regulations, the cost of which is largely borne by other regions. They construct a model in which local governments engage in fiscal or regulatory protection in an environment where the ability of the central government to collect taxes or enforce regulations is weak. Increasing decentralization and competition for capital can reduce tax revenues, increase regulatory violations, reduce central government enforcement effort and reduce welfare. Federalism is then ‘state corroding’ rather than ‘market preserving’. The point is that there are many different ways of attracting investors, some of which are in the wider public interest – such as reducing rent extraction and providing better infrastructure – and some that are not – such as shielding them from central taxes and regulations. The effects of decentralization will depend on which of these avenues are more effective instruments of attracting private investors, which depends on existing institutions and can only be settled (if at all) by empirical studies.

Rodden and Rose-Ackerman (1997) provide additional arguments why the ideal conditions required for ‘market-preserving federalism’ may not exist in many developing countries. The demands of immobile interests such as workers, farmers and domestic consumers may conflict with those of mobile factors of production such as foreign investors, but local politicians typically have to respond to both sets of demands. The survival of

regional political leaders may often require the cultivation of support of immobile interests who are frequently more numerous and better politically organized than private investors. Moreover, regional leaders could be motivated to engage in protectionist, rent seeking behavior at the expense of the wider national interest. Decentralization may result in growing inter-regional inequality and low provision of national public goods. To avoid these problems, market-preserving federalism requires a strong central government to rein in the uncoordinated self-seeking tendencies of local governments. But this is unlikely to be politically compatible with the relinquishment of most powers by the central government. How can the role of the central government be both strong and limited at the same time? For this reason, Rodden and Rose-Ackerman argue that the political foundations of the 'intergovernmental market' are shaky.

Another part of the literature compares the effects of centralized and decentralized corruption on bribes and investment efficiency. Shleifer and Vishny (1993) consider an economy in which any investor needs to obtain permits from different government officials in succession. They compare the outcome where the officials select bribes independently with one where a single centralized agency coordinates bribe setting. The latter system results in lower bribes and higher investment, owing to internalization of bribe setting externalities across officials. However, this corresponds to a different notion of decentralization, since investors are assumed to need clearances from *all* the governments, rather than be able to choose *between* them. This view of decentralization corresponds to adding layers of sub-national government on top of a national government, rather than the former replacing the latter. Differing definitions of decentralization thus give rise to contrasting effects: one (where a tier of competing local governments replaces a single centralized government) substitutes monopoly with competition. The other (where local governments represent an additional vertical tier of government) replaces a single monopolist by a chain of successive monopolists.

Waller et al. (2002) extend the Shleifer–Vishny model and obtain more nuanced results. In a system of 'bottom-up corruption', investors need simultaneous clearances from a number of different government officials who set bribes independently, just as in the Shleifer–Vishny framework. This contrasts with a system of 'top-down corruption', in which there is an additional layer in the government, consisting of a higher-level autocrat who attempts to coordinate and enforce a common bribe level, of which a fixed fraction accrues to the autocrat. To enforce the common bribe, the autocrat randomly monitors lower-level officials and punishes those found to be overcharging. They compare outcomes of the two systems, and show that the results are ambiguous, and depend on specific parametric

circumstances. Top-down corruption adds another bribe taker, which may increase overall corruption. On the other hand it may allow some coordination of bribe setting, which can reduce corruption. If the autocrat is able to control and enforce a coordinated bribe rate – which depends on the bureaucratic control systems available to the autocrat – then the top-down system may yield lower bribes; otherwise it may turn out to involve greater corruption. Other arguments for the same general conclusion – that the effect of powerful autocrats at the top level of the government on corruption and investment incentives is ambiguous – are discussed more extensively in Rose-Ackerman (1999, pp. 115–21) and Robinson (2001), with various examples from many developing countries.

Local democracy

The other mechanism for ensuring accountability of governments is through democratic pressure for re-election. This is particularly relevant in the supply of public consumption goods, social services and anti-poverty programs in developing countries because mobility costs are high for households and workers, and residents of one region are not usually entitled to public services in other regions.

Local governments are in closer proximity to citizens than central governments, and that fact may make them more accountable to ordinary people. Thus, Seabright (1996) argues that local citizens are often able to make accurate inferences concerning the accountability of local government officials, owing to their knowledge and observation of local conditions and behavior of these officials. But most of this knowledge is not hard evidence that can be used in a court of law or submitted to other watchdog agencies. As a result, central politicians monitor lower-level bureaucrats more poorly than do local citizens. Local elections form an ‘incomplete contract’ which permits citizens to express their displeasure with corrupt and incompetent officials by refusing to re-elect them. Tommasi and Weinschelbaum (1999) use a model of common agency with citizens as multiple principals appointing government officials as their common agents. The larger the jurisdiction of governments, the higher is the ratio of principals to officials, resulting in a weakening of the connection between pay and performance. These models formalize the arguments of Rousseau and Jefferson criticizing centralized government in a large state:

The rulers, overburdened with business, see nothing for themselves; clerks govern the state. (Rousseau 1762, pp. 49–50)

(distance between rulers and ruled:) by rendering detection impossible to their constituents, will invite the public agents to corruption, plunder and waste. (Jefferson, in Appleby and Ball 1999, pp. 169–70)

Opposite arguments concerning the relative accountability of local and national governments have also been made. Arguments for retention of the intervention rights of federal governments were made by the designers of the US constitution on the grounds that local governments were more likely to be captured by elites. James Madison in the *Federalist Papers* no. 10 argued:

The smaller the society, the fewer probably will be the distinct parties and interests composing it; the fewer the distinct parties and interests, the more frequently will a majority be found of the same party; and the smaller the number of individuals composing a majority, and the smaller the compass within which they are placed, the more easily will they concert and execute their plans of oppression. (Cooke 1961, pp. 63–4)

In a similar vein, Blanchard and Shleifer (2000) argue in the context of post-transition Russia that provincial governors have been highly susceptible to capture by old industrial firms, resulting in large transfers to these firms which also obtained protection from competition. At the same time, they argue that central governments are less likely to be captured by initial rent holders, being larger in size than local governments and less directly affected by the unemployment implications of closing any particular firm.

Sonin (2003) provides a model that formalizes the Blanchard–Shleifer view. Regional governors are assumed to receive campaign contributions from local firms and use these to purchase the votes of ‘unattached voters’. In exchange, they provide protection from responsibility to pay federal taxes, entry of new firms, and bankruptcy proceedings, as well as subsidies of various sorts. Equilibrium ‘capture’ is increasing with the concentration and inefficiency of local industry, the lack of local political competition, the proportion of ‘unattached’ voters (therefore, the extent of local unemployment), and p , a parameter that represents the cost to the regional governor of providing protection against the federal government. Subsequently, the federal government selects p at a certain cost to itself, in order to ‘punish’ recalcitrant regional governors. If the federal government is weak, the costs of imposing sanctions on regional governors are high, and there can exist an overall equilibrium of the system in which provincial protectionism is rampant. A cooperative equilibrium can also exist between the federal and local governments where the latter do not provide any protection. If the federal government is strong, the non-cooperative equilibrium can be eliminated. Hence the model echoes the opinion expressed by Blanchard and Shleifer that economic decentralization must be accompanied by political centralization in order to succeed (that is, where regional governors cooperate with the federal government, owing to sanctions that the latter could potentially impose on the former). Nevertheless, the model

does not address the potential for capture of the federal government itself within a centralized regime.

In some of our earlier work (Bardhan and Mookherjee 1999, 2000) we used a model of electoral competition with special-interest capture (extending Grossman and Helpman 1996) to argue that the extent of relative capture of national and local governments by special interest groups is theoretically ambiguous, the result of numerous factors that run in opposite directions, whose relative importance is likely to be highly context specific. The model is a more general version of that used in Sonin (2003): wealthy interest groups can contribute to the campaign finances of competing electoral candidates, which are used to mobilize the votes of 'unaware' voters. Aware voters, in contrast, vote based on more accurate perceptions of how chosen policies would affect their interests. Both types of voters also vote partly on the basis of loyalties determined exogenously, partly by historical circumstances and other non-economic dimensions that differentiate competing parties.

In this model, the equilibrium level of capture of government at any level depends ultimately on patterns of political participation, on the political awareness of different groups in the population, and on the evenness of political competition among contesting parties (which depends in turn on the distribution of voter loyalties). Patterns of political participation and awareness depend on the distribution of literacy and socioeconomic status within concerned communities, apart from exposure to independent media sources.

Capture may be higher at local levels compared with the national government for Madisonian reasons, such as greater media coverage of national issues, greater difficulty for special-interest groups to overcome free-riding problems at the national level, or greater formal separation of powers at that level. Alternatively, capture may be higher at the national level owing to the greater importance of campaign finance, more uneven political competition, or poorer information available to citizens to evaluate candidates on nationwide issues. If different regions are heterogeneous with regard to literacy, economic backwardness or socioeconomic inequality, capture of local governments will vary correspondingly across regions. The extent of capture of national governments will be located somewhere between the extremes of standards of governance across different local governments. Decentralization will then tend to be associated with greater dispersion of quality of governance across regions; more backward and unequal regions will be worse off compared with centralization, while more progressive and equal regions will benefit. These tendencies are accentuated in the case of national governments selected on the basis of proportional representation rather than first-past-the-post elections.

In summary, the two classes of models view the effects of decentralization on accountability quite differently. The Blanchard–Shleifer–Sonin approach emphasizes the debilitating effect of lack of political centralization, arising from the use of power by regional interests to engage in protectionism and free riding on national interests. Our approach views the effects of political centralization in more ambiguous and nuanced tones, owing to the difficulty of assessing the relative proneness of local and national governments to capture by special interests without knowledge of detailed circumstances of the nature of political competition.

2. Empirical evidence from country-wide and cross-country comparisons

This section reviews evidence from cross-country regressions concerning the relation between decentralization and measures of corruption and government performance. Estache and Sinha (1995) reported one of the earliest studies of this nature, based on a panel dataset of 20 countries (comprising an equal number of developed and developing countries) covering 1970–92. They evaluated the relation between a measure of expenditure decentralization (the share of subnational governments in total government spending) and per capita delivery of different forms of infrastructure. They found a significant positive association in general, an effect which was stronger when there was greater revenue decentralization (measured by dependence of subnational governments on self-generated revenues rather than fiscal transfers). In fact, there was little significant association when subnational governments relied almost exclusively on central grants. Hence they found a significant positive interaction between expenditure and revenue decentralization in their effects on infrastructure delivery.

Similar evidence suggesting positive effects of decentralization on governance is reported by Fisman and Gatti (2002a) who examine the relation between the same measure of expenditure decentralization and measures of corruption (on the basis of subjective perceptions of businesspeople and investors). Their dataset covers 59 countries for the 1980–95 period. The regression controls for an index of civil liberties, GDP, country size (population, government expenditure as a proportion of GDP), openness (import to GDP ratio), as well as indices of ethnic fractionalization, contract enforceability, the existence of a federal constitution, and regional and colonial dummies. They find a significant negative correlation between expenditure decentralization and corruption measures, which is robust with respect to the precise set of controls or corruption measures or sub-periods. However, as with any cross-sectional regression, there are potential problems with respect to the endogeneity of regressors, which Fisman and Gatti attempt to overcome using legal origin as an instrument for

decentralization. The validity of this instrument is doubtful because legal origin could well have a direct, independent effect on corruption, even after allowing for its effect via decentralization or other included controls.

In another paper, Fisman and Gatti (2002b) argue – analogous to the finding of Estache and Sinha – that the effects of expenditure decentralization may depend on accompanying revenue decentralization. Using data from 50 states in the US covering the 1976–87 period, they show a significant positive association between conviction rates for abuse of public office and dependence on central transfers, after controlling for state size, GDP, enforcement expenditures and civil service wages.

A contrasting picture emerges from a comprehensive set of cross-country regression results by Treisman (2002), who examines correlations between eight different measures of decentralization with various measures of corruption and of social service delivery, while controlling for a larger range of variables. The same measure of expenditure decentralization turns out to not have a significant association with corruption measures, despite using a similar set of countries and time period in the sample. Treisman explains the discrepancy from the Fisman–Gatti results by their use of a religion control variable: the proportion of Protestants in the population. This religion variable, which was excluded by Fisman and Gatti, accounts for the correlation they observed between corruption and expenditure decentralization: countries with more Protestants tend to be both less corrupt and more decentralized. Expenditure decentralization tends also to be positively correlated with youth illiteracy and negatively with access to sanitation, though positively correlated with paved roads. Hence the use of a wider range of controls and of measures of governance quality tends to cast doubt on the earlier findings of Estache–Sinha and Fisman–Gatti.

Other findings of Treisman (2002) concerning different measures of decentralization also fail to confirm the benign effects claimed by its advocates. Appointment decentralization, measured by the proportion of key officials in subnational tiers that were directly elected (or by directly elected local legislatures), rather than appointed by a central government, exhibited no significant relation with corruption. Corruption had a significant positive correlation with measures of health services delivered and paved roads, but also with youth illiteracy rates. The scope for interjurisdictional competition – measured (negatively) by average land area covered by first-tier governments because this serves as a proxy for distance between jurisdictions – was positively correlated with corruption. As for measures of decentralization represented by number of (vertical) subnational tiers, or existence of checks imposed by a regionally chosen upper house on the lower house of elected representatives at the national level, these had a significant positive correlation with corruption, and a negative correlation

with virtually all measures of service delivery. This last result is consistent with the Shleifer–Vishny prediction that more vertical tiers of government will worsen governance.

In summary, cross-country empirical studies fail to provide robust evidence of benign effects of decentralization on governance. Given the problems with this research methodology – involving the difficulty of controlling for unobserved cross-sectional heterogeneity, for other sources of endogeneity bias, for measurement errors and limited and biased selection of samples owing to the questionable quality and comparability of data – it is hard in any case to make any firm inferences based on such studies. It is more instructive to seek empirical evidence on a more disaggregated and localized set of contexts. To this we turn in the next two sections.

3. Within-country empirical studies

We first discuss evidence from Russia and China, respectively. This is followed by evidence from case studies in a variety of developing and middle-income countries, such as Argentina, Bangladesh, Bolivia, El Salvador, India, Indonesia and Uganda.

Provincial protectionism in Russia

A number of papers provide empirical evidence in favor of the Blanchard–Shleifer (2000) hypothesis (as formalized by Sonin 2003) of high levels of capture of regional governments in Russia, which also conforms to the Cai–Treisman (2004a) theory of ‘state-corroding federalism’. Ponomareva and Zhuravskaya (2004) provide evidence from a sample of Russian firms in the second half of the 1990s. Federal tax arrears accumulated at a faster rate in provinces whose governors had a larger popular base, were in political opposition to the central government, and had a better bargaining position *vis-à-vis* the latter. Lambert-Mogiliansky et al. (2003) show in a sample of over 8,000 firms that firms located in regions with governors who were politically more powerful, that were more independent from the central government, and that had more opaque tax collection systems were significantly less likely to be liquidated under the new bankruptcy law of 1998, which enlarged the discretion of regional governors over bankruptcy procedures. This result obtains after controlling for industry cash flows, pre-1998 firm characteristics (such as productivity, size, leverage ratio, liquidity), industry dummies and regional GDP levels.

Slinko et al. (2004) examine the effects of regional capture on performance and profitability of enterprises. They examine large firms (measured by sales) that received preferential treatment in the form of tax breaks, subsidized loans, subsidies of other forms, delays in tax payments or any other

kind of special privilege from the regional government during 1992–2000. They then use as a measure of ‘regional capture’ the concentration (Herfindahl index) of preferential treatments for the five firms in each region with the largest number of such treatments. This measure of concentration of ‘political power’ turns out to be positively correlated with Transparency International’s state capture ratings and other indices of lack of press freedom and administrative corruption. They show that firms receiving more preferential treatment grew faster in profits, sales, employment and federal tax arrears after controlling for firm characteristics. Firms not receiving such treatment invested more and performed better when they were located in regions where political power was less concentrated. Regions with more concentrated power exhibited lower rates of development of small businesses and retail turnover. However, overall rates of growth of economic activity in the region were not significantly different, suggesting that the effect of the protections was primarily redistributive within the region. However, greater concentrations of power was associated with lower payment of federal taxes, so this may have lowered economic activity for the country as a whole. Interestingly, concentration was uncorrelated with local tax arrears, at the same time that it was positively correlated with federal tax arrears. This provides support to the view that federal tax arrears were the result of collusion between firms and local governments.

Federalism in China: market preserving or market corroding?

Jin et al. (1999) provide evidence in favor of the market-preserving federalism view for China by relating measures of regional growth to measures of decentralization. They use three different measures of decentralization: *fiscal* (the ratio of spending by local governments to central government spending), *industrial* (share of industrial output from state-owned enterprises supervised by local governments in total industrial output in the province), and *administrative* (‘distance’ between top provincial officials and the central government or the Chinese Communist Party, in terms of whether they were appointed by the latter and transferred from outside, or promoted from within the region). Using data from 1982–92 for 30-odd provinces, and after controlling for province and time-fixed effects besides provincial tax rates and regional labor force growth, they show that fiscal decentralization was positively related (statistically significant at the 10 percent level) to growth of per capita regional GDP, of non-agricultural employment and non-state industrial output. Administrative decentralization had a significant positive correlation with local fixed investment, ratio of local to central government investment, and growth of non-agricultural employment and non-state industrial output.

They explain these results as resulting from the effects of altered fiscal contracts between local and central governments. During the period local governments were allowed to retain over 75 percent of all revenues collected, in contrast to only 18 percent during 1970–79. The extent of ratcheting (effect of unit increase in tax revenues collected one year to the amount transferred to the central government the following year) was 25 percent during the 1982–92 period, compared with 55 percent during 1970–79. The marginal retention rate was significantly correlated with percent contract workers in state-owned enterprises, percent wages paid in the form of bonuses, and new loans as a percent of GDP.

The high retention rate for local revenues has the potential of increasing inequality of revenues across regions exhibiting uneven rates of growth. However, Jin et al. point out that inequality in provincial per capita budgetary revenues and expenditures at the provincial level declined over 1982–92, with inequality in central transfers moving in the opposite direction. They infer that high incentives on the margin coexisted with inframarginal redistribution in the fiscal contracting mechanism.

A contrasting view of the effects of increased fiscal decentralization in China is presented by Young (2000), who argues that the increased autonomy and incentives offered to local governments induced them to engage in provincial protectionism, in the form of high barriers to interregional trade. These took the form of tariffs, road levies, prohibitions on interregional trade, and many other restrictions. The aim of these restrictions was to capture a large share of rents resulting from existence of significant price distortions (such as large gaps between prices of finished industrial goods and of raw materials). Moreover, just as in the Russian case, local governments could offer local enterprises exemptions on central taxes, accompanying them with informal levies accruing to their own coffers. He cites estimates that as much as 44 percent of after-tax profits in 1984 were collected in the form of these informal levies. The local governments thus found their ‘financial and political interests embedded in a particular industrial structure’. The empirical evidence he presents for this point of view is that China exhibited shrinking interregional specialization according to comparative advantage following 1978, at the same time it was becoming more open to the outside world. He shows that the composition of output converged across regions between 1978 and 1997, while prices, labor productivity and labor allocations diverged. In addition, there was no relation between labor intensity and agricultural yields (instrumented by weather variables) following 1978, whereas a significant positive relation existed prior to 1978.

Poncet (2003) provides additional evidence supporting Young’s hypothesis, using data aggregated at the regional level. She shows that while

reliance on international trade increased between 1992 and 1997, reliance on interregional trade decreased. More detailed support is provided in Poncet (2004) using data at the industry level. She computes indicators of province- and industry-level trade barriers using the border price method (which compares actual trade flows with those that would be predicted by a gravity equation that assumed no trade barriers). She finds that these barriers were high and increased between 1992 and 1997. The determinants of these barriers are consistent with a political economy model where local governments are assumed to maximize an objective function which weights tax revenues and socioeconomic stability (that is, reductions in local unemployment). Controlling for the provincial unemployment rate, size of the public sector and industry-level fiscal contributions, the level of the interregional trade barriers was positively correlated with the extent of local fiscal autonomy and the provincial share of government consumption. Based on these findings, she concludes by quoting Zhao and Zhang (1999, pp. 267–8): ‘Fiscal decentralization has created conditions that encourage regionalism: disappearance of the traditional umbrella, unfairness to the poor regions, territorial segmentation and confrontation, central–local confrontation, and failure of spatial programs of specialization and cooperation’.

In a similar vein Lin et al. (forthcoming) describe how fiscal decentralization in China in the 1980s led to growing inequality across provinces, regional protectionism, a fiscal crisis for both the central and (most) local governments, and a decline in redistributive power of the central governments, eventually inducing a fiscal recentralization in 1994. Despite this, the 1990s has witnessed continued problems of unfunded mandates for local governments, inducing them to impose illegal taxes on farmers and expropriate lands, causing considerable social unrest in the countryside. Since 2000 the central government has initiated reforms in local taxes and has imposed limits on illicit expropriations of arable land by local governments.

Despite the evidence for regional protectionism, Young (2000:1129) concedes that fiscal decentralization probably contributed to economic growth overall, owing to its success in dealing with control and incentive problems. Most writers on China and Russia seem to concur that the overall effect of fiscal decentralization was positive in China and negative in Russia. However, there is little hard evidence in favor of this. Most of the empirical results for China pertain to data on differences in regional growth rates and their relation to the nature of fiscal contracting: there are no estimates available of the effects of regional protectionism on growth in China as a whole, which trade-off the superior incentive properties of decentralization against the corroding effects on regional protectionism. The only supporting arguments are provided by Jin et al. (1999), who point out that fiscal

contracts with the provinces in the two countries were quite different: budgetary constraints for provinces were much 'harder' in China. Blanchard and Shleifer (2000) argue that the problem of capture of local governments by local firms was much less severe in China, because China did not start its reforms with the large industrial enterprises that characterized the Russian economy of the early 1990s. This may have lessened problems of capture of local governments by local firms in China. But the 'state-corroding' effects of federalism argued by Cai and Treisman (2004a) appeared to exist in China as well as Russia, based on the evidence reported above. There is no evidence on the comparative significance of these effects between the two countries.

Evidence in other countries concerning determinants of accountability and capture of local governments

A large body of empirical work on the accountability of local governments in many different countries is beginning to emerge. This literature attempts to provide quantitative estimates of accountability, and to estimate its important determinants. These include patterns of political participation and awareness in local communities, as well as the formal design of decentralization.

Relatively little evidence is available concerning the *relative* accountability of local and national governments. However, this is a key factor which partly determines the welfare effects of decentralization compared with a centralized state. Galasso and Ravallion (2005) study levels of pro-poor targeting achieved by a decentralized food-for-education (FFE) program in Bangladesh. The program sought to encourage school enrollment of poor rural families by providing food rations to selected households conditional on a class attendance rate of at least 85 percent of all school days. The actual selection of beneficiaries within each community was made by the local School Management Committee composed of parents, teachers, education specialists and school donors. Galasso and Ravallion use a sample of over 3,000 households from 200 villages and use a 1995–96 Household Expenditure Survey to assess the targeting achieved by the program. The program was mildly pro-poor: a larger fraction of the poor (12 percent) received benefits from the program than the non-poor (8 percent). This was accounted for almost entirely by targeting *within* participating communities, rather than across communities. This suggests that capture within the community was a less severe problem than distorted inter-community allocations decided by higher-level governments for political reasons.

Our research on targeting of service delivery programs by local governments in the Indian state of West Bengal (Bardhan and Mookherjee 2006a) generated a similar finding. Inter-village allocations of credit, resources for

local infrastructure and employment for the poor, and development grants from upper-level governments exhibited considerably poorer targeting than the allocation of these resources within villages. Intra-village targeting of subsidized credit, agricultural seeds and fertilizers was consistently in favor of the poor (defined as landless and/or marginal landowners), relative to medium-sized and large landowning households. In contrast, the inter-village allocations exhibited a perverse anti-poor bias: increases in the proportion of poor, low-caste households within the village resulted in a significant reduction in the total quantum of resources allocated to the village as a whole by upper-level governments.

Foster and Rosenzweig (2001) provide evidence from an all-India panel dataset of 250 villages that increased local democracy between the early 1980s and late 1990s (measured by whether local governments were selected via local elections) led to increased responsiveness of local government spending to the needs of the poor. Specifically, they argue that the principal difference of interest between the landless poor and the landowning households concerns the allocation of local infrastructure spending between roads and irrigation: roads generate more employment, while irrigation raises farm productivity and profits to a greater degree. They show that when local governments were democratically elected, roads were more likely to be favored *vis-à-vis* local irrigation facilities when the demographic weight of the landless in the local population rose.

Using the 1995 'big-bang' decentralization in Bolivia as a case study, Faguet (2001) presents evidence on the superior effect of decentralization on the interjurisdictional allocation of social services. Before the decentralization, the nine state or departmental capitals received 93 percent of all funds devolved from the center, leaving 7 percent for the other 302 municipalities. After decentralization these shares stood at 38 and 62 percent, respectively. This resulted in a massive shift of resources in favor of the smaller and poorer municipalities. Local governments were empowered to select the composition of the funds received and responded by dramatically altering the composition of spending from the production to the social sector. Between 1991 and 1993, 73 percent of all public investment in Bolivia was accounted for by transport, hydrocarbons, energy and other production enterprises. After the decentralization, education, urban development, water and sanitation constituted 79 percent of all municipal investment. Faguet finds these shifts were mostly explained by investment patterns in the poorest municipalities that had previously received negligible resources. He argues that these investments responded to measures of local need. However, he does not present any evidence concerning changes in intra-community targeting before and after the decentralization.

A final piece of evidence is a study of the effect of a nationwide decentralization of public schools in Argentina between 1992 and 1994 (Galiani et al. 2005). Using as a control group schools that remained under provincial administration throughout, they find that scores on standardized mathematics and language tests in schools that were transferred from central to provincial control improved in better-off provinces and became worse in less well-off provinces. This is consistent with theoretical expectations that the impact of decentralization will vary with the characteristics of local communities, resulting in increased inequality across communities.

Most of the remaining literature is concerned with measuring the extent and nature of capture within provincial or local governments, and relates capture to the following community attributes and institutions of local democracy.

Community socioeconomic (literacy–wealth) status Reinikka and Svensson (2004a) found that the average income of Ugandan local communities was negatively correlated with the diversion of school funds (earmarked for the community by the central government) by provincial authorities acting as intermediaries in the flow of funds. They interpret this as reflecting the capacity of better-off local communities to bargain with the provincial authorities and to be better informed about their entitlements. Besley et al. (2004b) found that South Indian villages with higher literacy rates were more likely to hold village meetings that discussed resource allocation issues within the village and the actions of local governments. Villages that held meetings targeted public benefits more closely in favor of landless and illiterate individuals by an order of 8–10 percentage points.

Socioeconomic inequality Galasso and Ravallion (2005) found that intra-village targeting of the FFE program in Bangladesh deteriorated in communities with higher land inequality and a larger fraction of households headed by widows. In the West Bengal local governments studied in Bardhan and Mookherjee (2006a), increased inequality in local land distribution between 1978 and 1998 was associated with significant increases in the fraction of local government expenditures allocated to government consumption (salaries and administrative expenses of government officials). At the same time, local revenues collected by the local government decreased, despite the nominal progressivity of local taxes with respect to landholdings. These results suggest that rising land inequality allowed greater collusion between big landowners who were allowed to evade taxes, and local government officials who consumed a larger share of the (shrinking) revenues collected. On the other hand, increased land inequality had no significant effect on the targeting of subsidized credit or

agricultural inputs within the village, and increased landlessness was associated with higher generation of employment for the poor (controlling for the resources available to the local government for those programs).

In a related setting of sugar cooperative factories in Maharashtra, India, Banerjee et al. (2001) provide evidence for increased diversion of cooperative funds and underpricing of cane supplied by members if large local landowners were responsible for managing the cooperative. The extent of such diversion and underpricing was highest when the proportion of land in the local area held in smallholdings was neither too large nor too small. Beyond a threshold level, further increases in the proportion of land in smallholdings allowed small landowning members to acquire effective control of the cooperative (through the increased size of their voting bloc among cooperative shareholders). This led to significantly improved performance of the cooperative (in terms of levels and growth of sugar output over time, as well as equity among members). They argue that differences in local land distribution explain to a significant degree the discrepancy between the sugar cooperatives in two major regions within the state, Western and Eastern Maharashtra.

Political competition The importance of local political competition is documented by Bardhan and Mookherjee (2003) in their study of land reforms implemented by local governments in West Bengal since the late 1970s. The land reform effort was highest when local elections were more contested between the two rival parties, a left alliance led by the Communist Party of India (Marxist), and the more right-leaning Congress party. This applied even when the local dominance of the Left party increased beyond a two-thirds majority and despite the prominence given to land reform in the political rhetoric of the Left parties. The result is robust with respect to using village or district fixed effects, and the use of a measure of loyalty shifts between the two parties at the district, state, and national levels as instruments for the extent of local competition. However, the political composition of these local governments had no significant effects on intra-village targeting of credit, subsidized agricultural inputs, composition of infrastructure investments, or local government finances.

Civic participation Jimenez and Sawada (1999) study the involvement of schoolchildren's parents in the management of schools in the EDUCO program in El Salvador since 1991. After controlling for school and student characteristics, they find a positive significant effect on language tests, a positive insignificant effect on math tests at the third-grade level, and a significant negative effect on student absenteeism. Santos (1998) and Baiochhi (2005) describe processes of participatory budgeting in a number

of Brazilian municipalities, where each neighborhood holds popular assemblies involving local residents to discuss investment priorities, review accounts, evaluate past investments, and elect representatives to a city council. Cities such as Porto Alegre witnessed at the same time a significant rise in local revenues and local spending on local sanitation and road paving, as well as improved school enrollment. Faguet (2005) discusses the role of citizen watchdog groups in Bolivia with the power to veto local government budget proposals. However, no rigorous statistical evaluation of the effects of these forms of civic participation in Brazil and Bolivia are yet available.

Access to information and media Reinikka and Svensson (2004b) provide evidence for the dramatic effects of a media campaign via radio and newspapers informing local communities of their entitlement to school funds from the central government in Uganda. This campaign, along with an increase in central government monitoring, reduced diversion of these funds by intermediating provincial governments from 80 to 20 percent. Although the impact of the components of the reform cannot easily be disentangled, the information strategy does seem to have had an independent effect. The authors show that the proximity to newspaper outlets to local communities was a powerful predictor of the extent of reduced diversions. Besley and Burgess (2002) provide evidence for the role of local newspapers in increasing the responsiveness of Indian state governments to natural disasters, using a panel study of major Indian states. The role of village meetings that discuss the resource allocation decisions of local governments in improving targeting in South Indian villages has already been discussed.

Monitoring by higher-level governments Olken (2004) carried out a randomized field experiment using over 600 village road projects in Indonesia to test the impact of central government audits. A randomly selected subgroup was told that they would definitely be subjected to these audits, the remaining being audited at the usual frequency (of 4 percent). Those in the treatment group experienced an 8 percent reduction in reported expenditures for the project relative to those in the control group. In contrast, increasing grassroots participation by local residents reduced thefts of villagers' wages, but this was almost entirely offset by corresponding theft of material costs. 'Theft' was measured by comparing reported expenditures with independent estimates of prices and quantities assessed as necessary by an independent team of engineers. These results suggest that grassroots monitoring may be more effective in reducing theft when community members have substantial private stakes in the outcome, but less so (compared with top-down monitoring) when public good supply is involved.

Reservation of local government positions for minorities Chattopadhyay and Duflo (2004) studied the effects of randomized reservations of local government *pradhan* (chief) positions for women in the Birbhum district in West Bengal, India in 1998. Governments with women as heads were associated with a significant shift in the composition of local government spending across different public services in line with priorities expressed by women at village meetings. Similar reservations for low-caste candidates altered the allocation of local government resources between different villages under their jurisdiction: more resources went to the village where the low-caste *pradhan* resided. Besley et al. (2004a) find that the same low-caste reservations of *pradhan* positions in South Indian village governments enhanced targeting in favor of low-caste households. Relative to living in a non-reserved area, living in a reserved area raised the likelihood that a low-caste household received private benefits from the local government (either has a home or toilet built under a government scheme, or received a private water or electricity connection via a government scheme) since the previous election. Village public goods (the improvement or construction of roads, sanitation, streetlights or water sources) supplied since the last election were more likely to be provided (by between 4 and 5 percentage points) in a village in which the *pradhan* resides, but there was no difference with regard to public goods supplied between reserved and unreserved constituencies. However, they were more likely to be provided in a village where more low-caste households reside: a 50 percent increase in the latter would raise the probability by about 4 percentage points. These results hold using as controls the proportion of landless households, village area and population, literacy rate, distance from nearest town, wage rate and block dummies.

Unfunded mandates of local governments Henderson and Kuncoro (2004) show that a significant determinant of (self-reported) bribes paid by Indonesian firms to local government officials was the extent of fiscal strain on local governments relative to their expenditure responsibilities. They report the results of a survey of 1,808 firms in Indonesia concerning economic activity in 2001–02, following a comprehensive nationwide decentralization. After controlling for various firm- and locality-specific characteristics, they find that increasing either the ratio of property tax revenues retained by local governments to local GDP or the ratio of central government transfers to local GDP had a strong negative effect on the number of licenses that local firms had to obtain. One standard deviation increase in each of these variables was associated with a 73 and a 56 percent increase in the number of licenses, respectively, which in turn has a significant correlation with bribes (a doubling of the number of licenses

raised bribes paid by approximately 80–90 percent of firm costs). They interpret this as measuring the effects of fiscal strain on local governments (relative to expenditure responsibilities mandated by the decentralization), which induces them to underpay government officials and let them rely on bribes to supplement their incomes.

4. Conclusion

In summary, the effects of decentralization on corruption and government accountability are complex and cannot be summarized by simple, unconditional statements. This applies equally to theoretical analyses, cross-country regression results, and more detailed empirical studies of specific countries. In this chapter we reviewed the literature dealing with two principal accountability mechanisms: external competition with other governments and internal democratic pressures.

In theory, decentralization can reduce corruption and reduce the undersupply of infrastructure support for private investors owing to interjurisdictional competition. It can harden budget constraints so that governments do not bail out inefficient enterprises. The extent of these incentive effects depends on the degree of fiscal autonomy of local governments, which affects the extent to which they internalize the benefits of economic development within their respective jurisdictions. China is an example of a country where fiscal decentralization was combined with a high degree of fiscal autonomy, yielding these incentive benefits, inducing fast economic growth since the early 1980s.

However, high-powered fiscal incentives can compound interjurisdictional externalities: local governments attract investors by colluding with them to protect them from federal taxes and regulations and impose barriers on interregional trade. These actions promote regional growth at the expense of other regions, and lower growth in the country as a whole. Collusion between local governments and local industry is widely viewed as an important cause of lack of growth in the Russian economy. The general consensus seems to be that the externality-causing actions dominated any local-growth-promoting effects of decentralization in Russia, while the opposite was the case in China. Yet this consensus judgment is untested and not well explained.

Blanchard and Shleifer argue that the difference between the Russian and Chinese experience is explained by the fact that these two countries started their respective transitions from different initial conditions. There was no scope for high levels of capture of regional governments by oligarchs in China as took place in Russia because such oligarchs did not exist in China in the late 1970s as they did in Russia in the early 1990s. In addition, they point to differences in the extent of political centralization between the two

countries. Whereas in Russia provincial governors often had an independent power base and were opposed to the central government, political centralization in China meant that leaders of local governments were appointed by the central government and evaluated on the basis of their success in promoting the goals of the centre.

The Blanchard–Shleifer argument concerning the benign role of political centralization is not supported by the facts for China, where administrative decentralization (wherein leaders of provincial government were promoted from within their respective provincial cadres rather than appointed and transferred from the central cadre) was positively rather than negatively correlated with local growth and investment. Moreover, there is now growing evidence of patterns of provincial protectionism in China in the work of Young and Ponget, quite similar (at least qualitatively) to such patterns in Russia.

The thesis that decentralization was growth retarding in Russia is also based on an implicit assumption that the potential for capture of the federal government is less compared with that of provincial governments. This remains untested. So does the hypothesis of less capture of regional governments in China compared with Russia, as well as problems of abuse of power by local government officials, and other problems associated with soft budget constraints (such as an unwillingness to close down inefficient enterprises owing to their repercussions for local unemployment). As Bardhan (2002) argues, perhaps the differences are accounted by lower levels of inequality in China at the onset of the transition compared with Russia. Inequality in China was low partly because of the significant land reform in the late 1970s, besides egalitarian after-effects of various Mao-regime policies. In contrast the privatization process in Russia increased asset inequality by effectively giving away most state assets to a handful of oligarchs. Much more needs to be learned about this issue.

In general, problems of capture and lack of accountability of local governments appear common in many transition and developing countries. There is also a rapidly growing body of evidence of some of the determinants of local government accountability. Empirical findings generally match predictions of political economy models of capture. Capture is related to malfunctions in local democracy, associated with asymmetries in local literacy, wealth, social status and patterns of political participation, and with lop-sided political competition. The extent of corruption within local governments is also related to availability of information to citizens concerning their entitlements and to the way they are monitored by higher-level governments and by external media. There is growing evidence that a number of institutional safeguards are effective in limiting capture of local governments by elites and non-minority groups: reservations of positions

in local governments for minorities, information–media campaigns, mandated village meetings, civic participation mechanisms and monitoring by upper-level governments.

Financial strain on local governments may also promote corruption, as in Indonesia. However, the effects of providing greater revenue autonomy are ambiguous, given evidence of the regressivity of local tax burdens. Hence ensuring that the expenditure mandates of local governments are matched by central government grants may be important in limiting pressures on local governments to tolerate or encourage corruption among its employees. However, this may limit the extent of fiscal autonomy of local governments, with adverse incentive effects on other dimensions.

Empirical evidence concerning the effects of decentralization on delivery of public services is beginning to emerge. These tend to indicate that the problems of local capture within communities have not been excessive and have been dominated by beneficial effects on targeting across communities. However, decentralization is likely to be accompanied by increasing inequality in quality of governance between better-off and less-well-off regions. This suggests the importance of accompanying decentralization with a watchdog role for the central government with regard to monitoring the performance of local governments and guaranteeing minimal service provisions through targeted interventions in lagging areas.

Generally, then, the literature contributes substantially to our understanding of the sources of capture and the reasons for the lack of accountability of local governments – information that should be useful in comparing the performance of different decentralization arrangements. For policy makers there are some important lessons. Decentralization by itself is unlikely to be a panacea for problems of accountability and must be accompanied by institutional safeguards to prevent excessive capture of local governments. These safeguards include literacy and information campaigns, minority reservations, land reform, monitoring by civic associations, media and higher-level governments, and avoidance of excessive unfunded mandates that force local governments to capitulate to corruption.

What is relatively less known is the relative proneness of local and national governments to problems of accountability. Thus it is difficult to evaluate decentralization versus centralization as constitutional options for state design. But recent studies do provide some idea of the factors that influence accountability. Thus, there is great potential for future research to provide a better understanding both of the overall effects of decentralization relative to centralization as a government disciplinary device and of why these effects vary so much from one context to another.

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7 Corruption, hierarchies and bureaucratic structure

*Ajit Mishra**

The study of corruption has received a lot of attention recently in both academic and policy circles. A key theme has been the design of suitable anti-corruption strategies. To the extent that corruption is a manifestation of rational economic calculation by public officials with power and discretion, it can be addressed by suitable incentive schemes. These schemes revolve around a basic ‘carrot and stick’ policy of rewarding the honest and punishing the corrupt. However, these schemes require both successful detection of corruption and the proper implementation of incentive schemes. If officials in charge of detection and implementation are also corrupt, then we are forced back to the original problem. It is imperative that we study how and to what extent corruption can be tackled in such situations. This is the main objective of this chapter.

Corruption often involves two overlapping relationships. The first is between the government and its various clients. For example, relationships between government and taxpayers, regulator and firms, police authority and potential criminals, government provider of services and potential recipients can all be viewed as principal–client relationships. The identities of the principals and the clients, as well as the nature of their relationships vary depending on the specific context. Thus potential criminals who hope to avoid detection when they break the law are very different from those who seek to obtain government benefits. All these cases, however, are characterized by tensions between the interests of the principal and those of the clients and by the principal’s lack of complete information. Second, the principal may use an intermediate agent to implement the public program. To consider an example, suppose that the regulator has a pollution control policy to ensure compliance by firm. For the implementation of this policy, the regulator might employ a pollution inspector who is in charge of inspecting the firms. But the agent’s objective may not be aligned with that of the principal. The agent can be corruptible, and the principal then has to design suitable mechanisms to deter corrupt activities. These mechanisms (anti-corruption policies) include monitoring of agents, and the stipulation of fines and rewards. There are various formulations of this basic framework. I adopt a simple hierarchical formulation where the principal

employs an agent to deal with the clients. I then extend the model to include other agents who engage in monitoring and oversight.¹

The chapter is organized as follows. Section 1 discusses the various types of agencies and forms of corruption. Corruption is a multi-faceted concept and can take various forms. Understanding these various forms is important because the effect of organizational structures will not be the same for all forms of corruption. Section 2 analyzes various organizational structures. We do not address the problem of corruption detection in this section and look only at the corruptibility of the officers' incentives. Section 3 extends the analysis by adding the possibility that corruption can be detected by the costly efforts of the supervising officers. Section 4 takes a broader view of the bureaucracy and compares top-down and bottom-up structures of corruption. Section 5 explores the implications of internal promotions. Section 6 concludes.

1. Agencies and types of corruption

Various authors have used the agency framework to analyze corruption. To fix ideas concerning the underlying agency relation, consider the example of a regulatory authority trying to enforce pollution standards by using pollution inspectors who are in charge of inspecting the polluting firms. Early work by Susan Rose-Ackerman (1978) focuses mainly on the agency relationship between the authority and the inspector. Corruption arises when 'some third person, who can benefit by the agent's actions, seeks to influence the agent's decision by offering him a monetary payment which is not passed on to the principal' (Rose-Ackerman 1978: 6). In our example, a polluting firm is the third person. Robert Klitgaard (1988) uses a similar framework where the regulator is the principal, the inspector the agent, and the firm is the client.² In economics, principal-agent problems have received much attention since the 1970s, but the extension to the issue of corruption is only recent. Jean Tirole's (1986) early work on collusion in organizations using the principal-supervisor-agent relationship has led to a substantial literature on collusion some of which dealt with corruption.

We shall look at three broad categories of such agent-client relationships. It will be useful to classify the relationships according to the power and responsibilities enjoyed by the agent. Informational asymmetry and contractual incompleteness are the two main sources of such power. First, the agent may have a purely information-gathering role. In such a case, power will come from the ability to manipulate such information. Most enforcement (regulatory enforcement, tax enforcement, policing) problems would fall into this category.³ Second, the principal might set some broad objectives for the agent, but the latter would have the power to choose the exact incentive mechanism for the clients. The principal has some control,

but delegates not only the implementation but also the design of the incentive mechanism. High-level bureaucratic corruption in policy design and in the delivery of public services would resemble this scenario. The bureaucrat might have a rough target (so many poor people to receive the public service, so much revenue to be generated) but otherwise have full control.⁴ Third, the principal might simply transfer all the power to the agent. In this case, the agent acts like a private monopolist. The issuance of licenses and permits where guidelines are virtually non-existent or non-operational resemble this monopoly case.⁵

Depending on the nature of the agency relationship and the underlying information structure, we can have two types of corruption: collusion and extortion. Consider the example of pollution control where the inspector is supposed to report on the firm's pollution level (compliance with standard). Collusion refers to the case where the inspector takes a bribe from the polluting firm to submit a favorable report. Alternatively, the inspector may be able to submit an unfavorable report or credibly threaten to report a non-polluting firm as a polluting one. In such a case, bribery might still occur, but as a form of extortion. Now the client will be bribing the agent *not to distort true information*, as opposed to the previous case where the client bribes the agent *to distort information*. We can also have an intermediate case of corruption. Suppose the non-polluting firm needs a clearance certificate for some other investment purpose. Now, the inspector might not actually report the non-polluting firm as a polluting firm, but can simply stall or delay the issue of the certificate. This is a case of harassment and bureaucratic red tape. The motive is similar to the extortion motive. The client needs to pay a bribe to get the clearance certificate.

Extortion is as important as collusion. For taxpayers, if it is possible to avoid a penalty for tax evasion by paying a bribe to the inspector, then one will be tempted to collude to evade taxes. Similarly, if an honest taxpayer is subject to extortion by the inspector, the taxpayer will be equally encouraged to evade taxes. Hence, both forms of corruption lead to a distortion of incentives. Corruption can take other forms as well but we shall be focusing on these two broad forms.

2. Organizational structures and corruption

Although the effects of corruption on resource allocation and the design of various anti-corruption measures have received much attention, research on the role of organizational structures is rather limited. Early work by Rose-Ackerman (1978) drew attention to this issue by undertaking a comparative analysis of different types of bureaucratic structures.⁶ Recently, several authors including Basu et al. (1992), Bac (1996a, 1996b), Carrillo (2000) and Mishra (2002) have studied different aspects of

corruption in hierarchies. Our analysis is partly based on the contributions of these authors.⁷

Consider a group of individuals/clients contemplating an illegal activity. The private benefit from this activity is x , where x is assumed to be distributed uniformly over an interval $[0, X]$.⁸ For much of the analysis we shall focus on the typical client, Z , with private benefit x . If Z is caught committing the crime then he/she has to pay a penalty F , $F > x$. If p is the probability that Z would be caught and punished then he or she would commit the crime if and only if:

$$x - pF > 0. \quad (7.1)$$

For any p and F , we can find the proportion of individuals choosing to undertake this activity.

These individuals/clients are monitored by officers/agents, and the agents are supposed to report the activity to the principal. This describes the basic hierarchy H_0 illustrated in Figure 7.1. The solid arrow (facing down) refers to the monitoring relation, while the dotted arrow denotes reporting. For example, in H_0 the agent monitors the client and reports to the principal. Since these officers are corruptible, they can always take a bribe and suppress the report of the activity. Hence the principal faces a double incentive problem – how to design incentive mechanisms for both the individuals and the monitoring agents.

We can interpret the model in different ways. The group of clients could be entrepreneurs trying to obtain a license or a permit which will yield a benefit x depending on the profitability of their projects. In that case, the agents are like bureaucrats who demand a bribe for granting of these permits. We have a case of pure extortion when all these projects are socially beneficial and are supposed to be granted permission. However, some projects might have higher social costs and these undesirable projects should

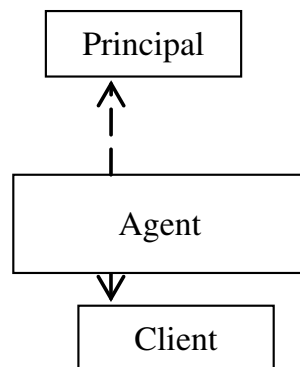


Figure 7.1 H_0

be screened out. Then we can have a case of collusion between entrepreneurs with undesirable projects and the bureaucrat when the latter approves the project in exchange for a bribe.

It is clear that enforcement is diluted to the extent that the officer is corruptible. The nature of this dilution obviously depends on the bribe determination process. If the officer has all the bargaining power, then he or she can demand a bribe of F . In such an extreme case, there might be revenue loss, but the deterrence effect is maximized. On the other hand, if the client has all the bargaining power, the client can get away with paying no bribe at all and deterrence is zero. Many authors have taken a middle ground where bribes are determined by a Nash bargaining solution with equal bargaining powers.⁹ The exact formulation does not matter so much, but results have to be interpreted accordingly. Using such a bribe determination process, it can be shown that individual Z would have to pay a bribe of $F/2$. Z would now commit the crime if and only if:

$$x - pF/2 > 0. \quad (7.2)$$

Suppose that fines cannot be raised arbitrarily (for example, limited liability reasons), $x/p < F < 2x/p$. Then the only way to ensure compliance by Z is to induce honest reporting by the officer. The officer, to that effect, can be given a reward R for honest reporting. Since the officer can always collect the reward by reporting after the bribe negotiation with Z has failed; it is proper to take R as the disagreement payoff of the officer. Now the bribe to be paid by Z to the officer is $(F + R)/2$. A higher reward implies a higher bribe. So even if honesty is not guaranteed by introduction of the reward, the bribe negotiation becomes more costly. Suppose, $R < F$, then it can be checked that the officer will never report honestly. But the individual Z will now commit a crime if and only if:

$$x - p(R + F)/2 > 0. \quad (7.3)$$

Even if $F > x/p$, for R substantially less than x/p , the above inequality can still hold and Z would benefit from committing the crime.¹⁰ But comparing the inequalities (7.1)–(7.3), one can see that some deterrence is achieved.

As seen in the previous paragraph, if $R < F$ then honest reporting does not take place. In that case, one can hire another officer to monitor the first officer. This is described in H1 shown in Figure 7.2. Agent 2 (A2) can detect bribe taking by Agent 1 (A1) with some probability q . Now, A1 can be subject to a penalty G for bribery and possibly confiscation of the bribe.¹¹ Following the detection of bribery, it is possible that the client Z also faces the same penalty and possibly an additional penalty for bribe giving. To keep

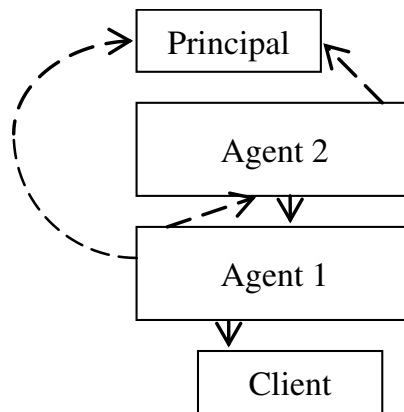


Figure 7.2 H1

matters simple, assume that it is not possible to punish Z (evidence might have been destroyed by A1) and the principal does not confiscate the bribe paid to A1. In this hierarchical set-up, the threat of punishment can work to some extent in preventing corruption by A1. However, there is nothing to guarantee that officer 2 will honestly report. Officer 2 can also take a bribe from officer 1 and decide not to report. The Nash bargaining solution to the bribe negotiation between the officers will simply be $G/2$, assuming that there is no reward for officer 2.¹² But this also has important implications for the bribe negotiations between A1 and Z. The bribe to be paid by Z is given by:

$$b = (F + R)/2 + qG/4. \quad (7.4)$$

Hence, the net expected payoff for officer 1 from taking a bribe will be given by $(F + R)/2 - qG/4$. Hence, even if $R < F$, the officer would choose to be honest if $R > F - qG/2$. So the introduction of another layer of monitoring has made bribe taking less attractive even when the second officer is corrupt. Given that $F > x/p$, honest reporting would imply compliance by Z.

Another implication of H1 is that the fine F might be non-maximal in order to achieve honest reporting by A1. Let the maximal values be denoted by the superscript 'max'. If there are upper bounds on R (or budgetary constraints in awarding high rewards) and G , such that $R^{\max} < F^{\max} - qG^{\max}/2$, then F has to be lowered to eliminate corruption. However, for maximal deterrence, the optimal fine continues to be maximal. From (7.1) it is clear that the optimal fine should always be set at the maximum F^{\max} , since it is relatively more costly to raise probability of detection p . The same is true in this case as well. Hence, maximal deterrence does not necessarily involve zero corruption in a corrupt hierarchy.

Continuing with H1 one can ask whether we need to add another layer of supervision – A3 monitoring A2. Suppose A2 is promised a reward S for

reporting bribery by A1, it is clear that for $S < G$, A2 will never truthfully report unless there is another layer of supervision. Honest reporting by A2 will make bribe taking less lucrative for A1 and even when bribery does take place, the actual bribe paid by Z will be correspondingly higher. The analysis is quite similar to the discussion in the previous paragraphs. In general, if there are no severe constraints on the choice of instruments (F, G, R, S), it is never optimal to add more layers.¹³ In principle, corruption by A1 can be eliminated with supervision by A2. When the existing hierarchy has supervisors at A3 or even higher levels, one can ask whether it is easier to eliminate corruption at the bottom or at the top.¹⁴ Unfortunately, there is no straightforward answer to this question. In the preceding discussion, the stake of corruption (size of the pie) is different at the various levels and this does not allow easy comparison.¹⁵

Instead of adding a higher level of monitoring at the basic hierarchy H0, one can add another layer horizontally (as in H2, shown in Figure 7.3). In many organizations these kinds of overlapping jurisdictions are observed. For example, a license or permit might have to be cleared by several bureaucrats in different ministries. The exact nature of this overlap depends on the context and can vary. Both the officers are supposed to detect illegal activity by Z. If one of them catches Z and reports truthfully, then Z pays the penalty and the second officer's action does not matter any more. However, if the first officer (A1) were to take a bribe and let Z off, then officer 2 (A2) could also catch Z and demand a bribe or report truthfully. Unlike the previous case, when A2 apprehends Z and the latter is penalized, nothing happens to A1 who had taken a bribe earlier. The second officer does not monitor the first officer.¹⁶

The second officer can get a bribe if Z has not been reported already. Assuming the same kind of rewards R for honest reporting, the second officer will take a bribe of $b_2 = (R + F)/2$ whenever $R < F$. This means that

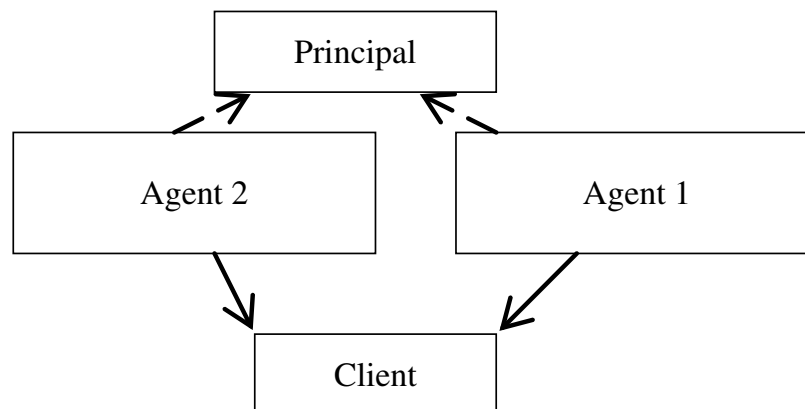


Figure 7.3 H2

the first officer's bribe is always going to be less. While negotiating with the first officer, Z knows that an agreement with him or her is not the end of the matter. If p is the probability that Z is caught by officer 2 (A2) after having been caught by officer 1 (A1), the bribe paid to A1 is given by:

$$b_1 = (F + R)(2 - p)/4. \quad (7.5)$$

This is less than the earlier bribe of $(F + R)/2$ when $p > 0$. This bribe amount for A1 is going to be still less when A2 is expected to report truthfully. As in H1, bribe taking is less attractive to the officer. It is possible to induce honesty even when $R < F$. Mishra (2002) shows that for some parameter values, it is possible to induce honest reporting in H2 even when it is not possible to do so in H1.

Similar features can be introduced in H1 also. Following Basu et al. (1992), consider a situation where following detection of bribery at any level in the hierarchy, all preceding lower levels involved in the process (not just the immediate one) also face penalties. If A2 is caught taking a bribe, A2, A1 and Z all face penalties. Hence A3 can collect bribes from all three of them. In such a case, it is easier to eliminate corruption and achieve compliance by Z.

A common feature of all these hierarchies is the fact that only the street-level officers interact with the client. In hierarchies H0 and H1, A1 is the street-level officer while in H2 both A1 and A2 are street-level officers. In some organizations it is possible to have higher-level officers also dealing with the clients. For example, in the Income Tax Department in India, senior-level officers undertake supervisory as well as tax assessment work. Hence agents at different levels combine client-related services with supervisory functions. In the context of H1, this implies that A2 deals with clients (in the same way that A1 does, though it is not the same client) and A2 also monitors A1. This opens up another possible source of bribery for higher-level agents. Agent A2 can take a bribe from some other client (say Z') and can also take a bribe from A1 in the event the latter has been found to be corrupt. Following Bac (1996a,b) we can term these as 'external' and 'internal' corruption, respectively. Such a hierarchy is described in H3, shown in Figure 7.4, where A2 is also monitored by A3.

Suppose A3 (A2) can detect external corruption by A2 (A1) with some probability. Unlike H1, internal corruption is never detected and can therefore be eliminated only through suitable reward schemes. A2 gets a reward R for reporting bribery by A1. Once an agent is found to have taken a bribe from the client, the agent is fired and all wage or other incentive payments are denied. This has some interesting implications for corruption control. Suppose A2 chooses to take a bribe from the client but prefers to report bribe taking by A1.

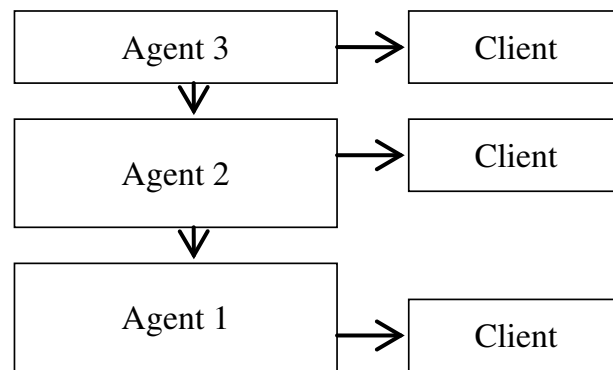


Figure 7.4 H3

The reward levels are such that there is no internal corruption. In this case, the opportunity cost of external corruption for A2 is higher because the penalty includes both wage loss as well as loss of supervisory rewards. Hence it is easier to discourage external corruption by A2 than by A1. Corruption is safer at lower levels rather than at the upper levels. But, on the other hand, this could push A2 towards internal corruption. The gain from internal corruption is higher if A2 plans to engage in external corruption as well. Hence, it is now more difficult to prevent internal corruption. Bac (1996a) addresses the issue of implementing different target levels of corruption (external) in the presence of internal corruption. It is shown that the threat of internal corruption affects the implementable range of targets in a significant way.

It is clear that these hierarchies achieve deterrence either by inducing honest reporting by the agents or by increasing the effective penalty (total bribes) faced by individuals. In many enforcement-type situations where the individual is meant to be discouraged from undertaking the action, this might seem appropriate. But what about situations where one would like to encourage such actions by the individuals? For example, in the case of entrepreneurs seeking permits or approval, a higher bribe would mean lower participation. The analysis of this situation will be different and accordingly the recommendations also vary. This being a case of extortion, the bribe negotiation process, information structure and the detection process are all likely to be different. Assume that A1 is solely in charge of issuing permits and A2 is in charge of supervising/reviewing A1's actions. The client can always supply information or file an appeal to A2 following bribe demand by A1. Hence detection of A1's corrupt practices is likely to be based on the client's actions. Since A2 is also corrupt, the client might not get any compensation, but A1 will have to bribe A2 to keep his/her job. Hence extortion might be less lucrative. In some cases, appeals might be costly, and clients will not appeal unless the extortion

payments are large. In that case, the bribe amount charged by A1 will be small.

Moreover, unlike the previous case (collusion between agent and client) where bribe payments by the clients also reflected any expected future penalty or payments by A1, in this case bribes might depend on a completely different set of factors. In this case the bribe depends on the private benefit of the client (x rather than F) and this is possibly unknown to A1. Hence A1 might charge a fixed bribe (like a monopoly price) as an extortion payment. If bribe size is fixed, the client might remain unaffected by changes in the organization structure unless these succeed in inducing honesty by A1. In the previous case, even if A1's corruptibility remains unchanged, the client is always affected by the organizational structure. But here there is some discontinuity; to the extent that bribes are unaffected by organization changes, the client is affected only when A1 stops making a bribe demand.¹⁷

Similar to H2, in this case we can also have several agents dealing with the client. Suppose the permit covers various aspects, and it is like a 'basket of goods'. There are two possibilities. In one case, agents compete among themselves for the provision of the basket of goods. As has been noted earlier, competition can lead to a reduction in the size of the bribe that the client has to pay. In the other case, agents are in charge of providing each good separately, and the client has to bribe each agent for obtaining the permit. The second situation can lead to hold-up like problems. Rose-Ackerman (1978) compares these two cases, but subsequent formal developments in the analysis of these bureaucratic structures are limited.¹⁸ We shall revisit some of these issues later in our discussion of top-down and bottom-up corruption.

The previous discussion makes it clear that different organizational structures affect the corruptibility of the officers in different ways. However, it must be pointed out that we are looking only at the corruption issue, and in real world applications other efficiency issues will also be important determinants of the organizational forms.

3. Monitoring effort and corruption control in hierarchies

The problem of detecting corruption was assumed away in the previous section. Higher-level agents were assumed to be able to detect corruption by subordinates with some exogenously given probabilities. But these detection probabilities are likely to depend, in fact, on the monitoring intensity or supervisory effort of the monitoring agent. In this section, we extend the analysis of the previous section by allowing for the detection probability to be determined through the effort choice of the monitoring agent. The success of anti-corruption measures is likely to depend on both the honesty as well as monitoring effort of the agents.

Assume that p , the probability of Z being caught by $A1$ depends on $A1$'s choice of effort e_1 in the following way:

$$p = e_1 / E, p \in [0, 1] \text{ and } e_1 \in [0, E]. \quad (7.6)$$

E is the maximum effort that an agent can exert. We shall take p as the implicit choice variable of the agent, since choice of effort uniquely determines p . We assume that utility functions are linear and additively separable. So the agent's payoff is given by:

$$\Pi = y - e, \quad (7.7)$$

where y is expected net income and includes rewards and bribes (receipts as well as payments).

The agent can truthfully report and collect the reward R or take a bribe b from Z . The bribe will depend on the penalties and rewards. The agent's choice of honesty is denoted by h , $h \in \{0, 1\}$. It will be assumed that $h = 0$ refers to honest reporting and $h = 1$ refers to bribe taking. When indifferent between these two options, the agent can randomize. Likewise, Z 's decision to commit the crime is denoted by c , $c \in \{0, 1\}$ and $c = 0$ refers to no crime. For simplicity we shall focus on the behavior of a single individual Z with benefit x . We shall suppose that c and h stand for these randomization probabilities as well and interpret these as levels of crime and corruption, respectively.¹⁹

For the benchmark hierarchy $H0$, $A1$ chooses p and h to maximize his or her expected payoff. Individual Z chooses c to maximize his or her payoff. The Nash equilibrium is simply a vector (c^*, p^*, h^*) , so that given the individual's choice, the agent's payoff is maximized and vice versa. The payoff to individual Z from committing the crime is denoted by Π_Z , and the payoff to agent $A1$ from a choice of p and h is given by Π_1 . These are given below:

$$\begin{aligned} \Pi_Z &= x - p \left[h \left(\frac{F+R}{2} \right) + (1-h)F \right] \\ \Pi_1 &= c \left[h \left(\frac{F+R}{2} \right) + (1-h)R \right] p - pE. \end{aligned} \quad (7.8)$$

It can be verified that when $R < F$, $A1$ always takes a bribe and in equilibrium $h^* = 1$. To avoid cases where the agent puts no effort in equilibrium we also assume that E is not too large.²⁰ For small penalties (compared to the gain x) there is an equilibrium with $c^* = 1$, $p^* = 1$ and $h^* = 1$. But for large

penalties, there is an interior equilibrium with $c^* = 2E / (F + R)$ and, $p^* = 2x / (F + R)$ and $h^* = 1$. The equilibrium crime level decreases in F .

Note that c^* is always positive, except in the limit when F tends to infinity. This is not surprising, since in the absence of any crime the agent does not receive any reward or bribe income and hence puts forth no effort.²¹ So long as the agent's payoffs depend on the equilibrium crime level in this fashion such a result will always hold. There might be lower bounds on p or e , but the general point is that if bribery is discouraged in this way, then this incentive scheme may not be able to eliminate the crime altogether.

To compare the various hierarchies, we shall use the following simple welfare function. A minimal version would be to take welfare as a function only of the crime level and effort costs. According to this formulation, corruption *per se* does not affect welfare. Let K be the net social cost associated with the illegal activity and N be the enforcement cost. Then welfare is given by:

$$W = -cK - N. \quad (7.9)$$

The expression for N , depends on the hierarchy under consideration. For H0, $N = pE$, and for H1, $N = pE + qE$, where q refers to the monitoring intensity of A1 by A2. One can also argue that corruption is a major determinant of welfare and bribes should not be treated simply as a transfer. Then one can include the relevant cost associated with h in this function.²²

Comparing H1 and H0

Let q be the probability that A1 is caught having taken a bribe. Given the penalty G , A1 would have to pay a bribe of $G/2$ if caught. As shown earlier, the bribe A1 receives from Z would be $(F + R)/2 + qG/4$. Assuming that q is determined the same way as p in (7.6), the payoffs in hierarchy H1 are given by:

$$\begin{aligned} \Pi_Z &= x - p \left[h \left(\frac{F + R + (qG)/2}{2} \right) + (1 - h)F \right] \\ \Pi_1 &= c \left[h \left(\frac{F + R + (qG)/2}{2} - (qG)/2 \right) + (1 - h)R \right] p - pE \quad (7.10) \\ \Pi_2 &= cph(qG)/2 - qE. \end{aligned}$$

As in the previous case, an equilibrium is given by $(c^*, h^*, p^*$ and $q^*)$. In the absence of any rewards or supervision, A2 is always taken to be corrupt. The only difference in the present case is the choice of effort by A2 who optimally chooses an effort level to maximize expected income. Clearly, A1's decision depends on A2's choice of monitoring effort. Since the bribe

that Z has to pay in the event of getting caught by $A1$ depends on $A2$'s choice, the individual's decision also depends on $A2$'s choice. We assume that E is not so high as to make the agents choose zero effort. Instead of characterizing all the equilibria, we focus on the interior equilibrium. For $R < F$, it can be shown that there exists an interior equilibrium where:

$$c = \frac{E}{R}, p = \frac{x}{F}, q = \frac{2(F-R)}{G}, h = \frac{2RF}{Gx}. \quad (7.11)$$

Note that corruption can be reduced (h lowered) by raising G and/or reducing R or F . A higher G implies greater honesty by $A1$ and less monitoring effort by $A2$. Hence it is always optimal to set G at the maximum. It can be shown that it is always optimal to minimize corruption in $H1$. When G cannot be raised because of institutional constraints, it might be optimal to lower F and raise R . Reducing R is clearly not the solution as it raises c and raises q as well. So a reduction in R will certainly mean lower welfare according to (7.9). This is a situation where the fine F need not be maximal.

However, when we are constrained to choose low R , elimination of corruption need not be optimal. Recall that elimination of corruption means $h = 0$. This is possible only if $R > F$. When $R > F$, we have $h^* = 0$, $q^* = 0$, $c^* = E/R$, $p^* = x/F$. Since $R < R_0$, where R_0 is some upper limit, welfare is bounded above by $-(E/R_0)K + xE/R_0$. But we can construct another equilibrium with $R = R_0$ but $F > R$, so that there is some corruption. The value of c remains the same. The enforcement effort now is $E[x/F + 2(F-R)/G]$. One can raise F and G such that this term is less than Ex/R . Hence by stipulating large fines one can achieve another equilibrium which yields greater welfare despite positive level of corruption. This shows that one need not insist on elimination of corruption in all situations and at any cost.

Comparing $H0$ and $H1$, it can be verified that the additional layer of supervision does raise welfare when K is high and G is not constrained to be low. Suppose that $R + F < 2x$. This means that $H0$ cannot achieve any compliance ($c^* = 1$). However, $H1$ can achieve limited compliance in such situations. When $A1$ can be punished severely (G large), compliance can be achieved at a lower cost (q is low), and one is more likely to see a hierarchy. But when $A1$ cannot be punished severely (G is small), there is need for greater monitoring (q is large) and hence the cost of enforcement is greater. Hence, unless the cost associated with the activity is very large, there is no need for hierarchical monitoring and hence no enforcement activity at all. We can summarize the previous analysis in the following proposition.²³

Proposition 1 Even when social welfare does not depend directly on the level of corruption, it is optimal to minimize corruption in $H1$ unless there

are severe constraints on designing an incentive scheme (R and G) for the street-level agent (A1). H1 welfare dominates H0, especially when the latter fails to achieve any compliance by the individual.

Comparing H1 and H2

Let us consider H2. In H2, since both A1 and A2 monitor individual Z, the sequence in which Z is apprehended matters. In many organizations, this sequence might be given from outside.²⁴ We simplify our analysis by assuming that both agents have equal probabilities of being the first one to catch Z. Since we shall focus on the symmetric case, where both agents put in the same effort, this is not a very restrictive assumption. The penalty F , the reward R , and the effort-probability functions are the same. As mentioned earlier, if the first agent is not corrupt, apprehension by the second agent does not add anything to the picture.

Let p be the probability that agent I ($I = 1, 2$) will catch A. The probability that Z will be caught is simply $p + (1 - p)p$ and the probability that Z will be caught by both is p^2 . The probability that A1 is the first one to catch Z is $p - p^2/2$. This is because H1 is the only one to catch Z with probability $(p - p^2)$ and has an equal probability of being the first one when Z is caught by both.

The analysis is straightforward if $R > F$. Now both of them are honest. However, only one can get the reward. The payoffs are given by:

$$\begin{aligned}\Pi_I &= c\left(p - \frac{p^2}{2}\right)R - pE \\ \Pi_Z &= x - [p + p(1 - p)]F.\end{aligned}\tag{7.12}$$

Assume that $F[p + (1 - p)] > x$, then there is a unique equilibrium with $c^* = 2E / R(2 - p)$ and p is given by the function $2p - p^2 = x/F$.²⁵ We can compare this with the vertical hierarchy H1. Note that if $R > F$ then one does not need a second layer or the second officer's effort is always zero. So in equilibrium $c^* = E/R$ and $p = x/F$. It can be shown that both the crime level and the effort costs are higher in H2. The main reason behind this is the duplication of effort by officers in the horizontal case.

A more interesting case emerges when $R < F$. Now the second agent is always taking a bribe if the first agent has not already reported. This affects the bribe negotiation between Z and the first agent. The bribe received by the first agent will be given by:

$$\begin{aligned}\arg\max_b [F - b - p(F + R)/2][b - R] \\ b^* &= (F + R)/2 - p(F + R)/4.\end{aligned}\tag{7.13}$$

This means that even if $R < F$, for certain values of $R > R^*$, the first agent will prefer to report truthfully and collect a reward rather than accept a bribe. This implies that the agent's optimal strategy regarding truthful reporting depends on whether that agent is the first one to catch Z. The optimal strategy would be to report truthfully if one is the first and to take a bribe if one is the last. Given that both agents follow the same strategy this means that in equilibrium Z is always reported honestly and there is no bribe taking.²⁶ The equilibrium outcome is the same as the previous case with $R > F$. So even with $R < F$, one can see complete honest reporting in H2 as opposed to H1 where some bribe taking always takes place. Since H2 can be interpreted as competition among agents, one can argue that greater competition means less corruption. In H2, there is no corruption in equilibrium for a greater range of parameter values as compared to the hierarchical case H1. Even though corruption does not *per se* affect welfare, lower corruption leads to smaller enforcement effort and possibly higher welfare in this case. The following two propositions (see Mishra 2002 for details) offer a partial characterization of the two structures H1 and H2.

Proposition 2 Unlike case H1, there exists an equilibrium in H2 where Z's crime is reported honestly even when rewards are less than the penalty. H2 welfare dominates H1 when the cost associated with crime and the officer's penalty G is not too large.

Note that as G increases the effort cost decreases under H1 and the claim does not hold for sufficiently large G . Likewise, if G is so small that the second layer of policing is defunct, the horizontal case may again welfare dominate but for exactly opposite reasons. Now the horizontal case would have a lower crime level but a higher enforcement cost. Suppose that rewards are large enough to ensure truthful reporting in H2. But now, since G is very low, there is no interior equilibrium in H1 and $c^* = 1 = h^* = p^*$ and $q^* = 0$. So there is no deterrence of crime. In that case it is better to have no enforcement at all under H1. But, the horizontal case does succeed in reducing the crime level for the same parameter values. If the gain from crime reduction outweighs the enforcement cost, then the horizontal case is better. This suggests the following proposition.

Proposition 3 When the reward and penalty for the agent are constrained so that no enforcement is possible under H1, positive enforcement can be achieved under H2 and it might be the preferred organizational structure.

Ex-ante collusion in hierarchies

The previous subsections show that when the probability of detection depends on the agent's effort, the principal is further constrained in designing mechanisms to curb corruption and achieve compliance. Still, higher-level monitoring has some role to play. But this effect gets further diluted if there is the possibility of 'ex ante collusion' between the agents at different levels.

Consider hierarchy H1. In this case, A2 puts effort into monitoring and detecting bribery by A1. It is only after detecting bribery that they collude, and A2 suppresses the report on A1's corruption in exchange for a bribe. This can be termed 'ex post collusion'. Our analysis so far focuses only on this possibility. However, A1 and A2 can collude prior to the latter's effort choice, and A2 can be bribed to do no monitoring at all. In that case, bribery by A1 is never detected. Using Coase theorem-type arguments, it is clear that this is perhaps a better arrangement for the agents concerned, as effort costs are saved. But, for the principal this poses a bigger problem, as instruments like a penalty for the agents (G) can no longer be used quite so effectively.

Many organizations do exhibit this kind of collusion. In organizations where there is repeated interaction between agents at different levels, this is the more likely form of collusion. Over time, this becomes institutionalized, and the superior officers simply receive a share up front for ignoring corrupt activities by the lower-level officers. While these two forms of collusion are not independent (*ex ante* and *ex post*), consideration of *ex ante* collusion further limits the success of anti-corruption measures.²⁷

Span of control

An important determinant of the probability of detection in the context of the various hierarchies is the span of control that the higher-level supervisors exercise. This aspect has been ignored in our analysis so far, but it can have implications for corruption. In the context of monitoring of workers and firm size, Williamson (1967), Calvo and Wellisz (1978), and Yingyi Qian (1994) have looked at the optimal hierarchical structures. The ratio of the number of supervisors to the number of supervisees (span of control) often affects the probability with which effort or shirking is detected. Bac (1996a,b) and Parimal Bag (1997) use similar insights to study different hierarchies in the context of corruption. It is possible to have a steep hierarchy (like H1) where one higher-level agent A2 monitors one lower-level agent A1 and in turn is monitored by A3. Alternatively, one can have both A1 and A2 dealing with clients with both monitored by only one high-level agent A3. This can be called a 'flat hierarchy'. These authors compare these two hierarchies under various assumptions regarding the nature of the supervision technology.

4. Centralized and decentralized corruption

The previous analysis dealt with mostly bottom-up models of corruption (Rose-Ackerman 1999). Only the street-level officer (A1) engages in bribe setting, though the actual bribe amount does depend on the nature of interaction between A1 and the rest of the hierarchy. When there are several such agents dealing with the clients, it can be viewed as a process of decentralized bribe setting. It has been observed by Andrei Shliefer and Robert Vishny (1993) and Pranab Bardhan (1997) that such decentralized bribe setting might be worse than a system of centralized bribe setting. We examine this hypothesis in this section. Our discussion follows recent work by Christopher Waller et al. (2002).

Let x be the benefit to the individual (client) from undertaking some unspecified action. We shall assume that this benefit can be realized (action undertaken) only by bribing the two corrupt agents/officers, A1 and A2. In addition, these agents are monitored by another corrupt higher-level agent A3. As mentioned earlier, corruption can be top down or bottom up. In the top down case, A3 sets the bribe to be collected from the client but requires the services of lower-level agents for dealing with the clients and hence leaves some share to A1 and A2. In the bottom-up version, only lower-level (street-level) agents A1 and A2 interact with the client, and they choose the bribe that the client has to pay. However, since the higher-level agent is monitoring them, they have to pay a part of the bribe to A3 in order to buy silence or protection from prosecution.

Assume, for convenience, that x is distributed uniformly over the interval $[0, X]$. Agents have no knowledge of x , but know the distribution. Agents ask for a uniform bribe from each client. Let B be the total bribe that the client has to pay. Clients with $x \geq B$ will undertake the action. The participation rate of the client population will be $(X - B)/X$.

Consider first the bottom-up version of corruption. Suppose that lower-level agents (A1 and A2) have to transfer a fraction q of the bribes collected by them to the higher-level agent. Suppose that A1 and A2 act in a non-cooperative way. Let w be the wage paid to the agent and b_j be the bribe demand by agent j ; $j = 1, 2$. Agent j 's payoff is given by:

$$\Pi_j = w + b_j(1 - q) \left(\frac{X - b_1 - b_2}{X} \right). \quad (7.14)$$

We can solve for the equilibrium bribe pair (b_1^*, b_2^*) , such that agents maximize their individual payoffs given bribe demand by the other agent and bribe share of the higher-level agent. It can be easily verified that:

$$b_1 = b_2 = \frac{X}{3}, \quad B = \frac{2X}{3}. \quad (7.15)$$

Participation rate will be 1/3 and total bribes received will be $2X/9$.

In this decentralized bribe setting the presence of the higher-level agent does not make a difference to the bribe amount paid by each agent or the total bribes. In that sense, adding another layer of hierarchy does not make a difference to corruption. It might be argued that this is because of the special way in which the higher-level agent has been modeled. However, we can reinterpret the situation as one where A3 monitors A1 and A2 and discovers bribery with probability q . Upon discovery A3 appropriates the entire amount of bribe collected by A1 or A2 but does not initiate any other penalty (like loss of wage or any other monetary fine). The results will be exactly same.

We can contrast this with the top-down corruption scenario. Here A3 sets the bribes to be collected by A1 and A2 (on his/her behalf). All bribes collected go to A3 who in turn transfers a certain share t to A1 and A2. Hence this resembles a centralized bribe-setting situation. In this case A3 choose B to maximize the following:

$$\Pi_3 = B \left(\frac{X-B}{X} \right) - t.$$

Clearly, $B^* = X/2$, each agent is asked to collect $b^* = B^*/2 = X/4$ from the client. Compared to the decentralized bottom-up situation, each client pays a smaller total bribe and the participation rate is higher.

Since A1 and A2 are involved in the actual collection of bribes, there is always a possibility that they may try to collect bribes in excess of the mandated bribe set by A3. Let b be the mandated amount and b_j be the excess bribe demanded by the j th agent. Since these excess bribes are not in the interest of A3, he/she would monitor A1 and A2. We assume that A3 can detect excess bribery with probability q and upon detection, appropriates the entire bribe collection and in addition can also fire the agents.²⁸ The lower-level agent will comply and $b_j = 0$, if the following is satisfied:

$$w + t \geq (1 - q)(w + t) + (1 - q) \left[\frac{X - 2b - (b_1 + b_2)}{X} \right] b_j. \quad (7.16)$$

We can find the excess bribes to be charged by the lower-level agents as in the first case. Agent j chooses b_j to maximize the following payoff:

$$\Pi_j = (1 - q)(w + t) + (1 - q) \left(\frac{X - 2b - b_j - b_i}{X} \right) b_j, \quad i, j = 1, 2. \quad (7.17)$$

It can be shown that $b_1^* = b_2^* = (X - 2b)/3$. In the absence of compliance by the lower-level agent, the higher-level agent will choose b (recall $B = 2b$) to maximize the following:²⁹

$$\Pi_3 = \left[2b + q \frac{2}{3}(X - 2b) \right] \left[\frac{X - 2b - \frac{2}{3}(X - 2b)}{X} \right]. \quad (7.18)$$

It can be shown that:

$$B^* = 2b^* = X \frac{6 - 8q}{4(3 - 2q)}. \quad (7.19)$$

We can plug the value of this in (7.18) and get the excess bribes chosen by A1 and A2. It can be shown that the total bribe paid by the client is much higher in this case. Let $q = 1/2$, then it can be verified that the total bribe paid by each client in the centralized case with non-compliance by the lower-level agent will be $3X/4$. This is higher than the total bribe demand in the decentralization case ($2X/3$). We have the following proposition:

Proposition 4 To the extent that a top-down system can achieve effective centralization of bribe setting, it leads to lower bribes paid by the client than the bottom-up decentralized form of corruption. However, in the absence of compliance by lower-level agents, the top-down system leads to higher bribes per client.

Hence the key to the whole exercise lies in the incentive constraint guaranteeing compliance by A1 and A2. As Waller et al. (2002) correctly point out, if the upper level in the hierarchy cannot achieve control of the bribe-setting process, adding such a layer simply leads to an additional layer of bribe seeking. Whether condition (7.16) will be met depends on several parameters X , q and w . In our simple example, transfer t can be chosen in such a way that (7.16) is always satisfied and the inefficiency associated with centralized bribe setting can be eliminated. However, this may not be possible in more general settings.

5. Internal promotion

Internal promotion has long been viewed as an incentive mechanism designed to curb employee shirking. In the context of corrupt hierarchies

it is not clear how promotion possibilities affect the incentives of lower-ranked officials towards corruption. At the outset, one would expect that internal promotions raise the opportunity cost of being fired and hence would reduce the incentive to be corrupt. However, as we shall see, the effects of internal promotions are not always straightforward in a hierarchy where the higher levels are also corrupt. Carrillo (2000) and James Rauch (2001) have looked at the effects of internal promotion on corruption in different contexts. Our discussion borrows from their works.

Let us consider the H1 hierarchy. A1 is monitored by A2 so that with probability p it can be detected whether A1 has taken a bribe from the client. If A1 is found not to have taken a bribe, then A1 is promoted to become another A2 (higher-level officer). Since payoffs for A2 are likely to be higher in most settings, this would strengthen the incentive of A1 to be honest. However, this expected payoff depends on a number of factors. The promotion mechanism determines the extent to which A1's chances of being promoted is affected by the decision to be corrupt. If A2 is also corrupt, then A1 can bribe A2 even after detection and can get promoted. In the extreme case, if extortion is possible, a corrupt A2 can deny promotion to the honest A1 but can promote a corrupt A1. Even when extortion is not possible but promotion is rationed so that only n members of a selected m ($n < m$) number of officers (A1) can be promoted, a corrupt A2 cannot prevent an honest A1 from being part of the selected pool but can also always pick the corrupt members of the pool for promotion. A corrupt A2 would prefer to have another corrupt colleague rather than an honest one. In these cases, if the bias towards corrupt A1 is strong, it is better to promote in a random manner. Alternatively, the promotion mechanism can be subject to review by some other officials so that a corrupt A1 is never promoted.

The expected payoff to A1 also depends on whether he or she, if promoted, plans to be corrupt or honest (as A2). It is quite possible that A1 behaves strategically in an honest manner so as to increase the chance of being promoted but plans to be corrupt. Carrillo (2000) considers a variant of H1 where A2 is monitored by another layer of agents (A3) who are always incorruptible. Here A3 can also be viewed as an outside agency which is not going to collude with the (internal) agents. A1 is audited by A2 with probability p , A2 is audited by A3 with probability q . If A1 is caught having taken a bribe (b) from the client, A1 can be fired, leading to a loss of wage income (w_1) and confiscation of the bribe. However, a corrupt A2 can hide this information in exchange for a bribe equal to the total bribe from the client. But this bribe taking by A2 can be detected as well (by A3) and in that case A2 is fired, leading to loss of wage income (w_2) and the bribe. Note that A1 incurs a cost in taking a bribe from the

client only when A2 is honest. Let x and y denote the private gains to the agents (A1 and, A2) from keeping the job or alternatively the moral cost of losing the job. As before, x and y are uniformly distributed over the intervals $[0, X]$ and $[0, Y]$, respectively. Given the wages and the monitoring/audit probabilities, one can solve for the fraction of agents who choose to be corrupt in equilibrium: λ_1 and λ_2 . Obviously, A1's decision to be corrupt will depend on the fraction of corrupt A2 officers. In this setting, it is clear that higher wages and higher probabilities of detection deter corruption. Even when w_1 and p are fixed, a rise in w_2 and q will lead to a lower λ_1 . In some sense, the deterrence effect has a trickle-down feature (as noted earlier); more honest behavior by A2 will discourage corruption at the lower level A1. In addition, wage policy and monitoring intensity are similar in terms of their effects on corruption. However, in the presence of internal promotions the role of these factors is likely to be affected.

Suppose the promotion system is such that honest A2 promotes only honest A1 (after an audit), whereas a corrupt A2 promotes both honest and corrupt A1. A corrupt senior promoting a corrupt junior officer is not uncommon given the lure of a bribe. In addition, the corrupt senior benefits if the fraction of honest A2 decreases, as that would lead to a rise in the number of corrupt lower-level officers and consequently a higher expected bribe income. Hence the proportion of A1 officers promoted is $\lambda_1\lambda_2 + (1 - \lambda_1)$. One can also work out the fraction of these who would choose to be corrupt. Suppose x and y are perfectly correlated so that we can predict whether A1 with a particular value of x will be a corrupt A2 after promotion. Let x_1 and x_2 denote the marginal agents indifferent between corruption and honesty as A1 and A2, respectively. This means that all officers with $x < x_1$ will choose to be corrupt as A1, similarly for officers with $x < x_2$. When we have $x_1 < x_2$, all corrupt A1 and even some honest A1 will choose to be corrupt after being promoted to A2.

We can discuss how anti-corruption policies are affected by the presence of promotions in such a setting. If w_2 is raised, the immediate effect will be a reduction in the proportion of corrupt A2. As indicated earlier this will make bribe taking more risky for A1. In addition, this also reduces the adverse effects of promotion (promoting corrupt officers) and indirectly encourages honest behavior by A1. A higher wage also implies a rise in the expected payoff to the honest A1 facing promotion. The overall effect of reduction in corruption (A1) is more than the case where there is no internal promotion. In contrast, a rise in q can have mixed results. First it leads to a reduction in the proportion of corrupt A2. But, for officers who intend to be corrupt after being promoted, this lowers the expected payoff. Hence the incentive to be honest declines, and overall

this can lead to a rise in corruption in A1. The following proposition, due to Carrillo (2000), summarizes this insight:

Proposition 5 Suppose that $x_1 < x_2$. An increase in the wage of higher-level officers (w_2) always reduces the proportion of corrupt lower-level officers. But an increase in the monitoring intensity (q) of higher-level officers can lead to a rise in the proportion of corrupt lower-level officers.

Promotion can play a more significant screening role if the nature and opportunities for corruption at the two levels are different and there is no internal corruption. Rauch (2001) models a situation where A2 is in charge of providing a mix of public goods out of an allotted budget. Corruption by A2 means siphoning of funds from this budget and altering the mix of the public goods. A2 uses the services of A1 to actually deliver these public goods, but A1 can also affect the final delivery of these goods by engaging in petty corruption. However, A1 is monitored by A2 so that the latter's desired mix of public goods can be delivered. An officer found to have engaged in corruption is fired and there is no internal promotion.

Individuals in the organization differ in terms of the utility they derive from the effective use of power (D), which can be exercised only at the top level (A2).³⁰ In the present context, an agent with high D will spend more time, effort and energy in monitoring subordinate agents to see that his/her desired mix of public goods is implemented. This means that less effort or time is available for designing mechanisms and schemes for creating sources of rents and hence lower large-scale corruption by A2. Since officers at the lower level (A1) risk losing their jobs by engaging in petty corruption, higher monitoring effort by A2 leads to a reduction in petty corruption. Hence, both upper- and lower-level corruption move together.

Note that in this case only honest officers have a positive probability of being promoted. Like the previous model, the prospect of promotion increases the opportunity cost of being corrupt. However, this cost differs across officers depending on their intrinsic D . A lower-level officer with a high D is likely to value promotion more because he or she can effectively use this power only after being promoted. Hence the incentive to remain honest at the lower level is always higher for officers with higher D . Since corrupt officers are not promoted, the probability of an officer with higher D being promoted is also higher. This means that if the top-level officer is to be chosen through internal promotion rather than from the general population, the probability of the top-level officer being a high D -type is also higher. Recall that such a top-level officer will spend more effort in monitoring and this leads to better screening because corrupt officers can be detected more often. Hence internal promotion leads to a reduction in both levels of corruption.

In the presence of corrupt superiors, internal promotion can also have some adverse effects. Corrupt seniors can harass their juniors which can result in more juniors choosing to be dishonest as well. Mishra (2006) considers a model of harassment along these lines and shows how we can have multiple equilibria (low and high corruption). Consider a group of junior agents being monitored by dishonest senior agents. If honest agents find that they are not free from charges of bribery and corruption and corrupt agents find that they can avoid a penalty by bribing the senior, we are likely to see depletion in the number of honest agents. The agents operate in an atmosphere of mistrust, and every one is believed to be corrupt, which prompts many agents actually to be corrupt. If there are many corrupt agents at the junior level, the probability that one of the corrupt juniors would be promoted and that the senior-level agent would also be corrupt is high. A corrupt senior, in turn, induces corrupt behavior by other agents. In this way, pervasive corruption can sustain itself.

6. Conclusion

In many countries, anti-corruption measures have been in place but have met with little success in terms of reducing corruption. The analysis in the present chapter shows that the presence of corruption in hierarchical organizations could be a significant contributing factor to this failure. When higher- as well as lower-level members of the organizations are corrupt, implementing any kind of incentive scheme becomes difficult. Incentive measures which are effective in dealing with corruption by agents can be quite ineffective when various layers of the organization exhibit corruption. The proverbial 'catching a thief with a thief' is feasible only in some specialized settings and does not meet with much success.

The results presented in the chapter go from positive to negative as we incorporate more and more real-world features. When the probability of detection of corruption is fixed, a suitable hierarchy can achieve some compliance either by inducing honest behavior or by making bribery more costly. But this is no longer true once we allow for detection probabilities to be endogenous through supervisory effort choice and *ex ante* collusion. In the latter case, there is no detection whatsoever, and the whole purpose of hierarchical monitoring is defeated to some extent.

Although we have compared various organizational structures, these have to be interpreted as choices between suboptimal outcomes. Moreover, the outcomes are sensitive to the institutional details and constraints on various instruments. In principle, it is possible to design sophisticated mechanisms, but in most real situations there are severe constraints on the choice of instruments. Our results emphasize this issue, and the general picture emerging out of the analysis suggests that the

optimal incentive scheme and the organizational structure are closely related.

We have not been able to address issues such as the role of elite honest outside agencies and the role of transparency in organizations. In cases where there is corruption inside hierarchies, adequate checks can only be provided by an outside agency. But as we have seen, if there is no way of guaranteeing the honesty of these outside agents, the objective of reducing corruption is likely to meet with little success. The process could simply lead to additional corrupt organizations. Transparency has a similar role. In the context of our model, transparency would mean easier detection of corruption. This can be achieved through various means, including disclosure norms for the income of higher-level agents, clear guidelines for decision making, and a reduction in discretionary powers.³¹

The role of honest individuals in such organizations has to be carefully examined. Often these organizations possess some honest individuals who prove ineffective when surrounded by many corrupt individuals. Unable to make any real changes, these individuals either become corrupt themselves or become passive members. One can explore schemes where the honest individuals can be more effective. Our analysis shows that we have to be careful in the design of recruitment policies and promotion schemes in such a context. Although some of these measures could be helpful in fighting corruption, in some cases it is perhaps virtually impossible to fight corruption. In such cases, we have to look at alternative modes of organizing the principal's activity.

Notes

- * I would like to thank Mehmet Bac, Kaushik Basu, Ryan Bubb, Indranil Dutta, Dilip Mookherjee and Susan Rose-Ackerman.
- 1. Hierarchies refer to the structure of relationships between agents in an organization. Williamson (1967) and Calvo and Wellisz (1978) analyze optimal monitoring hierarchies in the context of firm size by looking at the costs of vertical and horizontal expansions. Radner (1992) provides a survey of the literature looking at optimal hierarchies in the context of minimization of information-processing costs. Sah and Stiglitz (1986) look at decision making/screening in different organizational structures with imperfect communication and information processing leading to errors by individuals in the organization. Hierarchies also involve delegation as opposed to centralized decision making. Mookherjee (2003) provides an overview of the analysis of delegation and contracting hierarchies in the presence of colluding agents and a corrupt supervisor. The present chapter does not deal with these issues, although some aspects such as supervision and collusion among agents are common.
- 2. Political scientist Edward Banfield (1975) uses a similar framework in his analysis of corruption being more severe in government than in the private sphere.
- 3. Tirole (1986, 1992), Kofman and Lawarree (1993) and Mookherjee and Png (1995) are some of the models of corruption in this context.
- 4. This deals with red tape and corruption, see Banerjee (1997) and Guriev (2004). Bureaucratic red tape is one of the more important aspects of corruption not studied in this chapter.

5. There is a large literature looking at the inefficiencies resulting from corruption by the monopoly provider (Shleifer and Vishny 1993).
6. The four different types are: fragmented, sequential, hierarchical and disorganized. The first two are non-hierarchical and supervisors are placed horizontally.
7. We are not concerned with the broader issue of institutional structures. See Bardhan and Mookherjee (2000) for comparison of decentralized and centralized modes of delivery in the presence of corruption.
8. Obviously it does not make much sense to have activity with zero private benefit. This is mainly for notational simplicity and does not affect the analysis in any way.
9. Formally, bribes are chosen so as to maximize the product of the agent's and supervisor's utility. Alternatively, we can think of this as a case where each side makes a take-it-or-leave-it offer with probability $\frac{1}{2}$. See Basu et al. (1992), Mookherjee and Png (1995) and Polinsky and Shavell (2001).
10. For example, let $F = x/p + \alpha$ and $R = x/p - 2\alpha$, where α is small but positive. Then (7.3) would imply that Z still finds it profitable to commit the crime
11. In most situations, penalty for bribery involves loss of job at the most. Hence the penalty can be simply the monetized value of losing the current job.
12. One can easily introduce rewards for A2 but it does not change the main results.
13. Gangopadhyay et al. (1991) and Basu et al. (1992) have considered such multiple layers in H1 type hierarchy.
14. Bac (1996a) addresses a similar question in a slightly different context.
15. We can consider variants of H1 where the size of the initial pie (F) matters in the bribe negotiations at different stages. Suppose the penalty for bribe taking is negligible, but if a supervisor is caught by a higher-level supervisor, he/she risks losing the bribe amount. This may not be far from reality since in many corrupt bureaucracies officers are rarely punished.
16. We rule out collusion between the officers although this can have interesting implications. Kofman and Lawarree (1993) model a similar situation where in addition to A1, an external incorruptible A2 also monitors the client, and the principal can use the external agent's report to reduce corruption.
17. As pointed out in the preceding paragraph, some organizational changes (appeals mechanism) can affect the size of the bribe even if they do not induce honesty.
18. Lambert-Mogiliansky et al. (2004) is an exception. They analyse the second case in a hold-up type setting.
19. It is perhaps more natural to take heterogeneous clients and agents. As discussed in the beginning, we can have x distributed over some interval (uniformly), similarly officers can be different in terms of moral costs associated with bribery and this cost is again distributed uniformly over some interval. In such a case, we can examine the proportion of officers who choose to be corrupt. The present formulation is only for simplicity.
20. More specifically for $E < F/2$, the agent will put in positive effort irrespective of the value of the reward.
21. This is quite an obvious result and is found in most models dealing with supervisory effort and corruption. Similarly, we shall see in the context of H1 that it can never be the case that corruption is also completely eliminated ($h = 0$). In that case, upper-level supervisors have no incentive to monitor. See Marjit and Shi (1998), Bac (1996a,b) and Sanyal (2000) for different models with this feature and evaluation of anti-corruption policies.
22. One can also introduce revenue considerations of the government (suitably weighted) in the welfare function. $W = -cx - p_1 E + \theta(f - r)cp_1 h$, where θ is the weight associated with revenue considerations. Corruption also enters the welfare function because a penalty is imposed only when there is honest reporting. This formulation can also explain why rewards are not raised arbitrarily in many real enforcement situations.
23. See Mishra (2002) for a more formal statement and proofs of the various claims.
24. As mentioned earlier this is similar to the distinction between the sequential and fragmented models of bureaucracy in Rose-Ackerman (1978). In some organizations, the different permits have to be obtained in a predetermined sequence. Also see Lambert-Mogiliansky et al. (2004) for a model with multiple bureaucratic windows.

25. If $F > x > p + p(1 - p)F$, then there is another possible equilibrium with $c^* = 1$.
26. Kofman and Lawarree (1996) obtain a similar result in a different context. This result obviously will not hold if both officers could coordinate their actions and collude to have a joint strategy.
27. Various authors including Bac (1996a), Bag (1997), D'Souza and Klein (1999) and Guriev (2004) have looked at the problem of corruption with *ex ante* collusion in different contexts.
28. It is possible to argue that if A1 and A2 do not comply with the mandated bribe size, the participation rate will be lower and A3 will know for sure that there have been excess bribes. In that case $q = 1$. But it may not be enough to know that A1/A2 deviated, A3 will need to monitor to get evidence. See Waller et al. (2002) for more on this assumption.
29. Since A1 and A2 are not complying, there is no need to have positive transfer, $t = 0$.
30. One can offer various interpretations of this concept. Rauch (2001) refers to it as 'power-hunger', Soskice et al. (1992) call it 'ambition' and it is also similar to the 'legacy motive' in Maskin and Tirole (2004) and Mishra and Anant (forthcoming).
31. However, there are situations where so-called transparency can facilitate rather than deter corruption. See Bac (2001) for an analysis along these lines.

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8 Determinants of corruption in developing countries: the limits of conventional economic analysis

Mushtaq H. Khan

Corruption takes place when public officials break the law in pursuit of their private interest. But public officials can break different laws in different ways with different implications for the public good. The factors driving corruption and the effects of corruption can therefore vary widely. Understanding the causes and consequences of corruption is particularly important in developing countries, which almost without exception suffer from high levels of corruption. The virtual uniformity of this evidence strongly suggests that developing countries must share some powerful common drivers of corruption that are different from those that affect advanced industrial countries. At the same time, the very diverse economic performance of developing countries suggests that not all developing countries suffer from the same types of corruption. These two observations, summarized in the first section, provide the backdrop to my analytical investigation. I begin this investigation by identifying the drivers of corruption implicit in most conventional neoclassical economic analysis of the topic. Although these drivers are undoubtedly important in many contexts, I next argue that a number of other drivers of corruption may be more important in developing countries. These countries have several critical structural features that are recognized in the broader social science literature, but whose implications for the economic analysis of corruption have not been adequately developed. I argue that the types of corruption generated by these structural features of developing countries are much less amenable to the types of anti-corruption measures that are prescribed by the conventional analysis of corruption. I then use this analysis to provide an alternative classification of types of corruption in developing countries and suggest that policy must be appropriate to the drivers of corruption most relevant in particular countries. The implications of this analysis for anti-corruption strategies in developing countries are discussed in the final section.

1. Corruption in developing countries: the evidence

The evidence from across the developing world tells us there are very few developing countries that have low levels of corruption. The few low-

Table 8.1 Corruption and growth, 1980–1990

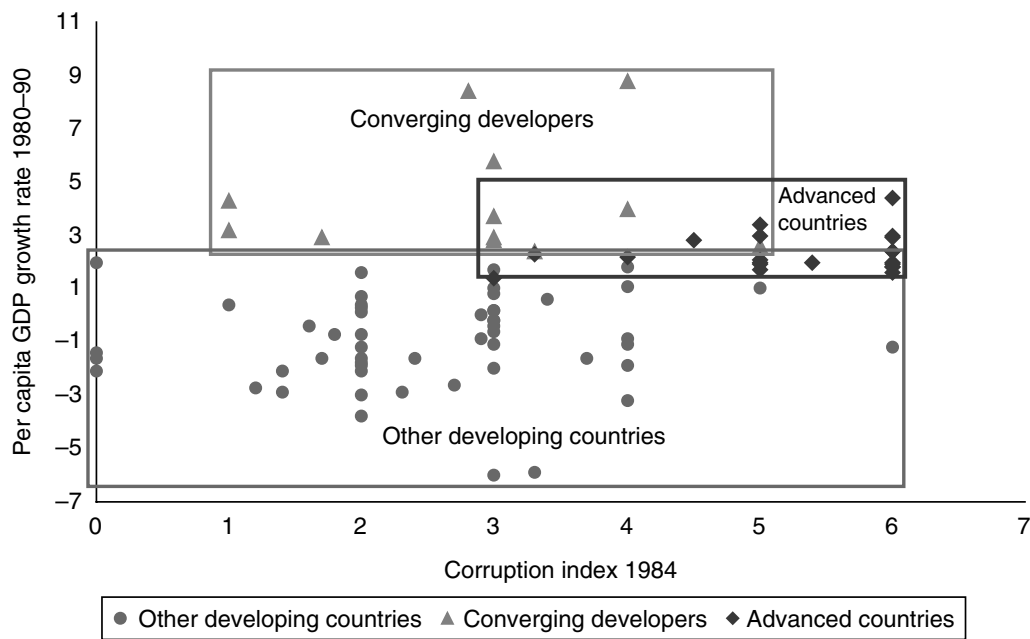
	Median corruption index 1984 (range)	Median per capita growth rate 1980–90 (range)
Advanced industrialized countries n=21	5.4 (3–6)	2.2 (1.4–4.4)
Converging developers n=12	3 (1–5)	3.5 (2.4–8.8)
Other developing countries n=52	2.6 (0–6)	–1.0 (–6.3–2)

Note: The corruption index ranges from 0 for maximum corruption to 6 for minimum corruption.

Sources: World Bank (1992); IRIS-3 (2000).

corruption developing countries tend to be exceptional and are not necessarily the fastest-growing developers. Although there are many problems with subjective corruption indices, they suffice to show the broad features of the problem. The earliest year for which corruption data are available across a broad range of countries is 1984, and we use the corruption indices provided by the IRIS center (Center for Institutional Reform and the Informal Sector) at the University of Maryland. This index ranges from 0 (the highest level of corruption) to 6 (the lowest level). Data are available for 85 countries. Table 8.1 summarizes the data and the per capita GDP growth rate of these countries over the 1980–90 period with the population split into three groups. The advanced industrialized countries are the first group. These countries have relatively low corruption indices and moderate rates of growth. Developing countries are split into two groups: a group of converging developers whose per capita growth rate is higher than the advanced-country average, and a third group of developing countries with growth rates below the advanced-country average, which were consequently falling behind in relative terms.

Table 8.1 shows that there is virtually no difference in the median level of corruption between high- and low-growth developing countries. The same data are shown graphically in Figure 8.1. The low-growth countries are more than four times as numerous as the high-growth countries, and so it is not entirely surprising that their corruption indices show a greater range of variation. Apart from that, there is no discernible pattern in the figures except that developing countries on average seem to suffer from higher levels of corruption compared to advanced countries.



Sources: World Bank (1992); IRIS-3(2000).

Figure 8.1 *Corruption and growth, 1980-1990*

Thus, two observations stand out in the table and in the scatter diagram. First, advanced industrialized economies tend to have lower levels of corruption than developing economies. This suggests that the level of development may be an important determinant of the chances of reducing corruption. Second, within the group of poorer economies, the median country in the high-growth developing-country group does not have significantly lower corruption levels than the median country in the group that is falling behind. Given the obviously damaging effects of corruption in many contexts, we read this observation not as saying that corruption has no effect on economic performance, but rather that corruption is likely to have very *different* effects in different contexts. These observations will inform our investigation of the economic analysis of corruption and the relevance of the drivers of corruption identified in much of the literature that is influencing policy making in developing countries.

An inspection of the data is particularly important given the growing number of sophisticated econometric studies that find some relationship between corruption and economic performance (reviewed in Lambsdorff, this volume, and Kaufmann, Kraay and Mastruzzi, this volume). Finding a relationship, however, does not tell us anything about causation. We need to examine the theoretical arguments closely before accepting the link between corruption and economic performance that has been suggested by a number

of frequently quoted econometric studies (Knack and Keefer 1995, 1997; Mauro 1995, 1997; Johnson et al. 1998; Hall and Jones 1999; Kaufmann et al. 1999). These studies typically establish a strong relationship between corruption (and other governance indicators) and per capita incomes. This is entirely consistent with the data showing a significant difference in the corruption index between advanced and developing countries. However, for corruption to be a policy target, we need to establish a causal relationship going from corruption to economic growth. This relationship is typically rather weak and often disappears with the inclusion of variables such as the investment rate (Mo 2001). This too is consistent with the crude data and suggests that the causal relationship between corruption and economic performance is too unreliable to be the basis of significant policy efforts without further investigation of the underlying theory (Khan 2004). In the next four sections, we identify four different types of corruption in developing countries, the factors driving their emergence and persistence, the likely economic effects of each, and the likely countermeasures that could be adopted. We argue that although all developing countries have high corruption in the aggregate, the mix of types of corruption that prevails differs widely, and this divergence helps to explain the very different net effects of corruption across developing countries.

2. ‘Neoclassical’ corruption: seeking bribes through damaging interventions

The most commonly used models of corruption, derived from neoclassical economics, assume that corruption is driven by the legal powers of the state that give public officials the ability to disrupt otherwise efficient markets. This allows them to create rents or obstacles for private investors and citizens, in most cases, acting inside the law. These powers give public officials the *ability* to bargain for kickbacks or bribes in exchange for allocating rents to those who can pay for them or removing obstacles in the path of those who would rather pay than suffer delay or obstruction (Rose-Ackerman 1978 and 1999; Klitgaard 1988; Shleifer and Vishny 1993). The kickbacks and bribes are, of course, illegal, and constitute corruption. Although the ability to create rents and restrictions is important, public officials must also have the *incentive* to break the law by seeking bribes in these ways, which means that the expected benefit to the official of engaging in corruption has to be greater than the expected cost of the potential punishment.

The two critical drivers of what we shall call ‘neoclassical’ corruption are shown in Figure 8.2. First, this type of corruption requires the existence of formal state capacities so that public officials can legally create rents of different types, or impose obstacles to the operation of markets. The creation of rents means that some potential beneficiaries will be willing to pay a price to get access to these rents, and similarly, the creation of obstacles

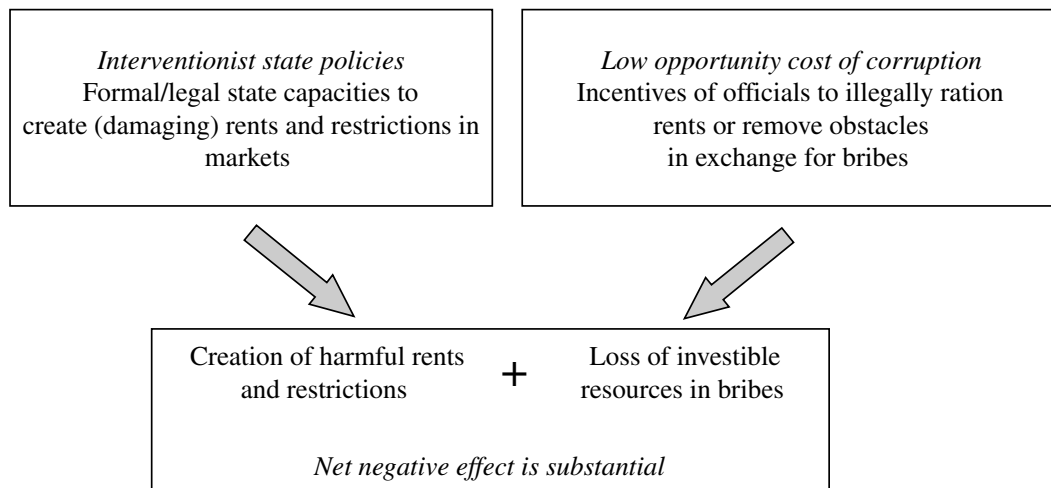


Figure 8.2 Drivers and effects of 'neoclassical' corruption

means that some market actors will be willing to pay to avoid them. The formal powers of the state to create rents and restrictions thus create the *potential* for corruption. But for corruption to take place, a second condition is that public officials must have the incentive to break the law and allocate these rents for a price to those who can pay for them, or to remove obstacles for those who can afford to pay for their removal. Because this part of the exchange is typically illegal (and therefore constitutes corruption), public officials must have a low opportunity cost of being caught in the act. The opportunity cost of being caught and losing the public position is low if the salary of the public official is low, if risk of detection is low, and if the probability of being found guilty and being punished is low even after detection. Because these conditions are commonly observed in most developing countries, the formal ability of the state to create rents and restrictions in markets leads to widespread corruption.

The obstacles and rents created by public officials seeking bribes can range from the unnecessary red tape and paper pushing that takes on iconic proportions in many developing countries to the creation of monopolies, tariffs, subsidies and other damaging rents that both directly damage the economy and create rent-seeking opportunities for public officials and others. Excessive regulation and requirements of permissions often have no purpose except to enable bureaucrats to extract bribes from the private sector. This type of corruption also includes 'petty corruption' involving low-level officials extracting small bribes for performing their duties (speed money), or for not harassing the innocent by deliberately misinterpreting very complex and unclear regulations (customs officials or police engaging in petty extortion).

This is often the most visible face of corruption in developing countries and, in opinion surveys, public irritation with these types of corruption

often dominates. Police corruption, for example, often takes top position in popular perceptions of the worst types of corruption. Some police corruption is petty corruption where traffic police (like customs officials and other low-level bureaucrats) find opportunities for corruption while implementing complex and poorly defined laws. Although these types of corruption are very irksome and can affect a great number of people, they are not necessarily the most damaging type of corruption for the economy. Nevertheless, petty corruption *is* damaging; the payoffs are regressive in that the victims are very often the poor, and they increase transaction costs and the general perception of lawlessness in developing countries. Of course, police and bureaucratic corruption can be much more serious and predatory, as we shall see later.

When these types of restrictions and laws exist, some corruption can actually enable investors and ordinary citizens to avoid damaging obstacles that impede the operation of the market. Indeed, at one time it was argued that in a second-best sense, some corruption of this type could be efficiency enhancing, depending on the context (Leff 1964; Huntington 1968). However, the ability of the state to make unnecessary laws can encourage the creation of more and more artificial restrictions and more and more red tape to increase opportunities for extraction (Myrdal 1968: 937–51). The social waste associated with this could be considerable according to some models of these processes (Krueger 1974). Nor can corruption be restricted only to those areas where the effects may be desirable even in a second-best sense (Rose-Ackerman 1978). Today the consensus is that for corruption of this type, the best policy would be to remove the unnecessary restrictions, rather than hope that corruption would enable the economy to work its way around these obstacles.

The economic cost of this corruption is twofold. First, there is a rent seeking cost, which is the cost of the resources used up in seeking the rents or overcoming the restrictions. This includes the loss of potentially investible resources in bribes transferred to public officials, who are assumed to use them less efficiently, leading to a reduction in investment. It also includes other resources that are used up, for instance by public officials seeking to maintain their positions in lucrative parts of the bureaucracy. Second, there is a social cost due to the rents and restrictions created by public officials. The damaging rents that states can create include monopoly rents, import restrictions that generate monopoly rents, subsidies to infant industries that never grow up, and transfers and subsidies to special-interest groups. Each of these generates deadweight losses for society. Similarly, restrictions and obstacles in markets increase transaction costs and result in efficiency losses. The effects of these rents and restrictions are therefore reductions in economic efficiency and deadweight

welfare losses that can result in further reductions of investment. The overall effect of corruption is the sum of these two different effects – the loss of resources in rent seeking and the adverse effects of the rents and interventions created by bribe-seeking public officials. The overall negative effect of this type of corruption (shown in Figure 8.2) is therefore likely to be significant (Khan 1996a, 2000b).

The policy advice that derives from the analysis of this type of corruption targets both sets of drivers. First, corruption of this type is likely to be reduced if the discretionary legal capacity of public officials to impose restrictions or create rents can be reduced through liberalization, privatization and reforms to ‘rightsize’ the state so that it provides only essential public services. Second, corruption will also be reduced if the opportunity cost of corruption can be raised. This can be achieved through higher salaries for public officials (financed if necessary by reducing their overall number), greater transparency in the allocation of public resources, and more effective judicial processes for dealing with those charged with corruption (World Bank 1997, 2000). These measures increase the expected cost of engaging in corrupt acts and are likely to reduce the incidence of corruption.

However, the empirical studies tracing the impact of such policy interventions on the level of corruption have produced very limited results. Contrary to the policy analysis discussed above, observations of developing countries show that factors such as the mix between the public and private sectors, interventionist or liberal economic policies, the presence or absence of democracy, the degree of centralization or decentralization of government, and the salaries of public officials have relatively little effect on the overall extent of corruption. Developing countries that follow policies of low intervention and have active civil society participation in politics do not tend to have significantly lower corruption than those that have more interventions or have authoritarian political regimes (Treisman 2000; Khan 2002). To make sense of this evidence and to come up with better policy responses, we need to look at a number of other possible drivers of corruption in developing countries.

3. ‘Statist’ corruption: seeking bribes with *potentially* beneficial interventions

A significant underlying assumption in the ‘neoclassical’ analysis of corruption is that in seeking bribes, public officials primarily create damaging rents and market restrictions. The implicit assumption is that the range of necessary public goods that states need to provide for market economies to operate efficiently is rather limited. This assumption is important for simplifying the analysis so that the capacity of the state to intervene is itself one of the neoclassical drivers of corruption summarized in Figure 8.2.

However, if the range of potentially beneficial state interventions is a wide one, there is a possibility that there may be different types of corruption with different effects. In this case, the drivers explaining the dominance of different types of corruption are inevitably more complex than in the simple model discussed earlier.

In fact, neoclassical economics recognizes a wide range of market failures and, therefore, acknowledges the possibility of potentially beneficial state interventions. These beneficial interventions are, in turn, very likely to create rents and market restrictions, but in this case, the creation of these rents may represent significant second-best improvements. The importance of some of these rents has been pointed out by asymmetric information economics, which established that a range of rents may be beneficial and even necessary for the operation of market economies in the context of asymmetric information (Stiglitz 1996). Heterodox economics looking at late developers has identified an even wider range of rents and interventions that can potentially accelerate economic development if properly managed. These include rents that can create additional incentives for accelerating the acquisition of new technologies or help development by maintaining political stability (Amsden 1989; Wade 1990; Rodrik 1995, 2002; Aoki et al. 1997; Lall and Teubal 1998; Woo-Cumings 1999; Khan and Jomo 2000; Khan 2002, 2004).

The possibility of growth-enhancing rents and interventions raises a number of critical questions for the analysis of corruption in developing countries. If a range of beneficial rents can be created by states, this gives the state discretionary powers to determine which of these rents will be created, how they will be allocated, and what conditions have to be fulfilled for beneficiaries to continue to receive these rents. Some rent seeking will inevitably follow, although the rent-seeking cost can vary depending on institutional and political conditions (Khan 2000b). Some of this rent-seeking can take the form of corruption, particularly in developing countries where the opportunity cost of corruption is low. But under these conditions, corruption can potentially have ambiguous effects. Unlike the simple case of neoclassical corruption shown in Figure 8.2 where both the rent the state creates and the rent-seeking cost in the form of bribes have a negative effect, in the case of statist corruption there are two offsetting effects.

The rent or restriction created *may* now have a positive effect that may offset the negative economic effect of bribes and other rent-seeking costs. The type of intervention and rent created now becomes of critical significance. The beneficial effect of the intervention may even be large enough to offset the negative effect of the bribe, such that the net effect of the intervention is now positive. 'Positive' in this context means that society would be worse off *without* than *with* the intervention, including the

negative effects of corruption. Of course, society would be even better off if the intervention could be organized without any corruption, but it would be unrealistic to assume that an intervention that creates a rent can be managed without a rent-seeking cost. Even if the corruption could be replaced with legal rent seeking, there would still be a rent-seeking cost, but in just the same way, society may be better off with these beneficial interventions even if they entail significant rent-seeking costs (Khan 1996a, 2000a, 2000b). It is always preferable to replace corruption with legal rent seeking if only because the latter can be regulated to ensure that its damaging effects are minimized. The policy challenge is then not one of organizing liberalization, but of strengthening state capacities for beneficial intervention, converting any illegal rent seeking into legal forms and regulating this rent seeking to ensure that the beneficial aspects of the intervention are maximized.

Figure 8.3 shows the drivers and effects of what I call ‘statist’ corruption. The outcome depends critically on the political economy of rent

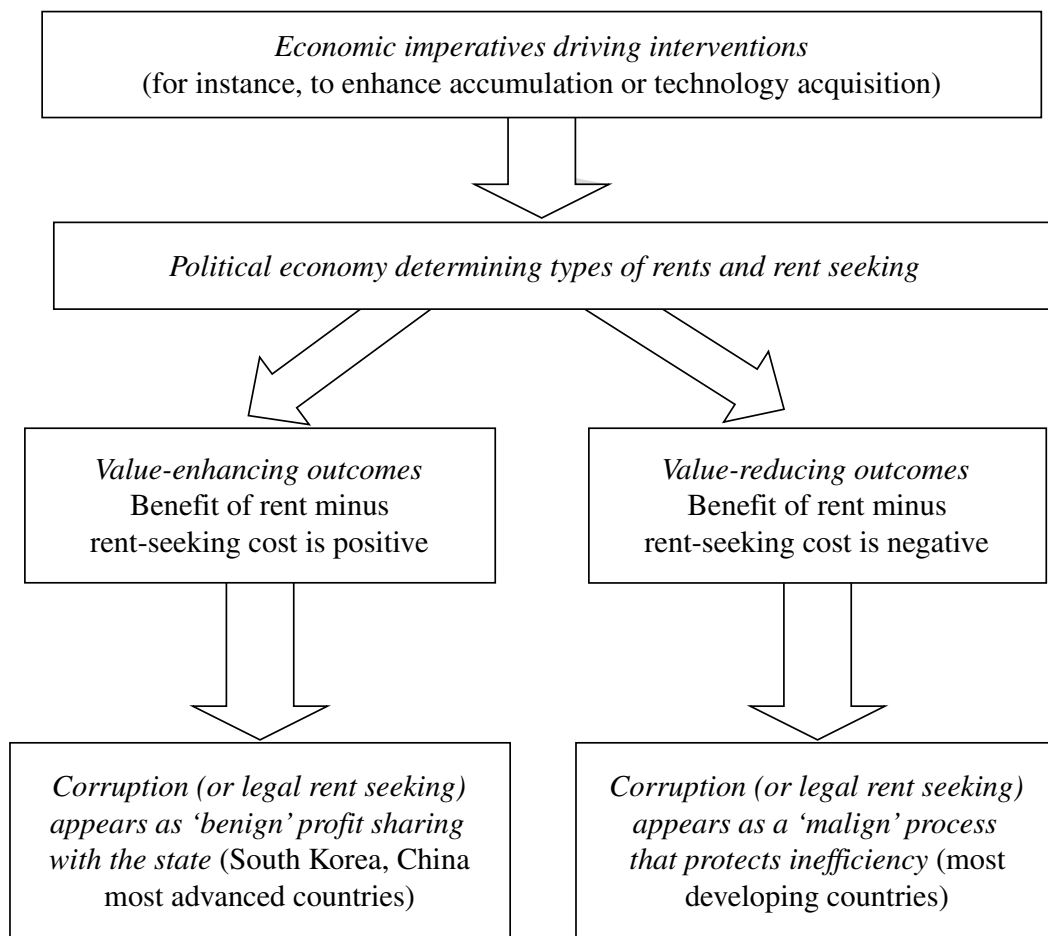


Figure 8.3 *Drivers and effects of statist corruption*

management. This is the process of rent seeking through which the types of interventions and associated rents are determined, together with the absorption of resources in different forms of rent seeking including both bribes and legal forms of rent seeking, such as lobbying, political contributions and so on. We can distinguish between two quite different possibilities as shown in Figure 8.3. Value-enhancing outcomes, shown along the left-hand fork arise if the political economy of the rent-creation process permits the creation and effective management of rents that create incentives for economic growth, and if the resource cost of rent seeking or corruption does not outweigh this benefit. In this case, economic development can coexist with substantial corruption, or in the absence of corruption, with substantial rent seeking. Corruption operates here as a tax that public officials collect from the growth-generating beneficiaries of rents. In the case of legal rent seeking, rent seekers contribute to political parties or hire lobbyists. As it is likely that a growing economy will allow more bribes or legal benefits for public officials over time, we can assume that, *ceteris paribus*, public officials (if they could act collectively) would prefer this outcome. Value-enhancing state intervention coexisting with substantial corruption is frequently observed in high-growth developing countries such as South Korea in the 1960s, or in contemporary China (Khan 1996b). Legal rent seeking by dynamic producers in advanced countries (for instance, to protect their innovation rents or to lobby for tax breaks) is generally also of this variety.

In contrast, the right-hand fork in Figure 8.3 shows that value-reducing outcomes are also possible, where the net effect of rent management is negative. This could be because either the cost of the rent seeking is too high, or more likely, the rents themselves are damaging. The damaging rents in this case are potentially beneficial rents that are poorly managed and allocated. The overall effect together with the rent-seeking cost is negative, just as in the pure neoclassical case. Indeed, the two can be difficult to distinguish because *potentially* beneficial rents can have damaging effects if they are badly managed or allocated. For example, a potentially valuable subsidy for technology acquisition can become a damaging rent if inefficient subsidy recipients fail to acquire technology and are able to pay to keep the subsidy in place even though it is ineffective. The effect of this rent is the same as if public officials had created wasteful subsidies in the first place, and used their capacity to allocate these rents to extract bribes from subsidy recipients. Thus, cases of corruption that appear to be neoclassical corruption (where damaging rents are deliberately created to extract bribes) may be difficult to distinguish from corruption associated with failed statist interventions where states fail to manage potentially beneficial rents effectively so that the rents appear to be damaging *ex post*.

Comparing the two types of outcomes in Figure 8.3, the paradox in the case of value-reducing outcomes is that the total bribes collected here may often be lower than in the case of value-enhancing outcomes where developmental policies are effectively implemented. We can assume that if public officials could determine the political economy of rent management, they would collectively prefer to achieve value-enhancing outcomes, if only because this would maximize the bribes or legal benefits that they could collect over time. This is a stronger version of Shleifer and Vishny's (1993) conclusion that coordinated corruption is less damaging than uncoordinated corruption. It follows that if public officials have the power to create rents, the creation of damaging rather than beneficial rents has to be explained because they could in theory benefit even more from the latter. One possibility is that state institutions are fragmented and individual public officials create rents to collect bribes for themselves and are unable to coordinate with other officials to maximize the total bribe. This is the explanation that Shleifer and Vishny suggest, although their model is one of neoclassical corruption where the rents created are always damaging. Nevertheless, they show that coordination to maximize the bribe collected can limit the creation of damaging rents. If states can create beneficial rents as well, the effect of a failure to coordinate state agencies would be even stronger. Another possibility is that rent-seeking factions in society are powerful but fragmented, so that factions can veto reallocations of rents away from themselves regardless of the social cost (Khan 1996b). For instance, it may be potentially very beneficial to provide emerging entrepreneurs with tax breaks or other resources to accelerate their acquisition of new technology. However, if inefficient capitalists can easily join political factions that can exert pressure to protect their subsidies regardless of efficiency, a potentially beneficial policy can be subverted by what appears to be corruption. In fact, the inefficiency-generating corruption is only a manifestation of a deeper problem, the fragmentation of political power. Unless reforms can restructure political organizations, anti-corruption strategies by themselves will not achieve much because legal rent seeking will be almost as harmful as illegal payoffs in these cases.

An analysis of the drivers of statist corruption shows that the policy recommendations coming from the neoclassical analysis of corruption can be counterproductive. If the rent-creating intervention of the state can be *potentially* beneficial for the economy, removing or limiting the rent-creation capacities of the state may be inappropriate. This would obviously be true for those cases where corruption was associated with value-enhancing interventions (the left-hand fork in Figure 8.3). Even in these cases, corruption is a social cost and is certainly not *functional*. But even if corruption is a social cost, the appropriate social response should

be to try to regulate and *reduce* the cost of the rent seeking, not to do away with the rents. Zero corruption could be achieved by removing the relevant rent-creation capacities of the state, but society would be worse off as a result.

The more interesting question arises in the cases (unfortunately the majority) where the underlying political economy of rent management subverts decisions about the types of rents to be created and their allocation so that the outcome is value reducing (the right-hand fork in Figure 8.3). Here the neoclassical response of limiting state capacities may appear to be appropriate because in these cases it would be arithmetically true that shutting down both the rent and the associated corruption would leave society better off. But closer reflection suggests that in many cases this response would be inappropriate. It would only make sense to scale back the interventionist capacities of the state if *nothing* could be done to address the underlying political economic situation. If something can be done, then addressing the political economy drivers responsible for subverting potentially beneficial interventions may be more fruitful for society than to respond as if the problem was one of neoclassical corruption.

4. Political corruption and clientelism

Neoclassical and statist corruption each raise different policy challenges, but they are both essentially driven by states that legally create rents and public officials who illegally benefit from the associated rent seeking. In contrast, the drivers of corruption in the political systems of developing countries raise some entirely new issues. These drivers derive from the imperatives of political stabilization in the context of underdevelopment. Political stabilization in any country entails the redistribution of incomes. But in advanced industrialized countries, the process through which this redistribution is achieved has characteristics that are quite different from those of the typical developing country. Two of these differences are significant, and together, they help to explain why political stabilization in advanced countries can typically be achieved through transparent redistributions through the fiscal process. In contrast, political stabilization in developing countries typically involves off-budget transfers that usually involve political corruption.

The first and most obvious difference between countries at different levels of development is that richer countries with large productive sectors in the regulated or formal sector find it much easier to collect a significant share of national income in taxes. This allows advanced countries to respond to political organizations demanding redistribution with a range of transparent and legal transfers and public service delivery. In contrast, countries where the formal or modern sector is still small find that not only is their

national income small, but also that they can typically tax a much smaller share of this smaller income. In many of the poorest developing countries, the budget is in deficit after the salaries of public employees have been paid. In the more developed of the developing countries, tax income may partially cover some of the spending on infrastructure, but even in these countries, much of the investment in infrastructure is typically financed by borrowing or aid. In most developing countries, very little tax revenue remains for financing redistribution. At the same time, developing countries typically face more serious problems of internal political conflict than advanced countries, given the wrenching social transformations that they are experiencing. This means that political stabilization cannot be organized through the public fisc in most developing countries.

Second, not only do advanced countries have significant tax revenues to achieve political stabilization, they also enjoy powerful internal feedback mechanisms that prevent or limit political demands that pose sustained threats to the viability of the productive sector. The main reason for this is that in advanced industrialized countries the standard of living of a significant proportion of the population depends directly or indirectly on the health of the capitalist sector. Apart from the capitalists and workers directly involved in this sector, the well-being of professionals, public sector employees and the self-employed depend on the taxes or the purchasing power of the capitalist sector. This means that although organized groups have every interest in pushing for redistribution to themselves, if their collective demands begin to restrict the growth of the productive sector, powerful feedback mechanisms begin to operate because all groups begin to lose out from the economic slowdown. This mechanism is not perfect, and there are clearly occasional crises, but in the main, political parties, trade unions and interest groups know that their redistributive demands will only be tolerated by other groups if they operate within the constraint of maintaining the viability of the capitalist sector. Not surprisingly, redistributive politics in advanced countries operates through periodic renegotiations of tax and spending priorities within relatively narrow ranges of variation. In contrast, in the typical developing country, the productive capitalist sector is relatively small and the well-being of most people in society is not affected by a change in the fortunes of this sector (except in the very long run). Consequently, even if the demands and activities of redistributive groups have serious implications for the economic viability of the productive sector, there are much more limited feedbacks limiting the demands of these groups. Not surprisingly, populist politics and clientelist political factions can persist in their strategies for long periods in developing countries.

These two features of developing countries combine to provide a powerful set of drivers for political corruption that have little to do with the

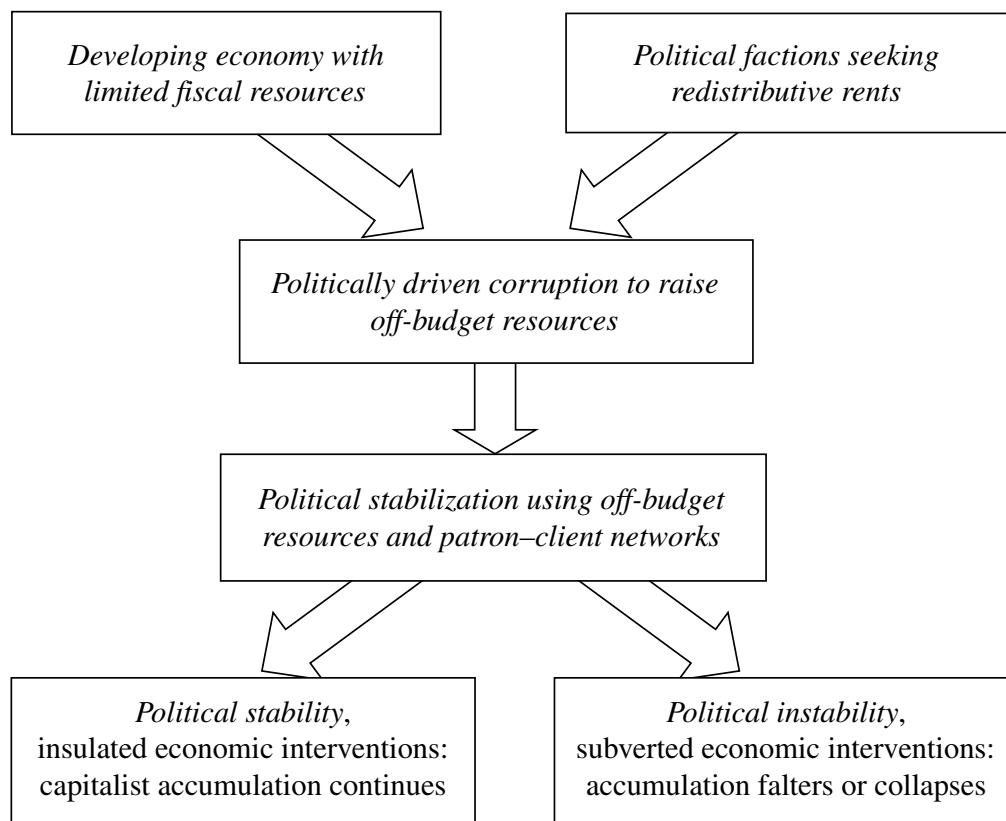


Figure 8.4 Drivers and effects of political corruption in developing countries

interventionist rent-creation capacities of states and the greed and opportunity cost of public officials involved in rent creation. These drivers are shown in Figure 8.4. Redistributive demands in developing countries are driven by political factions. The organizational structure of these factions varies from country to country, and this variation has important implications for the extent of these demands and the types of political movement through which they are expressed. At the same time, compared to advanced countries, state leaders in developing countries have much more limited formal tax resources to deal with these demands. The standard response of developing-country states has therefore been to try to achieve political stability by selecting the most powerful or dangerous factional groups and transferring resources through informal patron–client networks to accommodate these groups.

This results inevitably in political corruption for two reasons. First, most of the resources transferred down these networks are by definition off-budget resources often raised through corruption. In some cases, governing factions engage in corruption or predation and use the proceeds to accommodate powerful clients. In other cases, powerful clients may be

allowed to raise resources for themselves through corruption with the state turning a blind eye to these activities. Second, even if some of the resources transferred to selected factions come from legal fiscal sources, their allocation to chosen groups is itself often an act of political corruption. This is because the available resources are typically insufficient for general disbursement to all groups so that their allocation to chosen groups often has to be less than transparent and often has to involve violations of formal rules for the political benefit of the public officials concerned.

The impact of political corruption depends on the context. In some situations, political corruption can coexist with economic development, as shown along the left-hand fork at the bottom of Figure 8.4. In these cases, the net effect of patron–client politics and political corruption is to achieve enough political stability for the growth of the capitalist sector to continue. A good example of this type of political corruption in a democracy is found in India, particularly in the 1980s and 1990s (Harriss-White and White 1996; Jenkins 2000; Harriss-White 2003). Here political stability and economic reforms were achieved not because the political system was finally free of political corruption but rather because patron–client networks were used to buy off the opposition using graft and obfuscation. By most accounts, political corruption in India was high and growing during this period. This does not mean that all successful developing countries must suffer from high levels of political corruption. In high-growth Malaysia, which was moderately democratic in the 1980s when growth took off, political corruption was controlled through the construction of an inclusive political coalition that allowed political stabilization through legal transfers to powerful constituencies while still allowing significant growth to occur in the productive sector (Khan 2000b: 98–101). As resources for political stabilization did not have to be raised and allocated outside the budget to the same extent as in other developing countries, Malaysia scored better on corruption indices than many of its peers at a similar level of development. But this was partly due to fortuitous features of Malaysian political economy, including in particular the more significant development of its productive sector before its high-growth period began, which could be taxed both directly and indirectly to generate revenues for redistribution.

But most developing countries suffer from poor economic development and high political corruption as shown at the bottom of the right-hand fork in Figure 8.4. In Africa, it used to be argued that political corruption in the form of neo-patrimonialism was due to the absence of democracy, and that authoritarianism allowed the continuation of personalized politics and the use of informal sources of power by the ‘big men’ (Médard 2002). However, it is now more commonly recognized that neo-patrimonialism and

patron–client networks have survived the transition to democracy in Africa, and they continue to operate with relatively slight modifications (Chabal and Daloz 1999). Elected parties soon realize that staying in power involves transmitting resources to powerful constituencies through patron–client networks and, if anything, political corruption increased in many of these countries after democratization.

Thus, high- and low-growth developing countries do not necessarily differ in terms of the extent of political corruption. Rather, the differences are, first, that in successful developers, redistributions through political corruption and other mechanisms achieved political stability while in less successful developers stability was not achieved. As a result, the ruling elite in successful developers can take a long-term view in their policy interventions, but the ruling elite in unsuccessful developers has a short time horizon and in extreme cases becomes predatory. Second, an important feature of successful developers is the insulation of critical economic interventions and the associated rents from the political processes through which political rents are allocated. The greater the separation, the greater the chance of sustaining high economic growth as a greater range of critical economic interventions will remain growth enhancing. The extent to which stability is achieved and political redistribution can be isolated from essential economic interventions depends on the structure of patron–client factions in the country, the institutions of representation and the fiscal resources available to the state (Khan 2000b).

Given the drivers of this type of political corruption, it is not surprising that we find that its extent is hardly affected by greater transparency, higher public sector salaries or democratization. The only sustained long-term effect on corruption of this type is likely to come from economic development, which is likely to result in a growing fiscal capacity of the state to respond to political demands in open, transparent and generalized ways. Economic development is also likely to lead to a moderation of the demands coming from competing groups demanding redistribution so that economic viability is disrupted to a lesser and lesser extent over time. The comparative evidence supports the view that there are no easy fixes for this type of corruption, which is common in developing countries. The harm caused by this type of corruption depends on the organization of factional politics, and this can, to some extent, be altered through political restructuring. But if the aim is to achieve the degree of transparency and fiscal accountability observed in advanced countries, reformers in developing countries are setting themselves an impossible task given their fiscal capacity and the factional demands they have to satisfy.

5. Theft and primitive accumulation

The most pernicious type of corruption in developing countries is predatory corruption by public officials. In this variant of corruption, public officials directly, or indirectly through private factions, grab or assist in the grabbing of public resources, such as land or mineral resources, or collude in the extraction of 'protection money' from citizens. This type of predation can be observed in all types of societies, but its incidence is significantly greater in developing countries. Although theft by a private individual would normally not be defined as corruption, when the state colludes in and benefits from theft or the theft is carried out directly by public officials, this involves corruption because it involves the use of public power for private benefit. In extreme cases, this type of corruption could be associated with a descent into warlordism, where warlords become the *de facto* state.

Plunder in developing countries is also a systemic problem that seems to be associated with the transitional nature of these economies. Developing countries are typically characterized by a situation in which potentially valuable land and natural resources are owned by low-productivity traditional users, often for various forms of collective use. At the same time, most industrial assets are also owned by low-productivity firms. As a result, asset owners collectively cannot produce enough of a surplus to pay for the protection of their assets through the tax system. Individual asset owners who do produce a surplus are forced to make private or semi-private arrangements for protecting their assets, for instance by paying protection money to private mafias, but most asset owners cannot afford this option. In such a context, it is difficult, even with the best political will, for the state to ensure a satisfactory protection of property rights across the board. The most likely outcome is that the state or parts of it become variants of the mafia, providing private protection at a price to those who can afford it. The difference between predation and protection can very quickly become blurred in these contexts. Much of the police corruption in developing countries takes this more serious predatory form (compared to the neoclassical form discussed earlier), with police and security services often engaging in direct expropriation or allowing expropriation by those who can afford to pay them. With a high degree of coordination of the protection services offered by the state, the outcome can be effective protection for privileged asset holders, who may even be assisted in capturing further assets from those less able to buy protection. But with high degrees of fragmentation in the provision of protection, the outcome can be sequential extortion even from potentially productive producers by different agencies, with the result that the economy collapses.

There are obvious parallels between these processes and the descriptions of 'primitive accumulation' in early capitalism coming from classical

political economists, in particular Karl Marx. Marx was referring to *non-market* transfers during transitions from pre-capitalist to capitalist modes of organizing production. The transfer of assets from pre-capitalist sectors to the emerging capitalist sector has never happened entirely through market exchanges. According to Marx, in the context of the transition to capitalism in England, primitive accumulation involved theft, the enclosure of common lands, colonial plunder, and the use of political power to engineer unequal exchange, the protection of markets, and transfers through the fiscal mechanism (Marx 1979: 873–940; Wood 2002). Thus, primitive accumulation involves more than plunder, and all plunder is not primitive accumulation. If the ensuing transition takes society in the direction of a viable capitalist economy that can produce a significant economic surplus, this can eventually pay for the protection of the new structure of rights, and the primitive accumulation eventually ends.

Corruption related to the expropriation of property rights is particularly troubling given the importance attached to the stability of property rights in explaining the poverty of many developing countries (North 1990; Knack and Keefer 1997). However, property rights are unstable and contestable to varying degrees in every developing country, and they have been so in every country during the early stages of development. This is not surprising once we identify the structural factors that can explain why involuntary, non-market asset transfers are common in these situations. Stable property rights require a significant public infrastructure of laws, courts and enforcement mechanisms that can ensure that property rights are clearly defined and that their enforcement is a public good that does not depend on individual asset holders spending money to protect specific assets. This infrastructure is an expensive investment, but one that pays for itself over time. The problem for developing countries is that existing economic assets are (by definition) not being used in very profitable ways and most economic activities do not produce significant surpluses that could be taxed to provide for the collective enforcement of property rights. This chicken and egg problem can explain why property rights are uniformly weak across developing countries.

The absence of an adequate taxable surplus in developing countries that could allow the protection of property rights as a public good has two inter-related effects. On the one hand, the absence of public resources needed to provide an infrastructure of protection means that many assets are vulnerable to expropriation. Public officials are implicated if they turn a blind eye to the activities of expropriators who provide them with kickbacks or who are their clients. Furthermore, public officials sometimes directly engage in expropriation themselves. On the other hand, the high transaction costs of organizing voluntary sales of assets can prevent the purchase of assets by

potentially efficient users from current, less efficient users, even if public officials are not engaged in non-market transfers. The implications of the second effect are very significant. If the possibility of legal contracting is limited because of the high transaction costs of market exchanges, it is possible to explain why many transfers of assets, even in rapidly growing developing countries, take place through non-market mechanisms. These non-market transfers are typically driven by the greed and opportunism of expropriators rather than a calculation of net social benefit. Nevertheless, they may sometimes result in an improvement in asset allocation. This arguably happened in the case of the enclosures and other forms of primitive accumulation that led to the emergence of English capitalism. But equally, if greed and opportunism drive non-market transfers, there is no guarantee that the outcome will be socially beneficial.

In developing countries, powerful groups and factions in society are likely to be engaged in a struggle to restructure ownership and the organization of production or to capture weakly protected assets using their political power. The uncomfortable historical fact is that successful transitions to capitalism did not take place because pre-capitalist property rights were respected and only transferred through voluntary exchanges. Both in rapid developers and in other societies, periods of transition involved significant non-market transfers, but specific and contingent historical factors, in particular, pre-existing class and group organizations of some societies, ensured that expropriators had incentives and compulsions to invest in productive enterprises and were not themselves subsequently targets of further expropriation. Recent scholarship has pointed out the importance of the configuration of pre-existing social organizations in determining the trajectories of transition in Europe (Aston and Philpin 1987; Wood 2002). Similar differences in social organization can help to explain the differences between successful and less successful transitions in Asia (Khan and Jomo 2000).

The drivers and effects of the corruption associated with theft and primitive accumulation are shown in Figure 8.5. At first, low-productivity pre-capitalist economic sectors dominate the economy and explain the relatively low taxable surplus available to provide effective protection and enforcement of the underlying rights. The organizational structure of society determines how groups mobilize in response to these weakly defined and contestable rights to expropriate the assets of others or protect their own. We expect to see a wide range of non-market transfers in these contexts, ranging from theft and land grabs that are undoubtedly corrupt to politically organized transfers such as land reform. In between are transfers that are legal but open up possibilities of corruption, such as some privatization strategies, prioritized allocation of land and other resources for

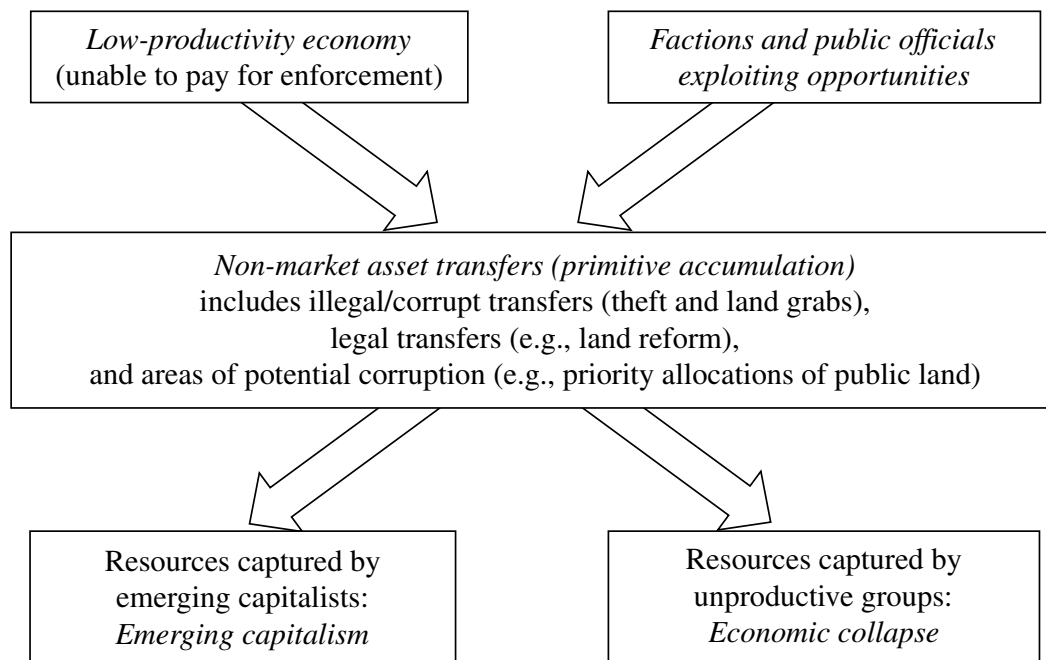


Figure 8.5 Drivers and effects of theft and primitive accumulation

specific sectors or uses, and so on. As in the cases of corruption discussed earlier, the outcomes are not predetermined.

If the expropriators of today can subsequently purchase protection at a price that allows them to avoid further expropriation, the period of primitive accumulation could lead to an emerging capitalism. The emerging productive economy can then begin to pay taxes and create state capacities that permit a transition to the stabilization and enforcement of property rights. Unfortunately, the norm in most developing countries is one where expropriators are in turn expropriated, where incentives for productive investments do not emerge, and where the non-market transfers appear to be overtly predatory and destructive for the society's economic prospects. In other cases, as in Russia, expropriators face limited or no compulsions for productivity growth and become instead monopolists who can use their market power to extract from consumers. Here, expropriators may be able to pay for the protection of their rights, but a second round of redistribution or the construction of institutions that can compel productivity growth may be required to enhance social output.

In a broad sense, expropriation can also be analyzed as a variant of rent seeking. The equivalent of the rent here is the asset or income that public officials can expropriate or help others to expropriate using their political or military power. The rent-seeking cost is the wasteful use of resources by different groups of expropriators in the course of maintaining their positions of power within or over the state. Despite these similarities with other

types of rent seeking, the drivers of this type of corruption are very different from those discussed earlier. In particular, expropriation is not based on state capacities to intervene, but rather on the absence of well-defined and well-protected property rights in society, which in turn create incentives for expropriation.

A focus on reform strategies that aim to address the predatory capacities of the state through greater transparency and accountability and by strengthening the enforcement capacities of the state is unlikely to be effective because the economy does not produce an adequate surplus to pay for the protection of underlying rights. This lack of resources is a critical structural driver of property rights instability that is unlikely to be adequately addressed before a substantial transition to a productive economy has already happened and the required revenues are available for the protection and enforcement of rights across the board. In the meantime, strategies responding to the typically adverse effects of predatory theft and corruption are most likely to work if they can change social organizations and state capacities to ensure that the non-market transfers that characterize every transition lead to a more productive economic structure. Unfortunately, our understanding of these conditions is still very poor and certainly not robust enough to generate reform strategies that are likely to enjoy a wide base of support.

6. A classification of corrupt transactions

The discussion so far has distinguished between four types of corruption in developing countries based on differences in the underlying drivers. From a policy perspective, it is useful to present this classification slightly differently. Although all corruption involves the violation of some formal rules of conduct, Table 8.2 classifies the types of corruption discussed here in terms of the characteristics of underlying state interventions that generate the corrupt behavior. There are two areas of difference in the underlying state interventions. First, the underlying interventions may be either potentially beneficial or potentially harmful. Second, the underlying interventions may be either legal or illegal. These two sets of differences identify four distinct types of corruption in Table 8.2. These distinctions are important for identifying the policies that may be appropriate for dealing with different types of corruption and for identifying types of corruption that may not be amenable to any simple policies in developing countries.

The first and simplest type, called neoclassical corruption, is shown in the bottom left-hand quadrant in Table 8.2. Here corruption is associated with the legal capacity of the state to intervene, but these interventions create damaging rents or restrictions in markets. Here, the mainstream policy recommendations of liberalization and privatization together with institutional reforms to increase the opportunity cost of corruption are

Table 8.2 A typology of corruption based on associated interventions

	Legal interventions	Illegal interventions
Potentially beneficial interventions	2. <i>Statist corruption</i> Net effect can be beneficial or damaging depending on how seriously corruption subverts interventions. Anti-corruption policy should address drivers to prevent subversion	3. <i>Variants of political corruption and primitive accumulation</i> Net effect depends on degree of political stability achieved, insulation from economic interventions and the emergence of productive capitalists. Anti-corruption policy should seek to increase likelihood of these outcomes
Damaging interventions	1. <i>Neoclassical corruption</i> Net effect of intervention always negative. Anti-corruption policy should remove these state capacities through liberalization and privatization	4. <i>Variants of political corruption and predation/theft</i> Net effect always negative: possible descent into warlordism and anarchy. Anti-corruption policy has to strengthen centralized coercive power of the state

appropriate. But it is doubtful whether this is the most important type of corruption in developing countries. If this is only a part of the corruption problem, and if in addressing this, policies damage the state's development prospects by limiting state intervention, then these policies may hinder, rather than help, the struggle against corruption in the long run. It is therefore important to assess the relative importance of other types and drivers of corruption before devising policy responses.

The second type of corruption is statist corruption, which is distinguished by being associated with state interventions that are legal and *potentially* beneficial for society. These interventions include such things as managing taxes and tariffs to accelerate technological progress and catching up by domestic industry, the regulation of financial markets, and the allocation of credit or the prioritization of infrastructure construction. These are precisely the types of intervention that heterodox theories of the state have identified as critical in developing countries going through rapid transitions and catching up with advanced countries. Clearly, corruption in these areas can have a much more significant effect on the economy, both in terms of growth and distribution. Here corruption can reduce the social benefit of the intervention or even make the intervention a damaging one. Indeed, in most cases, the subversion and distortion is so severe that *ex post*

many cases of statist corruption may be indistinguishable from neoclassical corruption because the potential benefit of the associated intervention is not obvious. Nevertheless, we have argued that liberalization would not necessarily be the most appropriate response. If potentially useful state functions are subverted, the underlying political economic reasons for why this happens have to be addressed. Otherwise, strategies of state withdrawal risk throwing out the baby with the bathwater.

The right-hand column in Table 8.2 looks at corruption associated with interventions that are not legal and cannot be made legal. All types of political corruption, primitive accumulation, and theft would be in one or other of the two right-hand quadrants, but it is quite important to be able to distinguish between them. The two differ in terms of whether the underlying interventions are potentially beneficial or not. If the illegal interventions associated with the corruption are beneficial for society, as in (3), the consequences are likely to be far less serious than if the underlying interventions are damaging as in (4).

Quadrant 3 describes corrupt transactions arising from potentially beneficial interventions that are not or cannot be made legal, including some variants of political corruption and primitive accumulation. We have seen that off-budget political stabilization typically cannot be legal, but may be necessary given the inadequacy of fiscal resources and the pressure for political accommodation coming from powerful political factions in society. Similarly, many forms of primitive accumulation cannot be made legal, but these non-market transfers may be necessary to achieve rapid asset reallocations to users who are more productive. Thus, a subset of both political corruption and of primitive accumulation may be potentially growth enhancing, and even in the presence of substantial corruption may actually be so, given the alternatives. However, the outcomes of these types of intervention are very susceptible to the precise form of the political economy and institutional drivers discussed above.

These drivers may be conducive to economic development and political stability. For instance, the net effect of some types of political corruption may be sufficient political stability for accumulation and growth to continue. The organization of the political factions that are accommodated through political corruption may also be such that they can be satisfied through rent allocations that do not require the subversion of necessary economic interventions. Political corruption may then be associated with illegal state actions that are nevertheless consistent with economic development. In the same way, the organization of factions may be such that the primitive accumulation induced by weakly defined property rights allows rapid asset transfers to an emerging productive capitalist class.

In these cases, anti-corruption strategies need to address the issue of converting the illegal rent seeking associated with otherwise beneficial state interventions into legal rent seeking that can be regulated in transparent ways over time. Some of these processes of legalization are made both easier and more necessary by the process of economic development itself. For instance, as economic development proceeds, growing fiscal resources mean that the dirty politics of patron–client alliances and payoffs can be replaced with transparent political stabilization and the stabilization of property rights. At the same time, the growth of interest-based political associations connected to a growing productive sector creates pressures for the political accommodation of broad interest groups rather than of personality-led political factions. This does not mean that the decline of political corruption is necessarily automatic as development proceeds. Here our analysis is different from the modernization theory developed by Samuel Huntington (1968) who argued that development would lead to the reduction of corruption. Economic development creates the conditions necessary for the removal of political corruption and primitive accumulation, but these conditions are by no means sufficient. It is often possible to find examples of political corruption and expropriation of property in relatively advanced countries. Thus, popular pressures for the appropriate institutional reforms are also necessary but are only likely to work once the economic conditions are conducive.

Conversely, pressure alone is not sufficient to reduce political corruption if political power cannot be maintained using fiscal strategies of redistribution, nor can pressure stop primitive accumulation if assets are unproductive and cannot pay for their own protection. *Any* government will be unable to stabilize a system of property rights that are not viable in the sense of producing a big enough surplus that can pay for their protection. In the same way, governments that lack a substantial fiscal base are likely to have to engage in forms of political corruption to distribute off-budget resources to powerful constituencies in order to survive. Political mobilization, democratization and demands for integrity will do little to reduce these types of corruption in most developing countries. In fact, developing countries that have attempted to root out corruption through public mobilization have uniformly failed to make a lasting dent in the problem. Mass movements against government corruption became common in many developing countries from the 1980s onwards. In a number of countries, including the Philippines, Indonesia and Bangladesh, mass movements resulted in the toppling of corrupt governments, but in all these countries successor governments were soon found to be just as corrupt. In most cases, public mobilization did little to reduce the problem in the long term, though there have sometimes been short-term reductions in corruption because of public pressure.

Much more serious are the cases where political corruption and non-market asset transfers lead to economic collapse, a possibility classified in (4) in Table 8.2. Because the underlying state interventions in this case are damaging as well as being illegal, this is clearly the worst type of corruption. The category is only likely to be important if the social order is breaking down. Public officials are, by definition, engaging in interventions that are directly damaging the economy. Because this hurts the interests of public officials collectively, this type of corruption can only become significant if higher levels of the state have lost control over lower levels, or if the state has begun to fragment horizontally. Once this happens, all types of public official, from police and security services to political leaders and their factions may engage in expropriation. Although there are aspects of such extortions in every society, it takes on significant proportions only in failed or failing states, which are characterized by the inability of higher levels of the state to discipline lower levels. Some degree of extortion can always take place at lower levels of the state, but where higher levels have the capacity to prevent it, they are not likely to have any interest in allowing this extortion to continue because it is unlikely to aid their own accumulation and stabilization strategies. If the state can enforce discipline, then even if higher-level bureaucrats and politicians are primarily interested in personal enrichment, they will do better by promoting development rather than predation (Khan 1996a). It is, therefore, very likely that higher levels of the state will engage in predatory extortion only if they fail to impose discipline on lower levels and on their clients. Under these conditions, the center can rationally join other expropriators in short-term predation since they have no better strategy.

Corruption of this type is particularly serious because, just as in the third group, it is difficult to see how such corruption can be realistically addressed before the state has achieved a relatively high degree of development. But here, corruption threatens to prevent the very development that is necessary for its solution. Political corruption here fails to achieve political stabilization. Similarly, contested property rights are captured by expropriators who in turn enjoy little security from other expropriators or have other reasons for having very short time horizons that induce them to consume their gains or invest them outside the country. In these cases, the non-market asset transfers are very different from the primitive accumulation that led to the emergence of capitalism in successful developers, and they are, instead, purely predatory expropriations that are well known in many developing countries.

As a result, countries where these types of corruption are important face very serious challenges that are quite unlikely to be resolved using the policy responses appropriate for neoclassical corruption. Unfortunately,

the drivers of both political corruption and of primitive accumulation and theft are powerful enough to ensure that attempts to counter these types of corruption through democratization, transparency reforms, and state withdrawal from intervention are unlikely to have much effect. In these circumstances, there is a very limited range of drivers that policy can address. Policy can seek to address the complex political economy determining the organization and structure of factional competition. We know there are countries where political reorganization enabled a shift in the division between type 4 and type 3 corruption (Khan 2000b), which can in turn create some of the preconditions for development and thereby help to reduce corruption over time. These examples of political reorganization include the coming to power of Park Chung Hee in South Korea in 1961 and the organization of the National Front government in Malaysia after the riots of 1969. In countries where the fragmentation of the polity has gone some way towards warlordism and anarchy, policy also has to address the political question of how to reconstruct the centralized coercive powers of the state. Far from liberalization, democratization and civil society pressure, the priority in these cases has to be a much more fundamental Hobbesian one of constructing the political basis for the state's monopoly of legitimate violence.

7. Conclusions

By breaking down corruption into a number of different types and recognizing their interdependencies, it is possible to explain why the *prior* reduction of corruption across the board may not be a viable goal for most developing countries. Some types of corruption are simply not going to be significantly reduced in societies going through social transformations, even in societies where such transformations eventually turn out to be successful. At the same time, this is not to deny that corruption is a problem. Very few developing countries have graduated to become dynamic capitalist economies. In poorly performing economies, corruption is damaging because it subverts critical state functions or is associated with failing processes of primitive accumulation or political stabilization. In extreme cases, corruption can be associated with state collapse and a descent into warlordism.

However, our analysis suggests that in each case, the policy response has to be based on identifying the main drivers of corruption and on strengthening state capacities required for achieving rapid transformation and high growth rates. An analysis of governance capacities in high-growth developing economies can play an important role in identifying critical transformational state capacities that may be subverted by specific types of corruption that dominate in particular countries. If the necessary state capacities for accelerating transformation can be achieved, a low-growth

economy can transform itself into a high-growth one. Paradoxically, our prediction is that in these countries corruption will coexist with growth for a time until the conditions for dealing with political corruption and asset stabilization are achieved.

The critical question for policy makers in developing countries is the mix between different types of corruption identified in Table 8.2 rather than the aggregate level of corruption. Our analysis is consistent with the two observations raised by the cross-country data summarized in Figure 8.1, namely that developing countries in general have higher average levels of corruption compared to advanced countries and that high- and low-growth developing countries do not have significantly different average levels of corruption. The first observation is explained by the fact that advanced countries do not have powerful drivers for political corruption and primitive accumulation. Greater tax revenues mean that political stabilization can be achieved with legal rents in the form of transparent fiscal transfers. At the same time, the productive sector generates enough of a surplus to pay taxes for the effective protection of property rights, limiting the possibility of expropriation. Rent seeking nevertheless remains widespread in advanced countries because state interventions (both beneficial and damaging) remain very extensive and there is rent seeking to capture the associated rents. But advanced countries can convert a large part of this rent seeking into legal rent seeking because rent seekers are well established and enjoy much greater legitimacy and can therefore legitimately seek to influence state policy. But, even though advanced countries may have converted a significant amount of corruption into legal rent seeking, this does not mean that they have low rent-seeking costs. Moreover, some corruption will always remain, but this residual corruption can be controlled by increasing the opportunity cost of corruption for public officials in the way neoclassical analysis suggests.

We explain the second observation by pointing out that although the drivers of political corruption and primitive accumulation ensure that corruption in the aggregate is likely to be high in every developing country, the mix between the different types of political corruption, primitive accumulation and theft shown in Table 8.2 can vary widely across developing countries. Moreover, the type of political corruption that dominates has interdependent effects on the type of statist corruption. The difference between high- and low-growth developing countries is rooted in their underlying political structures. In the former, we would expect to see a substantial amount of statist corruption but the state's interventionist capacities have not been entirely subverted by corruption, and corruption occurs along with successful political stabilization and primitive accumulation. There may be some extortion and some neoclassical corruption, but these would be relatively limited because a coherent state leadership would have

nothing to gain by allowing these types of corruption. In contrast, in poorly performing developing countries, we would expect to see damaging political corruption and predatory asset transfers. As a result, we would also expect statist corruption to be associated with much more distorted interventions and often indistinguishable from neoclassical corruption. It follows that to be effective, the policy debate in poorly performing developing countries has to address the political economy drivers of corruption that shift the balance between different types of corruption. Attempts to fight corruption across the board using instruments that are in any case most appropriate for neoclassical corruption are not likely to succeed.

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PART III

CORRUPTION IN THE TRANSITION FROM SOCIALISM

9 The effectiveness of anti-corruption programs: preliminary evidence from the post-communist transition countries

Alan Roussio and Franklin Steves

Over the past decade most bilateral and multilateral donors, international organizations, non-governmental organizations (NGOs), and academic experts on corruption have advocated a multi-vectored, comprehensive approach to fighting corruption around the globe (see, for example, Clarke 1983; Klitgaard 1988; Findlay and Stewart 1992; Charlick 1993; Harsch 1993; Riley 1993, 1998; Doig 1995; IRIS 1996; Langseth and Stapenhurst 1997; Larrea-Santos 1997; World Bank 1997a, 1997b, 2000; UNDP 1998; NSW ICAC 1999; Pope 1999; Theobald et al. 2002). Typically, there are three key aspects of such an approach: introducing new or amended legislation aimed at reducing public officials' opportunities for rent seeking in those areas most prone to corrupt practices, such as political party finance, the civil service, money-laundering and financial regulation; building alliances with other governments in the struggle against corruption by signing international anti-corruption covenants and participating in transnational organizations committed to fighting corruption; and the implementation of an integrated anti-corruption program. These integrated anti-corruption programs generally entail some combination of the following: a concept document, an anti-corruption law, a dedicated agency or inter-ministerial commission, an action plan to implement the program and a monitoring mechanism.

The justification for encouraging countries to adopt these comprehensive anti-corruption programs has been not only to develop an integrated framework for policy and institutional reforms, but also to launch a process whereby key stakeholders – both domestic and international – can build a consensus on a strategy for fighting corruption and hold governments accountable for implementing that strategy. For governments, a strong part of the appeal of such programs has been the signal that they are intended to send to domestic and foreign audiences that the government is committed to getting tough on corruption. Anti-corruption strategies are thus supposed to build momentum for change across a wide range of constituencies, to demonstrate the government's commitment to change, and to serve as a benchmark for measuring the government's success in the long-term struggle to reduce the incidence and impact of corruption.

Numerous developing and transition countries have adopted various combinations of these three types of anti-corruption programs, often with the technical and financial support of the multilateral donor agencies. However, despite the proliferation of anti-corruption programs around the world, there has been little systematic research into their impact as a signal of the government's commitment to anti-corruption efforts or, more importantly, their effectiveness in reducing corruption. The increased attention to governance and corruption by development institutions and donor agencies in the past ten years has spawned many diagnostic studies of the causes of corruption and has led to the creation of various corruption and governance indicators.¹ While this is a welcome development, it has not necessarily brought us much closer to understanding the causes of corruption, much less the effectiveness of various measures used to combat it.

In many transition countries in East Central Europe and the former Soviet Union, the development and implementation of anti-corruption programs is still at an early stage. Nevertheless, it is important continually to assess their impact on different dimensions of corruption and to adjust these strategies accordingly. Anti-corruption programs that prove ineffective in achieving demonstrable results in a reasonable time frame or, in the worst case, that serve as a rhetorical cover for government inaction, undermine public confidence in all future government anti-corruption efforts. Consequently, frequent tracking of the progress and performance of anti-corruption programs is critical.

This chapter analyzes the effectiveness of the anti-corruption activities of 26 of the 27 post-communist transition countries, dividing them into three groups: integrated anti-corruption programs, legislative measures to strengthen institutions of governance and accountability, and the adoption of international anti-corruption conventions.² The central question the chapter addresses is: to what extent have these three types of anti-corruption measures been associated with reductions in the levels of administrative corruption in the 2002–05 period?

The chapter is outlined as follows: in Section 1, we review the existing literature on the effectiveness of anti-corruption programs and outline our methodology. We then provide a detailed explanation of the indices of anti-corruption programs and describe the variable weighting used to construct the anti-corruption index. In Section 2, we describe the patterns in anti-corruption activities across the transition countries. Section 3 looks at the correlations between the various types of anti-corruption activities and changes in the measures of the 'objective' levels of corruption, and proposes some tentative explanations for these observed variations. Section 4 summarizes the findings. We find that levels of corruption between 2002

and 2005 have declined sharply overall in the transition region. However, this change is not associated with the intensity of anti-corruption activity in the preceding period (1999–2002).³

This chapter does not reach any firm conclusions on the impact of national anti-corruption activities on levels of corruption. First, the number of observations is too small to make strong statements on causality. Second, we only use data on corruption from 2002 and 2005 and the analysis is limited to the role of anti-corruption programs in this period. Despite this short time frame, the credibility of anti-corruption programs over the longer term often depends on defining manageable short-term benchmarks to demonstrate progress and build the government's support in this area. Our goal in this chapter is to identify key trends in anti-corruption efforts in the transition countries and to relate them to observed changes in reported levels and frequency of bribery.

1. Measuring the effectiveness of anti-corruption programs

The literature on the effectiveness of anti-corruption initiatives is still in its infancy.⁴ Much attention by scholars has focused on the importance of adopting a high-profile integrated anti-corruption program. Drawing from international experience beyond the post-communist transition countries, there are several examples where anti-corruption programs have worked effectively. The anti-corruption agencies in Hong Kong, Singapore and Botswana are often cited as models in which independent bodies with firm political backing and oversight by the legislature were able to root out corruption at the highest level of government (see Quah 1982, 1989, 2000; de Speville 1995; Tan 1995; Frimpong 1997; Doig and Riley 1998). However, applications of this model in other regions have had mixed results: for example, this approach has had far less success in countries where corruption problems were of a more systemic nature (see Pope 1999).

In fact, previous studies have suggested that anti-corruption agencies, ombudsman offices and similar institutions work best where they are needed least – that is, in countries where initial levels of corruption are less severe (see Huther and Shah 2000). In countries where corruption is endemic, the effect of these same institutions has generally been either neutral or, in some cases, counterproductive when the agency itself becomes discredited, further deepening public skepticism about the government's anti-corruption efforts. It has proved difficult to build anti-corruption institutions which operate independently from the weak governance structures that characterize countries with systemic corruption, including the legal system, mechanisms of political accountability, and financial and regulatory institutions. Anti-corruption commissions, ombudsman offices and ethics codes have rarely functioned effectively in these environments without substantial

government actions to make corresponding changes in the broader institutional context. Whether the development of a national anti-corruption program with a comprehensive strategy, action plan and independent commission is more likely to enhance the government's commitment to a multi-pronged reform agenda has not been studied systematically with evidence from existing anti-corruption programs.

To measure the effectiveness of these alternative forms of anti-corruption activity, we use data from the EBRD/World Bank Business Environment and Enterprise Performance Surveys (BEEPS), conducted in 1999, 2002 and 2005. These data provide important insights into the dynamics of corruption in the region. The three rounds of the BEEPS asked a large sample of firms in the transition countries a series of questions about the nature and effects of corruption on their business and the country's business climate. For the purposes of this analysis we use the BEEPS results from the 2002 and 2005 surveys. The changes in firms' responses in the three-year period between these two rounds allow us to estimate changes in the overall level of corruption by firms in the transition countries.⁵

The BEEPS was implemented in 2002 in 6,150 firms in 26 countries (excluding Turkmenistan) and in 2005 in over 9,000 firms in 26 transition countries (excluding Turkmenistan). In each country, the sectoral composition of the sample is stratified to represent the productive structure of the economy, resulting in a heavy representation of service firms. The sample in the 2002 and 2005 rounds, which are most relevant for this analysis, was heavily weighted toward small, private firms without foreign ownership. Some majority state- and foreign-owned firms as well as larger firms (with up to 10,000 employees) were included in the sample – at least 10 percent of the total sample in each case.

The overall results of the three rounds of the BEEPS have been described at length (see EBRD 1999, 2002, 2005; World Bank 2000, 2003). In brief, the surveys found that the levels of both administrative and grand corruption varied significantly across the region. By and large, the countries of the Commonwealth of Independent States (CIS) were subject to higher levels of both aspects of corruption than South-eastern European (SEE) and Central and Eastern European and Baltic (CEB) countries. The BEEPS also found that in virtually all transition economies the business environment improved significantly between 1999 and 2002 and continued to improve for most countries in 2005, including in the main indicators for corruption.⁶

For the purposes of this chapter, we use the country means for the BEEPS variables relating to administrative corruption.⁷ Figures 9.1 and 9.2 show the reduction in levels of corruption between 2002 and 2005 in the

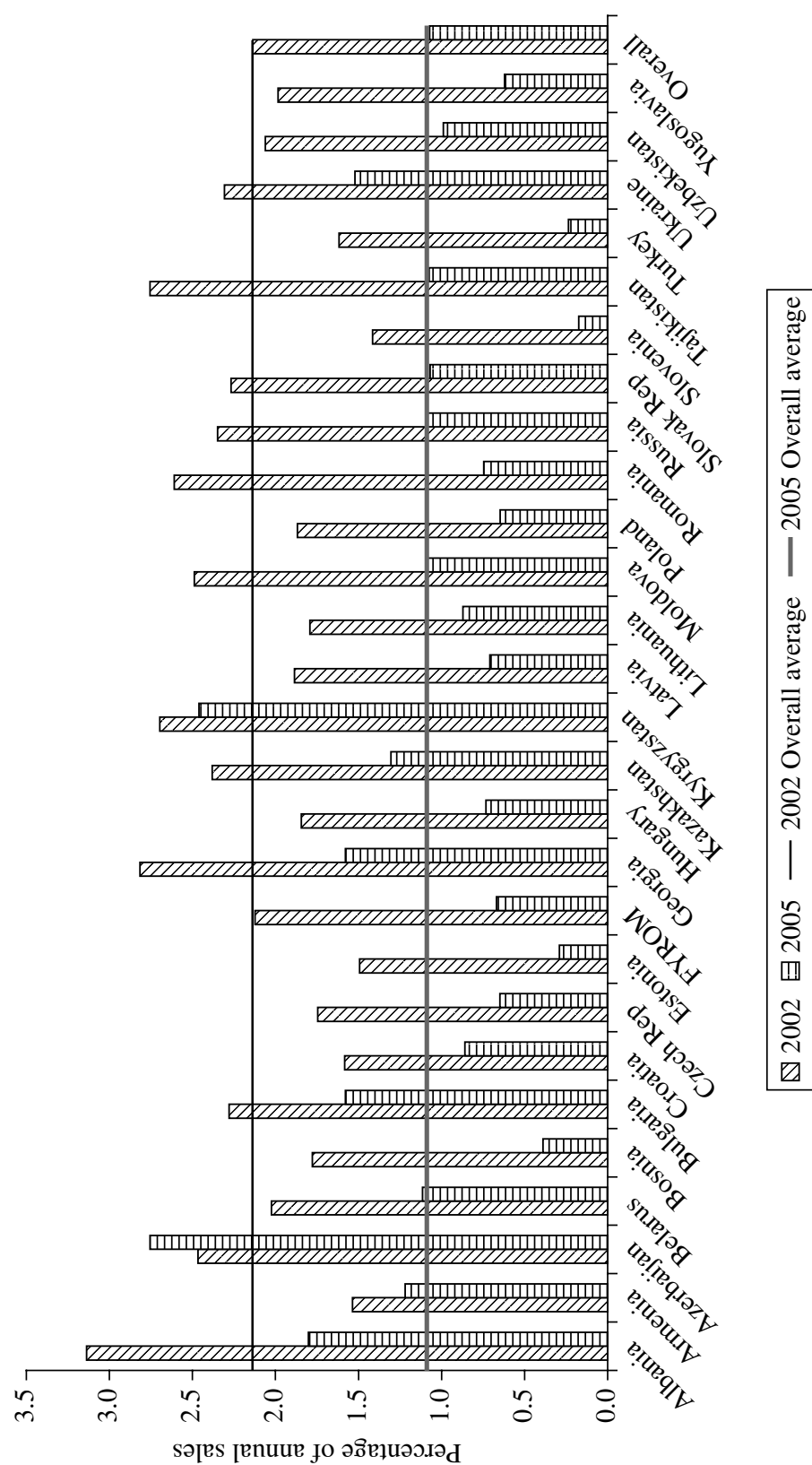


Figure 9.1 Changes in bribe tax by country, 2002–2005

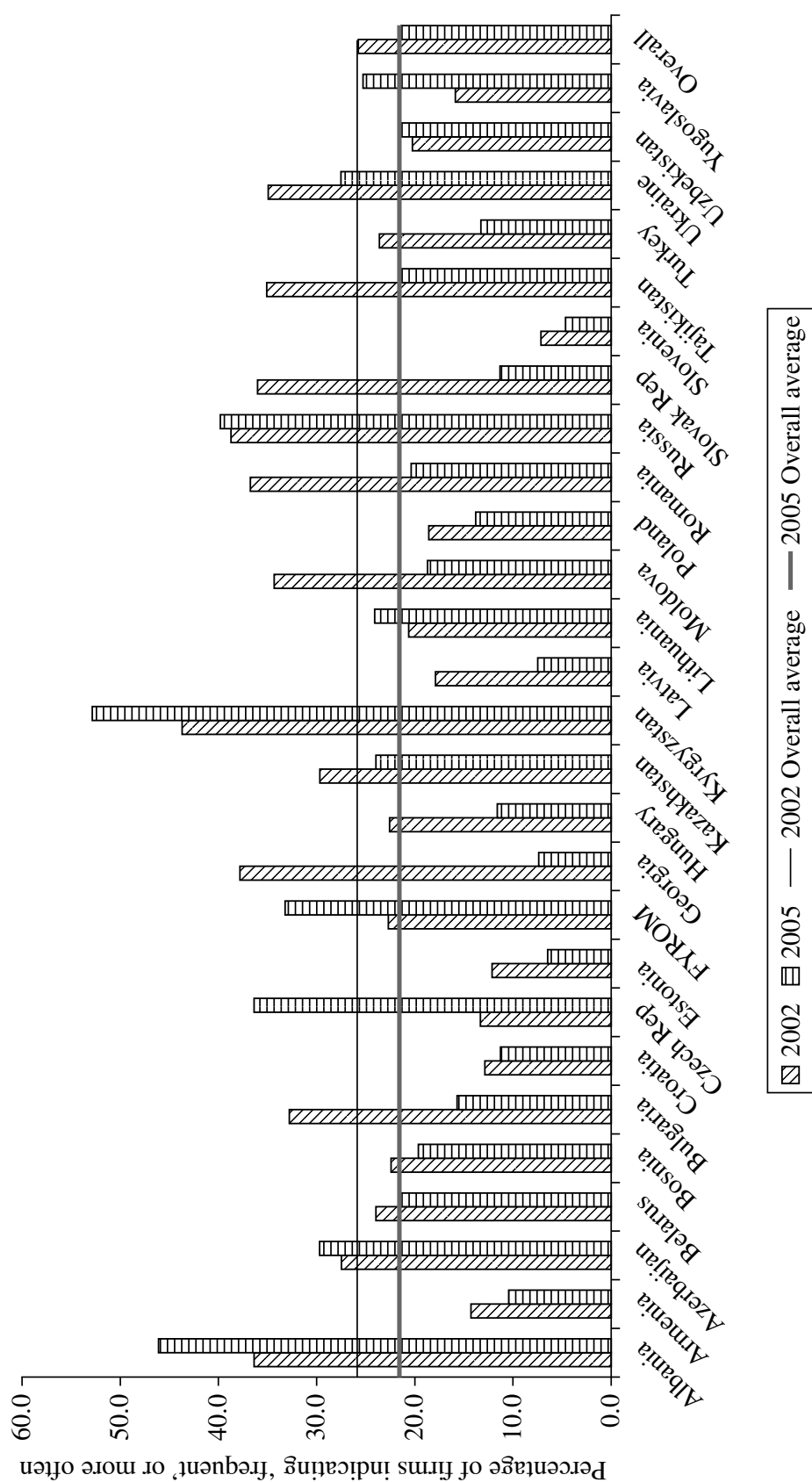


Figure 9.2 Changes in frequency of bribes by country, 2002–2005

country means of two of our three headline indicators, the bribe tax (the percentage of annual sales that firms pay in unofficial payments to state officials to 'get things done') and frequency of bribes (the percentage of firms reporting paying bribes frequently, usually or always).

Figure 9.3 shows the slight overall increase between 2002 and 2005 in the country means of kickbacks (the percentage of contract value firms pay to secure government contracts).

Is there any evidence that the kinds of visible anti-corruption initiatives adopted by these countries have contributed positively to the decline in levels of administrative corruption shown in the figures?

In order to classify anti-corruption activity, we surveyed initiatives that have been put in place in all countries from 1999 to 2002, and coded them in a matrix of anti-corruption activity. These activities are divided into the three broad categories outlined above: integrated anti-corruption programs, new legislation targeted at reducing the incentives for corruption, and adoption of international covenants and membership in international anti-corruption coalitions. In each area, a scoring system has been developed to serve as the basis of an index that can be used to compare the extent of anti-corruption activities across countries.

In the area of integrated anti-corruption programs, we examine whether any of the following initiatives have been undertaken: (i) the design and publication of an anti-corruption strategy; (ii) the development of an implementing anti-corruption action plan; and (iii) the establishment of a national anti-corruption commission ombudsman, or similar authority. For each of these three initiatives each country in the matrix was coded '1' if it had introduced the anti-corruption measures and a '0' if it had not. These three major components of the integrated anti-corruption index are all weighted equally in the integrated index, as outlined in Table 9.1.

Of course, drafting strategies and creating commissions need not necessarily indicate serious efforts to combat corruption and, indeed, could even serve as a smokescreen for inaction. Therefore, the index requires some measure of the government's commitment to these initiatives. Some crude indicators of government commitment include: (i) whether NGOs are included in the development of the anti-corruption strategy/action plan and in the operation of the anti-corruption commission; (ii) whether multiple government branches or ministries, that is, the judiciary, law enforcement and various government ministries, were involved in the elaboration and implementation of these programs; and (iii) whether the anti-corruption commission is granted formal independence from the government. These aspects of each of the three 'core' integrated anti-corruption measures are also coded '1' and '0', while the weighting of the combined subcomponents equals that of the core measures, as detailed in Table 9.1.

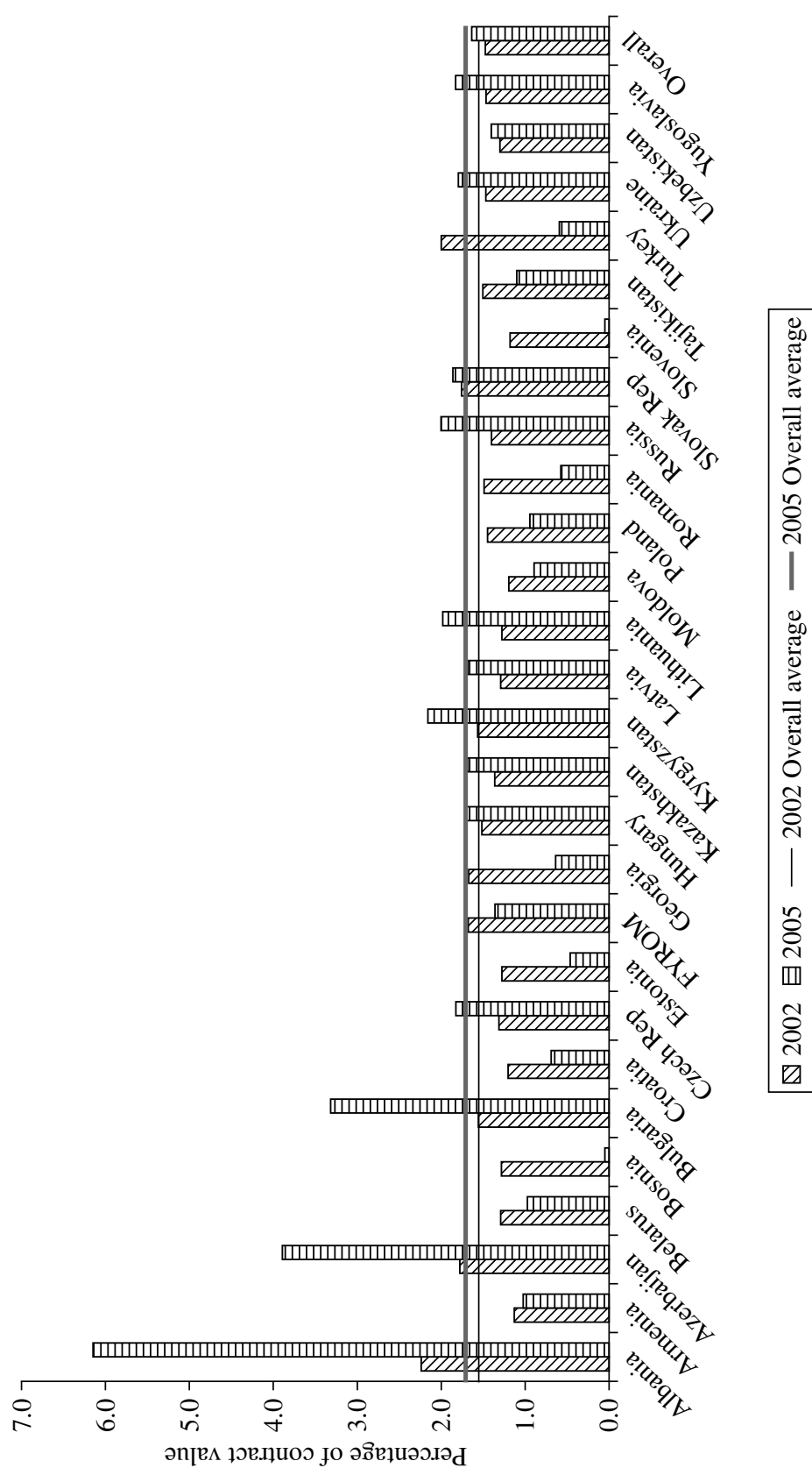


Figure 9.3 Changes in value of kickbacks by country, 2002–2005

Table 9.1 Anti-corruption matrix variables and weighting

	Percentage of intensity index
Intensity Index	100.0
of which:	
Integrated anti-corruption program index	33.3
<i>National anti-corruption strategy</i>	<i>11.1</i>
Adopted	5.56
Involved NGOs	2.78
Multi-branch	2.78
<i>Anti-corruption action plan</i>	<i>11.1</i>
Adopted	5.56
Involved NGOs	2.78
Multi-branch	2.78
<i>Anti-corruption commission or ombudsman</i>	<i>11.1</i>
Established	5.56
Involved NGOs	1.11
Multi-branch	1.11
Independent	3.33
Legislative reform index	33.3
Civil service law	5.56
Financial disclosure law	5.56
Public procurement law	5.56
Freedom of information law	5.56
Party finance law	5.56
Anti-money laundering law	5.56
Conventions index*	33.3
Stability Pact Anti-Corruption Initiative*	5.56
OECD Anti-Bribery Convention	5.56
COE GRECO	5.56
COE Convention on Laundering, Search, Seizure and Confiscation of the Proceeds from Crime	5.56
COE Criminal Law Convention on Corruption	5.56
COE Civil Law Convention on Corruption	5.56

Note: * In the non-Stability Pact countries, the other five indicators in this index represent 6.67 percent of the Intensity index.

The weighting of the subcomponents of the three anti-corruption program measures – anti-corruption strategy, action plan and commission – is by necessity subjective. There is no consensus in the literature on anti-corruption programs on the relative importance of NGO involvement or parliamentary participation in the design and implementation of these programs. However, we assume that simple adoption of a program is not

sufficient to indicate full governmental commitment to an anti-corruption agenda. In some countries, civil society involvement in and of itself might be a very important indicator of the seriousness of the endeavor. In others, parliamentary participation could be the key. In the absence of empirical evidence or expert judgment on the quality of the anti-corruption programs and their component laws, and of the relative importance of these other indicators of government commitment, we have decided to assign equal weights to NGO and multi-branch involvement. In the sub-index for anti-corruption commissions, we have given extra weight to the independence of the commission, based on the emphasis placed on independence in a number of studies on the effectiveness of these bodies outside the transition region.⁸

In terms of new anti-corruption legislation, we have developed an index based on the implementation of, or amendments to, six key laws: (i) a civil service law; (ii) a financial disclosure law, which regulates both public officials and private investors; (iii) a public procurement law; (iv) a freedom of information law; (v) a political party financing law; and (vi) an anti-money-laundering law.⁹ Although introducing other forms of anti-corruption legislation is without doubt also significant in terms of reducing corruption, these six areas have been chosen because they are areas in which the transition countries typically did not have effective legislation in place at the start of transition and in which the regulatory framework during the first half of the 1990s typically remained weak. These key legislative reforms have thus consistently been highlighted by bodies such as the OECD, international financial institutions, and domestic and international NGOs as the areas most likely to reduce the incentives and opportunities for both administrative corruption and state capture.¹⁰ Each of these six legislative reforms are weighted equally: the introduction or amendment of each of them during the 1999–2002 period would generate a score on the legal index of 100 percent, in three of these areas 50 percent, and so on. We call this the ‘legislative reform index’ for short.

Finally, in order to assess the transition countries’ commitment to international anti-corruption conventions and standards, we created an index measuring whether countries are signatories to and have ratified the Stability Pact Anti-Corruption Initiative (SPAI), the OECD Anti-Bribery Convention, the Council of Europe’s (COE) Criminal and Civil Law Conventions on Corruption, the COE’s Convention on Laundering, Search, Seizure and Confiscation of the Proceeds from Crime, and the COE’s Group of States against Corruption (GRECO).¹¹ As with the legislative reform index, membership in or signing of each of these international instruments is weighted equally. Those countries that are not eligible for any one of these instruments, for example the SPAI, were assessed on their participation in the others alone. To further refine this index, on each of the

conventions for which countries were eligible, countries were given 1/3 for signing the instrument, 2/3 for signing and ratifying, and a '1' if the convention had been signed, ratified by the legislature, and had entered into force both domestically and within the context of the international organization that sponsored it.¹²

By aggregating these three component indicators, we create an overall index measuring the extent of anti-corruption activities in the transition countries, which we call the 'anti-corruption intensity index'. The intensity index is weighted evenly on the integrated, legislative reform and international conventions indices.

We proceed from the assumption that anti-corruption initiatives of these three types should have a lagged effect on levels of corruption. Anti-corruption programs, legislation and conventions normally require supporting institutions and enforcement mechanisms which cannot be put in place overnight. We therefore assess the impact of anti-corruption initiatives adopted between 1999 and 2002 on changes in the levels of corruption between 2002 and 2005. By introducing this lag, we also address the simultaneity problem in the data analysis – changes in the independent variables are registered prior to observations on changes in corruption.

In the section that follows we describe the patterns in anti-corruption activity across the 27 transition countries, before going on to make a preliminary assessment of the effectiveness of integrated programs, new anti-corruption legislation and participation in international conventions in changing actual levels of corruption.

2. Anti-corruption programs in the transition countries

What types of patterns are evident in anti-corruption activities across the transition countries? Table 9.2 summarizes the transition countries' scores on the intensity and the three component anti-corruption indices, which range from '0' (no explicit anti-corruption programs) to '1' (substantial anti-corruption programs). The full country results are reported in Appendix 9A1. As Table 9.2 shows, 26 of the 27 transition countries, with the exception of Turkmenistan, have undertaken some form of anti-corruption activity in at least one of the three areas outlined above. Indeed, 16 of the 27 countries have undertaken activity in all three of the categories, and all countries – except Belarus and Turkmenistan – have implemented new legislation that addresses the issue of corruption. However, as Table 9.2 illustrates, there is a great deal of variation both across countries on the intensity index as well as within countries on the three component indices. The last column reports the standard deviation across the aggregate anti-corruption programs, legislative reform and conventions indices, reflecting the degree of variation within countries.

Table 9.2 *Anti-corruption activity indices, 1999–2002*

	Anti-corruption intensity index	ACP index	Legislative reform index	Conventions index	Standard deviation
Albania	0.837	0.900	0.833	0.778	0.061
Armenia	0.189	0.000	0.500	0.067	0.271
Azerbaijan	0.244	0.167	0.500	0.067	0.227
Belarus	0.022	0.000	0.000	0.067	0.038
Bosnia & Herz.	0.343	0.167	0.250	0.611	0.236
Bulgaria	0.704	0.667	0.667	0.778	0.064
Croatia	0.752	0.867	0.667	0.722	0.103
Czech Rep.	0.602	0.417	0.667	0.722	0.163
Estonia	0.578	0.000	1.000	0.733	0.518
FYR Macedonia	0.370	0.000	0.333	0.778	0.390
Georgia	0.383	0.417	0.333	0.400	0.044
Hungary	0.630	0.333	0.833	0.722	0.263
Kazakhstan	0.111	0.167	0.167	0.000	0.096
Kyrgyz Rep.	0.111	0.000	0.333	0.000	0.192
Latvia	0.700	0.667	0.833	0.600	0.120
Lithuania	0.900	0.967	1.000	0.733	0.145
Moldova	0.559	0.567	0.500	0.611	0.056
Poland	0.593	0.000	1.000	0.778	0.525
Romania	0.759	0.833	0.667	0.778	0.085
Russia	0.200	0.000	0.333	0.267	0.176
Serbia & Mont.	0.467	0.817	0.250	0.333	0.306
Slovak Rep.	0.907	1.000	1.000	0.722	0.160
Slovenia	0.641	0.200	1.000	0.722	0.406
Tajikistan	0.056	0.000	0.167	0.000	0.096
Turkmenistan	0.000	0.000	0.000	0.000	0.000
Ukraine	0.389	0.500	0.333	0.333	0.096
Uzbekistan	0.056	0.000	0.167	0.000	0.096
CEB	0.700	0.494	0.889	0.717	0.198
SEE	0.580	0.564	0.500	0.676	0.089
CIS	0.193	0.151	0.278	0.151	0.073
Average all	0.448	0.357	0.531	0.456	0.087

Some caveats are necessary at this stage. These indicators are designed to assess formal measures taken to combat corruption. However, the gaps between formal measures, government commitment and government capacity to implement these measures can be substantial. While we have sought to incorporate measures of policy commitment – that is, NGO participation, independence of anti-corruption agencies, parliamentary involvement

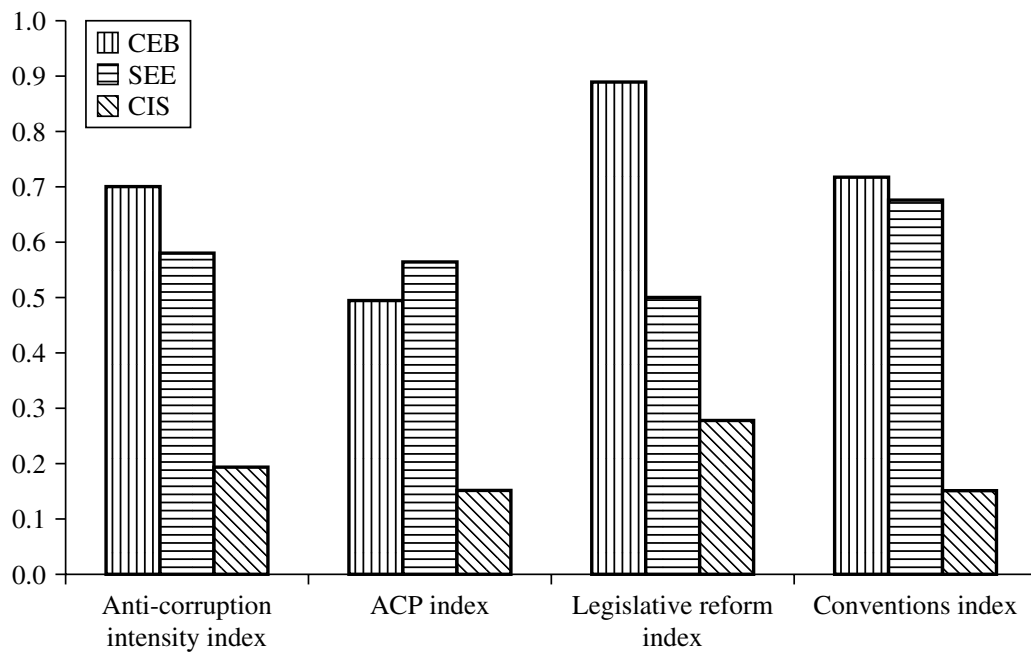


Figure 9.4 Regional patterns of anti-corruption activity

– these measures of anti-corruption activity cannot fully capture the authorities’ political will and capacity to combat corruption in their countries.

Moreover, not all corruption fighting measures will be captured by these indicators of activities explicitly undertaken to combat corruption. There is a very wide range of reforms to enhance the investment climate, improve public service delivery, and strengthen public administration and financial management. While these reforms address the core problems underlying corruption, they might not be incorporated within a broader anti-corruption program or agency. The impact of this broader menu of governance reforms on reducing levels of corruption has been discussed elsewhere (see World Bank 2003). We focus here on explicit anti-corruption activities, not because they are more important than governance reforms or a necessary supplement to such reforms, but because these activities have in fact proliferated across the region, whether motivated by external or internal pressures. Consequently, there is a genuine need to assess their impact to date.

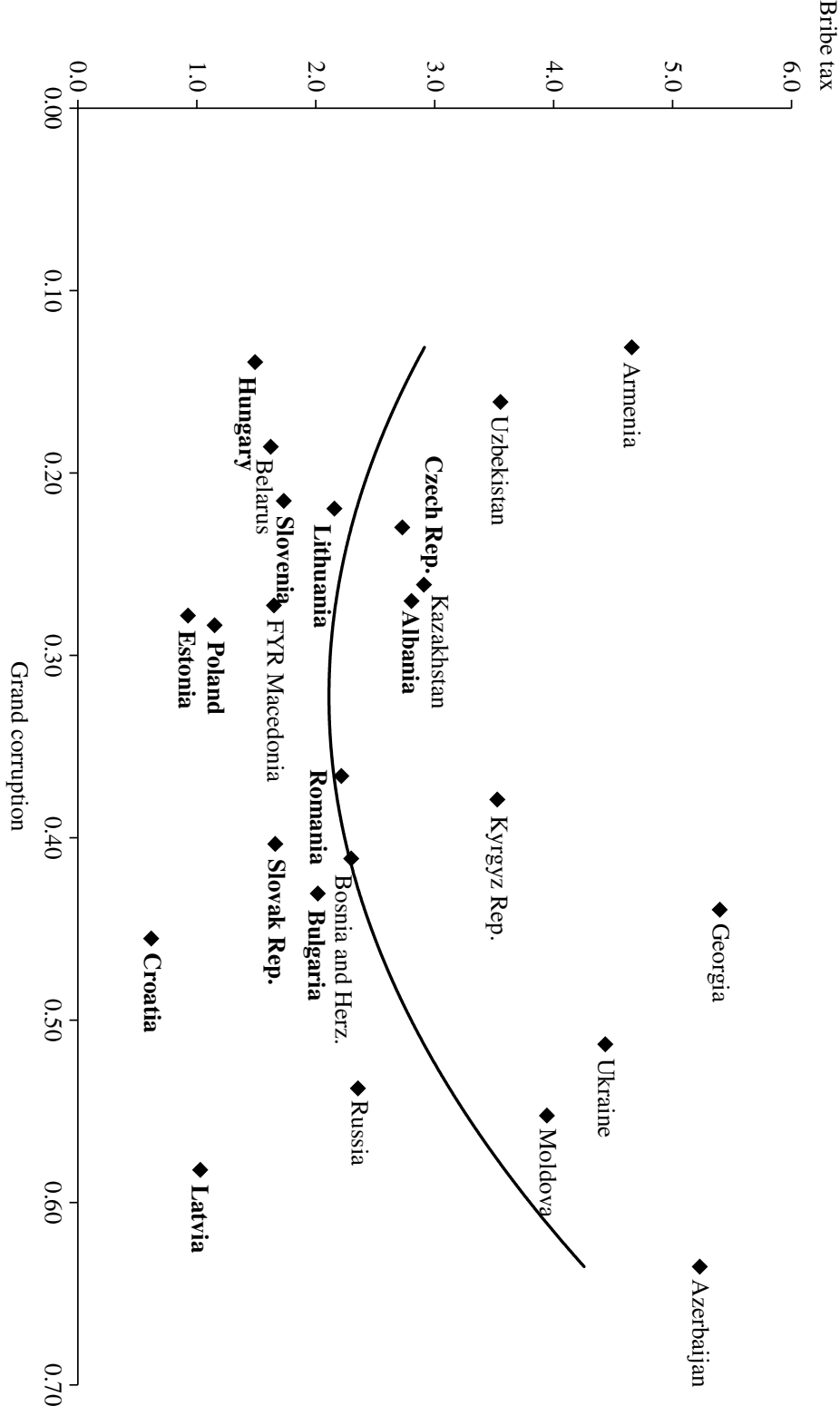
As one might expect, the advanced transition CEB countries score higher than the SEE countries and the CIS on the intensity index as well as on two out of three of the sub-indices (see Figure 9.4).¹³

SEE countries such as Romania, Bulgaria and, most remarkably, Serbia and Montenegro have been very active in the area of integrated anti-corruption initiatives, while their legislative anti-corruption initiatives lag behind in the intermediate to low range. SEE countries have also signed on to

a wide range of anti-corruption conventions, ranking almost alongside the CEB countries in this regard. This can be explained, at least in part, by the perception of far higher levels of corruption in the SEE countries, which increased pressures under the Stability Pact and from other international bodies to make visible efforts to tackle the problem. In contrast, in CEB countries in 1999, corruption was generally believed to be a less acute problem than in SEE countries, and the main outstanding legal and institutional issues for meeting the European Union's *acquis communautaire* were better addressed through specific anti-corruption legislative measures than through high-profile anti-corruption campaigns. Corruption was a more severe problem in the CIS than in other parts of the post-communist transition region, however, domestic and international pressure to combat corruption was too weak to overcome CIS leaders' reluctance to introduce real reform.

The overall intensity index divides into four rough groups: the high-intensity reformers include the Baltic states of Lithuania and Latvia, as well as the Slovak Republic, Albania, Croatia, Bulgaria and Romania. These countries are characterized by high scores across all three indices, with Lithuania and the Slovak Republic scoring particularly high on the ACP index. The next group of medium-high-intensity anti-corruption countries includes most of the then-accession countries – the Czech Republic, Poland, Estonia, Slovenia and Hungary – as well as Moldova, and Serbia and Montenegro. These countries are characterized by relatively high scores on the legislative reform and conventions indices and average scores on ACPs. The exceptions include Serbia and Montenegro, which scores high on new legislative reforms and low on the conventions index, and Poland and Estonia, which both score '0' on the ACP index and '1' on the legal index. The medium-low reform group includes the three Caucasian states – Armenia, Azerbaijan and Georgia – as well as Bosnia and Herzegovina, FYR Macedonia, Ukraine and Russia. The countries in this group tend to score low on the anti-corruption programs and closer to average on the legislative reform and conventions indices. Finally, the low reform group includes Belarus and the five Central Asian countries. The low anti-corruption intensity countries tend to score higher on the legislative reform index than on the integrated or conventions indices, although they generally tend to be among the lowest-scoring countries on all of the three component indices.

What accounts for this variation in the intensity of anti-corruption activity in the transition countries? Do countries with more corruption adopt more extensive anti-corruption programs? Figure 9.5 plots the transition countries according to their level of administrative and grand corruption as measured by the 1999 BEEPS and highlights those countries that score highly on the anti-corruption intensity index. In order to measure administrative corruption, we use the level of the bribe tax. To measure grand corruption we



Note: Countries in bold score high on the anti-corruption intensity index.

Figure 9.5 Bribe tax and grand corruption in 1999

take the unweighted average of countries' scores from the BEEPS on firms' attempts to exert influence over the government, parliament, criminal and commercial courts, the central bank and political parties. This figure clearly illustrates that virtually all of the transition countries that have pursued intensive anti-corruption programs over the past three years were countries with below-average levels of administrative corruption in 1999.

Why might this be the case? States with low levels of administrative corruption would seem to be more able to use the resources of the state to address the problem of administrative corruption. This could be due to the fact that institutions in these states are not so weakened by corruption of administrative structures that these structures are able to block anti-corruption reform programs, as in countries with higher levels of administrative corruption. This echoes the findings of Huther and Shah (2000) that anti-corruption programs work best in countries with low levels of corruption in the first place.

Figure 9.5 also shows that countries with low levels of grand corruption are just as likely as countries with high grand corruption to adopt intensive anti-corruption programs. Problems of systemic corruption alone do not appear to generate sufficient demand from below for specific anti-corruption initiatives. Rather, the common thread across countries with high-intensity anti-corruption programs is not their corruption profile in 1999, but their geographic location – they are all CEB or SEE countries which were then present or future European Union (EU) accession candidates.

It is no accident that the majority of high intensity anti-corruption countries have been EU accession candidates. Anti-corruption strategies in the transition countries tend to mirror domestic political institutions of power and the type of influence applied by international agencies on these countries. In the accession countries, for example, the concerns of the European Commission have been paramount in the crafting of anti-corruption policies, and the Commission has provided extensive assistance for the development of anti-corruption policy, in particular in the formulation of national anti-corruption strategies and action plans.

By contrast, in those countries where EU accession is not a near-term prospect and where political power is both more concentrated and less accountable, the process of introducing anti-corruption measures has been largely 'top down', based primarily on presidential decree, and the implementation of the supporting legislation has been delayed by legislative wrangling. This pattern generally holds across the CIS countries which have implemented integrated anti-corruption programs. In countries like Azerbaijan, Georgia, Kazakhstan and Ukraine, integrated anti-corruption programs were launched through presidential directives that lacked the broad political and popular support necessary to lead to any detailed

action plans, and therefore were not followed by supporting legislation or regulatory reforms.

3. Anti-corruption programs and changes in corruption

This section looks at the observed relationship between the intensity of anti-corruption activities and changes in levels of corruption between 2002 and 2005. Although the bivariate correlations presented here do not allow us to reach any conclusions about the causes of such changes, they do provide additional information on whether changes in levels of corruption are associated with changes in the readiness to adopt anti-corruption initiatives. Looking first at bivariate correlations between the overall anti-corruption intensity index, the integrated anti-corruption program index, the legislative reform framework index, and the conventions index and changes in administrative corruption, we found the relationship to be relatively strong in one case but elsewhere weak and/or incorrectly signed.

As Table 9.3 illustrates, changes in the bribe tax, kickbacks (payments made to secure government contracts), and overall bribe frequency, three

Table 9.3 Bivariate correlations between anti-corruption programs (1999–2002) and changes in administrative corruption (2002–2005)

	Intensity index	ACP index	Legislative reform index	Conventions index
Change in bribe tax	0.154	–0.077	0.307	0.192
Change in value of kickbacks	0.080	0.145	0.091	–0.048
Change in frequency of bribes	–0.189	–0.189	–0.120	–0.162
Change in frequency of bribes, public services	–0.037	–0.246	0.132	0.054
Change in frequency of bribes, licenses	–0.177	–0.191	0.031	–0.281
Change in frequency of bribes, tax	–0.198	–0.335	0.068	–0.207
Change in frequency of bribes, customs	–0.164	–0.332*	0.125	–0.176
Change in frequency of bribes, courts	–0.043	–0.174	0.122	–0.035
Change in frequency of bribes, kickbacks	–0.013	–0.026	0.056	–0.059

Note: * Correlation is significant at the 0.10 level (2-tailed).

headline indicators of corruption levels, were not closely correlated with either the intensity index or any of the sub-indices. The only statistically significant correlation that appears is between integrated anti-corruption programs and reductions in bribe frequency for customs officials.

However, bivariate correlations do not control for other factors that might have contributed to reductions or increases in the level of corruption in the sample countries. In order to control for these other factors that might have had an effect on determining outcomes in levels of corruption in this period, we use multivariate regression analysis with a number of political, institutional and economic control variables.¹⁴

In order to control for the level of political and economic development at the beginning of the period – on the assumption that more consolidated, democratic states with higher wealth per capita would have greater administrative resources to tackle corruption – we introduced four variables that describe a set of ‘initial conditions’. We use each country’s Polity IV score from 2002 (which measures democracy), their EBRD Transition score from 2002 (measuring achievements in structural reform), their score on the 2002 Freedom House Freedom of the Media index, and the log of each country’s per capita GDP in US\$ terms in 2002 as controls in a multivariate regression (a detailed explanation of these variables is included in Appendix 9A2).

As shown in Table 9.4, introducing these controls in multivariate regression analysis does not significantly change the overall picture of the relationship between anti-corruption initiatives and changes in levels of administrative corruption. None of the three forms of anti-corruption activities has a significant effect on our ‘headline’ measures of administrative corruption: the bribe tax, bribe frequency and kickbacks.¹⁵ No pattern is discernible from the data; the only statistically significant regression coefficient relates to the influence of legislative reform on the frequency of bribes for licenses, and this is incorrectly signed.

4. Conclusion

This chapter has formulated a new way of measuring the intensity of anti-corruption activity and has conducted a range of preliminary tests to assess the short-term impact of anti-corruption initiatives in reducing levels of administrative corruption in the transition countries for the 2002–05 period.

The results from a large survey of firms in the transition region conducted in 2002 and 2005 show that levels of administrative corruption – measured by the country averages for the percentage of annual sales paid in bribes to officials to ‘get things done’ (bribe tax) and the frequency of bribes and the percentage of contract value paid to secure a government contract (kickbacks) – came down significantly in this period.

Table 9.4 Multivariate regression results: ACPs (1999–2002) and changes in administrative corruption (2002–2005)

	Change in bribe tax	Change in kickbacks, value	Change in frequency of bribes	Change in bribes, public	Change in bribes, licenses	Change in bribes, tax	Change in bribes, customs	Change in bribes, courts	Change in kickbacks, frequency
ACP index	−0.480 (−0.976)	0.377 (0.587)	−0.158 (−0.499)	−0.212 (−1.203)	−0.08797 (−0.348)	−0.859 (−0.646)	−0.359 (−1.371)	−0.274 (−1.194)	0.01559 (−0.054)
Legislative reform index	1.063 (0.995)	1.229 (0.881)	0.518 (0.753)	0.373 (0.973)	1.282** (2.333)	−0.402 (−1.248)	0.938 (1.649)	1.019 (2.043)	0.756 (1.213)
Conventions index	−0.460 (−0.428)	−1.897 (−1.352)	−0.05143 (−0.074)	0.384 (0.998)	−0.733 (−1.326)	0.940 (1.344)	−0.524 (−0.916)	−0.171 (−0.341)	−0.187 (−0.299)
Polity, 2002	0.401 (0.415)	1.384 (1.096)	0.197 (0.317)	0.172 (0.495)	0.398 (0.801)	−0.768 (−1.093)	0.539 (1.048)	0.937* (2.077)	0.666 (1.181)
Transition, 2002	−1.571 (−0.540)	−2.279 (−0.600)	−0.896 (−0.478)	1.044 (1.000)	−0.862 (−0.576)	0.172 (0.273)	0.855 (0.552)	−0.231 (−0.170)	0.06924 (0.041)
Media freedom, 2002	−0.622 (−0.228)	−0.488 (−0.137)	−1.297 (−0.738)	−1.777* (−1.814)	−1.787 (−1.273)	−0.419 (−0.220)	−1.786 (−1.228)	−2.152 (−1.689)	−2.006 (−1.260)
Ln GDP per capita US\$, 2002	0.808 (1.285)	0.366 (0.445)	0.403 (0.995)	0.188 (0.833)	0.463 (1.432)	−0.749 (−0.419)	0.245 (0.732)	0.159 (0.542)	0.228 (0.622)
Constant	−2.327 (−1.145)	−0.648 (−0.244)	−0.560 (−0.428)	−0.918 (−1.260)	−0.620 (−0.593)	0.411 (0.999)	−1.120 (−1.035)	−0.220 (−0.232)	−0.484 (−0.408)
Observations	26	26	26	26	26	26	26	26	26
R-squared	0.243	0.143	0.121	0.256	0.301	0.256	0.221	0.234	0.143

Notes: Robust *t*-statistics in parentheses. * significant at 10 percent; ** significant at 5 percent.

Bivariate correlations, supported by multivariate regression analysis in which we introduce several control variables, show that integrated anti-corruption programs, legislative reforms designed to reduce the scope for corruption, and membership in international anti-corruption conventions are not associated with reductions in the level of administrative corruption. It is important to reiterate that these initial findings are based on only two surveys covering a relatively short time period, and so must remain preliminary. A great deal more empirical work must be conducted on the effectiveness of various types of anti-corruption programs before reaching firmer conclusions.

Nevertheless, some tentative implications for policy makers and donors can be drawn from the analysis. First, while anti-corruption initiatives may prove effective in the longer term, they are not quick fixes. Something is happening in the transition region to affect the levels of corruption, but our findings suggest that it is not necessarily related to the high-profile anti-corruption initiatives adopted in so many of these countries. Second, although signing international covenants and joining anti-corruption-related transnational organizations does not appear to have a direct, near-term impact on levels of corruption, the indirect effect of participation in these bodies, particularly for a country's reputation in the international community and among foreign investors (whose views are not surveyed in the BEEPS) could still be significant. One way to increase the potency of international organizations in reducing actual levels of corruption would be to better coordinate the existing analytical work to diagnose corruption problems, commission new surveys, and build in stronger incentives for governments to comply with the anti-corruption principles on which such organizations are founded. Finally, if further research confirms that high-profile integrated programs are not particularly effective in reducing levels of administrative corruption, bilateral and multilateral donors will need to adjust their lending strategies and policy advice accordingly.

Notes

1. For example, the highest profile of these include Transparency International's 'Bribe Payers Index' and 'Corruption Perceptions Index', available at www.transparency.org/surveys/index; the World Bank's 'Governance Indicators', available at www.worldbank.org/wbi/governance/data; the Heritage Foundation's 'Index of Economic Freedom', at www.heritage.org/research/features/index; and the World Economic Forum's 'Global Competitiveness Report', at www.weforum.org/gcr.
2. The 2002 BEEPS could not be completed in Turkmenistan, which has therefore been excluded from the analysis.
3. For an explanation of the lagged effect of our independent variable on levels of corruption see Section 2.
4. For a good overview of the existing theoretical and empirical literature see Rose-Ackerman (1999).

5. While all survey-based measures of corruption are inherently perceptions based, and therefore the results of the three BEEPS rounds will to a certain extent reflect changes in perceptions of corruption rather than any objective measure of corruption, the surveys attempted to minimize the impact of perceptions by asking questions specifically about levels of bribes and other quantitative indicators of misgovernance.
6. For a more detailed synopsis of these findings and a more explicit argument about how corruption affects firm performance, see Fries et al. (2003).
7. The 2002 and 2005 BEEPS samples were stratified by firm size, sector and ownership to provide comparability across the three surveys and included a partial panel of approximately 20 percent of the total 2005 sample.
8. Recognizing that the weights for our subcomponents of the anti-corruption program index are determined subjectively, we tested the relative impact of each of the subcomponents on changes in the levels of corruption using various weighting methods. The results are reported in Appendix 9A3 and show no significant change from the results reported in Section 4 (Table 9.4).
9. On the importance of freedom of information for general good governance, see Islam (2003).
10. In addition to these policy changes, recent contributions to the literature on anti-corruption have focused on democratic institution building – increased political competition, clearer separation of powers among branches of government and the reinforcement of checks and balances, adherence to the rule of law and media freedom – as well as government-led deregulation as effective ways to either reduce the opportunities for or raise the costs associated with corruption. See Glaeser and Goldin (2004); Hoff et al. (2004); Rose-Ackerman (2004).
11. Countries were only scored on membership in the organizations or conventions for which they are eligible. Although only seven countries in our study are signatories to the OECD Anti-Bribery Convention, all 27 countries (including members and non-members of OECD alike) are eligible to join the OECD Working Group on Bribery in International Business Transactions and, therefore, sign the OECD Anti-Bribery Convention. See OECD (2000).
12. The highest score any country could receive on the COE's Civil Law Convention on Corruption was 2/3, as the Convention has not yet received sufficient signatories to enter into force.
13. The CEB countries include Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, the Slovak Republic and Slovenia. The SEE countries include Albania, Bosnia and Herzegovina, Bulgaria, FYR Macedonia, Romania, and Serbia and Montenegro. The CIS includes Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, the Kyrgyz Republic, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.
14. Two-stage least squares regressions were used to control for probable recursivity in dependent and independent variables and for White's heteroscedasticity.
15. These relationships hold whether we include all three anti-corruption indices as simultaneous independent variables to control for multicollinearity or whether we use control variables. Results are available from the authors.

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Appendix 9A1 Anti-corruption matrix

Table 9A1.1 Anti-corruption matrix integrated ACP index

	National anti-corruption strategy			National anti-corruption action plan			National anti-corruption commission/ombudsman			
	Adopted	NGOs	Multi-branch	Adopted	NGOs	Multi-branch	Est'd	NGOs	Multi-branch	Indep.
Albania	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Armenia										
Azerbaijan	✓									
Belarus										
Bosnia & Herz.	✓									
Bulgaria	✓	✓	✓	✓	✓	✓			✓	
Croatia	✓	✓	✓	✓	✓	✓	✓			
Czech Rep.	✓		✓				✓			
Estonia										
FYR Macedonia										
Georgia	✓		✓				✓			
Hungary	✓	✓	✓							
Kazakhstan	✓									
Kyrgyz Rep.										
Latvia	✓	✓	✓	✓	✓	✓			✓	
Lithuania	✓	✓	✓	✓	✓	✓			✓	
Moldova	✓			✓			✓		✓	
Poland										
Romania	✓	✓	✓	✓	✓	✓	✓			
Russia										
Slovak Rep.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Slovenia										
Tajikistan										
Turkmenistan										
Ukraine	✓		✓	✓		✓				
Uzbekistan										
Montenegro										
Serbia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 9A1.2 Anti-corruption matrix legislative reform index

	Civil service law	Financial disclosure law	Public procurement law	Freedom of information law	Party finance law	Anti-money laundering law
Albania	✓		✓	✓	✓	✓
Armenia	✓				✓	
Azerbaijan	✓	✓	✓	✓		
Belarus						
Bosnia & Herz.				✓		✓/*
Bulgaria	✓	✓	✓	✓		
Croatia	✓	✓	✓	✓		
Czech Rep.		✓	✓	✓	✓	✓
Estonia	✓		✓	✓		✓
FYR Macedonia	✓					
Georgia			✓	✓		
Hungary		✓	✓	✓	✓	✓
Kazakhstan	✓					
Kyrgyz Rep.	✓		✓		✓	
Latvia	✓	✓	✓	✓	✓	
Lithuania		✓	✓	✓	✓	✓
Moldova		✓	✓	✓		✓
Poland	✓	✓	✓	✓	✓	✓
Romania	✓		✓			✓
Russia		✓				✓
Slovak Rep.	✓	✓	✓	✓	✓	✓
Slovenia	✓	✓		✓	✓	✓
Tajikistan		✓				
Turkmenistan						
Ukraine		✓			✓	
Uzbekistan			✓			
Montenegro						
Serbia	✓		✓			

Note: * This variable was scored 0.5 as the Federation has adopted anti-money-laundering legislation, but Republika Srpska has not.

Table 9A1.3 Anti-corruption matrix conventions index

	Stability Pact Anti-Corruption Initiative	OECD Anti-Bribery	COE GRECO	COE Convention on Laundering, Search, Seizure and Confiscation of the Proceeds from Crime	COE Criminal Law Convention on Corruption	COE Civil Law Convention on Corruption
Albania	✓		✓	✓	✓	✓*
Armenia	na			✓**		
Azerbaijan	na			✓**		
Belarus	na			✓**		
Bosnia & Herz.	✓		✓	✓	✓*	
Bulgaria		✓	✓	✓	✓	✓*
Croatia	✓		✓	✓	✓	✓**
Czech Rep.	na	✓	✓	✓	✓	✓**
Estonia	na		✓	✓	✓	✓*
FYR Macedonia	✓		✓	✓	✓	✓*
Georgia	na		✓	✓**	✓**	✓**
Hungary	na	✓		✓	✓	✓**
Kazakhstan	na					
Kyrgyz Rep.	na					
Latvia	na		✓	✓	✓	
Lithuania	na		✓	✓	✓	✓*
Moldova	✓		✓	✓	✓**	✓**
Poland	na	✓	✓	✓	✓	✓*
Romania	✓		✓	✓	✓	✓*
Russia	na			✓	✓**	
Slovak Rep.	na	✓	✓	✓	✓	✓**
Slovenia	na	✓		✓	✓	✓**
Tajikistan	na					
Turkmenistan	na					
Ukraine	na			✓	✓**	✓**
Uzbekistan	na					
Serbia & Mont.	✓			✓		

Notes:

* These variables were scored 0.66 as the covenant has been signed and ratified, but has not yet entered into force.

** These variables were scored 0.33 as the covenant has been signed but not ratified.

Appendix 9A2 Variables definition*Table 9A2.1 Dependent variables definition*

Dependent variables	Definition
Change in bribe tax	Change from 2002–05 in the country average of the percentage of firms' annual sales paid in unofficial payments or gifts to public officials
Change in kickbacks	Change from 2002–05 in the country average of the percentage of the contract value paid in additional or unofficial payments or gifts by firms to secure the typical government contract
Change in frequency of bribes	Change from 2002–05 in the country average of the frequency of firms' payments of additional payments or gifts to get things done with regard to customs, taxes, licenses, regulations, services, etc
Change in frequency of bribes, public services	Change from 2002–05 in the country average of the frequency of firms' payments of unofficial payments or gifts to get connected to and maintain public services (electricity and telephone)
Change in frequency of bribes, licenses	Change from 2002–05 in the country average of the frequency of firms' payments of unofficial payments or gifts to obtain business licenses and permits
Change in frequency of bribes, tax	Change from 2002–05 in the country average of the frequency of firms' payments of unofficial payments or gifts to deal with taxes and tax collection
Change in frequency of bribes, customs	Change from 2002–05 in the country average of the frequency of firms' payments of unofficial payments or gifts to deal with customs/imports
Change in frequency of bribes, courts	Change from 2002–05 in the country average of the frequency of firms' payments of unofficial payments or gifts to deal with courts
Change in frequency of bribes, kickbacks	Change from 2002–05 in the country average of the frequency of firms' payments of unofficial payments or gifts to secure government contracts

Table 9A2.2 Control variables definition

Control variables	Definition
Polity, 2002	Countries' 2002 score on the Polity IV index. This comprises two components: a democracy score and an autocracy score. The autocracy score is made up of a weighted average of scores on: openness of executive recruitment; competitiveness of executive recruitment; constraints on the chief executive; and competitiveness of political participation. The democracy score is made up of a weighted average of: competitiveness of executive recruitment; openness of executive recruitment; constraints on chief executive; the regulation of participation; and competitiveness of participation. The Polity score is computed by subtracting the autocracy score from the democracy score. Rescaled to 0–1 scale
Transition, 2002	Countries' 2002 EBRD Transition Indicator score. The unweighted average of the EBRD's eight Transition Indicators, which include scores for large-scale privatization, small-scale privatization, governance and enterprise restructuring, price liberalization, trade and forex liberalization, competition policy, banking reform and interest rate liberalization, securities markets and non-bank financial institutions. Rescaled to 0–1 scale
Media Freedom, 2002	Countries' 2002 score on the Freedom House Freedom of the Media index. Subjective scoring of freedom of the media, based on surveys of country and regional specialists. Rescaled to 0–1 scale
Ln GDP US\$, 2002	Natural log of per capita GDP in US\$ in 2002. Source: EBRD

Appendix 9A3 Reweighting of ACP index and regression results

Table 9A3.1 ACP index without NGO, reweighted

Integrated anti-corruption program index	33.3
<i>National anti-corruption strategy</i>	<i>11.1</i>
Adopted	7.41
Involved NGOs	—
Multi-branch	3.70
<i>Anti-corruption action plan</i>	<i>11.1</i>
Adopted	7.41
Involved NGOs	—
Multi-branch	3.70
<i>Anti-corruption commission or ombudsman</i>	<i>11.1</i>
Established	6.17
Involved NGOs	—
Multi-branch	1.23
Independent	3.70

Table 9A3.2 ACP index without multi-branch, reweighted

Integrated anti-corruption program index	33.3
<i>National anti-corruption strategy</i>	<i>11.1</i>
Adopted	7.41
Involved NGOs	3.70
Multi-branch	—
<i>Anti-corruption action plan</i>	<i>11.1</i>
Adopted	7.41
Involved NGOs	3.70
Multi-branch	—
<i>Anti-corruption commission or ombudsman</i>	<i>11.1</i>
Established	6.17
Involved NGOs	1.23
Multi-branch	—
Independent	3.70

Table 9A3.3 Multivariate regression results: variations on alternative ACPs (1999–2002) and changes in administrative corruption (2002–2005)

	Change in bribe tax				Change in kickbacks, value			
ACP	–0.480 (–0.976)				0.377 (0.587)			
ACP without NGO or multi- branch	–0.549 (–1.312)				0.205 (0.367)			
ACP without NGO	–0.476 (–1.014)				0.310 (0.504)			
ACP without multi- branch	–0.482 (–0.990)				0.363 (0.570)			
Legislative Reform	1.063 (0.995)	1.049 (1.009)	1.026 (0.968)	1.060 (0.994)	1.229 (0.881)	1.305 (0.937)	1.277 (0.918)	1.237 (0.887)
Conventions	–0.460 (–0.428)	–0.253 (–0.236)	–0.430 (–0.400)	–0.429 (–0.398)	–1.897 (–1.352)	–1.940 (–1.350)	–1.905 (–1.352)	–1.918 (–1.363)
Polity, 2002	0.401 (0.415)	0.441 (0.466)	0.418 (0.433)	0.375 (0.390)	1.384 (1.096)	1.427 (1.125)	1.391 (1.097)	1.407 (1.119)
Transition, 2002	–1.571 (–0.540)	–1.395 (–0.504)	–1.439 (–0.503)	–1.555 (–0.536)	–2.279 (–0.600)	–2.693 (–0.726)	–2.478 (–0.661)	–2.319 (–0.612)
Media Freedom, 2002	–0.622 (–0.228)	–0.935 (–0.355)	–0.713 (–0.263)	–0.638 (–0.234)	–0.488 (–0.137)	–0.173 (–0.049)	–0.364 (–0.103)	–0.460 (–0.129)
Ln GDP per capita US\$, 2002	0.808 (1.285)	0.795 (1.294)	0.809 (1.291)	0.801 (1.273)	0.366 (0.445)	0.328 (0.398)	0.351 (0.427)	0.368 (0.447)
Constant	–2.327 (–1.145)	–2.287 (–1.168)	–2.369 (–1.179)	–2.298 (–1.128)	–0.648 (–0.244)	–0.410 (–0.156)	–0.538 (–0.204)	–0.650 (–0.244)
Observations	26	26	26	26	26	26	26	26
R-squared	0.243	0.272	0.246	0.244	0.143	0.134	0.139	0.143

Note: Robust *t*-statistics in parentheses. * significant at 10 percent.

Change in frequency of bribes				Change in kickbacks, frequency			
-0.158 (-0.499)				-0.016 (-0.054)			
-0.240 (-0.888)				-0.046 (-0.185)			
-0.193 (-0.640)				-0.046 (-0.168)			
0.516 (0.757)				-0.158 (-0.504)			
0.016 (0.055)							
0.518 (0.753)	0.530 (0.788)	0.516 (0.757)	0.517 (0.752)	0.756 (1.213)	0.764 (1.235)	0.764 (1.233)	0.745 (1.196)
-0.051 (-0.074)	0.048 (0.069)	-0.033 (-0.048)	-0.041 (-0.059)	-0.187 (-0.299)	-0.166 (-0.260)	-0.179 (-0.285)	-0.194 (-0.308)
0.197 (0.317)	0.230 (0.375)	0.215 (0.346)	0.189 (0.304)	0.666 (1.181)	0.677 (1.202)	0.677 (1.199)	0.658 (1.171)
-0.896 (-0.478)	-0.912 (-0.509)	-0.908 (-0.494)	-0.890 (-0.477)	0.069 (0.041)	0.040 (0.024)	0.028 (0.016)	0.124 (0.073)
-1.297 (-0.738)	-1.382 (-0.810)	-1.297 (-0.746)	-1.303 (-0.743)	-2.006 (-1.260)	-2.008 (-1.281)	-1.984 (-1.254)	-2.037 (-1.281)
0.403 (0.995)	0.386 (0.971)	0.396 (0.982)	0.401 (0.989)	0.228 (0.622)	0.222 (0.607)	0.222 (0.605)	0.235 (0.640)
-0.560 (-0.428)	-0.475 (-0.375)	-0.530 (-0.411)	-0.551 (-0.420)	-0.484 (-0.408)	-0.449 (-0.386)	-0.449 (-0.382)	-0.525 (-0.441)
26	26	26	26	26	26	26	26
0.121	0.146	0.128	0.121	0.143	0.145	0.144	0.143

10 Corruption in China and Russia compared: different legacies of central planning

Jens Andvig

Corruption is a central issue for countries making a transition from centrally planned to capitalist market economies. The population in most European former socialist countries and in the former Soviet Union perceived that the transition from central planning was accompanied by a large increase in corruption.¹ China and Vietnam apparently also went through a period early in their transition when corruption was perceived to increase dramatically.²

Why this increase in perceived corruption? Corruption implies transactions that break prevailing rules or norms. Transitions represent massive changes in the rules. When individuals report increases in corruption, is their frame of reference the new or the old rules? Does the juxtaposition of old and new rules create contradictions that make it impossible not to break one set and feasible for agents to break both?

In what follows I discuss research that focuses on the links between corruption and growth (or production decline) in the transition countries³ of the former Soviet Union (the FSU countries), the former centrally planned or labor-managed countries of Eastern and Central Europe, and the poorer, but also formerly centrally planned countries, such as China and Vietnam. Most attention will be given to Russia and China. The main difference between them is that, although market mechanisms are now used pervasively in both countries, the Communist Party lost power in Russia but not in China. I shall emphasize explanations that tie corruption and growth during the transition to the properties of the old planned economies. I try to avoid simplistic explanations that view present-day corruption as merely a carry-over of old corrupt practices; rather I show how the new institutions created corrupt opportunities by destroying some of the checks and balances of the old planning system.

Economists and other social scientists no longer spend much time studying the socialist economic system because it is seen as a historical loser. As a result, many of its features have been quickly forgotten and are less well understood than the passage of time by itself would explain. At present,

strong normative beliefs in the efficiency and desirability of the market have made it difficult to understand the appeal of an opposing normative system and the tensions that arose when it was discarded. I argue that this tension is a significant explanation for the rise of perceived corruption but may also have had an impact on the actual occurrence of both corruption and embezzlement in the early transition years. Moreover, their normative dislike of the system may have led analysts to underestimate its effects on the transition process. For example, it is difficult to understand the production decline in the FSU countries without understanding the economic role of the Communist Party in a planned economy. Likewise, without understanding the different and subservient role of prices in a planned system compared to a market economy, it is difficult to understand the high rate of corruption in the tax administration and the decline in effective taxation in the transition economies.

My focus is somewhat controversial. Based on cross-country evidence, Daniel Treisman (2003) argues that factors that have nothing to do either with the specifics of the planning system or with the characteristics of the transition explain most of the present perceived corruption levels in the former socialist countries in Europe and Central Asia. He concludes that most of the dramatic institutional changes in the region have just produced eye-catching institutional noise and that there is nothing distinctive about the transition from communism. My analysis questions the explanatory power of Treisman's empirical exercise and by extension all conclusions about the region based on *n*-country, cross-section econometric research on governance.

At least since the publication of Paolo Mauro's (1995) paper, cross-country studies have dominated empirical corruption research in economics. Mauro's study focused on the effects of corruption on growth rates. Since then, *n*-country econometric studies of the effects of corruption on GDP levels and growth rates (and the effects of GDP levels on corruption rates) have been prominent in corruption research. This research has demonstrated that broad cross-country regularities exist, but they overlook much of the nuance of individual country experiences. By highlighting the experience of the transition countries, this chapter points out some inconsistencies between the transition experience and the generally strong statistical relationship between growth and low levels of corruption. All of these countries experienced massive changes in their information, decision making and incentive structures as they made a transition away from central planning. However, these changes were accompanied by widely diverging growth experiences. One would expect economic system changes of this size to have an impact on both corruption and growth, but why in such different directions?⁴

Given Mauro's econometric result that corruption has a negative impact on growth, the cases of China and Vietnam appear paradoxical. They have to be explained either by claiming that they are random aberrations from a tendency for corruption to have a negative impact on growth or by bringing other variables into the growth–corruption equation. Corruption may act as a negative drag on what would have been an even stronger underlying growth experience. For example, the low degree of industrialization (and low GDP per capita) in China and Vietnam compared to the FSU area at the onset of their shifts towards market economy left a larger scope for growth whatever the incidence of corruption. But why then was the rate of *decline* in the FSU countries negatively correlated to their initial GDP levels at the starting-point of their transition (Andvig 2002)? Given the wide variation in the rates of change in GDP, is it really reasonable to conclude that the corruption–GDP nexus is affected throughout the region by the same variables working additively in the same equations? Instead, should one not look for different mechanisms – one that ties together corruption and production decline in the FSU case and one that links growth with corruption in the cases of China and Vietnam? Or should one de-link the explanations of corruption from the explanations for growth? These are some of the questions that arise when the different transition experiences from central planning are brought together in a multiple case-study setting (Ragin 2000).

After a brief discussion of corruption definitions, I outline the well-known general features, first, of Russia and China at the time of their transition, and then of centrally planned economies. These conditions are, I argue, relevant both in explaining the level of corruption within those systems and in determining the new forms of corruption that arose during the transition. I begin with corruption under central planning and discuss the major explanations of corruption specific to that system that have some obvious implications for the growth and economic performance of the socialist states. This is followed by an overview of some general characteristics of the initial transition stage, emphasizing the major differences between China/Vietnam and the FSU countries. Finally, I present a few of the models and empirical analyses that have been tailor-made for transition conditions. The discussion is exploratory and focuses on work that links economic growth (or contraction) and corruption and that seeks to understand the connection between the past and the present.

The thrust of the analysis of links between corruption and growth during the transition may be summed up by the metaphor of a ski-jump. I consider three different, but interlocked dynamic subsystems: the in-run, the jump and the flight. The final outcome, the length (the post-transition conditions), hinges upon the performance in all three subsystems.

1. Corruption definitions and systemic change

Many, somewhat different, definitions of corruption are currently used in the literature. The one most frequently used is ascribed to Nye (1967: 416) who defines corruption as ‘behavior that deviates from the formal duties of a public role (elective or appointive) because of private-regarding (personal, close family, private clique) wealth or status gains’. Interpreted literally, this definition is too wide for most purposes, because almost every official would be guilty of behaving corruptly. A more reasonable interpretation would be for it to cover serious acts of bribing and extortion at its core, and depending on the context, to include various types of private-regarding activities at its edges. I have few objections to the standard definition interpreted this way, but I have found the following definition, based on Rose-Ackerman (1978: 6–7), somewhat more precise and useful for my purposes:

- An act is *commercially corrupt* if a member of an organization uses his/her position, his/her rights to make decisions, his/her access to information, or other resources of the organization, to the advantage of a third party and thereby receives money or other economically valuable goods or services where either the payment itself or the services provided are illegal and/or against the organization’s own aims or rules.
- If the act is mainly motivated by the intangible valuables received and is given by the member serving the interests of friends or family, or his/her own standing in family–friendship networks, it is an act of *family–friendship corruption*.
- An act represents *embezzlement* if a member of an organization uses his/her rights to make decisions, his/her labor time, his/her access to information, or some tangible assets of the organization to his/her own economic advantage in ways that are either illegal or against the organization’s own aims or rules. Embezzlement might also be motivated to improve the individual’s standing in family–friendship networks.

From this set of definitions we observe that corrupt transactions are not simply a set of particular actions, but rather that corruption has to be related to a set of rules about the proper procedures for transactions – when a person acts corruptly, a transactional mode is broken (Andvig 2006). Both family–friendship and commercial corruption imply a transaction between at least two actors, one of whom has to be outside of the organization being corrupted. In the case of regular, commercial corruption, there is an illegal or illegitimate expansion of market transactions into the

bureaucratic or political fields. A major question is whether the large expansion of the legal scope for market transactions, which is a necessary consequence of the transition away from central planning, may have increased (or limited) the scope for illegal market transactions such as commercial corruption. It is obvious, but rarely made clear, that since the rules for the proper dividing lines between bureaucratic and market transactions change during the process, so will the scope of what is considered corrupt.

Embezzlement, on the other hand, may be performed by a single insider, but large-scale embezzlement normally involves several people. More importantly, the rules broken are different. Although corruption in the narrow sense raises the question of the proper way of making transactions, embezzlement challenges the property rights of the organization, including the proper internal allocation of decision making rights. In the case of the FSU countries and the other formerly centrally planned economies in Europe (FCPE), massive changes in the rules and principles for determining property rights took place. What was considered legal privatization from the point of view of the new norms was considered embezzlement of the people's property from the point of view of the old norms. Even if we are uninterested in the old system as such, it leaves marks on the new one. If nothing else, the old norms may be held by the older generation, and these people may believe that the privatization of state assets is corrupt and that the growth of private property is illegitimate.⁵

Perceptions may have a direct impact on behavior, but old norms and socialist law also have an impact along other routes. It takes time to develop a consistent set of laws. Direct legal inconsistencies are part of the transition picture and provide scope for corruption and embezzlement. Even when the laws have become clear, the existence of contradictory norms may also affect behavior, for example by reducing the ethical costs of their violation.

The precise mechanisms may prove difficult to pin-point: ethical costs may go down because people did not believe in socialist laws and, therefore, do not believe in any laws including the new market-framing ones. Conversely, the agents may believe in socialist laws but also believe in the value of being law-abiding, in general. If that is the case, the costs of abiding by the market-framing laws will go down. Whatever the precise mechanisms were, the old system's formal norms and their cumulated violations under the old regime should be understood when trying to explain the corruption and embezzlement taking place during the transitions.

2. Central planning institutions and corruption

Here I shall outline briefly the set of institutions and economic background characteristics of the centrally planned economies (CPEs) that have shaped corruption both under central planning and its demise.

Several features of the socialist system were important not only as explanations for corruption inside the planned economies but also as determinants of post-transition corruption. This applies to rules of ownership, the economic role of the ruling party, the demarcation of the proper areas for market versus bureaucratic transactions, the ethics of governance and income distribution, the missing roles of prices, the incentive structure and so on. These are all important features of the system that distinguished it from the market-led systems. All had important consequences for the growth experiences and for the corruption, perceived and realized, in the systems that followed. The main features were shared by all post-communist states but were more clearly articulated in the Soviet Union than in China.⁶

Central planning as an all-embracing economic bureaucracy

A basic characteristic of the socialist economies is that they were organized as a single, but complex, public hierarchy. Unlike standard public bureaucracies, the main thing shuffled between offices (the enterprises) were not messages, but real goods and services. Like a standard bureaucracy there were no hard prices charged as long as transactions were internal to the bureaucracy. Prices were mainly accounting devices to keep track of what the offices were doing, making it possible to compare their reports, aggregate the reports to consistent ones at the higher levels and so on. The prices were not very important for behavior. Only when the goods left the bureaucracy and went to private consumers were real prices levied. Labor was the only item on the bureaucracy's ledger that represented a real cost.

At the higher levels the central problem was to coordinate the different offices so that their plans for delivery and procurement meshed. In order to do this, the specification of the transaction technology – which office to communicate with about what – was exceptionally important so that the higher levels were not overwhelmed with information. In theory, the economy was coordinated by a production and delivery plan. In practice, the system operated more like a multilateral bartering system where the subordinate offices had to do a considerable amount of searching for suppliers. The lack of price charges implied that most of the search costs had to be borne by the office that needed to acquire the good. There was an excess demand for most goods, so only agents that wanted to acquire goods were willing to bear the search costs. The specification of the transaction technology, the planning apparatus, reduced search costs, however.

But bureaucracies are not only arenas for human task solving, they are also hierarchies where superiors rule, and where wages and working

conditions at the top are better than those further down. The desire for promotion – moving up the hierarchical ladder – becomes a hard economic incentive. It is comparable in strength to the profit motive among owners of capital and is often reinforced by the prospect of having increased influence within the organization. The only way to become rich and widely respected is to move up the hierarchical ladder.

Hence, the key to power in any bureaucracy is to gain control of the employment function: the ability to employ and fire, to promote and demote the employees of the organization.⁷ The way in which the probability of promotion is related to the agent's task-solving behavior is a key factor in determining the activity levels in public bureaucracies. On the one hand, if promotions are granted to officials who work harder than average, a rat race may arise (Akerlof 1976). On the other hand, if an official enters an organization accustomed to low levels of activity, he or she may work at a slow pace without being identified as lazy. If the official starts out in this situation as an energetic person and tries to initiate new activity, he or she may not accomplish much. Other agents are accustomed to their low speed. The joint efforts usually required to improve performance will not be forthcoming. Also, because of spillover effects in the promotion system, the optimal activity level chosen by a single bureaucrat depends upon the activity levels adopted by the bureaucrats with whom he or she is in regular communication.⁸

In the planned economies the mechanisms for promotion, hiring and firing were also important in facilitating coordination. They represented an enormous saving in information costs compared with the physical planning of all inputs and outputs. Although management positions in the Soviet Union and China were numerous, the number of significant actions that were coordinated through the planning process was much larger. It was much easier to control individuals through personnel policies than to control all their actions through extensive formal control systems. This partly explains why the *Nomenklatura*⁹ system became so important in the centrally planned economies, and why the Communist Party's control of hiring policies was so important.

Large and technologically interlocked enterprises

Another way in which the system sought to reduce search costs was to concentrate production in exceptionally large enterprises. This meant that each enterprise had few alternative suppliers for each input. Large size was also consistent with an ideology that believed in the benefits of economies of scale. This implied that enterprises were often tied into chains of technologically interlocked units, each unit in a kind of monopolistic position relative to the next one in the chain.

The role of the Communist Party

As emphasized by János Kornai (1992: 361) the Communist Party and its ideology are the keys to understanding the workings of the European CPEs. The Party's economic role has rarely been subject to precise analysis, however.¹⁰ It combined the economic roles of entrepreneurship, planning and capital markets with the political functions of security, repression and participation. By determining who held leadership positions in the enterprises, it acted as both active owner and capital market. By being formally outside the economic organizations, the Party could push for results and urge changes in the composition of industries. Hence, it had to act somewhat like an entrepreneur. Since the cadres were interlinked in a separate hierarchy, their interaction was a key lever in determining economic growth rates in the CPEs. Although results are mixed, the Party's emphasis on growth-related promotion criteria sometimes allowed the planned systems to achieve fairly high growth rates, as shown recently by China and Vietnam, and by the Soviet Union in part of the Stalinist period. A certain dedication and belief in the system was probably also important in order to keep the system in high-activity equilibrium.¹¹

In any bureaucracy the major monitors of corrupt transaction are other members of the same bureaucracy. Although the security police played an important role in monitoring the cadres, the key monitors were the Communist Party cadres themselves. Whether a corrupt transaction was discovered, exposed and punished hinged upon other cadres' behavior. The whole party of a country, or some regional partitions of it, could encourage the propagation of corruption, lenience, or active monitoring and effective punishment. Given their monitoring and directing role with respect to the economic bureaucracy, the cadres' behavior had economy-wide effects. In short, a key transmission mechanism linking growth and corruption went through the Communist Party.¹² As a partly personalized network that crisscrossed practically all activities in the socialist countries, the Communist Party was important both for how corrupt transactions became organized after the transition and for their frequency.

The role of prices

In capitalist market economies, prices have at least three functions (Johansen 1978: 55–9): (i) aggregating different items for accounting, (ii) allocating resources and (iii) generating income and income claims or debts that give rise to strong incentives. In socialist economies prices mainly served the first and partly the second role; the third role was rather unimportant. It is the third role, however, that makes prices so important in market economies. Debts may also be hard or soft in the sense that they may have to be paid back in hard sales income or just be an accounting

relationship. If prices and debts are soft, enterprises will not spend many resources in fighting taxes under a planning system, nor would they be much interested in increasing prices or fighting wage increases.¹³ Their position as debtors or creditors of other enterprises would also be of minor interest. During the transition process the role of prices changed from soft to hard everywhere, and this move was of great importance in determining the locus of corrupt transactions when the countries moved away from central planning.

Furthermore, the relative price structure, even for consumer goods, differed significantly from prices in the world market. This was most pronounced for the Soviet Union, but applied also in other socialist countries, including China. The original difference in price structure was a source of extensive smuggling and corruption in the early years of the transition as controls weakened before the price-setting mechanisms were abandoned.

The legal and norm structures

Although many (in some countries most) citizens in the CPEs did not believe in the official socialist codes of ethics, these ethical principles came to play a role for both the actual and perceived levels of corruption during the transition. Important here was the notion that all property that involved use of labor power should be publicly owned. Only a circumscribed set of market transactions was ethically acceptable. It was morally wrong for any member of the elite to be very rich in the sense of owning large properties even for his/her own consumption. Equally important was the idea that enterprises should be managed by the government and, in practice, be part of the government structure, not separated from it. Moreover the lines separating the political and government spheres were thin. This normative and legal structure could not simply be abandoned by administrative fiat during a transition. That is obvious in the case of social norms that almost by definition cannot be manufactured freely (Elster 1989: 125), but even old legal structures may also possess considerable inertia. At the very least, it takes time to make a new, consistent legal structure. These old structures may have an impact in different ways:

1. A norm supporting a type of action may survive directly into the new system that prescribes a new set of actions. The new set of norms that will underpin the legal reform may not be accepted by the population, however. Then, if the new legal prescriptions are followed, the public may perceive these transactions as corrupt if they are defined as such by the old norms.¹⁴
2. Old norms/legal practices may mix with new ones in ways that give scope for corruption. Of key importance here is when the norm combination

- ‘close cooperation between government regulators and enterprises’ and ‘enterprises earn soft-budget income’ is not supplanted by the new ideal norm combination ‘arm’s length relations between government regulators and enterprises’ and ‘enterprises face hard-budget constraints’, but rather with the combination ‘close cooperation between government regulators and enterprises’ and ‘enterprises face hard-budget constraints’.¹⁵
3. The old rules may still be believed, but may be inconsistent with the new rules. People feel stress as they try to reconcile these contradictions.
 4. More complex interactions between old and new norm systems may exist. For example, suppose that action patterns a, b and c were labeled by the old norm structure as inappropriate market transactions, but that a and b, but not c, are accepted in the new system. The former unacceptability of all three action patterns may lead agents to consider c to be appropriate as well, because c is seen as normatively equal to a and b.

So far, I have emphasized the basic institutional characteristics of the planned economies that appear relevant for the growth–corruption nexus both inside and in the transition away from central planning. Let me now outline a number of economic models that seek to tie these institutional characteristics to corruption under central planning as well as to the production response and forms of corruption during the early transition period.

3. Models of corruption in centrally planned economies

How might the corruption experiences in the transition countries be linked to the corruption under central planning? There are several possibilities: (i) corrupt behavior and situations may be directly transferred; (ii) brakes that were present under central planning may have been released, creating new corrupt opportunities; (iii) norms, laws or situations that contained or caused corruption then may cause or contain corruption when they are mixed with new conditions; or (iv) there may be no links at all – the pre- and post-change mechanisms may be completely different. Unless the last possibility is dominant, corruption mechanisms under central planning are of obvious relevance for a study of corruption in post-socialist countries.

Only a few analyses of the specific corruption mechanisms of central planning have been formulated. A plausible reason for this is that at the time when the research interest in corruption increased, the interest in central planning faded.

One early article, by John Michael Montias and Susan Rose-Ackerman (1981), was published when central planning was still in force. It studies the

effects of plan indicators on the internal corruption of the socialist bureaucracy and draws on interviews and case studies of Soviet corruption. The authors analyzed situations inside the central apparatus that might give rise to corruption. They concluded that the effect of bribes on output may easily be ambiguous. A shift in the degree of plan tautness may trigger the enterprise to move either above or below the planned level, and the impact of reduced tautness on corruption was ambiguous. With the advantage of hindsight more recent work presents more specific results.

The Shleifer–Vishny models

The Shleifer–Vishny models have been the most influential analyses of corruption under central planning (Shleifer and Vishny 1992, 1993), and not only for central planning. These models explored type-1 and type-2 possibilities. They outlined a mechanism that could explain both how corruption was deeply ingrained (in their view) in the core of central planning, and also how likely modifications of the corruption mechanism during a transition could lead to negative growth rates that did not exist under central planning. Their starting-point was the all-embracing experience of shortages under central planning. Shleifer and Vishny (1992) explain it as caused by the monopolistic behavior of socialist industries. The ministry officials colluded with enterprise managers and became one decision making unit.¹⁶ The authorities taxed away all profits. Hence, it made no sense to maximize profit. Rather the ministry/enterprise maximized net bribe income. The same bribe was paid by all customers, but as the bribe increased, the demand for the good or service in question decreased. Like a normal monopolist, a ministry would operate along its demand curve by restricting sales/production. Unlike a regular monopolist, however, a ministry would not worry about its cost function but only about the official price of the goods it was obliged to deliver. The higher the official price, the lower the net bribe income would be.

What happens in a transition without privatization, when the official, controlled prices are increased in order to relieve shortages? The outcome would be as suggested: reduced output and therefore increased shortages despite an increase in the market price and reduced net bribes. The negative supply response was working through the reduction in net bribes. If the enterprise were allowed to keep its profits, one would not get this negative supply effect from an increase in official prices.

A transition may, however, also cause bribe collection to become decentralized and therefore, according to Shleifer and Vishny (1993), be potentially more harmful to growth. In their 1993 article they generalize their model of corruption in a socialist shortage economy to apply to any official who monopolizes the delivery of a public service. They distinguish between

two cases, one where the official hands over the income to the government at its official value, as the socialist ministry did, and a second one where he/she may steal it (corruption with theft). The last case may become relevant in the post-communist case where monitoring breaks down, but the plan allocation is still law. It may also prove to have lasting effects because in a market economy, the bribe payers (with theft) normally pay less than their lawful competitors and tend to out compete them, while they will pay more without theft and be out competed. Hence, compared to bribery without theft, aggregate demand for output would increase and prices fall. This evidently was contrary to fact in the early stages of post-communist transition, however, but it nevertheless was a prediction that tied aggregate output, transition and corruption in one model.

Shleifer and Vishny (1993) also point to another aspect of the breakdown of monitoring more compatible with stylized facts: it not only led to stealing, but also to a decentralization of bribe collection. A communist party in a centrally planned economy might be considered a monopolistic bribe collector dealing in a system of complementary goods and services. Bribery maximization by a joint monopolist agency will take into account the effect of bribes collected for one service on the bribery collection of the other. To increase the bribe for one service or good will reduce the willingness to pay for another. Hence bribe rates will be kept lower than if bribe collection were decentralized, and the agencies would disregard the effects on other markets. The rate of bribe collection for each agency will be higher, but both aggregate bribes and aggregate output will be lower than in the centralized system. With free entry into bribe collection, this negative effect on output should be even stronger.

Summing up, if one accepts Shleifer and Vishny's conception of central planning, it is difficult to imagine any other way to organize the economy that would cause more extensive forms of corruption. But corruption could become even more harmful when Communist Party control breaks down. This theory at one stroke appears to explain the production decline of many of the FSU countries during their transition and the better economic performance of China and Vietnam which stuck to a centralized way of collecting bribes.

A number of anomalies immediately arise, however. For example, because the joint bribe collector – the Communist Party – in China and Vietnam would perform centralized collection, gauging the effects of bribe-collection in one industry on the bribe-collection prospects in the other industries, the economic shortages should also be less pronounced than the individualized collection in the FSU countries. In fact, the opposite appears to be the case, since many of the FSU countries appeared to experience symptoms of generalized excess supply, not generalized shortage.

But before further elaborating weaknesses in the Shleifer and Vishny explanations of corruption in the CPEs and their applications to the transition countries, I shall look at another instructive model that ties corruption in the centrally planned economies with corruption that arose during the transition period.

The Harrison–Kim model

Like Montias and Rose-Ackerman, Harrison and Kim (2001, 2003) focus on the interaction between planners and enterprises in their effort to explain corruption under central planning. As they point out, the Shleifer and Vishny model implies that the corrupt ministry–enterprise complexes should strive for low official prices. In this way they could increase the bribe earned per unit of output. That implication, however, violates the well-established fact that ministries preferred higher prices but planners insisted on lower prices. Generalized excess demand appears to have been deeply ingrained in the system, but the degree of excess demand was more strongly influenced by bureaucratic output drives than by prices.¹⁷

In standard descriptions of the planning process, where the ministry and enterprise responses are modeled, official prices are assumed fixed, reflecting the fact that a separate agency determined the official price lists. Relying on recent investigations of the Russian state archives, Harrison and Kim found that the Soviet managers had much more discretion in influencing prices than most researchers had believed. In the so-called material balances that specified the planned outputs and inputs to be supplied by and delivered to the enterprises, planned quantities were not quantities after all, but nominal values that, in practice, left scope for considerable price manipulation, a fact that Shleifer and Vishny were among the first to build into their modeling of the system. The major method applied by the enterprises according to Harrison and Kim was not to fix market prices through monopolistic price setting, however, as Shleifer and Vishny have claimed, but rather to change the output mix through ‘innovations’. Since the plan was fixed in nominal values, an accepted (but false) claim of a higher-quality product implied a higher price and lower quantity in the actual delivery compared to the plan specification for the enterprise.

The Harrison–Kim model starts with an initial price–output combination that is accepted by the planners. They are, however, willing to accept other combinations where output may be lower and the price higher, but as the price increases (through fake innovations or other means), planners become less and less willing to accept the implied output declines. The enterprise may spend effort on this price-increasing deception, on leisure,

or on output. As more effort is spent driving up the accepted price, the enterprise has to give up more output or leisure. The interaction between planners and the enterprise will generate an equilibrium output–price mix with a higher price and a lower output than the one specified in the plan.

So far there is no monetary corruption or embezzlement in the model although one may consider the resulting leisure as a form of embezzlement. Noting that there is excess demand in most ‘markets’, Harrison and Kim maintain that the customers (if they have some liquid assets available) may be able to pay a price above the official price. In the case of ‘loyal’ managers this unofficial income would be added to the resources of the enterprise and give less hidden inflation, more output and more leisure. Spent this way, the bribes received by the enterprise would lead it to produce more and cheat less in the sense of delivering less output and charging higher prices than assumed by the official plan.¹⁸ Harrison and Kim argue that the managers’ position normally would lead them to simulate loyalty. If disloyal, the transformation curve of the enterprise between hidden inflation and output would be unchanged.

In their set-up, the degree of tautness – that is, the price–output combinations that the planners were willing to accept – was an important policy instrument. If they were willing to accept more slack, it became easier for disloyal managers not to recycle the bribes into production, and output would tend to fall as the hidden inflation increased together with managers’ private consumption. Seen this way, the reduced tautness in planning may indicate collusive behavior by the managers that caused a downward pressure on output and upward pressure on hidden inflation and meant that corruption had harmful effects both directly and by increasing the share of the managers who could become disloyal. The first part of the transition in the FSU countries may be viewed as a process that lifted the price–output curve far out, giving much larger scope for output decline and corruption increase. Thus their model is also able to connect output levels and corruption and to explain falling output and increasing corruption, the stylized fact of the FSU experience

The role of family–friendship corruption

Shleifer and Vishny admit that suppliers might not close the whole shortage gap through their bribe demands. Some direct rationing would take place. But how would the scarce goods be rationed? Queues were one possibility and were a common (and visible) feature of the centrally planned economies, particularly in the Soviet Union. Another obvious way of rationing – particularly of consumer goods – was for the suppliers to hand them over to family, friends or more distant acquaintances. At the same time, individuals sought out suppliers who were able to give them

preference. Thus, the more or less regular, spontaneous creation of personal networks was stimulated by trafficking in scarce consumer goods. Presumably they thereby increased in scope and carried more 'traffic' than networks based on pure friendship–family feelings. Their importance is indicated by the fact that personal-based networks have well-known names – *blat* in Russia and *guanxi* in China – and have received considerable research attention. The Chinese *guanxi* appears to be more formalized, considered more ethically acceptable, and more based on a model of family structures.¹⁹

Many of the modifications of the formal rationing principles caused by the use of connections did not involve corruption. Lining up in a queue one could buy something extra for friends without violating any principle of socialist governance.²⁰ But a large share of the informal rationing involved family–friendship corruption or embezzlement. If a queue organizer (such as a shop employee) set aside some high-quality item for a friend instead of allotting it to those in the public queue, or if he/she was actively sought out by friends to hand over those goods, he/she was performing a family–friendship corrupt act. As the transaction shades into a quid pro quo, it might become close to commercial corruption. If the customer exerted political influence, it might shade off into extortion. Networking might obviously also be used for establishing commercially corrupt transactions, for example, by reducing their transaction costs.²¹

Similarly, networking was also used in inter-industry procurement for many of the same reasons. Excess demand made the procuring enterprises become active networkers, not suppliers. Given the major changes in the consumer markets, one should expect the old *blat* networks of the Soviet Union to become useless and, hence, lead to a decline in family–friendship forms of corruption. Ledeneva's (1998) interviews confirm that expectation for Russia. Almost by definition commercial corruption at the consumer end would disappear when shops became private and both the supply and the demand for consumer goods are determined through public market forces.²²

When it comes to inter-industry transactions, the need for networks remains. But as the economic system moves from a situation of generalized excess demand before the transition to a situation of excess supply (Weitzman 1984), one would need networks to assist in selling output rather than for the procurement of inputs. Whether these networks have increased in size and whether they depend more on family–friendship links or on corrupt commercial links after the transition is not only a matter of definition. The need for networks in the labor market should even intensify, but, in general, it appears that family–friendship corruption is likely to have been more common under central planning than during the transition and afterwards.

The internal and external transaction costs of corruption

In order to understand the issues of day-to-day corruption in the CPEs, it may be fruitful to distinguish between its 'internal' and 'external' forms. Internal corruption arose in the transactions between state enterprises, planning units or other institutions inside the governmental apparatuses. Here the forms of financial control were crucial in containing corruption. External corruption arose mainly in the interaction between enterprises and the other governmental units, on one side, and the consumers, on the other. Where corruption was extensive, illegal private enterprises may have arisen.

Above these units, party organizations coordinated and monitored both internal and external transactions. Party officials could be bribed by both consumers and government units, that is, they could be involved in both external and internal forms of corruption. KGB and other police units monitored Party officials. Their role increased as the corruption of Party members became more common. Because the Party was decisive in important employment decisions, its control of the career prospects of cadres was also the key to Party corruption and therefore to the political forms of corruption.

Most of the analytical attention to corruption in the former socialist countries has focused on 'internal' corruption, corruption tied to the planning process itself. Shleifer and Vishny (1992, 1993) were an exception. As noted, they considered Soviet economic planning simply as a form of generalized monopolistic supply confronting consumers. As such, it was not necessary to go into detail regarding its inner workings.

In an earlier paper I also argued that corruption in the Soviet Union was connected to the interaction between the planning mechanism and the market sectors, particularly the illegal ones (Andvig 1985). The starting-point of my argument was the observation that the exceptionally high transaction costs in making corrupt deals should constrain corruption in CPEs. Due to its illegality, there are always considerable transaction costs involved in completing any corrupt interaction, whatever the nature of the economic system. Although those transaction costs would normally be reduced if the incidence of corruption increased, they would not disappear. Furthermore, the fact that corrupt deals required a barter exchange also increased the time and trouble involved.²³

In market economies enterprises initiate and pay the largest share of the total amount of bribes paid.²⁴ In a CPE they were likely to account for a smaller share of the total. One reason was simply that the enterprise and the corresponding ministry often acted as one administrative unit. Thus, the enterprise had no incentive to pay bribes to its own regulators in the ministry. Moreover, the regular transaction costs of corruption were compounded by the difficulty of finding matches for corrupt barter deals.

Substantial corrupt transactions across industries meant that corrupt enterprises had to pay with their own output and then normally would have to get involved in large multilateral barter deals. Although facilitated by *blat* chains, the initial transaction costs would have been higher than in a market economy – at least for the capital goods industries.

The transaction costs would not have been so high for consumer goods, however. The shops transacted with cash in their sales to consumers. Moreover, consumer goods were also more liquid in the sense that they were on average more tempting to embezzle by the employees themselves. Thus, corrupt incentives would be much stronger there, all else equal. The signs of pervasive corruption were, therefore, most visible in some consumption industries but might spread backwards.

Given the context of the socialist society, many types of market transactions were illegal without being corrupt, but regular, illegal markets stimulated corruption along several routes. In addition to the direct demand for (corrupt) public protection, the underground economy presented an outlet for some of the state enterprises' output, yielding income that might be spent on bribery. Here we have a clear instance of a case where illegal market transactions both increased the motives for corrupt transactions and reduced their transaction costs.

The evidence for the importance of illegal consumer markets as a mechanism that reduced the transaction costs of corruption, increasing its scope and incidence, has to be sought in roundabout ways. No corruption perception indices existed, but in the case of the Soviet Union we have useful regional indicators that may throw light on the importance of transaction costs: estimates of the size of the second economy, the number of newspaper stories about corruption (Holmes 1993), or the number of people convicted of economic crimes including corruption (Clark 1993). Many stories of a more or less anecdotal kind support the impression of an uneven distribution of corrupt transactions. If the major corrupt transactions had started from the center, we would expect either the highest incidence around Moscow or, alternatively, a rather even one across the regions.

Single, well-documented stories may reveal more general features of the phenomenon and its geographical distribution. Stories of large-scale corruption might be revealing. For example, in Uzbekistan local units embezzled a large share of the cotton harvest in the early 1980s (*Radio Liberty Research Bulletin*, 5 September 1984). Many would have to work together to perpetrate this kind of illegal transactions that would only be possible in an environment of pervasive corruption. That is, a single story may have strong implications for assessing the overall level of corruption.

The increasing size of the second economy in the late Brezhnev years is documented in Trembl and Alexeev (1993). They found that the statistical

correlations between official income and savings and between income and the registered sale of important consumer goods weakened significantly in the period between 1965 and the late 1980s (even for alcohol). A reasonable interpretation is that a larger share of household income came from unofficial sources, and a larger share of consumer goods items was sold outside official channels. A likely positive connection between corruption and the size of the second economy over time is indicated in Table 10.1, which also shows a rough cross-section correlation between the estimated size of pre-transition second economies and the economic crime conviction rates per million people.

The pre-transition conviction rates are of course a very rough corruption indicator. The high rates in Azerbaijan may, for example, reflect the effectiveness of Heydar Aliiev's anti-corruption campaign in fighting *competing* corrupt networks, not his own corruption (Vaksberg 1991), and the low rates in Tajikistan may indicate ineffective economic policing, and so on.²⁵ The table also indicates a surprising degree of persistence in corruption and the size of the underground economy during the transition to legal

Table 10.1 Corruption and the second economy: regional estimates for the FSU area

Country	Conviction rates per million population, 1965–90	Control of corruption, 1997–98	Unofficial economy share, 1979 (%)	Unofficial economy share, 1995 (%)
Armenia	7.27	–0.80	na	na
Azerbaijan	21.85	–1.00	50	70
Belarus	0.20	–0.65	43	35
Estonia	2.14	na	22	22
Georgia	15.00	–0.74	50	71
Kazakhstan	1.21	–0.87	50	50
Kyrgyz Republic	3.85	–0.76	na	na
Latvia	0.00	–0.26	34	41
Lithuania	1.41	0.03	34	31
Moldova	4.63	–0.39	43	48
Russia	2.81	–0.62	27	46
Tajikistan	2.00	–1.32	na	na
Turkmenistan	4.06	–1.29	na	na
Ukraine	1.70	–0.89	38	57
Uzbekistan	2.71	–0.96	50	29

Sources: Clark (1993, Table 3.5); Alexeev and Pyle (2001, Table 5–6); Kaufmann et al. (2002, Table 2).

market economies.²⁶ This persistence may suggest the ability of family and other informal networks to undermine formal structures whether they are planning or market oriented.

The high corruption rates in the Soviet areas of Georgia and Azerbaijan were reflected in the bribe rates for entry to the universities. For example, while the bribe rate for the entry to medical studies at Moscow University was 6,000 rubles in 1979 and rising, the rate was 15,000 rubles in Georgia and 30,000 in Azerbaijan (Simis 1982: 167). These bribe rates are likely to capture some of the capitalized value of the expected bribe income of future medical doctors.

As observed in the Harrison–Kim model, the degree of tautness in plans may affect internal corruption. Increasing tautness ‘forces’ the managers to break more rules in order to achieve plan-fulfillment, which increases the incentives to bribe input suppliers. However, if the financial side were also tightened, corrupt transactions would be restrained due to the transaction costs involved in barter corruption.

The degree of tautness would also work through the interaction between the planning process and the market side of the economy. In particular, a large reduction in tautness could change the nature of corruption as it related to the planning process. Any softening of monitoring combined with less taut planning made it easier to produce goods outside the plan. In particular, the softening of planned restrictions on the allocation of hard money to the enterprises made it easier to buy inputs through bribes. On the other side of the ledger, if it becomes easier to sell outside the plan (that is, easier to receive hard cash bribes), it would transform the soft incentive of gaining an easy life through easy plans (high input allocations and low output obligations) to the hard incentive of gaining more cash bribes through easier plans.

At the cash borders of the planned economy, that is, in the consumer goods industries, the transaction costs of making corrupt deals had always been modest. Combined with the usual state of excess demand in the consumption goods markets, bribery became a dominant way to get access to scarce goods. For example, when a sample of people in Czechoslovakia was asked in 1989 about the area in which bribery was most prevalent, 26 percent mentioned retail sales as the number one sector (Lizal and Kocenda 2000), while 31 percent mentioned services and only 3 percent mentioned state administration.²⁷

In times of easier income policy, excess demand for consumer goods increased and the use of corruption to gain access to legally produced consumer goods also increased. At the same time, such policies tended to reduce the supply of labor without inducing any increase in the legal supply of consumer goods, worsening the excess demand. One of the paradoxes of the socialist economy was that the strengthening of democratic forces and the

authorities' consequent response to popular demands normally resulted in a worsening economic situation for the population with longer queues, more corruption, an expansion in the second economy and more criminal activities.

Most observers agree that the degree of plan tautness was reduced while both the incidence of corruption and the size of the underground economy increased during the 1970s in the Soviet Union. This indicates that the internal effects of reduced tautness in production plans on corruption were weaker than the external ones. Moreover, loosened financial controls worked on both increasing excess demand for consumer goods and stimulating corruption directly. Furthermore, the resulting growth of the second economy increased the demand for bribes at the same time as it implied a gradual decrease in the transaction costs of corrupt deals. In certain areas, such as in the Caucasus, the scale of the second economy was sufficient to make the external and internal types of corruption merge. When an enterprise was able to keep part of its output outside the plan, one part of the cash demand for it came from enterprises willing to acquire input outside the plan to satisfy its plan. The second part came from (legal) enterprises that needed extra input in order to sell output outside the plan, and a third part of the demand came from enterprises working wholly outside the plan – enterprises completely submerged in the underground economy.

Many individualized public services (or punishments) such as hospital services, schooling and imprisonment had corruption characteristics similar to those in the retail sector. The demand for bribes in the police and judicial sectors became exceptionally strong due to the growth of the second economy, the weak rights of individuals, and the harsh penal codes. The lack of ideological underpinnings for an independent judiciary and police contributed in making bribery endemic and ethically cheap in these sectors.

In principle, foreign trade was another sector where the socialist economies used cash. Since the customers were not forced to buy from a socialist supplier, their incentives for bribing were in general modest, however. Moreover, foreign trade was concentrated in large, specialized foreign trade organizations that were strictly monitored almost to the end. Because the customers were not directly linked to suppliers, foreign trade did not, in general, become a nucleus for expanding corrupt second-economy clusters, compared to other sectors where the demand for cash was high.²⁸ That changed after the transition.

Compared to capitalist countries with a similar incidence of corruption, corruption in the centrally planned economies was more pervasive in retailing, at least in the former Soviet Union, but less so in investment and infrastructure. Bribes were paid by buyers, not suppliers. An important braking mechanism was the limited role of money, not only for resource allocation

within the planning process, but also for its limited ability to buy secure property rights in luxury goods. Not only was most valuable private property allocated through political channels, but once acquired, the owners needed continual political acceptance to keep control of their possessions. The ideology of the communist parties, however perverted, functioned as a real brake on the elite's ability to acquire luxuries and private property through illegal means such as bribery.

The transaction cost perspective, like the Harrison–Kim model, would predict that the laxer policies of the Brezhnev years should have increased corruption. Since monetary policies in the Soviet Union were easier than in China, this also was likely to contribute to lowering the transaction costs of corruption. Another prediction from this perspective is that the incidence of corruption should become geographically uneven if the size of the underground economy also was geographically uneven. The argument for multiple equilibria levels of corruption (Andvig and Moene 1990) combined with some (possibly small) initial cultural differences in the ease with which informal networks may be created, may explain geographical unevenness. Moreover, it may explain how small initial differences in transaction costs (for example, caused locally by more extensive family networks) may survive both through the initial imposition of central planning and its demise through the imposition of another structure of formal organizations more adapted to market conditions.

Although hard evidence is missing, the difference in the incidence of the retail, external forms of corruption between China (when centrally planned) and the Soviet Union in its last two decades is difficult to explain fully by softer income policies.²⁹ Perhaps the mutual monitoring of citizens and party officials in the Chinese system can help explain the differences.

4. The transition process and corruption

Although the original central planning systems of the FSU countries and China varied only in detail, their transition processes varied in fundamental ways. Both promoted rapid institutional change with markets being used to coordinate decisions and reward agents; however, they differed markedly in the role of the Communist Party.

The role of the Communist Party

In the transition away from central planning, there are three possible alternative roles for the Communist Party.

1. The Communist Party keeps it power. Examples: China and Vietnam.
2. The Communist Party loses its power, but no alternative, established political forces wholly outside the dominant Communist Party (or

- secret police) networks exist at the point of transition. Examples: the FSU countries (except Estonia, Latvia and Lithuania), Romania and – partly – Bulgaria.
3. The Communist Party loses its power and alternative, established political forces exist or evolve rapidly. That is, opposition activities – open or secret – evolved during the reign of the Communist Party. Examples are the Czech Republic, Hungary and Poland.

Only in the first situation was the rate of institutional change really a policy variable. In the other two cases, given the extensive economic role of the Communist Party in the socialist system, its loss of power entailed a *de facto* revolution in the economic system under which key components of the planned economy began to unravel. The speed of change was not under anyone's control. Seen from that perspective, the extensive debates about the economic and political advantages of 'big bang' versus 'gradualism' (Roland 2000) appear somewhat academic. Big bangs, in fact, occurred and seemed inevitable.

Nevertheless, after the initial transition, the rates of change in the institutional environment of economic governance varied depending upon the initial conditions. In group 1, Vietnam moved fast, China, slowly; in group 2, Russia had a fast transition and Ukraine a slow process; in group 3, Poland had a fast transition and Hungary, a slow one. Whether fast or slow, it is in type 2 kickoff situations where the initial production declines were most extensive. It is also among countries that belong to this group that corruption appears to have become most serious. Whether fast or slow, type 1 kickoffs seem to result in high growth and increased (perceived) corruption, while type 3 countries have experienced both less severe production declines and more modest increases in perceived corruption whether institutional changes have evolved fast or slowly.

This does not imply that the fast–slow distinction is without interest for the growth–corruption nexus. The reasons why countries fell into slow or fast patterns may differ according to kickoff type. For example, it is still an open question whether the revolutions of type 2 were deliberately planned by insiders. It is difficult to believe that key power-holders in such a centralized system as a Communist Party before the revolution could become so rich so fast after the revolution without being aware of its prospects beforehand and without trying to enhance those prospects. The degree of deliberate pre-planning probably varied. If the kickoff was premeditated, with basically the same agency before and after, tactical considerations might have been decisive: some early 'transitioners' may have preferred fast privatization in order to convert as much of their pre-transition political power as possible into assets that would be economically valuable in

a capitalist market economy. Others, in contrast, might want to delay. In Azerbaijan, for example, local party bosses apparently feared that foreigners, such as the Russians, would have both the necessary inside information and large stocks of liquid assets. As a consequence, the old Azeri party networks preferred to delay privatization and tax the enterprises, thus keeping their capital values down. They only privatized after they had collected sufficient cash on their own (Andvig 1999: 81–3).

Transition types are summarized in Table 10.2. As in most typologies, there are cases of ‘more or less’ that may not wholly fit into one or another category. Uzbekistan is a mixed case of kickoff types 1 and 2; Bulgaria is a mixture of all three types; Albania may have more of the symptoms of a type 2 country, but may, in fact, formally belong to group 3, and so on.

Based on similar observations, Walder (2003) also notes the importance of initial conditions, but he divides the transition processes into four types defined along two dimensions: extensive or low degree of regime change, and high or low barriers to asset appropriation. That is, he focuses on the embezzlement aspects of corruption. The countries with low barriers to asset appropriation coincide with our group 2.

This is not so surprising. As long as the Communist Party retains power, it is difficult for individuals to appropriate assets under its control. If a large share of the population is mobilized against the Communist Party in workable organizations, it becomes difficult for the former power-holders to use their initial positions to acquire individual assets, since they have lost their power and since the new, emerging power-holders have based their power on a system designed to make such conversions difficult.

Walder documents the elites’ opportunities before and after the new conditions arose and studies their survival rates under the regime change. Not surprisingly, the survival rate of elites across the transition was highest in group 1 and lowest in group 3 but was high even in the latter group. Inside the elite considerable reshuffling of relative positions did, of course, take place.³⁰ Walder’s main focus is on China. Here he shows that communist

Table 10.2 A transition typology

Speed of change	Post-transition Communist Party position		
	Keep formal power	Lose power, dominant networks kept	Lose power, opposition networks dominant
Fast	Vietnam	Russia, Bulgaria	Estonia, Poland
Slow	China	Ukraine, Azerbaijan	Hungary, Slovenia

cadres did well after the transition and were able to acquire a private enterprise and keep their cadre position in areas where private entrepreneurs earned significantly more than a cadre without a private enterprise.

Walder suggests – as we have – that one reason why transition occurred in the first place is that the private income of the elites of the socialist economies was severely restrained. That applies to all three kickoff types. It is difficult to imagine that the elites were completely unaware of the possibilities of becoming very rich after the move towards a capitalist market economy, but as pointed out by Walder, there were different restraints in the three situations as well as different types of risks.

It was not only embezzlement that was easier to perform from type 2 initial conditions. Regular corruption appears to have evolved also as a more serious problem, despite the tactical substitution effects between embezzlement (illegitimate privatization) and bribe collection. Table 10.3 supports the proposition that GDP levels and perceived corruption levels are usually negatively correlated.³¹

The striking difference was in growth rates of GDP, however. The beginning of the reform transition in China was 1978–79, and in Vietnam it was 1989.³² For both, the yearly growth rates in GDP were around 8 percent during the first reform decade. The second group was characterized initially by strong production declines. The beginning of reform for the FSU countries was 1991–92, and the rate of yearly GDP decline was around 5–8 percent for the first decade. For Russia and Ukraine, positive growth two years in a row did not occur for almost a decade after the decline had begun.

Given the way socialist economies were organized, it is not surprising that their centralized bureaucracies had a strong impact on the transition process. During the transition some central signals were sent to the underlying bureaucratic units. Even a message stating that an enterprise had become a private firm was a message sent by a central bureaucracy.

Table 10.3 'Control of corruption' values for a sample of post-socialist countries

	1996	1998	2000	2002	2004
China	–0.01	–0.14	–0.34	–0.35	–0.51
Vietnam	–0.64	–0.60	–0.71	–0.67	–0.74
Russia	–0.74	–0.69	–1.02	–0.92	–0.72
Ukraine	–0.74	–0.89	–0.96	–0.97	–0.89
Poland	0.41	0.49	0.49	0.40	0.16
Hungary	0.63	0.69	0.78	0.59	0.65

Source: Kaufmann et al. (2005).

Different kickoff types implied widely divergent signals from the center, however. The viability and character of the private firms that emerged were affected by the characteristics of the economic system in place at the time of the transition.

Although production declined in most of the group 2 countries, the differences in the rates of decline were striking. In the case of the FSU countries, regional data underline the extent and variation of the production declines and indicators of corruption rates. Since the first observations of extensive production declines were made in Poland (Blanchard et al. 1991), some have argued that the methods applied in their estimation tend to exaggerate the decline, but few argue that the decline has not been considerable, which suffices for our qualitative discussion (see Table 10.4).³³

Among the group 2 countries of the FSU, production declines ranged from 74.6 percent for Georgia (that is, at the lowest, GDP in Georgia was only 25.4 percent of its level in 1989) to 14.4 percent for Uzbekistan. In Russia proper the production decline was 45.1 percent. Inside group 2, the rates of output decline appeared to follow an inverse-U function as a function of the rate of regime change. A high rate of change may reflect the implementation capabilities of a country's bureaucracy (associated with its GDP levels) while a slow rate of change may on the other hand cause less disruption.

Table 10.4 Production decline and corruption indicators in FSU

Country	Cumulative output decline to lowest level in % (1989 = 100)	Control of corruption 1997/98	Capture economy index	Administrative corruption % of revenues of all firms
Armenia	65.1	-0.80	7	4.6
Azerbaijan	63.1	-1.00	41	5.7
Belarus	36.9	-0.65	8	1.3
Georgia	74.6	-0.74	24	4.3
Kazakhstan	40.0	-0.87	12	3.1
Kyrgyz Republic	50.4	-0.76	29	5.3
Moldova	66.3	-0.39	37	4.0
Russia	45.1	-0.62	32	2.8
Tajikistan	74.0	-1.32	—	—
Turkmenistan	59.5	-1.29	—	—
Ukraine	63.8	-0.89	32	4.4
Uzbekistan	14.4	-0.96	6	4.4

Sources: Fischer and Sahay (2000, Table 1); Hellman et al. (2000, Table 1–2); Kaufmann et al. (2002, Table 2).

A quick inspection of Table 10.4 tells us that there is likely to have been some rough correlation between the relative size of the production decline and the extent of corruption in the country. A somewhat surprising result, not evident from inspection of the table, is that the rate of production decline appears to be inversely related to the initial size of GDP per capita.

For China we have only summary data for the key period. For the whole 1978–95 period, per capita growth rates were all positive, ranging from 5.1 percent in Qinghai to 12.8 percent in Zhejiang. The average rate of growth for all of China was 9.3 percent (Yao and Zhang 2001). Here, the regional corruption rate appears not to be related to the rate of change in GDP. The same applies for Vietnam (Khuong and Haughton 2004: 16).

Another striking difference is the size and growth of the underground economy, which may partly reflect differences in the transition processes and partly differences in initial monitoring structure. The size of the underground economy in China is surprisingly small – only 13.1 percent in 2000, compared with 46.1 percent in Russia (Schneider and Klinglmaier 2004). In Russia this is an increase from 27 percent in 1979 (Alexeev and Pyle 2001). The relative size of the underground economy in China has also been increasing, but only slowly.³⁴

In both areas the income distribution became dramatically more unequal during the transition process, although the process was faster in Russia. Today the rate of income inequality in Russia and China is still quite similar when measured by Gini indices, despite their different economic structures.³⁵

Finally, let us look again at some of the comparative corruption data. None is based on systematic observation. The most easily accessible data are heavily influenced by perceptions, mainly from experts, journalists and businesspeople. There are two major public corruption perception indices: Transparency International's (TI) CPI index and the World Bank Institute's (WBI) 'Control of corruption' index.³⁶ The WBI has a scale from –2.5 to 2.5. The TI index goes from 1 to 10.

With the exception of the CPI index for 1996, all observations indicate higher perceived corruption levels for Russia compared with China. For example, in 2000 the WBI index records –1.05 for Russia and –0.34 for China; the TI index 2.1 for Russia and 3.1 for China. TI ranks China as the 63rd and Russia as the 82nd (out of 90) most corrupt countries in 2000. The difference between perceived corruption levels appears significant, but as a statement about the real incidence of corruption, the result should be interpreted with care. Russians may just be more worried about corruption, or expatriate businesspeople may be more influenced by rumors.

Is it possible to note any trend from the perception index data? Although corruption in China appears to increase somewhat according to the WBI

index, it decreases according to the TI index. Here we should note, however, that the TI index started with a very high corruption result for China in 1995, when it was estimated to be the second-most corrupt among the 62 countries then included (Russia was not included in the TI index in 1995). Interpretation of changes in these indices over time is hazardous for a number of reasons,³⁷ but at least for China, Kaufmann et al. (2005) indicate that a significant worsening has occurred.

The major impression from these perception data – that China appears to be less corrupt than Russia – is supported by other comparative data. Here I shall emphasize the results from the large international crime victimization surveys, since they are both comparative and closer to experience. Alas, we have only one observation from China: 5.6 percent of respondents to a questionnaire on crime victimization in Beijing 1994 answered that they had been exposed to corruption in the last year, while 11.8 percent had such an experience in Moscow in 1992 and 18.7 percent in 1995 (Zvekic 1998; Zvekic and Alvazzi del Frate 1998).³⁸

The World Values Survey is also of some interest here as Chinese respondents expressed less tolerance of corruption and appeared more trustful and supportive of democracy than the respondents in Russia (Moreno 2002).³⁹

The role of economic development levels

I have emphasized the role of the Communist Party in shaping the output–corruption nexus. The major alternative explanation focuses on the difference in development levels. When it began to reform, China was basically a poor, agriculturally based economy, whereas most of the USSR was a middle-income (over) industrialized economy. In 1980 about 75 percent of the Chinese population was employed in agriculture, while only about 15 percent of the population of the present Russian Federation worked in agriculture in 1990 (calculated from WTO 2000). This had obvious implications for both the growth potential of the state and for the forms and location of potential corruption. In 1980, the agricultural value added per worker in China was at the level of Chad, and it still is only 10 percent of the corresponding value in Russia. Somewhat less than half of the Chinese and somewhat less than a quarter of Russians lived below the international poverty line at \$2 a day at the turn of the millennium (*World Development 2004*, different tables). This difference was even more pronounced when their transition began. Naturally, the level of GDP per capita of China in 1980 was much lower than for Russia in 1990.⁴⁰ However, at the outset of the transition the *income distribution* in China was about the same as in Russia.⁴¹

However, the poorest areas of the Soviet Union experienced the worst economic declines. Thus, it is difficult to believe that the economic development levels, taken by themselves, could be decisive. Nevertheless,

the rural starting-point of Vietnam and China might have been the key precondition for the Party to keep power when the transition began.

Technological rigidities as determinant of the corruption–output nexuses

In addition to development levels, the degree of technological interconnectedness may have been an important factor in determining the level of corruption. It is well known that the size of enterprises and their degree of interconnection were much higher in the Soviet Union compared to China.

Blanchard and Kremer (1997) focus on the strong technical complementarity (simplified in a Leontiev technology) between industries and on the specificity of the network structure between enterprises under central planning. Planning has vertical and horizontal dimensions. Looking at the vertical dimension, a given product of enterprise n would need inputs only supplied by enterprise $n-1$, that needed input only supplied by $n-2$, and so on, until reaching the supplier of raw materials enterprise 1. This technology structure of central planning was then inherited by the transitional market economy. Under central planning the enterprises would normally reach binding agreements for delivery, but with weak market institutions these chains might easily unravel when the enterprises were free to contract with agents not linked to the chain. Blanchard and Kremer assume that under such conditions the suppliers were unable to sign a contract for delivery before goods were produced. Hence each producer had to pay for his/her inputs before he/she had earned any income.

If any enterprise either withdrew its output due to new outside opportunities or refused to pay the preceding link, the chain would unravel. Withdrawal of output from producer chains during transitions may sometimes be motivated by contracting difficulties, but embezzlement of variable inputs or capital assets induced by outside markets opportunities was also possible.

Blanchard and Kremer also considered horizontal networks. Here an enterprise may need n inputs. If an input did not materialize, it would produce nothing. Each supplier of inputs had an alternative use for it, but the alternative was not worth the same to each supplier. The enterprise would announce a take-it-or-leave-it price that was the same for each supplier. If the price was fixed too high, the enterprise would be unable to produce any net output. If the price was set too low, that is so low that at least one of the suppliers would not deliver at all, the enterprise would produce nothing with negative effects on the output of the other supplying enterprises. During the transition at least some of the suppliers are likely to get better alternatives, increasing the likelihood of production decline in the interlocked state-enterprise system. Again, at least as long as these enterprises were state owned, this withdrawal of supply may be considered as embezzlement.

Turning their model around, the suppliers may become the price setters. These prices may include bribes. If coordinated, suppliers would adjust their bribe demand so that the enterprise would at least break even. If decentralized, the bribe demands may exceed the enterprise's ability to pay, and production may cease. Hence, decentralized corruption and the old inherited centralized input–output mechanisms may together explain the stylized fact of strong production declines and steep corruption increases in most FSU countries during the early years of the transition.

Pure historical auto-correlation

When explaining the overall high levels of corruption in most transition countries, one should not, of course, completely disregard history. In addition to the economic structures, a number of inherited cultural codes of conduct may have been of significance. Historically established corruption rates are likely to have had an impact. Under both socialist and market systems, Russia and China are known to have had highly corrupt public administrations going back several centuries before the establishment of socialist structures.⁴² Even so, they must have been carried through that system in order to have an effect today.

5. The dual-track system and corruption

The large number of corrupt possibilities that arose during the transitions has generated a large number of models and suggested mechanisms that may explain them – too many to survey here. Instead I shall focus on one model of a mechanism, once important in China, but with some relevance in pre-transition Hungary and the last years of the Soviet Union. It shows how parts of the old planned economy, as they interact with newly established markets, can lead to extensive corruption. Moreover, unlike many other models it has a clear empirical basis.

One way to introduce a market economy slowly was the so-called 'dual-track' system. It was most systematically used in China after 1985 and was an important component of the economy until 1993 but has since been more or less gradually phased out. In 1990, 36 percent of industrial goods were allocated through markets; by 2001 this number increased to 88 percent. The great leap occurred in 1993 (Hope and Lau 2004). Variations of a dual-track system were independently introduced in Hungary and copied in Russia. The construction of the Chinese dual-track system consisted of three parts:

1. Each state-owned enterprise (SOE) was ordered to supply some plan-allocated output at plan-determined prices and was to receive a corre-

- sponding amount of plan-allocated input at plan-determined prices. The plan sought to ensure that in-plan output and input quantities meshed.
2. Planned output was to be handed over to, and planned input to be received from the Material Supply Bureau (MSB).
 3. When the output quota was satisfied, the enterprise could sell the rest of its outputs on the market, possibly using any leftover input. However, most of the input needed for out-of-plan output was to be bought in the new markets that had been created and legalized as part of the dual-track system. The system evolved more or less informally since 1979 but was formalized in 1985 when market prices were also liberalized (Li 1999).

Given the shortage situation induced by central planning, it was not surprising that the market prices for both inputs and outputs increased above the planned prices. Hence one would have expected strong pressures to arise for enterprises to get as much planned input from the procurement agencies as possible and for them to supply as little output to the plan as possible. The pressure should be stronger the larger the difference between market and plan prices. In fact, the opposite happened: planned output as a share of total output increased and planned inputs as share of total inputs decreased as the market prices increased relative to the planned prices in the late 1980s.

For example, in 1984 average in-plan procurement per SOE was 33.9 million yuan (measured in market prices) when output prices were 6 percent above plan prices, and in-plan delivery per firm was 20.4 million when market prices for intermediate input were 24 percent above plan prices (Li 2002a: 20). Note that procurement and delivery were defined from the point of view of the procurement organization, not the enterprises. In 1988 the market prices for the enterprises' output were 16 percent above plan prices while input market prices were 80 percent above plan prices. But now the enterprises could receive plan inputs for only 14.1 million yuan (in 1989 market prices) while they were forced to supply 45.2 million yuan each to the material supply organization (*ibid.*). The simple explanation is that the officials in the procurement organization were more powerful than the enterprise managers and could collect most of the rent created by the price divergence; they could procure goods cheaply through the plan and sell them for a higher price in the market.

It is not obvious how the procurement organizations obtained this power. Given the legal existence of markets for out-of-plan goods and services, perhaps it was easier to organize the illegal brokerage between in-plan and market prices in these organizations than in the firms; perhaps it was

considered less risky or less unethical than letting the enterprises bribe the officials directly to get low output quotas and high input quotas.⁴³ Whatever the detailed institutional arrangement, it is not surprising that extensive corruption evolved from a situation where many goods had two prices.

Li (1999, 2001) studies the interaction between the out-of-plan markets for intermediate inputs and outputs and the corresponding plan procurement, and estimates the amount of real income diverted to corruption. Li's major results fit well with those of Shleifer and Vishny (1993), as officials set output and input quotas so as to maximize their own irregular income. They have, however, to deliver a given share of the procured output⁴⁴ within the plan and hand it out to final consumers at plan prices. Another share of the procured intermediate inputs has to be handed over to the enterprises at plan prices. As mentioned, in addition to the planned allocations, markets were opened for both outputs and intermediate inputs. Market prices were to be above plan prices, as they in fact were. Procurement officials would seek to get as high procurement quotas with as small plan obligations as possible. However, by increasing the output quota the officials would push the market price down. This price decrease would also limit the profit the official can get from diversion. Hence, the competition between officials and enterprise managers both limits the size of their bribes and increases production compared to a situation where they collude.

As in the Shleifer and Vishny (1993) model of bribery without theft, an increase in in-plan prices reduces diversion (bribes); unlike their model, however, it leaves the market price undisturbed. The collusion of managers and officials leads back to the Shleifer–Vishny result under which plan officials gain by lower in-plan prices (Li 2001, table 2). Moreover, Li's result is quite robust and applies in both market settings he outlines. He argues that the total amount gained by corrupt officials would be less in the dual-track system than in the pure planning system of Shleifer and Vishny where enterprise managers and officials collude.

This is, as far as I can see, misleading. Under central planning officials were not, in fact, seeking lower prices. The Shleifer–Vishny assumption that market demand functions existed and that officials could operate along them to maximize their bribes was quite unrealistic for the heyday of central planning, at least regarding intermediate inputs. The Chinese economy, when the dual-track system played an important role, is another story. Here markets were already a reality, and Li's models appear of obvious relevance.

Equally important, having access to the detailed financial accounts of a set of 769 state enterprises for a number of years, Li was able to make

assessments of the empirical relevance of this form of corruption (or flows of embezzlement). The information from the accounts could be used to estimate the ratios of market prices to plan prices and their change during the 1980s. Combining this with input–output tables for China from 1987, Li could make empirical estimates of the level of corruption at state enterprises and its movement during the 1980s. He found that it increased as the market and plan prices diverged more and more during the 1980s. He estimated that corruption increased from 1.9 percent of GDP in 1985 to 9.1 percent in 1989.⁴⁵

The dual-track system is at present no longer an important part of the Chinese economic system. Bribes collected in this manner cannot, therefore, constitute an important part of the Chinese elite's present economic rewards. But why then does the WBI index indicate that corruption is 'perceived' to have significantly increased since that system went down the historical drain (Kaufmann et al. 2005)?

Although it covers only a particular historical episode in a single, but important, country's move away from central planning, Li's study has given quantitative precision to the impression that corruption was an important economic phenomenon during the transition. It contributes to the small but increasing number of studies that examine corruption empirically without relying on the conceptually fuzzy indices that pervade econometric analyzes of the causes and consequences of corruption. Moreover, his explanations ties in with Shleifer and Vishny's models of corruption and shortage. Thus it seems a good place to end my overview of the mechanisms that may have linked together corruption and growth in countries undergoing rapid institutional change.

However, Li's research leaves a number of unanswered questions. He has isolated a mechanism that transferred significant resources away from stagnant state enterprises into the hands of officials at the same time as the enterprises were allowed to survive. But what did the officials do with their illegal income? Did they move into private business? Also, if Li's analysis is correct, when the system ended, the economic effects on the corrupt officials should have been considerable. Did they accept lower proceeds from their official positions, but then start more private business on the side? Or did they move out of government altogether? What kind of elite transition did, in fact, occur? I am not aware of any follow-up of Li's research in these directions, but such studies would be important for an understanding of the growth consequences of this particular type of corruption. Li himself argues that since the dual-track system should generate less corruption than the Shleifer–Vishny centralized corruption model, the dual-track system allowed more growth. However, because the Shleifer–Vishny model of centralized corruption was, in fact, not very relevant for understanding either

central planning or most of the transitions in the FSU countries, I also find Li's argument about the higher growth rate in China unconvincing.

6. Conclusions

The chapter makes three arguments.

The first is a critique of the *n*-country, cross-section econometric analyses of corruption that have dominated empirical research on corruption over the last decade or so. These studies show that corruption on average causes lower growth rates (Mauro 1995) and lower per capita GDP (Kaufmann and Kraay 2002). In the group of countries that once were organized along central planning principles we find, however, that high and probably increasing corruption rates go together with exceptionally high growth rates in some countries and exceptionally steep rates of production decline in others. Moreover, corruption appears to be more serious in Russia – a large country with relatively high per capita GDP – than in China – another large and much poorer country. It is unsatisfactory to consider a country with more than a billion inhabitants as a mere statistical aberration, as the *n*-country approach tends to do. That approach appears to have low explanatory power in the transition countries.

Treisman (2003) argues that there is nothing special about the post-communist experience. According to him, their corruption rates are not above average once one takes account of factors such as GDP levels at 1989, years of communist rule, fraction of Protestants, absence of British rule and so on. But the level of GDP is both a cause and an effect of corruption levels. Furthermore, number of years of communist rule is precisely the characteristic which may make these countries special; it seems odd to use it as part of a study designed to show that the region is *not* special. Variables such as British colonial history and religion are essentially black boxes with no policy implications. Both help 'explain' the high levels of corruption in the region, but if that level is harming growth and lowering government legitimacy, it is not much comfort to note that these countries are close to the regression line. Furthermore, Treisman's study cannot explain the different results for China and Russia.

Another reason why this case throws doubt on the *n*-country approach is that the transitions involve so many complex changes that they may call into question the use of corruption as a separable causal variable in empirical tests (Hicks 1979: 13). Corrupt transactions pop up in so many different ways that it is difficult to specify what its non-presence implies. It may rather be characterized as a 'sponge' variable – a variable that soaks up so many neighborhood processes and influences that it is difficult to vary it in isolation.

It is puzzling that the leading approach to empirical governance research claims that, only a decade after the socialist system's demise, that system appears to have had no traceable effect on corruption levels in the areas which it ruled (Treisman 2003). At the same time, results from this approach purport to demonstrate that the mortality rates among European settlers more than a century ago are of great significance to present corruption and growth rates (Acemoglu et al. 2001). My survey indicates, however, some of the ways the recent past may affect the present even when most economic arrangements and normative ideas about them appear to have abruptly changed. I conclude that the differences appear to be due to the role of the Communist Party. I argue that the breakdown of the Party in the FSU versus its survival in China was a key factor in determining the difference in the transition output–corruption nexus of Russia versus China.

A final criticism of *n*-country corruption studies is their reliance on corruption perception indices. In the transition countries a significant share of the population is likely to carry over norms about proper transactional modes from the former regime and, therefore, perceive some of the legal aspects of the market mechanism as corrupt. This makes the different perception indices exceptionally unreliable as indicators of the extent of corrupt transactions during transitions. In carrying out *n*-country research, one should be careful when including countries undergoing drastic changes in the dataset.

Along these lines, the second argument of this chapter is positive. The cases of the FSUA and China demonstrate that when analyzing countries undergoing drastic changes, one should be aware that the set of transactions defined as corrupt will undergo changes as well. Moreover, the stock of norms and behavioral codes – including the stock of old managerial solutions – are likely to have a significant impact on present behavior. When combined with the new set, agents are more likely to choose actions that may be considered corrupt from both the old and new set of laws and norms.

The third set of arguments applies to the cases considered in this chapter. Here I emphasize two features of the analysis. First, in contrast to other analyses of the rise of corruption during post-socialist transitions, I underline the difficult managerial issues that arise when prices undergo a shift from being mainly accounting devices to becoming the basis for enterprise income and 'hard' debt. I show how this phenomenon gave rise to exceptional strains on the monitoring organizations as well as leading to a large number of new opportunities for corrupt commercial transactions. The demand for central control increased while its supply in the FSU area decreased. Markets may not only provide opportunities for decentralization

but may also produce a new need for central control. Second, regarding the supply of central control, I argue that the *Nomenklatura* organization has often been misunderstood and should be considered as a functional analogue to the capital market of capitalist economies. The difference in the supply of central control produced by the *Nomenklatura* was probably the key to the different output–corruption nexuses that evolved in China versus Russia.

Notes

1. As reported in Rose (2002) when asked ‘By comparison with the former communist regime, would you say that the level of corruption and taking bribes has increased?’, a large majority of respondents in all the countries with the partial exception of Poland answered in the affirmative.
2. See the title of Johnston and Hao (1995), ‘China’s surge of corruption’.
3. I use the term ‘transition’, since it has become the standard, although it has the undesirable connotation of suggesting that all countries would move to the same economic and political system. In fact, the actual outcomes may be quite different, and some very unpleasant. Reed’s (1996) term ‘transformation’ might be better, but in any case it is evident that we are considering major shifts in the economic–political system.
4. According to *World Bank Development Indicators 2005*, the average growth rate (GDP) in China and Vietnam was 9.6 percent and 7.5 percent, respectively, over the 1990–2003 period, but for the FSU countries it ranged from 1.0 percent (Estonia) to –5.9 percent (Moldovia). In Russia it was –1.8 percent. In the period in which China went through the first part of its transition (1980–90), its growth rate was 10.3 percent, while in the first phase of the transition of the FSU countries, growth rates ranged between –11.0 percent (Uzbekistan 1992) and –52.3 percent (Armenia 1992). See Havrylyshyn et al. (1998).
5. Cábelloková (2001) has studied the interaction between corruption experiences and corruption perceptions in a representative sample of respondents from Ukraine. One of her observations is that older people perceive state institutions to be more corrupt at the same time as they appear less willing to bribe. Dramatic differences in attitudes towards the (mostly) legal early market organizations (the cooperatives) have been observed between the different age groups in the Soviet Union (Jones and Moskovoff 1991: 94–109).
6. The term ‘post-socialist’ will be used to refer to economic systems that have moved away from central planning as the leading ideal of economic coordination while the term ‘post-communist’ will be applied to the post-socialist countries where the communist parties have lost power.
7. Historically, maybe the most clear-cut and famous case was Stalin’s takeover of the Communist Party in the 1920s through his control of the employment prospects of party employees. Because of their increasing numbers among the representatives at Party congresses, he was able to acquire control of the party itself.
8. Analytically, the situation is identical to several multiple equilibrium models of corruption. Schlicht (1981), See Lui (1985), Frank (1988), Andvig and Moene (1990).
9. The *Nomenklatura* system was a list of positions in the Soviet government where the Communist Party was supposed to decide who was on the list.
10. The workings of the communist parties have attracted more attention among sociologists and political scientists than from economists, despite their important economic role. An interesting exception is Lazarev (2004), but he is unable to answer the question of why the leadership of such organizations earned such modest economic returns if the organization is created for maximizing the economic returns of the leadership, as he argues it did.
11. This emphasis on bureaucratic drive and the Communist Party role in it highlights the role of the motivational forces in the bureaucracies, at the expense of coordination issues and the role of market incentives. The high transaction costs involved when introducing

- genuine innovations were, for example an Achilles' heel of the system. From the perspective outlined here, the Chinese (and Vietnam) experiments with market forces may be a way to let the party cadres receive growth-related promotion incentives, not any system change. In a more general context, Jones and Olken (2005) have shown that shifts of national leaders may have significant impact for national growth rates even for countries that have fewer centralized levers than a ruling communist party.
12. From a different, political science, perspective, Jowitt (1983) explicated the key role of the Party, even making its behavior the defining characteristic of political corruption in the Soviet type of system. The Soviet elite became corrupt, Jowitt claimed, when the Party members' informal practices, rather than contributing to the Party's formal goals and interests, subverted them, destroying its organizational integrity.
 13. As shown in Harrison and Kim (2001) they will have some interest in higher prices, but their survival would not hinge upon their levels.
 14. A more detailed exposition of these possibilities may be found in Andvig (2006).
 15. Yao (2002) argues that the key to recent corruption in China is the lack of separation between business and government. In the oil industry in Azerbaijan a similar mix was a key to that country's corruption problem in the late 1990s (Andvig 1999: 88–99). SOCAR, the state-owned oil company, acted at the same time as the Ministry of Energy and was the linchpin of corrupt transactions in the country.
 16. This assumption appears fairly realistic for the Soviet Union (Granick 1980), but is less plausible when markets exist. In a market system the divergence between the interests of officials and managers would become very pronounced, as later formulated in Li's (1999) analysis of the dual-track system in China discussed below.
 17. As mentioned, prices played a modest role in the resource allocation and individual income distribution in the classical socialist economy. Hence, repressed inflation did not imply that prices were fixed at too low levels, but rather that they would accommodate most bureaucratic forces that determined the enterprises' deliveries and procurement. At least after Stalin, under most circumstances the managers in the enterprises/ministries would supply as little output as possible and procure as much as they could independently of the prices of inputs and outputs, leading to generalized excess demand. Higher prices for output made their bureaucratic life easier, prompting efforts to increase them, but the price levels received were neither a question of survival for the enterprises nor a road to personal enrichment for the managers as long as income credited to the enterprise/ministry could not be spent.
 18. The model operates with three price levels: the initial, historically given price the planners had in mind when specifying the planned nominal delivery requirements of the enterprise, the real planned delivery price (after output cheating), and a market price for out-of-plan delivery. That price is determined by a demand function. When it is above the real delivery price, the case of shortage, the enterprise will keep some output outside the plan. Harrison and Kim suggest that this demand function would apply only for consumer goods when the prices are hard. Consumers would then bribe the enterprise, which could spend the out-of-plan output on out-of-plan inputs, which would make it easier for loyal managers to keep to the plan. But then there would also be an out-of-plan market for inputs, and the enterprise would have to bribe its input suppliers. Harrison and Kim do not discuss this eventuality.
 19. Michailova and Worm (2002) compare *blat* and *guanxi* with personal networking of the regular European type. Due to the larger number of goods available and the higher levels of perceived shortage in the Soviet Union, *blat* was important for obtaining scarce goods. That reason disappears in capitalist excess-supply situations. Then *blat*, using connections, would become useful for selling efforts, including selling regular labor power. Ledeneva (2003) covers the same territory. They both compare only Russia and China. The parts of the Soviet Union that combined its economic scarcity characteristics with larger family structures, such as in the Caucasus and Soviet Central Asia, probably created the largest personal network structures.
 20. Alternatively, one might violate rules against economic middlemen activity if one lined up, bought more than what one needed, and resold the extra for an illegally high price.

- This was illegal profiteering, but was, according to our definition, neither embezzlement nor corruption if performed by a private individual.
21. Agelasto (1996) describes in detail how *guanxi* relation-building facilitated corrupt transactions within a Chinese university. The novel *Wild Swans* (Chang 1991) reveals movingly how under the extremes of Maoism, family structures and family ideology were perceived to be so important in furthering corruption (and political rivals) that they had to be crushed.
 22. This would not by necessity contribute to a *perceived* decline. From a perspective steeped in old socialist norms, the market mechanism itself might be perceived corrupt. For example, when local shops are allowed to increase prices, it may remind the public of situations where local shop employees charged higher prices, that is, demanded bribes under the counter. Answering a questionnaire in the Czech Republic 45 percent reported that they paid bribes for hairdressing and similar services (down from 61 percent in Czechoslovakia in 1989) (Lizal and Kocenda 2000: 15).
 23. This acts as a restraint on any large bureaucratic system since internal deals have to be made in-kind. This is probably an important reason why public bureaucrats appear to be less corrupt than politicians and their counterparts in the private sector in Western Europe, according to PricewaterhouseCoopers' (2001) economic crime survey.
 24. One indication that Russia has now become a market economy is that most bribes appear to be paid by enterprises. Citing results from the INDEM survey (planned as a part of the World Bank's diagnostic surveys of corruption) Ledeneva (2005) reports that today about 90 percent of bribes are business related, while only 10 percent are paid by households.
 25. An alternative interpretation is the possibility that the size of the underground economy, corruption and corruption convictions were all expressions of political resistance and the force applied in fighting it. This interpretation is belied both by the low numbers of individuals caught in all areas and by the indications of lower corruption rates in countries like Estonia.
 26. This is particularly surprising for the size of underground economies, since one should expect that most of the motivation for participating in the underground should disappear with central planning. Moreover, these economies showed steeper production declines, another surprise since these areas should be more accustomed to market transactions.
 27. Health services also scored high (21 percent) in 1989 presumably because the legal market played little role. In 1998, 31 percent mentioned state administration.
 28. There might have been exceptions to this. Cross-border networks were likely to have been significant between the Caucasus and Turkey and maybe also between the Caucasus and Iran. These networks still exist, but with the exception of oil, they now probably deal in different products. Little is known about the international aspects of the Soviet second economy. I have, for example, not found any reference in the social anthropological studies of Altman and Mars (Altman 1989; Altman and Mars 1983). Well-informed rumors about the origin of some of the largest recent private fortunes in Azerbaijan tell about such origins, in this case exports of embezzled oil. Due to the strong mutual monitoring among private consumers in China, foreign trade-related corruption has been relatively more important.
 29. Although both areas had by then moved away from classical central planning, it may be indicative of the difference that reported incidence of bribes paid by households during a year was about three times as frequent in Moscow as in Beijing in the mid-1990s (estimate based on data from the ICVS web page, ruljis.leidenuniv.nl/group/jfcr/www/icvs/).
 30. In a study of post-transition elites in Russia, Steen (2000: 11) found that 97 percent of the elite members had been Communist Party members. Almost as many, 94 percent, private businessmen had been members, but only 43 percent had been mid-level leaders under communism and none had been in a top position. Among present state enterprise businessmen, only 11 percent had been party members. Unlike Azerbaijan, Russia was so complex that the country experienced a higher degree of variability in its stochastic process of conversion of political power into private economic assets.

31. Table 10.3 is based on table C6 in Kaufmann et al. (2005). I have chosen two larger or typical countries from each group. No corruption indicators existed at the outset of the transition processes. In interpreting the table, we have, of course, to make several qualifying observations. The control-of-corruption variable is based on a number of sub-indices, so it is possible that it may not discriminate between corrupt transactions and embezzlement. When the statistical association between GDP and corruption indicators is subject to some econometric tests, Kaufmann and Kraay (2002) argue that the causality runs from governance (corruption) to GDP, not the other way around. Given the swiftness in the economic decline in the type 2 countries, it is difficult to believe that this decline was without impact on perceived corruption.
32. Here we should add that industrial output declined in 1989 when the more extensive part of Vietnam's transition began (Doanh et al. 2002).
33. Note that I have deleted Estonia, Latvia and Lithuania from the FSU area, since they belong to group 3 rather than group 2. The control of corruption variable ranges from 2.5 to -2.5 and is heavily influenced by perceptions (explained in Kaufmann et al. 2002). The capture index indicates the degree to which firms buy political or judicial decisions. Higher value means stronger tendency. (The index is explained in Hellman et al. 2000.) That measure, together with the indicator of petty corruption, is likely to be less influenced by perceptions and more by actual occurrence of corrupt acts, but still has strong perception components.
34. In 1994–95 it was 10.1 percent according to the Schneider research group. Inside the FSU countries there appears to be fairly clear correlation between the relative size of the underground economy and indicators of corruption levels both before and after the transition. Evidence is provided in Andvig (2002: 38). Schneider provides cross-country evidence that indicates negative effects on growth rates.
35. Ellman (2000) calculates the rise in the value of the Gini coefficient for Russia from 24 in 1987–88 to 48 in 1993–95. According to Xu and Zou (2000) the increase in China was from 25.7 in 1984 to 37.8 in 1992. In 2000 the Gini coefficient was 45.6 for Russia and 44.7 for China (World Bank 2003).
36. The construction of the TI index is explained in Lambsdorff (2003), and the construction of the WBI index in Kaufmann et al. (1999). They are constructed on the base of sub-indices, which overlap but are not identical and are aggregated in different ways. The WBI index varies between -2.5 (the most perceived corruption possible) to 2.5. Although TI has observations that go further back in time, I have used the WBI results, since the aggregation methods WBI uses have made it possible to accommodate more sub-indices with closer ties to experience (Andvig 2005).
37. One problem is that a change from one year to the next in a country's relative position may change the index value ascribed to it without any underlying change in how corrupt it is conceived to be. Another is that the variance of the indices is so large that increases or decreases in the index value are rarely statistically significant. For the WBI index Kaufmann et al. (2005) have constructed a measure of significant change for the 1996–2004 period. Among the group of countries I have focused on, Bulgaria, Estonia and Latvia have become significantly less corrupt, while Moldova (a kickoff type 2 country) and China have become more so. The other countries did not show any statistically significant change.
38. Transparency International's (2004) Global Barometer reports that the extent and persistence of small-scale corruption in the European group 2 countries is surprising. In 2004, 21 percent of the respondents in Russia and 25 percent in Ukraine and Romania reported that they had paid a bribe last year.
39. Again, we must be careful with the interpretation. This survey reports strictly on professed values regarding cheating and embezzlement rather than corruption as such. It asks questions such as whether it is justifiable to avoid paying on public transport, cheat on taxes and so on. It is difficult to tell how one should interpret results showing that India and China having lower acceptance of 'corruption' thus defined than Norway and Finland.
40. China's GDP per capita in 1980 was \$173 while Russia's figure for 1990 was \$2,583 (measured in 2000 US\$) (www.ers.usda.gov/data/macro_economics/HistoricalRealPerCapitaIncomeValues.xls).

41. The Gini coefficient (for income) was 27.8 for the Soviet Union in 1989 (Shorrocks 1999) and 25.7 in China in 1984 (Xu and Zou 2000). In 1984 the transition had already started in China, so the income distribution in 1979 was probably even more equal than in 1984.
42. Ni and Van (2004) estimated that the higher bureaucracy's corrupt income in the Ming and Qing dynasties was more than twenty times their official income. They argue that corruption was a major factor behind China's technological stagnation after 1300.
43. Since MSB was allowed to sell an in-plan good to a recognized distributing agency enterprise for a small mark-up (5 percent), a low-risk procedure was to set-up a chain of such 'briefcase' enterprises (all controlled by MSB officials) where the last one sold the good at full market price. It was then registered as a market, as opposed to an in-plan, input (Li 2002b).
44. Li claims that the share could be made endogenous in the model without changing results.
45. He estimated corrupt diversion of enterprise income to be 40 percent of company value added and 60 percent of profits. If true, one wonders if these enterprises were as ineffective and unprofitable as they are generally assumed to be.

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PART IV

SURVEYS AND EXPERIMENTS

11 Why are some public officials more corrupt than others?

*Jennifer Hunt**

In all countries, some public officials are more corrupt than others, depending on variations in the opportunities for private gain and the willingness to pay of private citizens and businesses. Effective anti-corruption campaigns need to be able both to identify which types of officials are most likely to be corrupt and to understand why some, such as the judiciary or the police, are more corrupt than others. A number of surveys report household and business perceptions of corruption across official types, but these data provide no information on why one type of official is more susceptible to corruption than another. One is left with plausible, but empirically untested, theoretical speculations. Newly available Peruvian data permit analysis of this very important issue. In this chapter I use the data both to measure corruption by type of official and to seek the causes of corruption across official types.

The existing literature has uncovered some determinants of corruption using a cross-section of countries. Factors found to be associated with lower corruption include, for example, a common law legal system, Protestant traditions and British colonial rule (Treisman 2000), fiscal decentralization (Fisman and Gatti 2002), higher relative salaries for public officials (van Rijckeghem and Weder 2001), and greater presence of women in parliament and the civil service (Swamy et al. 2001). Most of these causes vary only at the country level, and most are not amenable to direct policy interventions. My data allow me to study determinants of corruption whose natural variation is across official types; this gives new insights into the causes of corruption and generates some practical policy implications.¹

My data are from the national household survey of Peru, a middle-ranking country in Transparency International's Corruption Perceptions Index (TI 2004). Concern about corruption led the Peruvian statistical agency to include a detailed module on bribery in the 2002 and 2003 household surveys, measuring usage rates and reports of bribery for 21 types of public official. The questions pertain to the previous 12 months, and the official types are specific Peruvian institutions, such as the judiciary or the social security agency (political parties and the legislature are not among

the specified types). Thus the emphasis is on reports of actual experience, not perceptions, of corruption.²

I begin by discussing theoretical reasons why corruption may vary across official types. I then use the Peruvian data to rank institutions in terms of corruption and quantify the role of three potential causes of corruption. The first factor I examine is the direct effect of client characteristics. Because clients vary in their ability and willingness to pay bribes, the type of client using an institution will affect the level of bribery at that institution. The second factor is the share of client cases that honest officials can handle within a 12-month window, adjusted for client characteristics (the ‘adjusted conclusion rate’). This measure captures an institution’s ability to provide a benefit to the client promptly, as determined by its administrative efficiency, resources and red tape. Slow service will frustrate clients and make them more willing to bribe. The third factor is the indirect or spillover effect of client characteristics. Spillovers exist if the interaction between an official and a particular client is influenced by the characteristics of other clients. For example, if official scruples are endogenous and are weakened in the face of temptation, a client may be more likely to have to bribe if the other clients are rich.

1. Theory

There are a number of reasons why corruption might vary across official types. First, the services offered may be demanded by clients with different ability and willingness to pay or even different scruples. Officials have some monopoly power, and monopolists can take advantage of differences in their clients’ willingness to pay by charging different prices (including zero) to different clients for their services (price discrimination). We would expect officials in institutions with richer clients to take bribes more frequently and to take larger bribes. Jennifer Hunt and Sonia Laszlo (2005) have confirmed empirically that richer clients do pay more frequent and higher bribes, both in general and within official type. Furthermore, certain official types, such as the police or the judiciary, may assume that their clients have lower scruples than the population at large. This would make such officials more likely to solicit and obtain bribes because their clients are less reluctant to pay bribes. There could, in addition, be spillover effects between clients. This could happen if rich clients corrupt officials so they behave less scrupulously with all clients, or if rich clients attract unscrupulous officials to the institution.

Second, officials provide different types of services in return for bribes, and these vary in value. This influences the client’s willingness to bribe as well as the level of payoffs. Bribes vary in size both because the value of the ultimate benefit varies and because officials’ ability to provide the benefit promptly also varies. The latter, in turn, depends on three considerations: the number

of officials involved in the conclusion of business for one client; how easy it is for superiors to monitor officials; and what resources are available to the institution compared to the demands on its officials. For example, police officers, who often meet clients one-on-one in the street, have complete control over the imposition of fines and are hard to monitor. If the resources of the agency granting drivers' licenses are insufficient to prevent large queues forming, the conditions will be ripe for frustrated clients to bribe to get to the head of the queue.³

Third, institutions vary in the degree of internal competition among officials with different levels of scruples. For example, a customer wishing to have a telephone connected who encounters an official demanding a bribe could return the next day and hope for an official with more scruples. By contrast, in a court case brought before a judge, it will usually be impossible to choose another judge unless he or she is caught explicitly demanding a payoff.⁴ Fourth, institutions may vary in the degree to which combating corruption is a management priority. Finally, public officials with few scruples will migrate to institutions which offer more opportunities for corruption, reinforcing other patterns. The data permit the second hypothesis and two variants of the first hypothesis to be tested.

2. Corruption in Peru

Discoveries leading to the resignation and self-exile of former president Alberto Fujimori revealed the enormous scale of corruption in Peru. Video-taped evidence showed that Vladimir Montesinos, Fujimori's spy chief, had repeatedly bribed congressmen to defect to Fujimori's party to ensure its majority in Congress. In addition, large bribes had enabled Montesinos to control most of the media and influence the judiciary (McMillan and Zoido 2004).

However, Fujimori is credited with having reduced petty corruption. His 1990–2000 administration pursued policies that reduced the role of government, which he justified not only on efficiency grounds, but on the grounds that reducing the role of government would reduce opportunities for corruption. He attempted to reduce corruption in the police and municipal governments, in the latter case by establishing a supervisory agency to field citizen complaints. However, despite some progress, several institutions with which ordinary people have much contact were judged by TI in a November 2001 report to suffer from pervasive corruption.⁵

Fujimori's reforms of the judiciary are thought to have been ineffective and may even have made it more corrupt. An increase in the number of temporary judges, appointed in part to help clear backlogs, contributed to corruption. Such judges, representing 74 percent of all judges, were vulnerable to political pressure and susceptible to corruption because of

their lack of job security. The slowness of judicial proceedings (and, one suspects, the high corruption) has led to the establishment of various arbitration systems for settling disputes (US Department of State 2005).

TI argues that poor pay and equipment reduced the morale of the police, which, combined with weak internal controls and sanctions, rendered them susceptible to small- and large-scale corruption, as well as to cooperation with criminals. At the time of its report, TI found that it was customary to bribe the transit police.

Public administration generally was corrupted by poor pay, complex procedures for sanctioning bribe taking, and the frequent overturning of administrative sanctions by the judiciary. Only public servants with contracts comparable to those in the private sector were well paid, but they lacked the job security that would protect them from political interference (and, presumably, that would allow them to report corruption by superiors).

The interim regime and the presidency of Alejandro Toledo that followed Fujimori's downfall made corruption a priority, but focused particularly on prosecuting actors in the Montesinos affair. A group including representatives of civil society and the World Bank drew up a list of anti-corruption proposals in 2001. Initiatives put into effect included the naming of an 'Anti-Corruption Tsar', the establishment of a special anti-corruption police division, and the introduction of an anti-nepotism law for the public service. Ominously, however, the Tsar was fired in December 2004 after seeking to investigate accusations of corruption in the Toledo administration.⁶

3. Data

The basic data for this study are contained in the 2002 and 2003 waves of the Peruvian household survey, the Encuesta Nacional de Hogares (ENAHOG), conducted by the national statistical agency, the Instituto Nacional de Estadística e Información (INEI). The sample includes responses by more than 36,000 households to a large number of economic and demographic questions and to questions on the use and bribery of public officials. One respondent per household indicated for each of 21 official types and for the previous 12 months whether the household had interacted with the official; whether anyone in the household had paid a bribe or been asked to pay a bribe; if they had paid, how much they had paid; whether they had concluded their business with the official; and whether the service was good, regular or bad. The only missing aspect of bribery is the case of the client offering a bribe and the official refusing.

Overall, 4.9 percent of households report having bribed in the previous 12 months. Of households who had transacted with at least one public official, 5.7 percent had bribed. Although the share of households bribing

may seem low, the bribery rates for some official types are very high, indicating that, at least for some official types, respondents were not ashamed or afraid to admit having bribed. The number of bribery episodes is somewhat understated, however, because each respondent can only report one bribery episode per official per year. If clients commonly use agents to act as intermediaries between themselves and officials, and bribes paid by the agent are reported in the survey by the agent (or no-one), rather than the client, the understatement will be worse and the share of households bribing will also be understated. A 2003 survey by Proética, a Peruvian anti-corruption group, gathered information on bribes and agents (*tramitadores*) (Proética 2003). Fifty-two percent of respondents who had bribed to obtain a driver's license reported having paid the bribe to an agent, while the share that bribed an agent was 15 percent or less for the other nine activities reported in the summary statistics (including dealing with a judge, customs, police on patrol and transit fines).⁷

A 2004 TI survey of 416 respondents in greater Lima found that 14 percent of respondents had bribed in the previous 12 months, compared to 6.0 percent among the 3,758 Lima respondents in my 2002–03 data. However, the TI question did not restrict itself to bribes paid to public officials. Proética reports much higher bribery rates for the years 2002, 2003 and 2004 of 32, 29 and 27 percent, respectively (Proética 2004). Proética's bribery rates, conditional on the use of particular officials, look very similar to mine, but their usage rates look implausibly high for a window of one year. For example, in 2004, 24 percent report using a judge compared to 2 percent in my sample; 14 percent of those who used a judge report having bribed in this connection in the Proética sample, compared to 17 percent in my data. This suggests that the Proética time frame, not reported in the documentation available to me, was in fact much longer than a year, even though yearly bribery rates are reported. I prefer the ENAHO survey to the TI and Proética surveys because of its large sample, wealth of covariates, and additional questions on the bribery and usage of public officials.

4. Empirical strategy

I begin by ranking official types according to their corruption. The data are sufficiently detailed that there could be many ways to combine them to produce a measure of how corruption varies by official type.⁸ As a simple summary measure, I divide the official type's share in bribe revenues (essential the bribery rate times the bribe amount) by the official type's share in household/official interactions. This is a measure of the relative corruption of the official type: an official type's corruption measure equals one if it receives bribe revenue in proportion to the number of its transactions. This measure corrects for the fact that an institution might appear to be

relatively honest simply because few households ever interact with officials from that institution.

I next take the raw bribery rates and bribe amounts for the various official types, and adjust them to remove differences associated with differences in the clients of the various official types. I assess the explanatory power of the client characteristics by comparing raw and adjusted values. In the adjustment, I account for differences in the number of visits the household made to the official type (possibly for more than one purpose), the value of household consumption, respondent and household demographics, education, job type, student status, ownership of vehicles, location and time of the survey. The covariates and adjustment procedures are explained in detail in Appendix 11A1 and Appendix 11A2, respectively.

Having computed the adjusted bribery rates and amounts by official type, I seek to explain their variation with observable characteristics of officials representing factors identified as important in the theory section. First, I compute an adjusted conclusion rate to represent the variation in service provision across official types net of client characteristics and behavior. I compute the adjusted conclusion rate using observations on scrupulous transactions only. The question concerning whether business was concluded seems designed to find out whether the client is still in the process of dealing with the official, and the adjusted conclusion rate therefore captures queues, red tape and other reasons for slow or ineffectual service that are unrelated to bribery. The effect of the adjusted conclusion rate is causal as long as the speed at which officials conclude their business honestly is not affected by how many of their colleagues are taking bribes and/or how much they are taking in bribes. The issue of causality and the details of the adjustment procedure are discussed in Appendix 11A2, while more information on the conclusion question is given in Appendix 11A1.

The second explanatory variable I use is the response rate to the question concerning the amount of bribes paid. This functions as a selection correction, in case, (i) those who did not report the amount were disproportionately those who paid large bribes, and (ii) officials whose clients were loath to report the amount of the bribe had clients who also underreported engaging in bribery. The response rate over all clients is 98 percent, but is much lower for the food agency compared to any other official type: 50 percent, compared to 86 percent for the official type with the next lowest response rate.

My third set of explanatory variables consists of the means of client characteristics by official type. Because the impact of individual client characteristics has already been incorporated, these means represent the indirect effects of other clients' characteristics.

If a higher conclusion rate reduces bribery by reducing the number of clients disgruntled with the service, the effect of the adjusted conclusion

rate on bribery should not be examined directly, as proposed above. Rather, a technique known as ‘instrumental variables’ should be used to find the indirect effect of the conclusion rate operating via client satisfaction (see Appendix 11A2 for a more technical discussion). I create, by official type, an adjusted share of clients reporting bad service, using an adjustment procedure identical to that used for the conclusion rate. I include this variable as an explanatory variable and instrument it with the adjusted conclusion rate. To test for robustness, I alternatively instrument with the adjusted share of clients who reported seeing the official immediately, and replace the share of clients reporting bad service with the share reporting good service.

5. Results

Which official types are most corrupt?

Table 11.1 lists the 21 official types in order of their share of total bribery ‘episodes’. A bribery episode is an encounter between a household (client) and official in which either a bribe was paid or a bribe was solicited by the official but the client refused to pay. Column 1 reports these shares, based on 91,668 total encounters between households and officials and 1,628 bribery episodes. The police account for 35 percent of bribes and the city (municipal) government for 21 percent, with the judiciary in third rank with 12 percent. Column 2 shows that these institutions are even more dominant in terms of total bribe payments: the judiciary alone accounts for 42 percent of the money paid in bribes, followed by the police with 27 percent, and city government with 11 percent, making a total of 80 percent. The third column puts these shares in perspective by reporting the official type’s share in household/official interactions; that is, the number of households using the official divided by the total over all official types. The police and judiciary represent only 2 percent each of interactions with officials, while the city government has a higher 10 percent share.

Column 4 of Table 11.1 and Figure 11.1 display the overall corruption of each official type (column 2 in Table 11.1 divided by column 3). The judiciary is by far the most corrupt institution, with bribery levels 26 times the level that its usage rate would predict. The police force is also an outlier with about half the corruption of the judiciary. The next official type is ‘other’, with one-third the police corruption rate, but four times the next category. ‘Other’ includes the Ministry of Transport and Communication, which houses the agency that grants drivers’ licenses. Here, the use of agents might be expected to lead to an underestimation of bribery. The ‘other’ category also encompasses numerous small welfare programs as well as Congress, the office of the president, and the many unspecified ministries such as the Ministry of Energy and Mines.

Table 11.1 Shares of bribes, bribe payments and sample by official type

	(1) Share of bribery episodes	(2) Share of amount of bribe payments	(3) Share of household– official interactions	(4) Corruption index (2)/(3)	(5) Business conclusion rate	(6) Clients reporting bad service
Police	0.35	0.27	0.02	12.7	0.81	0.38
City government	0.21	0.11	0.10	1.1	0.90	0.13
Judiciary	0.12	0.42	0.02	26.3	0.54	0.36
State schools	0.08	0.05	0.21	0.2	0.98	0.04
State hospitals	0.04	0.02	0.13	0.2	0.93	0.10
National ID registry	0.04	0.02	0.06	0.3	0.88	0.11
Water	0.03	0.01	0.12	0.1	0.95	0.09
Other	0.03	0.05	0.01	3.9	0.78	0.21
Ministry of Agriculture	0.02	0.01	0.01	1.1	0.72	0.15
State banks	0.02	0.004	0.06	0.06	0.95	0.07
Social security	0.02	0.01	0.03	0.3	0.88	0.16
Electricity	0.02	0.003	0.14	0.02	0.96	0.05
Department of Migration	0.01	0.003	0.004	0.9	0.91	0.11
Customs and Taxes	<0.01	<0.01	0.02	0.05	0.92	0.07
Election office	<0.01	<0.01	0.004	0.6	0.86	0.10
Telephone	<0.01	<0.01	0.04	0.001	0.95	0.09
Development agency	<0.01	<0.01	<0.01	0.5	0.76	0.11
Arbitration	<0.01	<0.01	<0.01	1.0	0.87	0.10
Election court	<0.01	<0.01	<0.01	0.4	0.90	0.07
Food agency	<0.01	<0.01	<0.01	0.02	0.81	0.16
Ministry of Industry	<0.01	<0.01	<0.01	0.4	0.83	0.10
All	1	1	1	1	0.93	0.09
Observations	2,123	1,628	91,668	–	91,668	91,668

Note: Bribery episodes include cases where the client refused to bribe (463). A number of bribe payers do not report the amount of the bribe (32). Ministry of Industry is short for Ministry of Industry, Tourism, Integration and International Commercial Negotiation.

Corruption in other institutions is relatively modest compared to the top three, although all these institutions carry out tasks that might lead to bribery. For example, the city government provides a variety of bribery-prone services, such as construction and demolition permission, trash collection, and property titling/registration. Arbitration is to some extent a substitute for the judiciary. The Ministry of Agriculture provides

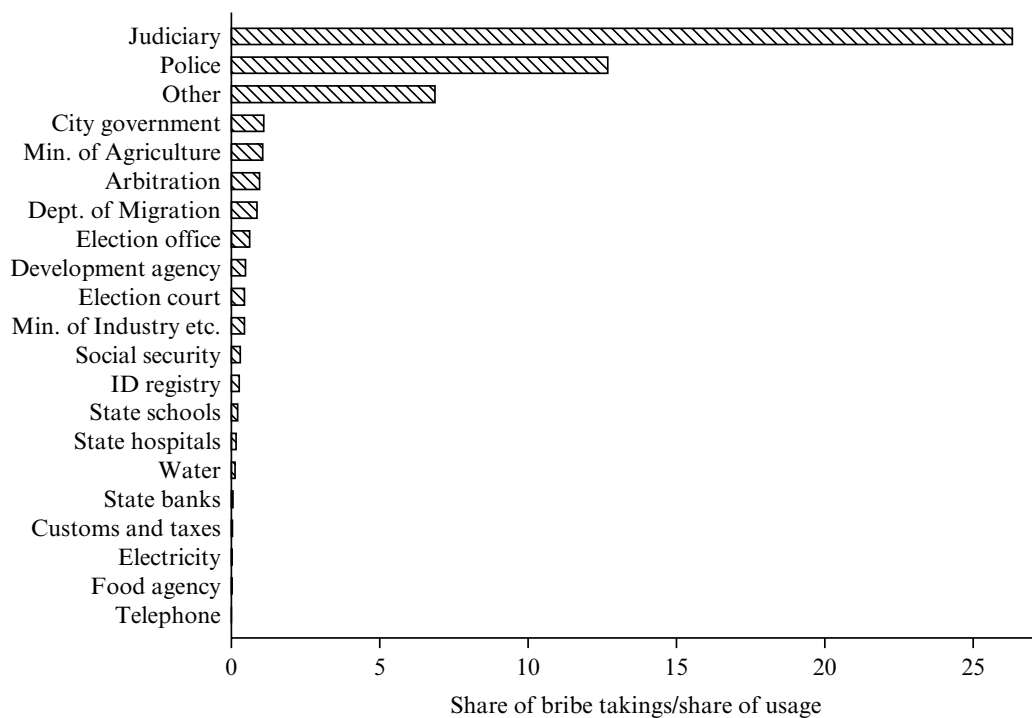


Figure 11.1 Corruption ranking of official types

title to agricultural land and credit to farmers. The Department of Migration provides visas for foreign workers and passports.

The election ‘office’ in Table 11.1 is the Oficina Nacional de Procesos Electorales (ONPE), while the election ‘court’ is the Jurado Nacional de Elecciones (JNE). The ONPE runs elections, while the JNE, which employs many lawyers, deals with electoral justice. The main reason for someone to use and bribe the ONPE would be to obtain a sticker confirming that he or she had participated in the mandatory voting (failure to obtain the sticker results in a suspension of legal rights). The JNE can issue exemptions and deals with any disputes over electoral outcomes or eligibility. Most activity connected with the national elections of April and June 2001 should be outside the 12-month bribe windows of both the 2002 and 2003 surveys. However, there were municipal and regional elections on 17 November 2002, which would be inside the window for many 2002 and 2003 respondents.

The Ministry of Industry, Tourism, Integration, and International Commercial Negotiation (MITINCI) issues permits for businesses, and the National Identification Registry issues identity documents and certificates of birth, marriage and divorce. The social security agency (ESSALUD) provides a wide variety of health-related services, such as clinics and hospitals, professional rehabilitation, health and disability insurance, and worker’s compensation. Reasons to bribe state hospitals (in principle

distinct from those run by the social security agency) range from wanting to visit a patient outside visiting hours, to obtaining a certificate of health, to accessing the desired doctor. The main reason to bribe the water, electricity and telephone utilities is to speed up connections. The main reason to bribe state schools is to ensure registration of one's child at the appropriate school (the Parent-Teachers' Association typically collects this bribe). The development agency (FONCODES) could be bribed for a (typically agricultural) loan. State banks could be bribed by those seeking loans or who want to be placed at the head of the long queue to pay the fine for not voting. Customs could be bribed to let goods enter or leave the country, and the tax authority in the same institution (SUNAT), known for its predatory ways, could be bribed not to do a tax audit, or possibly to lower tax liability. The food agency (PRONAA) could be bribed to judge that a family is eligible for food aid.

Raw and adjusted bribery rates and average bribe amounts

Figure 11.2 indicates the raw bribery episode rates by official type and the associated 95 percent confidence intervals, with the vertical line at 0.048 setting the city government rate as a reference point. Overall, 37 percent of those using the police and 17 percent of those using the judiciary had a bribery episode; bribery at the telephone and electric authorities was negligible.

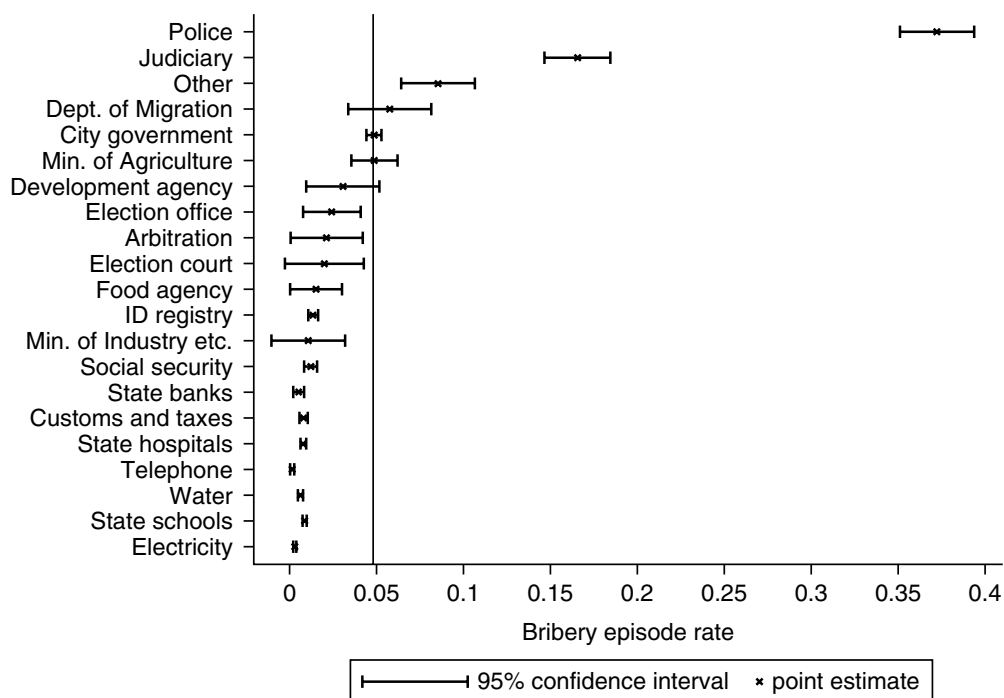


Figure 11.2 *Bribery episode rate by official type*

Figure 11.3 shows the adjusted bribery rates (marginal effects, with the city government coefficient normalized to zero) and the associated confidence intervals. The adjustment reduces the confidence intervals (the scales are different in the two figures) and explains much of the difference between the very corrupt officials and the others, but does not change the ranking of the officials much. Figure 11.4 makes clearer that a large amount of the variance across official types is explained by client characteristics. It plots the raw and adjusted bribery rates on the same figure (with the city government bribery rate subtracted from the raw rates). The unweighted standard deviation of the 21 raw bribery rates is 0.084, while the unweighted standard deviation of the 21 adjusted bribery rates is 0.032, so two-thirds of the standard deviation, or 85 percent of the variance, is explained by household characteristics. Client characteristics explain most of the (statistically significant) difference in the bribery rate between the judiciary and city government and more than half the difference between the police and city government. The adjusted judiciary and police bribery rates remain significantly higher than that of city government, however. The adjustment brings the lower bribery group, from the election office on down, slightly closer to the city government, although the gap remains statistically significant.⁹

I repeat this exercise for the bribe amount in Figures 11.5–7. The large confidence intervals of Figure 11.5, which reports raw means of log bribe

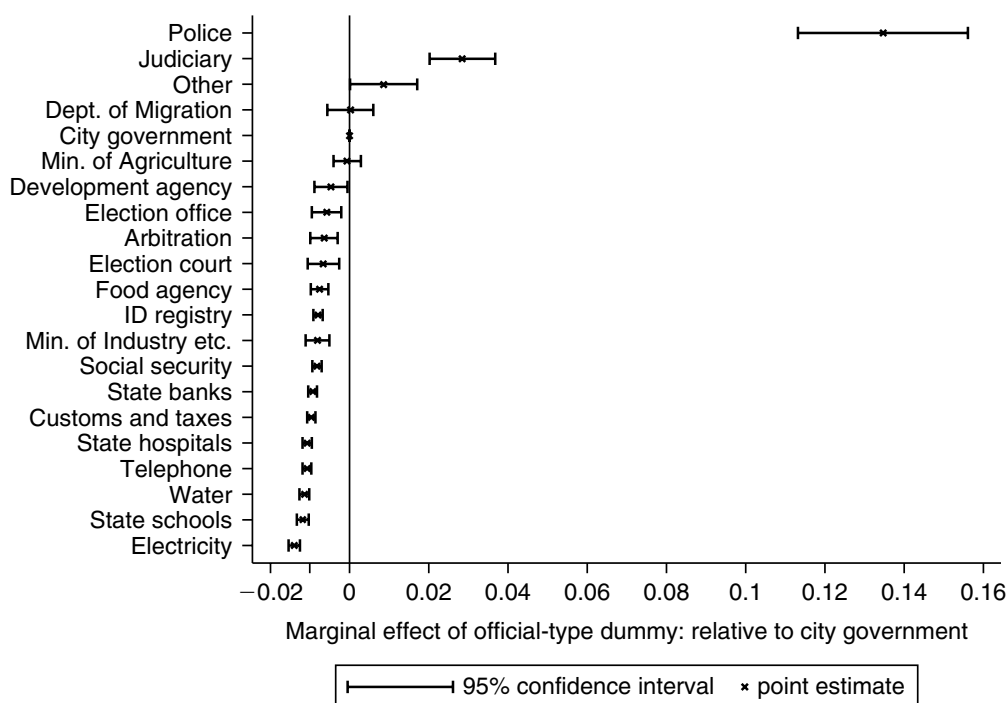


Figure 11.3 Adjusted bribery rate by official type

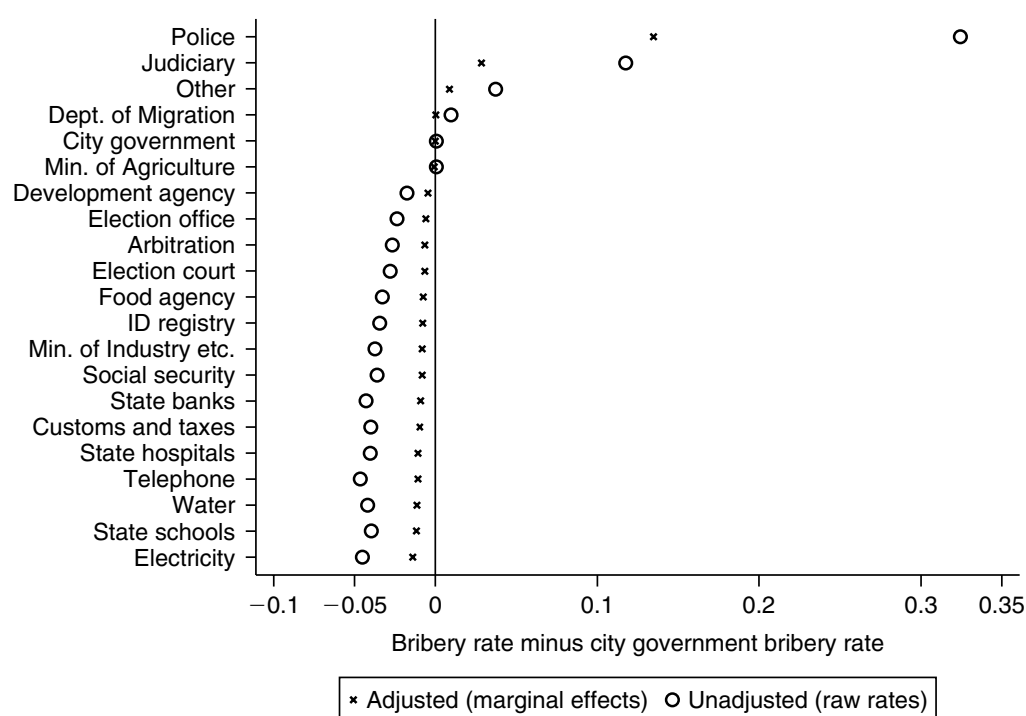


Figure 11.4 *Adjusted and unadjusted bribery rates*

amounts, reflect the small number of reported bribe amounts for some types of official. The highest 'mean' is for the election court, where only one bribe amount (of 80 nuevos soles, or about US\$24) is reported; the second-ranked institution, the Ministry of Industry, also has only one bribe amount reported. The judiciary, which by contrast has many bribes and a tight confidence interval, is ranked third, closely followed by 'other', arbitration, social security and the police.¹⁰ The difference between the judiciary and the police is statistically significant, but many other gaps are not.

Of the 2.1 percent of bribes that are 500 nuevos soles or more (US\$150), 47 percent went to the judiciary; of the 1.2 percent of bribes (19 bribes) that are 1,000 nuevos soles or more (US\$300), 53 percent went to the judiciary. The highest reported bribe is 15,000 nuevos soles (about US\$4,500), to the judiciary, which compares to bribes of between \$2,500 and \$10,000 paid by Montesinos to ordinary judges (McMillan and Zoido 2004).

The adjusted bribe amounts in Figure 11.6 have tighter confidence intervals and have some small ranking differences compared to the raw bribe means in Figure 11.5. However, as Figure 11.7 makes clear, the adjustment scarcely affects the size of the gaps between the official types (the unweighted variance of 0.67 actually rises to 0.71). Although bribery rates vary across official types in large part because client profiles vary across official types, the variance in the size of bribes paid across official types is

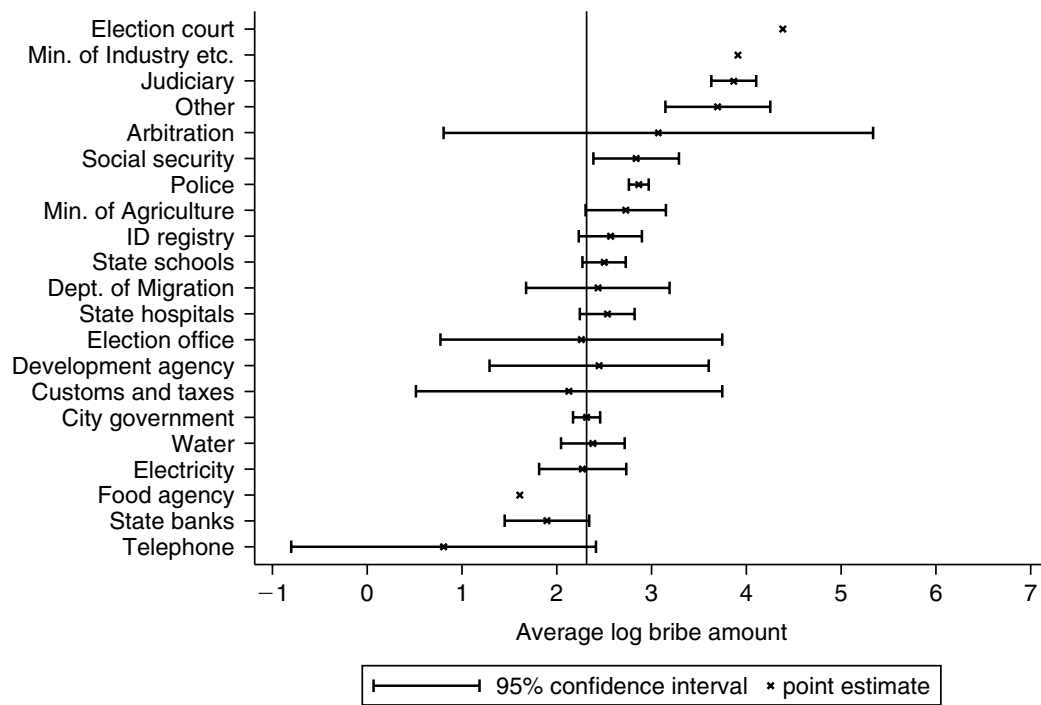


Figure 11.5 Average bribe amount by official type

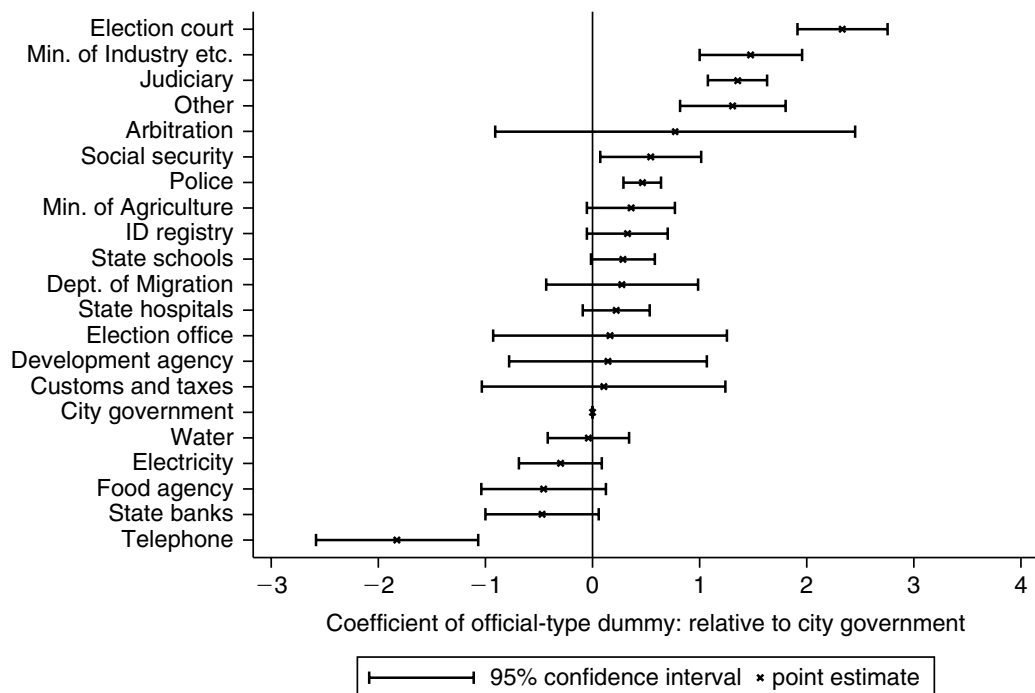


Figure 11.6 Adjusted bribe amount by official type



Figure 11.7 *Adjusted and unadjusted bribe amounts*

almost unrelated to these different profiles and must instead be almost fully determined by differences in the institutions themselves.

Given these results, one can understand why the plots marked with circles in Figure 11.8 show little relation between the official types with high raw bribery rates and the official types with high raw average bribe amounts. The plots marked with crosses show that there is also no correlation between the adjusted rates and the adjusted bribe amounts.

Determinants of adjusted bribery rates and adjusted bribe amounts

I continue the analysis of the variation in bribery across officials by examining the effect of the adjusted conclusion rate. The mean raw conclusion rate across households is 93 percent, with the means by official type ranging from 54 percent for the judiciary and 72 percent for the Ministry of Agriculture to 98 percent for state schools (see column 5 of Table 11.1). Figure 11.9 plots the adjusted bribery rate¹¹ against the adjusted rate of concluding business with officials, and the unweighted regression line connecting them. The fit is very good, with only the police rather far from the regression line: the police have a higher bribery rate than would be expected given their rate of concluding business. This might be the result of the latitude enjoyed by police officers to seek out their own clients and impose a fine if a bribe is not forthcoming (inspectors of various kinds also have this latitude) – such actions are intimately associated with bribery but

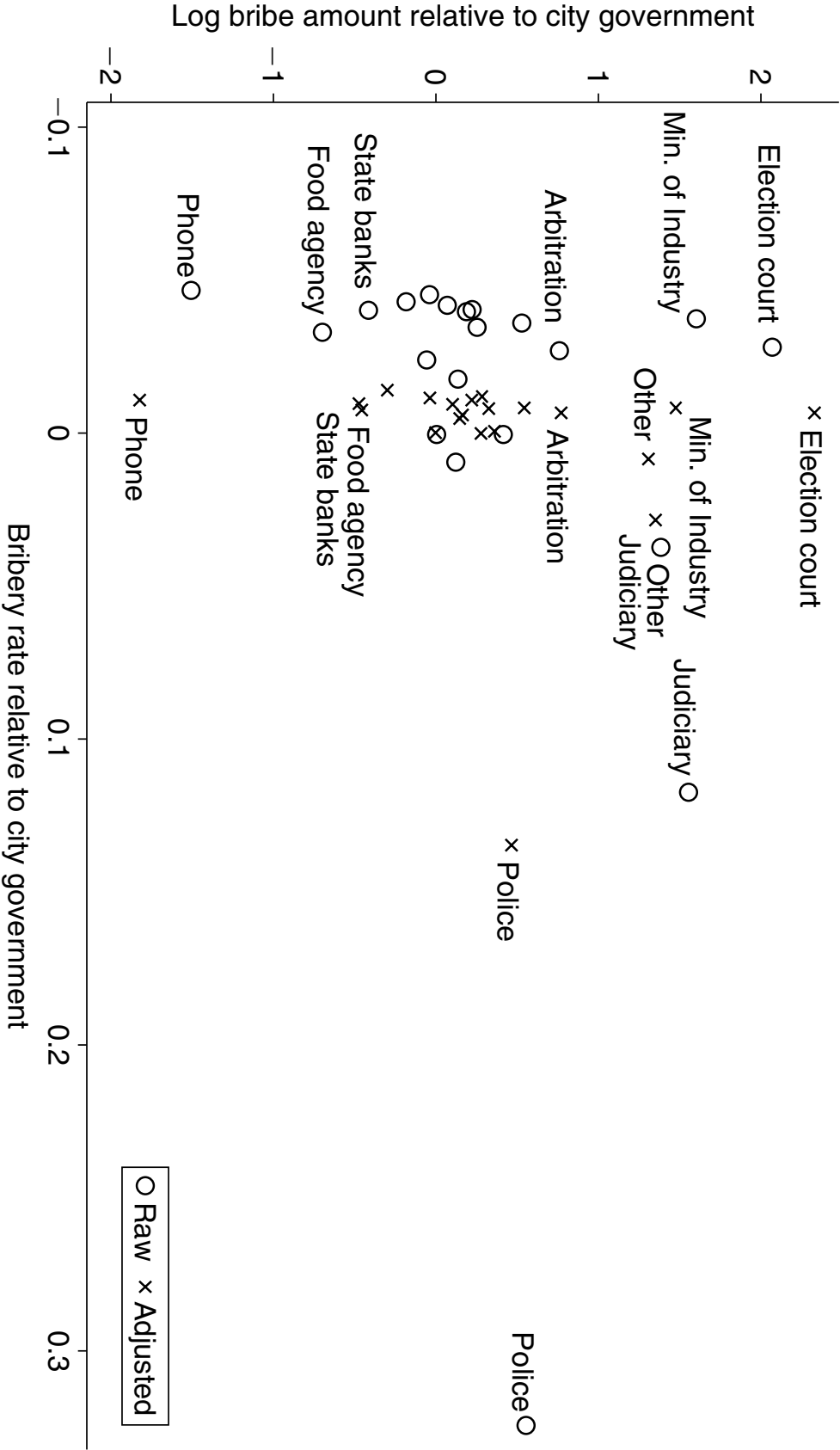


Figure 11.8 Adjusted bribery rate versus adjusted bribe amount

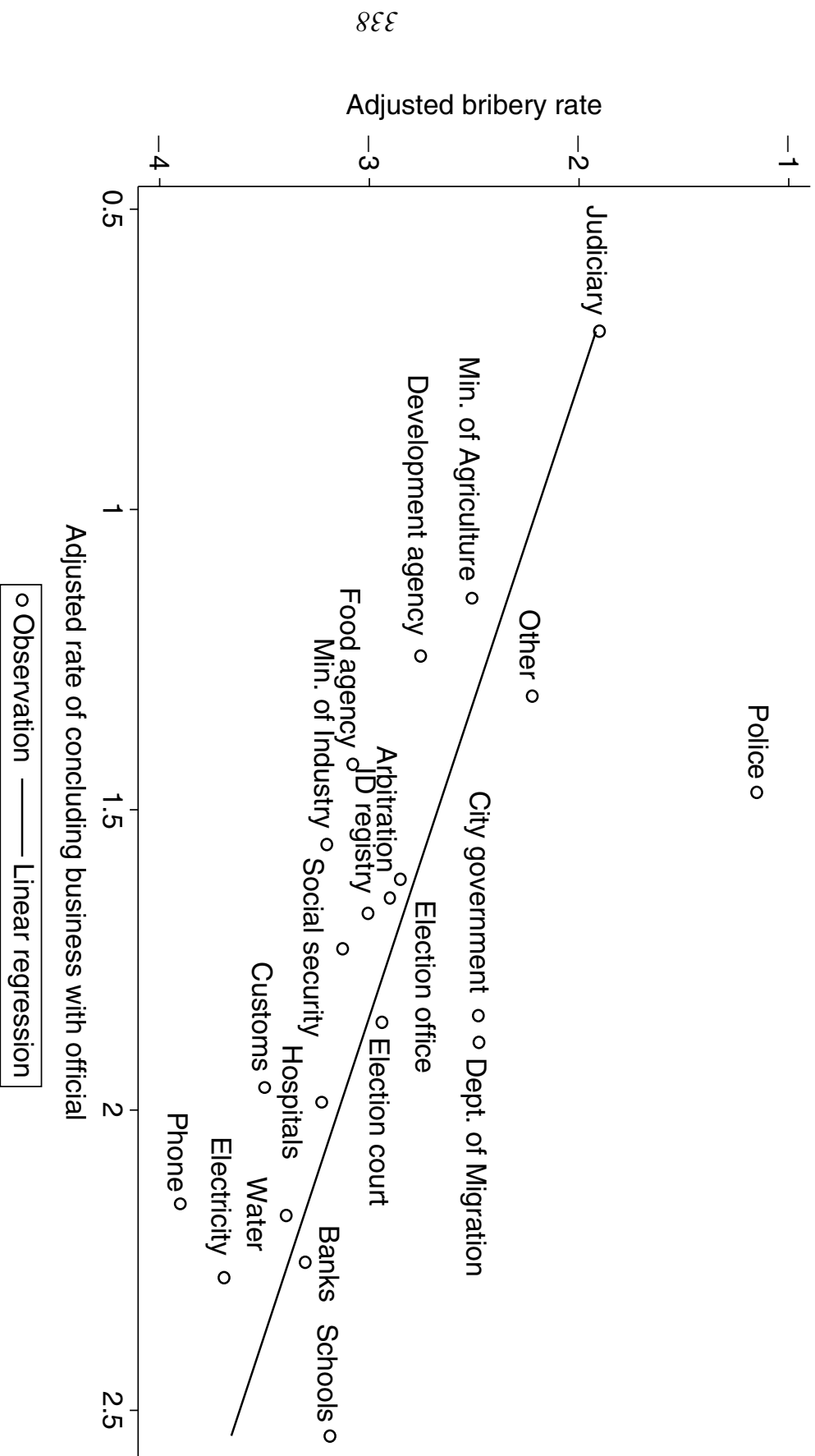


Figure 11.9 Adjusted bribery rate versus adjusted conclusion rate

Table 11.2 Determinants of adjusted bribery rates by official type

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Business conclusion rate (adjusted)	−0.98 (−4.0)	−1.00 (−4.1)	−0.38 (−2.5)	— —	— —	— —	— —
Share clients saying service bad (adjusted)	—	—	—	1.58 (5.1)	1.70 (4.6)	1.12 (3.2)	0.76 (3.1)
Response rate for bribe amount	—	1.41 (1.3)	0.12 (0.9)	1.42 (1.4)	1.45 (1.5)	1.81 (0.8)	0.06 (0.3)
R-squared	0.46	0.50	0.27	0.60	0.60	0.41	0.48
Adjusted R-squared	0.43	0.45	0.19	0.56	0.55	0.35	0.42
Instrumental variables	—	—	—	—	Yes	Yes	Yes
Adjusted conclusion rate (in first stage)	—	—	—	—	−0.59 (−6.6)	−0.71 (−11.1)	−0.65 (−8.3)
All adjustments made using OLS	—	—	Yes	—	—	—	Yes
Weights	Reciprocal of squared standard errors from household–official-level regression					Share of households using official	

Note: *t*-statistics in parentheses. Weighted regressions on 21 observations. The dependent variable in columns 1–5 is the set of coefficients on the official-type dummies in a probit for the probability of paying a bribe. The adjusted business conclusion rate is the set of coefficients on official-type dummies from a probit for the probability of concluding business with the official. The adjusted share of clients reporting bad service is the set of coefficients on official-type dummies from a probit for the probability of experiencing bad service with the official. For columns 3 and 7 all adjustments to variables are made using OLS. Where instrumental variables is performed, the adjusted share of clients reporting bad service has been instrumented with the adjusted business conclusion rate.

are often concluded on the spot. Alternatively, clients of the police may have fewer (unobservable) scruples.

In Table 11.2 I report regressions, with one observation per official type, in an effort to explain the variation in bribery rates. As explained in Appendix 11A2, the regressions are weighted. The first five columns use weights based on the standard errors from the first (household/official) stage; the last two weight the observations according to the number of transactions of each official type.

In column 1, the adjusted conclusion rate alone explains 46 percent of the variance in the bribery rate, and has a *t*-statistic of −4.0. In column 2, I add the response rate for the bribe amount, which is insignificant and does not affect the coefficient on the conclusion rate. To make the coefficients easy to interpret, I rerun the regression of column 2 performing all adjustments to obtain the dependent and independent variables using ordinary least squares

(OLS), rather than using any non-linear probit regressions. The resulting coefficient on the adjusted conclusion rate, in column 3, indicates that a 10 percentage point increase in this rate (the unweighted standard deviation) reduces the adjusted bribery rate by 3.8 percentage points, a very large effect.

The first three columns suggest that when conclusion rates are low, clients become frustrated and bribe. As shown in column 6 of Table 11.1, the share of clients rating the service as bad ranges from 38 percent for the police to 4 percent for state schools. Thirty-four percent of clients rate their service as good; 9 percent as bad. To check that dissatisfaction with service is indeed the correct mechanism, I control for the adjusted share of clients saying service was bad, instead of the adjusted conclusion rate, in column 4, and instrument it with the adjusted conclusion rate in column 5. In both columns, the coefficient on bad service is positive and significant, as expected, with a larger absolute value than the conclusion coefficient of columns 1 and 2. In column 6, I repeat column 5 with different weights, the share of households using the official type, which reduces the coefficient on the bad service variable.

To help interpret the coefficients, in column 7, I rerun the column six regression making adjustments using OLS only. The coefficient of 0.76 indicates that a 10 percentage point increase in the share of clients who think the service is bad increases the bribery rate by 7.6 percentage points. We can use the coefficient on the conclusion rate in the first stage of the instrumental variables regression, -0.65 (lower panel of column 7), to relate this coefficient to the direct coefficient on the conclusion rate in column 3 (-0.38). A 10 percentage point increase in the conclusion rate reduces the share of clients rating service as bad by 6.5 percentage points, which in turn reduces bribery by $0.76 \times 6.5 = 4.9$ percentage points, similar to the 3.8 percentage point effect of column 3. The results are very similar when the first set of weights (from columns 1–5) is used.

The next step is to add the third class of explanatory variables: average characteristics of clients, particularly the value of household consumption and the share of clients in various types of job such as white collar and self-employed in agriculture (see Appendix 11A1). Household consumption has a significant positive coefficient if the job categories are included, but not otherwise. Certain job category coefficients are significant, but only if household consumption is included. These unreported results are somewhat difficult to interpret. They might imply indirect or spillover effects between clients or indicate that unscrupulous officials gravitate to institutions with bribe-prone clients.

The corresponding regressions for the adjusted log bribe amounts are presented in Table 11.3; Figure 11.10 graphs the adjusted bribe amount against the adjusted conclusion rate.¹² Columns 1 and 2 and the figure show

Table 11.3 Determinants of adjusted bribe amounts by official type

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Business	−0.85	−0.90	−3.83	–	–	–	–
conclusion rate	(−2.1)	(−2.3)	(−2.1)	–	–	–	–
(adjusted)							
Share clients saying	–	–	–	0.46	1.58	1.09	5.89
service bad (adjusted)				(0.8)	(1.9)	(4.2)	(4.9)
Response rate for	–	2.56	2.50	2.42	2.84	−3.1	−2.63
bribe amount	–	(1.5)	(1.5)	(1.3)	(1.4)	(−0.8)	(−0.7)
<i>R</i> -squared	0.20	0.29	0.26	0.10	–	0.36	0.43
Adjusted <i>R</i> -squared	0.15	0.21	0.18	0.00	–	0.29	0.36
Instrumental variables	–	–	–	–	Yes	Yes	Yes
Adjusted conclusion	–	–	–	–	−0.57	−0.68	−0.60
rate (in first stage)	–	–	–	–	(−5.8)	(−9.6)	(−6.9)
All adjustments made	–	–	Yes	–	–	–	Yes
using OLS							
Weights	Reciprocal of squared standard errors from household–official-level regression					Number of bribe amounts reported	

Note: *t*-statistics in parentheses. Weighted regressions on 20 observations. The dependent variable in columns 1–5 is the set of coefficients on the official-type dummies in an OLS regression for the (log) amount of the bribe. The adjusted business conclusion rate is the set of coefficients on official-type dummies from a probit for the probability of concluding business with the official. The adjusted share of clients reporting bad service is the set of coefficients on official-type dummies from a probit for the probability of experiencing bad service with the official. For columns 3 and 7 adjustments to variables are made using OLS. Where instrumental variables is performed, the adjusted share of clients reporting bad service has been instrumented with the adjusted business conclusion rate.

that the adjusted conclusion rate is significantly negatively related to the log bribe amount when the official types are weighted similarly (in the table) or equally (the regression line of the figure). The fit is not as good as in the case of the bribery rates, however, with only 20 per cent of the variance in the bribe amount explained. In column 2, as in later columns, the response rate for the bribe amount has an insignificant coefficient. The fully linear version of column 2, presented in column 3, indicates that a 10 percentage point increase in the conclusion rate reduces the bribe amount by 38 log points or 32 percent, a large effect.

In columns 4 and 5, I control for the adjusted share of clients reporting bad service, rather than the adjusted conclusion rate. This variable has an insignificant coefficient when not instrumented, but a positive coefficient significant at the 10 percent level when instrumented in column 5. The coefficient becomes smaller but much more significant when the weights are

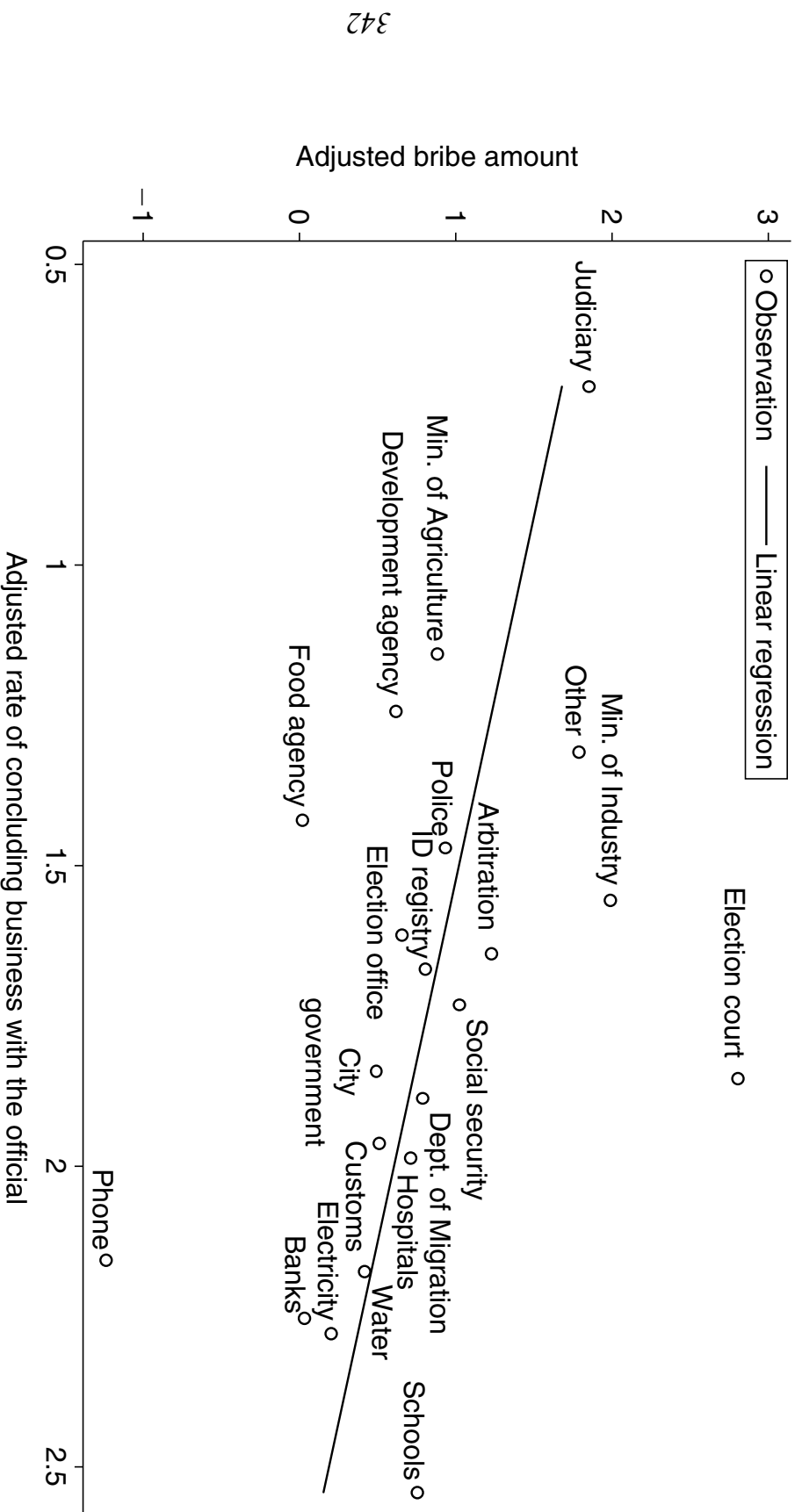


Figure 11.10 Adjusted bribe amount versus adjusted conclusion rate

the number of bribe amounts reported, in column 6: the increased significance comes from the low weight on the observations far from the regression line in Figure 11.10 owing to their being based on a tiny number of bribes.

In Table 11.3, the fully linear results of column 7 indicate that a 10 percentage point increase in the share of clients reporting bad service reduces the bribe amount by a statistically significant 58.9 log points (45 percent), and the unadjusted *R*-squared rises to 0.43. Because the first-stage coefficient on the adjusted conclusion rate is -0.60 (column 7 lower panel), this means that a 10 percentage point increase in the conclusion rate reduces the bribe amount by $0.60 \times 58.9 = 35$ log points, or 30 percent. This is very similar to the direct effect of 38 log points in column 3.

As was the case for the bribery rate, average client household consumption is a significant determinant of the bribe amount only if the share of clients in various job categories are included, and vice versa. When all these covariates are included, the significant coefficients have opposite signs from the bribery rate regression (these results are not reported). More research is needed to characterize indirect or spillover effects between clients.

I have repeated the instrumental variables regressions of Tables 11.2 and 11.3 using the share of clients reporting good, rather than bad, service. The adjusted conclusion rate has a larger and much more significant effect on the number of clients judging service to be bad than on the number judging service to be good. Thus, the impact of the conclusion rate on bribery works not through creating happy clients, but rather through reducing the number of unhappy clients. Unreported regressions also indicate that the adjusted share of clients who saw the official immediately works well as an instrument (and predicts bad service better than good service) and gives similar results to Tables 11.2 and 11.3. Allowing clients to see the official immediately is a good first step in speeding up the conclusion rate, increasing client satisfaction and lowering bribery.

6. Conclusion

Peruvian data on bribery rates and on household bribe payments indicate that almost all the variance in bribery rates across types of officials can be explained by a combination of client characteristics and the speed with which honest officials are able to act. Furthermore, the study provides definitive evidence on which government services are the most corrupt – the judiciary and the police in the case of Peru.

First consider the incidence of bribery. Variation in clients' propensity to bribe or in their ability to pay explains much of the variation in bribery rates across official types. Raw bribery rates range from almost zero to 37 percent depending upon the type of official, and client characteristics explain 85 percent of the variance in these rates. However, even after correcting for

differences in client characteristics, adjusted bribery rates still span 15 percentage points. Fully 46 percent of this remaining variance is explained by the adjusted conclusion rate. A 10 percentage point increase in this rate (a standard deviation) reduces the adjusted bribery rate by 4 to 5 percentage points, a very large effect. Thus, the incidence of bribery is higher at institutions whose clients have a bribe-prone profile and whose clients are frustrated with slow service. A low conclusion rate, implying long delays, can be interpreted as causing corruption if the provision of services by honest officials is not affected by the extent of bribery in the institution.

Second, the results help explain the size of bribes paid. These amounts are not closely correlated with bribery rates across official types, and client characteristics do not explain the variance in bribe amounts. However, a 10 percentage point increase in the adjusted conclusion rate reduces the adjusted bribe amount by a significant 30–32 percent and explains at least 20 percent of the variance. Thus, clients frustrated with slow service pay higher as well as more frequent bribes.

I find some evidence that the characteristics of the official's *other* clients help to explain a given client's bribery behavior. However, the results differ qualitatively depending on whether one considers the bribery rate or bribe amount, and are difficult to interpret. I therefore draw no firm conclusions concerning indirect or spillover effects, or the concentration of unscrupulous officials in institutions with bribe-prone clients. I speculate that both for bribe amounts and bribery rates, the stakes and the degree of internal competition play a role in explaining the remaining variance.

My results for the bribery rate and for the size of bribes paid suggest reasonable policy priorities for reducing corruption. Reform should focus on improving administrative efficiency, providing more resources, and cutting red tape so that delays are reduced and clients can complete their official business in a reasonable period of time.

Turning to the results for individual sectors, my corruption ranking shows that judicial actors are by far the most corrupt type of official in Peru, with an impressive 42 percent of reported bribe revenues. The police force is the other extremely corrupt institution, with 27 percent of bribes. TI (2004) reports that in 36 of 62 countries surveyed, respondents perceived the police and the judiciary to be the most corrupt institutions after political parties and the legislature. This indicates that the Peruvian situation is not unique and could provide lessons for other countries.

The judiciary has both a high bribery rate and a high value of bribes, and it has by far the lowest conclusion rate. Only 54 percent of clients concluded their business with the judiciary within the 12-month window of the survey. The magnitude of the effects uncovered suggests considerable scope for reducing the bribery rate by speeding up Peru's infamously slow judicial

proceedings. This will require a sustained investment in attracting and training more lawyers and judges and providing these judges with permanent contracts. Faster proceedings would also help reduce the high value of the bribes paid to the judiciary, but the inevitably high stakes, low internal competition and unwilling participation of defendants associated with judicial proceedings may be significant obstacles to progress.

The police are also highly corrupt in Peru: although the value of bribes paid is not much above average, the bribery rate is the highest of any official type, at 37 percent. The police have a much higher bribery rate than their high conclusion rate warrants. This suggests that other, possibly more difficult to implement reforms, must supplement an increase in the conclusion rate. A peculiarity of the police – that they can extort bribes from clients of their choosing – may well explain this, and should be a target of policy. The police may also deal with clients who have fewer scruples than average, something that policy cannot influence. Although increasing the conclusion rate would be helpful, the need for additional measures is even more urgent than for other institutions. These might include attempts to restrict abuse of police monopoly power, for example, by limiting the extortion of bribes from innocent motorists.

This study demonstrates how survey results based on reports of actual behavior can be used to provide a nuanced view of the phenomenon of corruption. Rather than simply asking people to report their feelings about public institutions, one asks the respondents to report what has actually happened to them. Of course, they may shade the truth in providing answers, but, at least, they are encouraged to describe their own experiences, not speculate based on second- and third-hand impressions. The survey permits me to compare usage of various types of officials and thus avoids a common pitfall of surveys that do not correct for difference in household contact with officials. I have also been able to unpack the concept of corruption to distinguish between the incidence of corruption and the level of bribes. All of these features of my analysis give the results more validity than much previous work based on surveys. As such, it can provide a better guide to policy. Fortunately, there is nothing special about the survey in Peru. It could easily be replicated in other middle-income countries to provide comparable insights.

Notes

- * I thank Vincent Chandler for excellent research assistance, and the Social Science and Humanities Research Council of Canada for financial support. I am grateful to Susan Rose-Ackerman, Sonia Laszlo and participants in the McGill summer seminar series for comments, to Miguel Jaramillo Baanante for enlightening conversations about Peru, and to the Instituto Nacional de Estadística e Información for providing the data.
- 1. The World Bank has conducted surveys of public officials in several countries, and qualitative responses related to corruption are available at www1.worldbank.org/prem/acr/bankproj.html. Peru is not one of the countries surveyed.

2. The few previous papers using measured corruption include Svensson (2003), Deininger and Mpuga (2004), Hunt (2004), Mocan (2004), Hunt and Laszlo (2005) and some analysis in Swamy et al. (2001). Di Tella and Schargrodsky (2003) convincingly infer corruption from their data.
3. Bardhan (1997) discusses how giving many officials the power to stop a file may backfire as a means of reducing bribery if the client ends up bribing all the officials. Rose-Ackerman (1978) and Lui (1985) analyze bribery and queuing.
4. Rose-Ackerman (1978: ch. 8, 1999: ch. 4) and Shleifer and Vishny (1993) discuss the significance of competition between officials.
5. Most of the rest of this section is based on this report: TI (2001).
6. See: www.signonsandiego.com/news/world/20041217-0702-peru-corruption.html.
7. Bertrand et al. (2005) analyze the use of agents for obtaining drivers' licenses in India.
8. Quid pro quos, not directly observable in the data, can also play a role. See Hunt (2004).
9. Haiken-DeNew and Schmidt (1997) discuss subtleties associated with measuring the variance of the coefficients on such group effects.
10. The ranking of average bribes, rather than average log bribes, is different: judiciary (mean 260 nuevos soles, or US\$78), other (144), election court (80), arbitration (72), police (50), Ministry of Industry (50).
11. Coefficients now, rather than marginal effects as in earlier graphs – see Appendix 11A2 for details.
12. I show coefficients, not marginal effects. The distinction is explained in Appendix 11A2.

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Appendix 11A1 Data

The 2002 survey contains information from interviews in October–December 2002. The ‘2003’ survey contains information from interviews in every month from May 2003 to April 2004. I have made no adjustments for inflation nor for seasonality consumption patterns, and simply use the total value of household consumption as computed by the statistical office. The statistical office imputes some components of consumption where necessary. Two thousand of the 18,000 addresses interviewed in 2002 were re-interviewed in the 2003 survey.

Regressions at the household/official level to adjust the bribery rate and bribe amount include: the number of visits to the official type, seven regional dummies, household-size dummies, town-size dummies, dummies for interview months from May 2003–April 2004, time to the district administrative center; ‘job type’ dummies for the respondent’s main job – employer (non-agricultural), employer (agricultural), self-employed (non-agricultural), self-employed (agricultural), white collar, domestic worker, unpaid family member, other and not employed (the omitted type is laborer); characteristics of the respondent – sex, married/cohabiting, married/cohabiting*sex, age and age squared, student status, whether main job is in public administration; characteristics of the household – number of earners, number of members in school, ownership dummies for bicycle, car/van, tricycle, motorbike and truck, whether land obtained by invasion, presence of children aged 0–3, 4–7, 8–11 and 12–15 and whether any member other than the respondent had each of the several job types.

The regressions used to adjust the probability of concluding business with the official, the perceived quality of service and the probability of seeing an official immediately contain the same covariates, excluding the number of visits, but the sample contains only respondents who did not experience a bribery episode.

Respondents are asked whether their business with the official type was concluded (*‘concluyó’*). As in English, the Spanish is ambiguous as to whether conclusion implies successful conclusion. The one word question *‘concluyó?’* is beside the column where the number of visits to the official is recorded, and both are under the heading asking how many times the respondents went to the official (in the previous 12 months). In this context, it is likely that the respondents interpreted the question about conclusion as a question as to whether they were still in the process of dealing with the official. I assume without evidence that respondents forced to pay off police officers to avoid fines for imaginary offences also interpret the question as asking whether they are still engaged in dealings with the officer.

Appendix 11A2 Methodology

Adjustment of bribery rates and bribe amounts for client characteristics

To adjust bribery rates, I begin with the full dataset of household/official pairs (21 officials times 36,000 households), and extract those 91,668 household/official pairs where the household used the official. I estimate the following probit regression for the probability of household i having a bribery episode with official type j :

$$P(\text{Bribe}_{ij}) = \alpha_{1j}\mu_j + X_i\beta_1 + \beta_2 Z_{ij} + \varepsilon_{ij} \quad (11A2.1)$$

The variables are defined as follows. The official type dummies are μ_j ; Z_{ij} represents the number of visits the household made to the official type (possibly for more than one purpose); and X_i includes controls for the value of household consumption, respondent and household demographics, education, job type, student status, ownership of vehicles, location and time. Appendix 11A1 lists the covariates in detail.

The estimated coefficients $\hat{\alpha}_{1j}$ on the official-type dummies μ_j are the bribery rates adjusted for the characteristics of the clients. Because coefficients from non-linear regressions like the probit of equation (11A2.1) are difficult to interpret, when displaying the adjusted bribery rates graphically I most often present the marginal effects (the effect of increasing the covariate by one) instead.

I proceed similarly for the bribe amount. In the first stage I use the sample of 1,628 household/official pairs where a bribe was paid and the amount specified and run the OLS regression:

$$\log(\text{Bribe amount}_{ij}) = \alpha_{2j}\mu_j + X_i\beta_3 + \beta_4 Z_{ij} + v_{ij} \quad (11A2.2)$$

where μ_j , X_i and Z_{ij} are as in equation (11A2.1). The estimated coefficients $\hat{\alpha}_{2j}$ on the official-type dummies μ_j are the adjusted bribe amounts.

Determinants of bribery rates and bribe amounts

To analyze the determinants of adjusted bribery rates and bribe amounts, I use them as the dependent variables in a weighted least squares regression at the official type level:

$$\hat{\alpha}_j = \gamma + \phi O_j + \eta_j, \quad (11A2.3)$$

where the O_j are the characteristics of the officials. I use as weights either the inverse of the squared standard errors of $\hat{\alpha}_j$ in the first stage (equations (11A2.1) and (11A2.2)), or the share of the households that use the official type (for bribery rates) and the number of reported bribe amounts for the

official type (for bribe amounts). The first set of weights reflects how precisely the coefficients were estimated in the first stage, but in practice these weights do not differ much across official types.¹ The second set of weights reflects directly that bribery rates and amounts are measured with different precision by official type because of large differences in the number of clients using them and in the number of reported bribes.

Adjustment of the conclusion rate and its potential endogeneity

In order to adjust the conclusion rate, I run a probit with the same covariates as for equation (11A2.1), excluding the number of visits Z_{ij} , where the dependent variable is whether the client i concluded his/her business with the official j :

$$P(\text{Concluded business}_{ij}) = \alpha_{3j}\mu_j + X_i\beta_5 + \xi_{ij} \quad (11A2.4)$$

Because the conclusion of business is influenced by bribery behavior, I run this regression on a sample of household/official pairs where there was no bribery episode. I refer to the estimated coefficients $\hat{\alpha}_{3j}$ on the official-type dummies as the adjusted conclusion rate, and use them as one of the covariates in O_j .

I assume that neither the average bribery rate nor the average amount paid for the official type belongs in equation (11A2.4) (that is, that they are not among the official characteristics being captured by the official-type dummies μ_j). This is important: if speed at which officials conclude business honestly is affected by how many of their colleagues are taking bribes and/or how much they are taking in bribes, the adjusted conclusion rate will be endogenous in equation (11A2.3). For example, if corruption demoralizes honest officials or otherwise reduces effort in honest dealings, the coefficient on the adjusted conclusion rate in equation (11A2.3) will be biased downward, and any beneficial effect of fast conclusion overstated. A related point is that the sample includes some clients who did not notice that their slow service indicated the official was angling for a bribe. If dishonest and honest officials differ in ability, the adjusted conclusion rate would also not measure the conclusion rate that would obtain if all officials behaved honestly. Finally, if some respondents perceive the question about conclusion to mean successful conclusion, and if some of these respondents judge success based on whether the official was willing to perform an illegal act for the client, a high conclusion rate is not unambiguously a good thing.

Computation of standard errors

The standard errors in all regressions at the household/official level are clustered by district, allowing for correlation of the errors across residents of

the same district in any survey period. This procedure takes into account that people in the same district might have similar behaviors, and that in fact panel households appear twice in the sample.

Note

1. Borjas and Sueyoshi (1994) show that when the first stage is a probit, the weights necessary to recover the coefficients that would have obtained in a one-step procedure are more complicated than the inverse of the squared standard errors. I show that the results are not sensitive to the weights.

Reference

Borjas, George and Glenn Sueyoshi (1994), 'A two-stage estimator for probit models with structural group effects', *Journal of Econometrics*, **64**(1), 165–82.

12 Corruption and the demand for regulating capitalists

*Rafael Di Tella and Robert MacCulloch**

Economists have long emphasized the costs of corruption (Myrdal 1968; Rose-Ackerman 1978). In an important paper, Mauro (1995) provided evidence that subjective measures of corruption (prepared in the construction of country risk indices) were negatively correlated with measures of investment over GDP and GDP growth. Much work since then has studied the reasons for such a connection. For example, Mauro (1998) has argued that corruption biases public investment towards physical capital (where bribes are easier to collect) and against human capital (such as education). In a similar spirit, Banerjee (1997) and Alesina and Di Tella (1997) argue that corruption introduces a ‘leak’ in public policy rendering it less effective. Acemoglu and Verdier (2000) show that this point still holds even in a more complete model where agent’s contracts are adjusted optimally (see Reinikka and Svensson (2004) for evidence on this). A different type of cost is emphasized by Djankov et al. (2002) in their work on the regulation of entry: corrupt entrepreneurs create regulations that allow them to extract rents from society in general.

A different view is that corruption affects political outcomes, including political legitimacy (della Porta 2000; Seligson 2002). Within this approach, Di Tella and MacCulloch (2002) emphasize that corruption reduces commercial legitimacy by undermining people’s faith in capitalism. Starting with Thomas Piketty (1995) economists have understood the critical role of beliefs in shaping economic organization (see also Denzau and North 1993; Alesina and Angeletos 2002; Benabou and Tirole 2002; for evidence see Hochschild 1981 and Alesina et al. 2002). In fact, Piketty shows that two otherwise identical societies can adopt very different forms of organization (like Europe and America) if they start accidentally with different beliefs. The idea is that people with a particular belief (say that effort pays) will vote for policies and institutions (like low taxes) that will reinforce that original belief. Di Tella and MacCulloch (2002) show that the existence of corruption can play a similar role if people have non-conventional (altruistic) preferences. If corruption offends citizens they may vote for interventions and high taxes even if that is costly to them, just as in the ultimatum game they are willing to ‘burn’ money to obtain ‘fair’ outcomes. The interesting point

is that high taxes, in turn, make it more likely that capitalists engage in corruption, opening up the possibility of multiple equilibria as in Andvig and Moene (1990) and Piketty (1995). They also present some evidence from the World Values Survey consistent with the hypothesis that concern about corruption is connected with people being on the left of the political spectrum and desiring more intervention. Note that this evidence is inconsistent with the standard view in economics whereby regulations cause corruption. Indeed, Djankov et al. (2002) show that countries with more regulation have more corruption. Given that, within countries, those individuals that observe more corruption also want more intervention, the idea that regulation is introduced by corrupt insiders to the industry (as argued by Djankov et al.) is implausible.

In this chapter, we propose a model of a democratic state where the observation of corruption leads people to demand that elected leaders socialize production (or, more generally, take actions that reduce the profits of the capitalists), but where all preferences are standard (that is, there is no altruism and individuals care only about their material payoffs). The idea is that initially people are indifferent between socialism and capitalism. They then observe corruption and update their beliefs concerning how productive capitalists actually are. If capitalists are really productive, they would not waste their time bribing the government in return for favors. We also study the available evidence, going beyond the findings in Di Tella and MacCulloch (2002) in several ways. First, we study the correlation between perceptions of corruption and demand for regulation (or more broadly, left-wing ideology) in a new dataset (using data from the Latinobarómetro) as well as running separate regressions for each of the individual countries (rather than just for the aggregate sample) (see also Di Tella and MacCulloch 2005). Second, the dependent variables used include not only the extent to which individuals are on the left of the political spectrum, but also whether they think that the distribution of income is unfair and whether the privatization of state-owned enterprises was beneficial to their country. Replicating our results this way goes a long way towards establishing the robustness of the link between perceptions of corruption and ideology.

One ambiguity of these correlations is that it is possible that worrying about corruption is a trait of left-wingers. In other words, left-wingers may just happen to see corruption everywhere. Then, the correlation we uncover may reflect causality going from an omitted trait (being a left-winger) to expressions of such ideology. Of course, this would not affect our conclusion that more corruption affects the political equilibrium because it would give more salience to left-wing parties (and make them more successful in political debates). But it would change the interpretation somewhat. In order to study this further we use new data on whether individuals (or their

relatives) have experienced an act of corruption. Because asking about people's involvement in such an act may be incriminating, the question asks respondents whether they have known of an act of corruption in the last 12 months. Of course, the wording of the question is not perfect as it is still possible to interpret the question as asking about whether the individual has read about corruption (although the question is immediately preceded by the question 'Have you or a relative of yours been the victim of a crime in the last twelve months?', which makes the experience interpretation more salient). One definite (and important) advantage of this question is that it allows us to go beyond correlations between opinions and instead study the correlation between an opinion (how intense are left-wing beliefs) and experience with corruption (directly, through a relative or, in the weaker interpretation, through the act of reading about it).¹ Finally, we take this approach further and study the correlation of beliefs with accounting measures of firm performance, such as earnings before interest, taxes and depreciation (EBITDA). The idea is that in countries where corruption is high, and capitalism is illegitimate, firms have to earn higher profits out of which they can make their bribe and tax payments to bureaucrats. In these countries we also expect people to hold beliefs contrary to capitalism.

The chapter is organized as follows. First, we present a theoretical model that illustrates the main points in the connection between ideology and corruption when preferences are standard (that is, non-altruistic). Then we present the basic evidence using the Latinobarómetro dataset and go on to briefly present the correlations between beliefs and accounting measures of firm performance.

1. Theory: corruption and beliefs about the productivity of capitalism

In this section we present a model where actions reveal productivities. Capitalism and socialism are assumed to provide equal expected returns to voters, but there is uncertainty regarding productivity levels under both systems. The observation of deviant behavior (corruption or crime) under capitalism reveals information about individual productivity. The case of crime is straightforward: when voters see other people engaged in crime they may doubt that the 'American dream' that hard work can bring success holds in their country. They then update their beliefs accordingly. Observing other people's actions is a substitute for experimenting (Piketty 1995). The corruption case is somewhat more difficult because we have to analyze how people interpret corruption under socialism. In a democratic capitalist system, voters' beliefs concerning firm productivity are updated (downward) when firms are observed to corrupt public officials rather than engage in productive activity. In a fuller model we would need to distinguish between corruption in the form of monetary payoffs to officials and

lobbying. Here the two types of activity are treated as identical. Both have moral costs, and both are used to provide firms with benefits from the state that substitute for productive activity. In other words, if the government responds to the rent seeking activities of firms the result is always harmful to individual voters. In interpreting our empirical work, we contrast this model with one where firms use bribes to avoid inefficient rules imposed by rent seeking officials – the ‘toll booth’ model.

In a democratic socialist system, by contrast, the observation of corruption does not reveal information about socialist productivity (just about the officials implementing it). The reason is that the dimension over which there is asymmetric information (that is, productivity levels) in the two economic systems can be appropriated under capitalism but not under socialism. By this we mean that under socialism in our model there is uncertainty about the value of an externality that the agent cannot capture by underreporting. In other words, the firm is not the legal residual claimant of the externality that it produces under socialism so there is no monetary incentive for anybody to exchange bribes for favors to the firm (and the incentives that exist for individuals to obtain bribes are only weakly related to firm productivity). If officials can be changed more easily than can the productivity of private sector firms, then democratic socialism provides voters with higher expected returns since corruption exposes (long-run) low productivity under capitalism but not under socialism.² The desire to remain in power may limit the corruption of officials. There may also be a negative externality in the sense that corruption by bad entrepreneurs reduces the returns to all entrepreneurs.

Preferences

The economy consists of a large number (continuum) of individuals with preferences over income, y . Whenever they engage in corrupt activities they incur a moral cost m_i , which is private information. This cost is distributed with cumulative function $F(m_i)$.

Government

The population of individuals pay a lump-sum tax that produces a government budget of R . In the absence of corruption this sum finances a pure public good such as national defense expenditures. In addition, under socialism the government can order the production of other public goods as specified below, but tax revenues are not used for this purpose.

Technology

One individual is chosen as the manager to run a single firm, and the rest are employed as workers.³ The workers are uncertain about the

level of productivity of the firm. Under capitalism, the firm has to choose whether to produce private goods or public goods. The productivity of the firm producing private goods can be either high or low, $p \in \{l, h\}$. The *ex ante* probability that productivity is p is given by q^p . When producing public goods, the firm has productivity $s + e$, where s can be appropriated by the firm and e is an externality that can be insignificant or big, $e \in \{i, b\}$. The *ex ante* probability that the externality is e is given by g^e .

Under socialism the firm is ordered to produce the public good. Assume that $s < l$ and that $s + b > l$. In other words, the firm never chooses voluntarily to produce the public good, and private good production is less valuable than social good production when the firm has low productivity, at least in the case of big externalities. This is a critical assumption that permits us to consider a benchmark situation where capitalism and socialism are on a par in the absence of corruption.

Contracts and information

The manager of the private firm can corrupt the government or produce. When the manager chooses to produce, he/she obtains αp and the remainder is distributed to the workers. As an alternative he/she can corruptly obtain $R/2 - m$.⁴

Assume that some workers remember last-period income (that is, are informed) and some do not remember anything (that is, are uninformed), and care only about the present. This is without loss of generality.

Timing

At the start of each period, workers vote to choose the system of production (the single manager's vote is irrelevant). The firm's manager then chooses either to produce or to engage in corruption of the government, and payoffs are made.

Results 1: capitalism in practice Under capitalism, a manager for whom moral costs are lower than $m^p = R/2 - \alpha p$, for $p \in \{l, h\}$, prefers to abandon production and seek corrupt benefits from the government. In that case, voters are left with 0 to consume. Otherwise they get $(1 - \alpha)p$.

Thus, voters experience one of three levels of income (outcomes), 0 or $(1 - \alpha)h$ or $(1 - \alpha)l$. The last two fully reveal the level of p . They also know that the firm would never try out public good production voluntarily. Thus, when zero income is experienced, voters know with certainty that the manager was corrupt. Using the Bayes rule, voters estimate the probability that the firm has productivity p in the production of private goods as:

$$z(p|_{\text{corrupt}}) = F(m^p) \frac{q^p}{q^h F(m^h) + q^l F(m^l)}. \quad (12.1)$$

Thus, $z(h|_{\text{corrupt}}) < q^h$.

Results 2: socialism in practice Under socialism, the firm is ordered to engage in public good production. A manager for whom moral costs are lower than $m^s = R/2 - \alpha s$ prefers to abandon production and corruptly influence the government. In that case, voters are left with 0 to consume. Otherwise they get $(1 - \alpha)s + e$.

Thus, voters experience one of three levels of income (outcomes), 0 or $(1 - \alpha)s + b$ or $(1 - \alpha)s + i$. The last two are fully revealing concerning the level of e . When zero income is experienced, voters know that the manager was corrupt with certainty, so the fact that it has $m < m^s$ is fully revealed. Voters estimate the probability that the firm has productivity $s + e$ in the production of public goods as g^e .

Results 3: voter strategy Uninformed voters maintain their priors concerning productivity levels in the two economic systems. Expected income under capitalism is given by:

$$q^h[1 - F(m^h)](1 - \alpha)h + q^l[1 - F(m^l)](1 - \alpha)l. \quad (12.2)$$

Expected income under socialism is given by:

$$ER(S) = g^b[1 - F(m^s)][(1 - \alpha)s + b] + g^i[1 - F(m^s)][(1 - \alpha)s + i]. \quad (12.3)$$

It is assumed that they are equal so there is no reason for the uninformed voter to lean in any particular way ideologically.⁵

Informed voters remember the last period's outcome. When they experience anything different from zero income, they know the productivity levels under either production system. If the manager is honest, they can be certain to achieve the corresponding levels of income. For example, income when the manager is honest and productivity is high is $(1 - \alpha)h$, which can be assumed to be equal to $(1 - \alpha)s + b$, so the worker is equally well off under a highly productive capitalist system as under a highly productive socialist system.

When the informed experience zero income under capitalism they know that they can expect to get:

$$z(h|_{\text{corrupt}})[1 - F(m^h)](1 - \alpha)h + z(l|_{\text{corrupt}})[1 - F(m^l)](1 - \alpha)l. \quad (12.4)$$

When the informed experience zero income under socialism they know that they can expect to get:

$$g^b[1 - F(m^s)][(1 - \alpha)s + b] + g^i[1 - F(m^s)][(1 - \alpha)s + i]. \quad (12.5)$$

Assume that there is a democratic polity in which a right-wing party implements the capitalist system if it controls the government and a left-wing party implements the socialist system. The following results can be established:

Proposition 1

1. The probability of voting for the right-wing party is lower when corruption is observed in a capitalist system compared with the case where voters have no information on corruption.
2. The effect of observing corruption on voting behavior is larger for the observation of corruption in a capitalist system than for the observation of corruption in a socialist system.
3. If the right-wing party credibly promises to control corruption its appeal may still be lower than that of the left-wing party.

Proof

To see (1), check that (12.4) < (12.2).

To see (2), which stems from the assumption that the dimension over which there is asymmetric information (that is, productivity levels) in the two economic systems can be captured by the agent under capitalism but not under socialism, check that (12.4) < (12.2) whereas (12.3) = (12.5).

To see (3), note that expected income under a capitalist system after observing corruption and after a (credible) promise to control corruption is given by:

$$z(h|_{\text{corrupt}})(1 - \alpha)h + z(l|_{\text{corrupt}})(1 - \alpha)l. \quad (12.6)$$

Consider the limiting case of low productivity. Calculating the difference in expected income under a left-wing party versus (12.6) and taking limits, we have:

$$ER(S) - \lim_{z(h|_{\text{corrupt}}) \rightarrow 0} [z(h|_{\text{corrupt}})(1 - \alpha)h + z(l|_{\text{corrupt}})(1 - \alpha)l] > 0. \quad (12.7)$$

Discussion

We can also consider how extending the model to the case of many different firms may introduce a negative externality from corrupt firms to highly productive firms. To see this, note that the structure of information assumed is also formally identical to assuming that at any point in time both high and low productivity managers coexist, in the ratio $q^h:q^l$ (prior to updating). That is, equation (12.2) stays unchanged but one must reinterpret the probability weights as proportions of high- and low-productivity firms. Now simply note that part 1 of the proposition and $s < h$ means that profits of a highly productive firm are lower after the observation of corruption if the voters decide to abandon capitalism.⁶

The model highlights one possible channel through which the observation of corruption reduces the appeal of capitalism. It emphasizes the fact that disclosure of lobbying and corruption efforts by the firm reveal information about its production possibilities.⁷ More precisely, the fact that a firm prefers to ignore production and concentrate on making payoffs, together with information on the size of the potential gains from corruption and the distribution of moral costs in society, allows voters to update (down) their prior beliefs concerning the productivity of a capitalist system. This is true even if we assume that $s < l$, so that corruption is always higher under socialism.

Corruption is assumed to reduce voter welfare under both capitalism and socialism. Welfare would be higher under both systems if corruption were to be controlled. The model, however, shows that corruption may be more harmful for the electoral prospects of capitalism than for socialism. This is appealing because it predicts that, on average, in places where there is widespread corruption (for example, the third world) capitalism will be less popular with voters. This is the result of *assuming* an asymmetry in the set-up. The dimension over which there is asymmetric information (productivity levels) in the two economic systems can be captured (as a sum of money) in capitalism but not in socialism. Since the externality, e , does not affect managerial actions in socialism, observing corruption tells us nothing about whether the externality is high or low.

This asymmetry is connected to two types of phenomena. First, it captures the idea that corruption in a capitalist economy reflects something about the technology whereas corruption under socialism reflects something about people who work for the state. Under capitalism, observing corruption reveals low productivity, whereas under socialism, the only information content is that an official has accepted a bribe from a firm. Firms, their technology and their corporate culture, seem to be quasi-permanent features, with very slow patterns of change. People who work in politics can be changed in elections. Thus, parties can always claim that

they represent change, that *this time* they will bring honesty and integrity to the public sector.

Second, the asymmetry built into the model is connected to the idea that capitalist economies differ in the degree to which the productivity of private firms is connected over time. The productivity of large family firms can be expected to have a higher degree of persistence than managerial firms where shareholders can easily get rid of underperforming managers.⁸ Compare a corruption scandal in a US corporation with a corruption scandal in a family-owned conglomerate in a Latin American country. After the scandal erupts and if management is changed in both cases, the new manager of the US corporation may have an easier time arguing that it is now a highly productive firm than the family conglomerate.

Private sector performance can also be expected to be more serially correlated than public sector performance because incentive contracts are more prevalent in the private sector. Thus, one would expect that the behavior of managers is unlikely to change if the circumstances were similar because they are income maximizers. Thus, a promise of change is not really credible if the way incentives are provided does not change also. Of course, the right-wing party can promise to reduce the size of government (reduce R in our model) so the temptation to engage in corruption would fall. But the one receiving the proceeds from corruption is the (right-wing) politician, so this is not necessarily credible (although the model does not explicitly include this fact). And, as part 3 of the proposition shows, productivity levels have already been revealed.

2. Empirical results on the connection between corruption and beliefs

Data source

We follow the approach in Di Tella and MacCulloch (2002, 2005) and use survey data to address the main questions of interest.⁹ In particular, the data come from the Latinobarómetro, an annual survey of public opinion in 18 countries in Latin America (very much in the spirit of the World Values Survey (1981–2002)). Topics covered rotate each year, so the number of waves (and thus our sample size) changes depending on the question being studied. The largest coverage in years is 1995–2002. It is produced by Latinobarómetro Corporation, a non-profit non-governmental organization (NGO) based in Santiago, Chile. A number of aspects of the survey are less than ideal, including slight changes in the wording of some questions and in the order in which they appear from year to year, a large number of questions that adds to the length of the interview, and the fact that there are a few cases of more than one question that refer to the same concept. However, the overall quality of the survey appears to allow simple exercises such as those proposed in this chapter.

We focus our tests on a variable that captures the extent of corruption in the country perceived by each individual. The question that best captures this is *Perception of corruption*, namely ‘Corruption has increased or decreased?’. The answer can be one of five categories: ‘Has increased a lot’, ‘Has increased a little’, ‘Has stayed the same’, ‘Has fallen a little’, or ‘Has fallen a lot’. Although there are five categorical answers to this question, the overwhelming majority chooses one option. Table 12.1 shows the distribution of survey responses across our sample. Because the vast majority of the sample selected the answer ‘corruption has increased a lot over the past year’, we collapsed the answers into two: one with the first category and the second with the remaining four categories. We repeated the analysis using the combined four categories and all our results remain qualitatively similar.

The other variables of interest are ideological standing (‘In politics people talk of the “left” and of the “right”’. On a scale where “0” is right and “10” is left, where would you place yourself?), beliefs concerning the fairness of the distribution of income (‘Now I’d like you to answer some questions about the problem of poverty, in this country and in other countries: how fair do you think the distribution of income is in this country?’, where the four possible answers are: 4. ‘Very fair’; 3. ‘Fair’; 2. ‘Unfair’; and 1. ‘Very unfair’), and beliefs concerning the benefits of privatization (the answer to the question ‘Do you agree or disagree with the following statement: the privatization of public companies has been beneficial to the country’. The four possible answers are 4. ‘Very much in agreement’; 3. ‘In agreement’; 2. ‘In disagreement’; 1. ‘Very much in disagreement’). Appendix 12A contains the full survey description and set of variable definitions.

The regressions presented in all the tables are estimated through ordinary least squares (OLS) because it is simple to interpret and because using a more flexible cardinalization does not change any of the main results. We include year dummies in these regressions as controls. We also re-estimated all of the reported regressions including income, education, gender and occupation as covariates and obtain very similar results (again, we present the simplest possible estimates for transparency).

The right-hand variable in all of the main tables (12.2, 12.3 and 12.4) is *Perception of corruption* (collapsed into two categories, as explained above).

Results 1: perception of corruption and ideology We present the basic set of results in Table 12.2. There are 17 regressions, one for each country for which we have data. The left-hand variable is ideological self-placement. Specifically, we use the answer to the question ‘In politics people talk of the “left” and of the “right”’. On a scale where “0” is right and “10” is left, where would you place yourself?. The correlation with *Perception of corruption*

Table 12.1 Distribution of responses to the question: 'corruption has increased or decreased?' (17 Latin American countries)

	Argentina	Bolivia	Brazil	Colombia	Costa Rica	Chile	Ecuador	El Salvador
Has increased a lot	8,292	4,596	5,579	5,911	5,363	4,211	6,315	5,289
Has increased	521	468	555	543	305	1,233	393	744
Has stayed the same	532	311	731	523	184	148	310	588
Has decreased	99	93	265	142	36	274	94	143
Has decreased a lot	20	34	27	31	9	71	19	54
Dates	1995–02	1996–01	1995–01	1996–01	1996–01	1995–01	1995–01	1996–02

Table 12.2 Corruption perception and ideological beliefs in Latin America

	(1) Argentina	(2) Bolivia	(3) Brazil	(4) Colombia	(5) Costa Rica	(6) Chile	(7) Ecuador	(8) El Salvador
<i>Perception of corruption</i>	−0.04 (0.08)	0.42 (0.10)	0.041 (0.029)	0.17 (0.09)	−0.39 (0.15)	−0.23 (0.06)	0.07 (0.13)	0.50 (0.09)
No. of Obs.	7,192	4,083	6,172	5,349	4,380	5,620	5,734	5,293
Dates	1995–02	1996–01	1995–01	1996–01	1996–01	1995–01	1995–01	1996–02
Pseudo Rsq	0.006	0.012	0.014	0.021	0.019	0.004	0.000	0.031

Notes:

1. Dependent variable, *Ideology-L*, is the answer to the question: 'In politics people talk of the "left" and of the "right". In a scale where "0" is right and "10" is left, where would you place yourself?'.
2. All regressions are OLS and include year dummies. Standard errors in parentheses.
3. *Perception of corruption* is a dummy that equals 1 if the answer to the question 'Corruption, has increased or decreased?' is 'Has increased a lot' and 0 if it is 'Has increased a little', 'Has stayed the same', 'Has fallen a little' or 'Has fallen a lot'.

is positive in 13 out of 17 regressions indicating that people who perceive corruption to have increased also tend to be on the left of the political spectrum. The four exceptions are Argentina, Chile, Costa Rica and Venezuela, although it is statistically significant only in the last three countries. In the 13 countries where the correlation is positive, it is significant in nine of them (and in three of them only at the 10 percent level). The countries where the correlation is negative and significant have extreme political histories, at least in the cases of Chile and Venezuela. In terms of size, no generalizations appear possible.

Guatemala	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay	Venezuela
4,921	5,294	5,286	5,313	5,256	4,267	4,372	6,282	6,247
718	272	1,584	275	837	183	1,210	1,809	375
659	267	1,318	207	614	216	1,205	1,025	388
194	77	292	73	175	38	632	77	301
76	30	42	52	46	6	65	13	100
1996-02	1996-01	1995-01	1996-01	1996-02	1995-02	1995-01	1995-02	1995-01

(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Guatemala	Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay	Venezuela
0.18	0.03	0.22	0.32	0.03	0.54	0.04	0.11	-0.37
(0.09)	(0.13)	(0.06)	(0.14)	(0.09)	(0.15)	(0.06)	(0.06)	(0.12)
4,853	4,807	6,875	4,525	5,875	3,598	6,183	8,571	5,973
1996-02	1996-01	1995-01	1996-01	1996-02	1995-02	1995-01	1995-02	1995-01
0.045	0.100	0.024	0.017	0.105	0.015	0.007	0.005	0.006

Of course, the exact interpretation of ideological position varies across countries. More precisely, and as suggested by the examples of the countries where the correlation is negative, there may be political differences in the countries that originate in their historical experiences. It is entirely possible that right-wing ideas are associated with colonial origin or a recent military dictatorship that is also autocratic and corrupt. In that case the association does not reflect issues of commercial legitimacy (such as those that concern us) but rather these historical experiences. Thus, it is of interest to study more 'pure' forms of ideology or, more precisely, specific economic components of ideology. The Latinobarómetro includes two questions that can be used for such purposes. Table 12.3 presents the results obtained using the variable, *Fair*, which is generated from the question, 'How fair do you think the distribution of income is in this country?'. The specification again includes only year dummies as controls, but including the basic set of personal controls leaves the results unchanged. The results are somewhat stronger, with all 17 correlations being negative, and 15 of

Table 12.3 *Corruption perception and belief in fair distribution of income*

	(1) Argentina	(2) Bolivia	(3) Brazil	(4) Colombia	(5) Costa Rica	(6) Chile	(7) Ecuador	(8) El Salvador
<i>Perception of corruption</i>	-0.38 (0.03)	-0.27 (0.06)	-0.17 (0.03)	-0.12 (0.06)	-0.27 (0.10)	-0.19 (0.03)	-0.07 (0.08)	-0.23 (0.05)
No. of Obs.	4,594	1,807	3,001	2,341	1,909	3,435	2,288	2,708
Dates	1995-02	1996-01	1995-01	1996-01	1996-01	1995-01	1995-01	1996-02
Pseudo Rsq	0.127	0.014	0.066	0.049	0.031	0.034	0.001	0.069

Notes:

1. Dependent variable, *Fair*, is the answer to the question: 'How fair do you think the distribution of income is in this country?'. Very fair = 4; Fair = 3; Unfair = 2; Very unfair = 1.
2. All regressions are OLS and include year dummies. Standard errors in parentheses.
3. *Perception of corruption* is a dummy that equals 1 if the answer to the question 'Corruption, has increased or decreased?' is 'Has increased a lot' and 0 if it is 'Has increased a little', 'Has stayed the same', 'Has fallen a little' or 'Has fallen a lot'.

them strongly significant. The size of the effect appears consistent across countries, although being categorical answers, the interpretation is perhaps less straightforward.

An alternative question is 'Do you agree or disagree with the following statement: the privatization of public companies has been beneficial to the country'. The four possible answers are 'Very much in agreement' = 4, 'In agreement' = 3, 'In disagreement' = 2 and 'Very much in disagreement' = 1. Table 12.4 presents the results from correlating these answers (measured by the variable, *Privatize*) with the answer to the question on the extent of corruption (including only an indicator for the year in which the survey was carried out, although the results remain similar if our basic set of controls is included). Of the 17 columns, 15 report negative correlations and two report positive (although one of these is insignificant) correlations. Of the 15 negative correlations, one is insignificant, one is significant at the 10 percent level, while the rest are significant at conventional levels. Again, no generalizations concerning the size of the effect appear possible.

Results 2: experience with corruption and ideology Whereas the previous correlations involve measures of perceptions on both the right- and left-hand sides, the Latinobarómetro allows us to move towards aspects more closely related to actual experience. Indeed, in the last few waves (since 2000) the survey includes a question on corruption experience. It asks: 'Have you or a relative of yours been the victim of a crime in the last twelve months?'. This is immediately followed by the questions: 'Have you, or a relative of yours, known of an act of corruption in the last twelve months?',

(9) Guatemala	(10) Honduras	(11) Mexico	(12) Nicaragua	(13) Panama	(14) Paraguay	(15) Peru	(16) Uruguay	(17) Venezuela
−0.29 (0.05)	−0.03 (0.09)	−0.32 (0.09)	−0.72 (0.08)	−0.28 (0.04)	−0.24 (0.07)	−0.29 (0.04)	−0.18 (0.03)	−0.34 (0.06)
2,672 1996–02 0.079	1,912 1996–01 0.065	3,459 1995–01 0.058	1,941 1996–01 0.101	2,828 1996–02 0.106	2,240 1995–02 0.035	3,073 1995–01 0.117	4,366 1995–02 0.040	3,376 1995–01 0.031

‘Have you known of a friend, or a relative of yours that has consumed drugs in the last twelve months?’, and ‘Have you known of somebody that has participated in buying or selling of drugs in the last twelve months?’. The possible answers for each of the questions are ‘Yes’, ‘No’, and ‘I don’t know’ (the categories ‘I don’t know’ and ‘No answer’ will not be considered in our analysis). We focus on the corruption answers from which we define the variable, *Corruption case*.

Given the wording, and the fact that it immediately follows a question asking about one’s experience with crime, we believe that the interpretation of this question in terms of direct experience is justified. However, it is possible that the answers might reflect overall perception of acts of corruption from media reports because the question does not ask respondents to limit their answers to examples from personal experience. The distribution across countries is shown in Table 12.5.

The answers are somewhat different from those obtained using the previous question (on the perception of corruption), which gives us confidence that these two variables are capturing somewhat different concepts. Most striking, perhaps, is the fact that in two countries (Brazil and Mexico) the number of people answering ‘yes’ was higher than the number answering ‘no’ (whereas *Perception of corruption* in Brazil and Mexico does not behave differently from in the other countries).

As in the previous section we start with ideological self-placement (this is done in Table 12.6). The left-hand side variable is the answer to the question, ‘In politics people talk of the “left” and of the “right”. On a scale where “0” is right and “10” is left, where would you place yourself?’. Again the estimation is with simple OLS and the only covariate included is a year indicator. The correlation with *Corruption case* is positive in 14 out of 18 regressions (there is one extra country compared to Table 12.2 because Dominican Republic is added to the sample). In nine out of these 14 regressions the correlation is significant at the 10 percent level or better whereas only one of the four negative correlations is significant. These results are

Table 12.4 Corruption perception and belief in the benefits of privatization

	(1) Argentina	(2) Bolivia	(3) Brazil	(4) Colombia	(5) Costa Rica	(6) Chile	(7) Ecuador	(8) El Salvador
<i>Perception of corruption</i>	-0.11 (0.02)	-0.07 (0.02)	-0.10 (0.02)	-0.09 (0.02)	-0.07 (0.03)	-0.06 (0.02)	0.01 (0.02)	-0.09 (0.02)
No. of Obs.	5,607	3,694	3,671	4,392	3,476	3,132	4,341	4,529
Dates	1995-02	1996-01	1995-01	1996-01	1996-01	1995-01	1995-01	1996-02
Pseudo Rsq	0.063	0.050	0.026	0.055	0.064	0.023	0.022	0.039

Notes:

1. Dependent variable, *Privatize*, is the answer to the question: 'Do you agree with the statement: The privatization of state owned enterprises was beneficial to the country'. Very much in agreement = 4; In agreement = 3; In disagreement = 2; Very much in disagreement = 1.
2. All regressions are OLS and include year dummies. Standard errors in parentheses.
3. *Perception of corruption* is a dummy that equals 1 if the answer to the question 'Corruption, has increased or decreased?' is 'Has increased a lot' and 0 if it is 'Has increased a little', 'Has stayed the same', 'Has fallen a little' or 'Has fallen a lot'.

less robust than the correlations presented in Table 12.2 because when the same additional set of covariates is used as controls, three more coefficients from the 14 regressions that exhibit a positive correlation become insignificant.

Again, given that the exact interpretation of ideological position varies across countries we focus on attributes of ideology that are easier to interpret. Table 12.7 correlates *Corruption case* with the answer to the question, 'How fair do you think the distribution of income is in this country?'. The specification again includes only year dummies as controls, but including the basic set of personal controls leaves the results unchanged (it actually increases the significance of several coefficients). The overall results are relatively supportive of the idea that corruption moves people's beliefs in a left-wing direction, with 15 out of 18 correlations being negative, 11 of which are statistically significant.

Finally, we also correlate *Corruption case* with the answer to the question, 'Do you agree or disagree with the following statement: the privatization of public companies has been beneficial to the country'. The four possible answers are: 'Very much in agreement' which equals 4, 'In agreement' = 3, 'In disagreement' = 2 and 'Very much in disagreement' = 1. Table 12.8 presents the results. The overall picture is inconclusive, since there are no strong correlations uncovered in this table. Of the 17 regressions (there are no data on privatization for Dominican Republic), all but

(9) Guatemala	(10) Honduras	(11) Mexico	(12) Nicaragua	(13) Panama	(14) Paraguay	(15) Peru	(16) Uruguay	(17) Venezuela
−0.03 (0.02)	−0.12 (0.03)	−0.03 (0.01)	−0.10 (0.03)	−0.05 (0.02)	0.24 (0.04)	−0.09 (0.02)	−0.08 (0.01)	−0.02 (0.02)
4,517 1996–02	3,584 1996–01	4,393 1995–01	3,739 1996–01	4,745 1996–02	2,740 1995–02	3,823 1995–01	4,980 1995–02	3,200 1995–01
0.086	0.065	0.040	0.020	0.027	0.036	0.036	0.026	0.007

two are insignificant (although these two are negative as expected). Including other covariates (education, income, occupation and gender) leaves the results unchanged, with the only exception being Colombia where the coefficient turns significant at the 10 percent level (this coefficient is also negative as expected).

3. Empirical results on the correlation between EBITDA and beliefs

One way to move beyond correlations of a person's opinions is to study data on earnings. Given that capital is (somewhat) mobile, returns are presumably similar across countries. But in some countries capitalism is illegitimate, which means that taxes are high and capital tends to run the risk of expropriation. In such an environment, corruption prevails both because government intervention allows extortion to take place and because lobbying and capture are very productive to capitalists. This suggests that firms in countries where capitalism has low legitimacy also tend to have high rates of pre-tax earnings (indicating that rents are high relative to productivity). We investigate this further by collecting data on company earnings before interest payments, taxes and depreciation (EBITDA) for all traded companies, measured as a proportion of GDP. This is a selected sample since the proportion of traded companies obviously depends on factors that are correlated with corruption and other variables of interest (for example, family capitalism), so our calculations remain illustrative. For each country we then obtain the average EBITDA. We also obtain from the World Values Survey some measures of beliefs about aspects of the capitalist system.

One question concerns the organization of business. The precise question is:

There is a lot of discussion about how business and industry should be managed.

Which of these four statements comes closest to your opinion?

Table 12.5 Distribution of responses to the question: ‘Have you, or a relative of yours, known of an act of corruption in the last 12 months?’ (18 Latin American countries)

	Argentina	Bolivia	Brazil	Colombia	Costa Rica	Chile	Ecuador	El Salvador	Guatemala
Yes	1027	849	2001	397	632	364	724	753	853
No	3709	2495	1350	3151	2344	3148	3207	3207	3072

Note: The data correspond to the years 2001, 2003 and 2004, except for Argentina, El Salvador, Guatemala, Panama, Paraguay and Uruguay which also include the year 2002.

Table 12.6 Corruption experiences and ideological beliefs in Latin America

	(1) Argentina	(2) Bolivia	(3) Brazil	(4) Colombia	(5) Costa Rica	(6) Chile	(7) Ecuador	(8) El Salvador	(9) Guatemala
<i>Corruption case</i>	0.23 (0.09)	0.19 (0.11)	0.48 (0.12)	0.48 (0.17)	-0.22 (0.15)	0.02 (0.15)	0.19 (0.13)	0.64 (0.15)	0.18 (0.15)
No. of Obs.	3,552	2,401	2,6282	2,370	2,065	2,565	2,699	2,650	2,233
Pseudo Rsq	0.004	0.009	0.012	0.020	0.055	0.003	0.002	0.012	0.026

Notes:

1. Dependent variable, *Ideology-L*, is the answer to the question: ‘In politics people talk of the “left” and of the “right”. In a scale where “0” is right and “10” is left, where would you place yourself?’.
2. All regressions are OLS and include year dummies. Standard errors in parentheses.
3. *Corruption case* is a dummy that equals 1 if the answer to the question ‘Have you, or a relative of yours, known of an act of corruption in the last twelve months?’, is yes and zero if it is no.
4. The data for *Corruption case* correspond to the years 2001, 2003 and 2004, except for Argentina, El Salvador, Guatemala, Panama, Paraguay and Uruguay which also include the year 2002.

1. The owners should run their business or appoint the managers.
2. The owners and the employees should participate in the selection of managers.
3. The government should be the owner and appoint the managers.
4. The employees should own the business and should elect the managers.
5. Don’t know.

We define a dummy variable, *Owners decide*, taking the value 1 if the individual answers option one (allowing owners to run their business or appoint

Honduras	Mexico	Nicaragua	Panama	Paraguay	Peru	Uruguay	Venezuela	Dominican Rep.
576	2110	575	774	559	625	713	831	278
2394	1524	2413	3126	1805	2744	4006	2684	692

(10) Honduras	(11) Mexico	(12) Nicaragua	(13) Panama	(14) Paraguay	(15) Peru	(16) Uruguay	(17) Venezuela	(18) Dominican Rep.
0.27 (0.16)	-0.05 (0.10)	0.18 (0.19)	-0.45 (0.13)	0.26 (0.14)	0.11 (0.11)	0.95 (0.11)	-0.13 (0.13)	0.57 (0.27)
2,309	3,219	2,089	3,169	2,061	2,704	4,336	2,957	852
0.093	0.024	0.005	0.069	0.011	0.018	0.019	0.041	0.004

the managers) and 0 otherwise. Averages across all respondents living in each country are again computed. The expected correlation with EBITDA is negative, since we predict less public desire for owners to be running businesses (and more desire for employees to become involved) as pre-tax profits become excessively large. The actual partial correlation coefficient is -0.33 , significant at the 13 percent level, with 22 observations (Figure 12.1).

An alternative measure of beliefs is given by the mean answer to the question:

Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between.

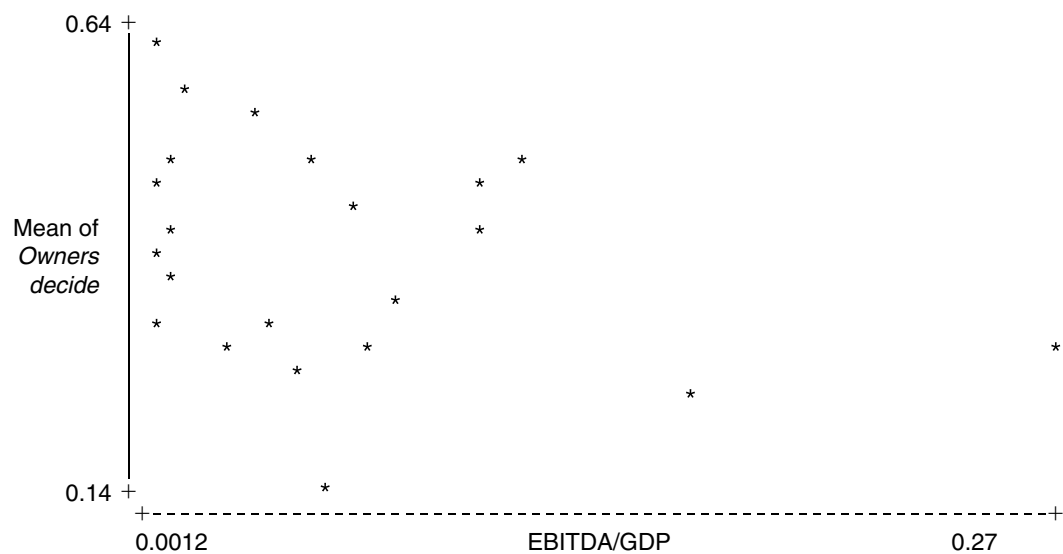
1. Private ownership of business and industry should be increased.
- 2.

Table 12.7 *Corruption experience and belief in a fair distribution of income*

	(1) Argentina	(2) Bolivia	(3) Brazil	(4) Colombia	(5) Costa Rica	(6) Chile	(7) Ecuador	(8) El Salvador	(9) Guatemala
<i>Corruption case</i>	-0.10 (0.03)	-0.18 (0.06)	-0.34 (0.07)	-0.01 (0.07)	-0.20 (0.08)	-0.07 (0.07)	-0.10 (0.06)	-0.14 (0.06)	-0.17 (0.05)
No. of Obs.	2,310	995	935	1,158	937	1,112	1,139	1,762	1,821
Pseudo Rsq	0.007	0.009	0.024	0.000	0.005	0.000	0.002	0.015	0.007

Notes:

1. Dependent variable, *Fair*, is the answer to the question: 'How fair do you think the distribution of income is in this country?'. Very fair = 4; Fair = 3; Unfair = 2; Very unfair = 1.
2. All regressions are OLS and include year dummies. Standard errors in parentheses.
3. *Corruption case* is a dummy that equals 1 if the answer to the question 'Have you, or a relative of yours, known of an act of corruption in the last twelve months?', is yes and zero if it is no.
4. The data for *Corruption case* correspond to the years 2001, 2003 and 2004, except for Argentina, El Salvador, Guatemala, Panama, Paraguay and Uruguay which also include the year 2002.



Note: The Y-axis is the average answer to a survey question that is ranked on a scale from 0 to 1: 1 = Owners decide; 0 = All others.

Figure 12.1 *EBITDA and average answer to 'How should business be managed?'*

(10) Honduras	(11) Mexico	(12) Nicaragua	(13) Panama	(14) Paraguay	(15) Peru	(16) Uruguay	(17) Venezuela	(18) Dominican Rep.
0.09 (0.06)	-0.23 (0.06)	0.05 (0.09)	-0.04 (0.05)	-0.14 (0.05)	0.05 (0.06)	-0.16 (0.04)	-0.03 (0.08)	-0.10 (0.03)
947	1,230	964	1,810	1,152	965	2,271	1,141	2,304
0.001	0.010	-0.001	0.006	0.014	-0.000	0.006	-0.001	0.020

...

9.

10. Government ownership of business and industry should be increased.

99. Don't know.

We define *Less private ownership* to be a cardinal variable measured on the 1 to 10 scale corresponding to the above answers for each country. Averages across all respondents living in each country are computed so now, for example, if half of the sample answers 1 and the other half answers 10, then the average would be 5.5. The prediction is again that high corruption countries have a high EBITDA, high enough so that firms can meet corruption payments and tax impositions by a dissatisfied and suspicious public. And in these countries, beliefs that there should be less private ownership and more government ownership should become more widespread (that is, we now expect a positive correlation with EBITDA). There are 35 observations and the partial correlation coefficient is 0.61, significant at the 1 percent level. Figure 12.2 presents a graph to illustrate.

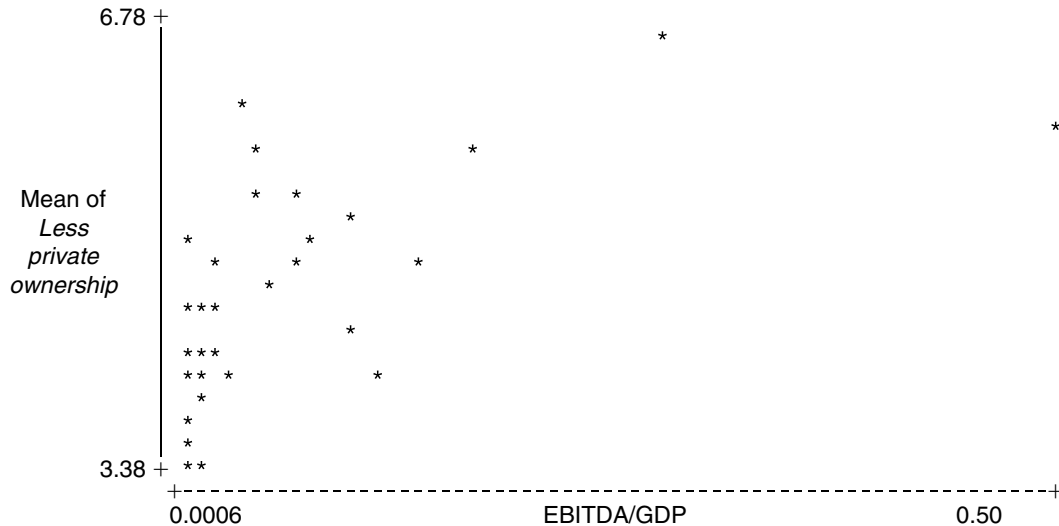
Finally, we can study the relationship between the EBITDA measure (normalized over GDP), and the extent of corruption. For the latter we use two measures. First we use the World Values Survey question that asks about the extent of corruption. There are four possible answers and we give the value 1 to those answering 'almost no public official involved', 2 = 'a few public officials involved', 3 = 'most public officials are involved' and 4 = 'almost all public officials are involved'. The answers are in the aggregate tilted towards more corruption, with 908 individuals answering category 1, 7,081 answering category 2, 6,870 answering category 3 and 5,303 answering category 4. The correlation with the EBITDA measure is 0.9635, significant at the 1 percent level for just seven observations

Table 12.8 *Corruption experience and belief in the benefits of privatization*

	(1) Argentina	(2) Bolivia	(3) Brazil	(4) Colombia	(5) Costa Rica	(6) Chile	(7) Ecuador	(8) El Salvador
<i>Corruption case</i>	0.02 (0.01)	-0.01 (0.02)	-0.10 (0.02)	-0.02 (0.03)	-0.01 (0.04)	-0.01 (0.03)	0.02 (0.02)	-0.01 (0.02)
No. of Obs.	3,401	2,063	1,959	2,115	882	2,078	2,145	2,690
Pseudo Rsq	0.004	0.005	0.011	0.040	-0.001	0.015	0.020	0.043

Notes:

1. Dependent variable, *Privatize*, is the answer to the question: 'Do you agree with the statement: the privatization of state owned enterprises was beneficial to the country'. Very much in agreement = 4; In agreement = 3; In disagreement = 2; Very much in disagreement = 1.
2. All regressions are OLS and include year dummies. Standard errors in parentheses.
3. *Corruption case* is a dummy that equals 1 if the answer to the question 'Have you, or a relative of yours, known of an act of corruption in the last twelve months?', is yes and zero if it is no.
4. The data for *Corruption case* correspond to the years 2001, 2003 and 2004, except for Argentina, El Salvador, Guatemala, Panama, Paraguay and Uruguay which also include the year 2002.



Note: The Y-axis is the average answer to a survey question that is ranked on a scale from 1–10: 1 = More private ownership; 10 = More government ownership.

Figure 12.2 *EBITDA and average answer to 'Should private ownership be increased?'*

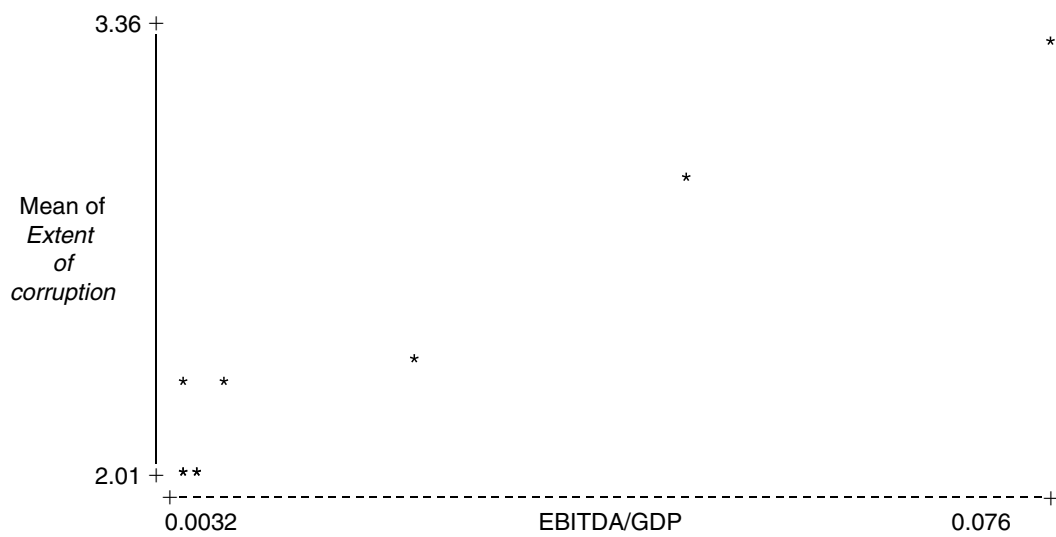
(9) Guatemala	(10) Honduras	(11) Mexico	(12) Nicaragua	(13) Panama	(14) Paraguay	(15) Peru	(16) Uruguay	(17) Venezuela
0.02 (0.02)	-0.01 (0.03)	0.03 (0.02)	0.02 (0.03)	-0.01 (0.02)	-0.01 (0.03)	0.01 (0.02)	-0.04 (0.02)	-0.01 (0.02)
2,631 0.009	1,660 0.006	2,353 0.001	1,834 0.013	2,729 0.068	1,637 0.022	2,050 0.036	3,105 0.008	2,227 0.034

(see Figure 12.3). We can also increase the number of countries covered by considering the Transparency International (TI) measure of corruption for the year 2000 (almost identical results obtain if an average of the TI index for several years is used). The TI measure is defined in a way that higher numbers denote less corruption. The correlation with the EBITDA measure is -0.50 , significant at the 1 percent level across 49 countries (see Figure 12.4).

4 Conclusions

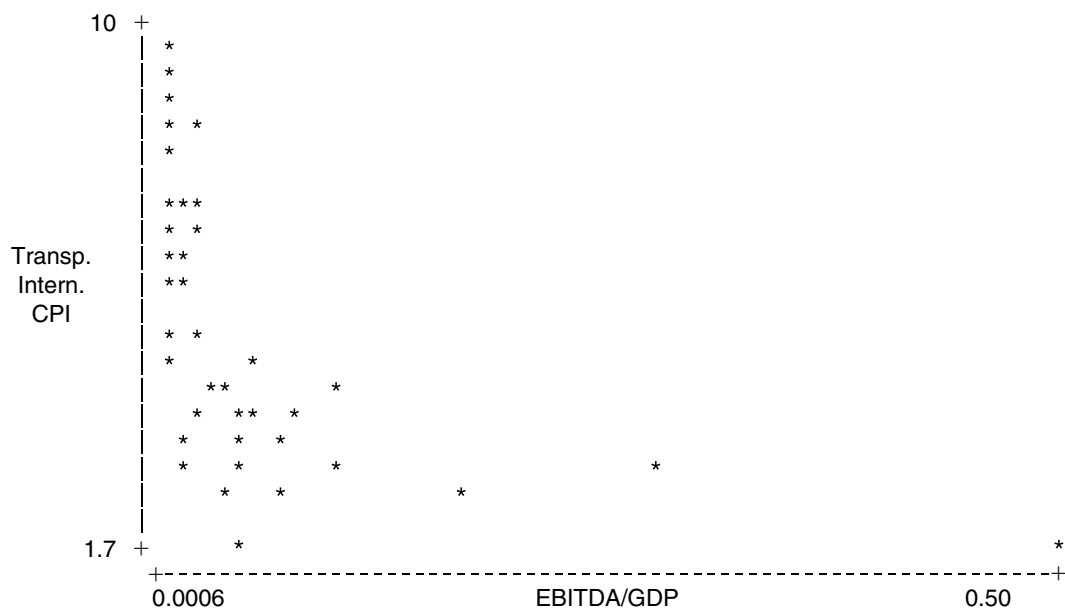
Economists have emphasized a variety of channels through which corruption affects economic activity. Perhaps the most influential view is that of Djankov et al. (2002), who argue that regulations are put into place to allow rent extraction by bureaucrats (the ‘tollbooth’ theory of regulation) rather than to maximize social welfare. They find that measures of the intensity of regulation are positively correlated with bad-performance indicators across countries (for example, water pollution, deaths from intestinal infection and so on). They also find that corruption and measures of regulation (such as the number of procedures, time and cost measures) are positively related. They conclude, ‘While the data are noisy, none of the results support the predictions of the public interest theory’ (p. 25), favoring instead the ‘tollbooth theory’. In Di Tella and MacCulloch (2002) we have shown that, within a country, people who observe a lot of corruption also want more regulation. This is inconsistent with the tollbooth theory. The alternative explanation that we proposed is that corruption by rich capitalists offends people’s sense of fairness, who then vote for more regulations even if that generates more corruption (much like in the ultimatum game where people ‘burn’ money).

In this chapter we present a different model based on standard (that is, non-altruistic) preferences. In it, corruption by capitalists reveals that they are low productivity (otherwise they would spend their time innovating) and



Note: The Y-axis is the average answer to a survey question that is ranked on a scale from 1–4. 1 = Almost no official involved; 4 = Almost all officials involved.

Figure 12.3 EBITDA and average answer to ‘Extent of Corruption’



Note: The Y-axis is the average answer to a survey question that is ranked on a scale from 1–10. 1 = Maximum corruption; 10 = Minimal corruption.

Figure 12.4 EBITDA and Transparency International Corruption Index for 2000

then people optimally choose socialism because (among other reasons) redistribution is not so costly in terms of low incentives. We also study the evidence available. First, data from the Latinobarómetro suggest that people who perceive corruption to be high in their countries also tend to answer that they are on the left of the political spectrum, that the distribution of income is unfair, and that privatizations of state-owned enterprises were not beneficial to the country. Replicating the results in Di Tella and MacCulloch (2002) using a different dataset, and with slightly different questions, gives us some confidence that the tollbooth theory of regulation is, at best, seriously incomplete. Moving beyond correlations between two opinions held by an individual, we study the correlation between left-wing beliefs and corruption experience, namely whether the individual (or a relative) knows of an act of corruption in the last 12 months. This yields broadly similar results. Finally, we also present some evidence on the correlation of beliefs with accounting measures of firm performance (like EBITDA, earnings before interest, taxes and depreciation). The idea is that in countries where corruption is high, and capitalism is illegitimate, firms have to earn higher profits out of which they can make their bribe and tax payments to bureaucrats. The correlations we observe are consistent with the idea that a big cost of corruption is that it affects the legitimacy of the capitalist system and that individuals vote for more regulation as a reaction.

Notes

- * For comments, suggestions and sharing data, we thank Paulina Beato, Sebastian Galiani and Ernesto Schargrotsky as well as seminar participants at the Inter-American Development Bank. In particular, we thank Jaime Jordan who suggested that we should look into EBITDA measures.
- 1. Just like unemployment data (and other measures of labor market conditions), such data are *not* subjective even though they come from a survey.
- 2. Officials can either be voted out or fired, whereas private sector productivity depends on slow-moving rates of technological progress.
- 3. The model can be extended to the case of many firms. See the discussion subsection below.
- 4. We assume that the manager splits the government budget with the corrupt official. Any other division can be assumed without loss of generality.
- 5. Our results still hold when we assume that capitalism offers higher returns *ex ante*.
- 6. Note that even without two types of manager coexisting the (past) observation of corruption imposes an external cost on (future) productive managers since the latter will be forced to drop production from h to s if voters decide to abandon capitalism.
- 7. This is consistent with Lambsdorff (2003), who shows that aggregate measures of productivity (such as the ratio of GDP to the country's capital stock) are negatively correlated with corruption; and Kaufmann and Wei (1999), who show that the amount of time that managers spend with bureaucrats is correlated with corruption.
- 8. In Burkart et al. (2002), for example, the founder of the firm is more likely to leave the management in the hands of a less able heir (than in those of a professional manager) in environments with weak legal protection to investors (which is more common in less-developed countries).
- 9. We thank the Inter-American Development Bank for providing us with the data.

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Appendix 12A Survey descriptions and variable definitions

Latinobarómetro survey

The Latinobarómetro Survey is an annual public opinion survey of approximately 19,000 people in 18 countries in Latin America. Questions of interest rotate, so the number of waves (and thus our sample size) varies considerably depending on the question being studied. It is produced by Latinobarómetro Corporation, a non-profit NGO based in Santiago, Chile. It surveys development of democracies, economies and societies and we are particularly interested in a number of attitudinal variables that are associated with ideological standing (on an economic dimension). It is similar to the World Values Survey in scope and design, so it allows cross-national comparison of values and norms on a variety of topics. National random sampling was used, with surveys carried out through face-to-face interviews, with a sampling universe consisting of adult citizens, aged 18 and older. The countries covered are Argentina, Bolivia, Brazil, Colombia, Costa Rica, Chile, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Dominican Republic (for some surveys), Uruguay and Venezuela.

Variable definitions

Perception of corruption A dummy that equals 1 if the answer to the question 'Corruption has increased or decreased?' is 'Has increased a lot' and 0 if it is 'Has increased a little', 'Has stayed the same', 'Has fallen a little' or 'Has fallen a lot'.

Corruption case A dummy that equals 1 if the answer to the question 'Have you, or a relative of yours, known of an act of corruption in the last twelve months?' is 'Yes' and 0 if it is 'No'.

Ideology-L The answer to the question 'In politics, people often refer to left and to right. On a scale where 0 is right and 10 is left, where would you place yourself?', The possible answers are: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10.

Fair The answer to the question 'Now I'd like to ask you some questions about the problem of poverty, in this country and in other countries: how fair do you think the distribution of income is in this country?'. The four possible answers are: 1 = Very unfair; 2 = Unfair; 3 = Fair; and 4 = Very fair.

Privatize The answer to the question 'Do you agree or disagree with the following statement: the Privatization of public companies has been beneficial to the country'. The four possible answers are 1 = 'Very much in disagreement'; 2 = 'In disagreement'; 3 = 'In agreement'; 4 = 'Very much in agreement'.

Gender The respondent's gender.

Income The respondents declared income level as captured by the question 'The wage or salary you receive and the total family income, does it allow you to satisfactorily cover your needs? In which of these situations are you?'. The possible answers are: It is good enough, you can save; It is just enough, without great difficulties; It is not enough, you have difficulties; and It is not enough, you have great difficulties.

Occupation Respondent's answer to the question 'What type of work do you do?' The eight possible answers are: Independent professional (doctor, lawyer, accountant, architect); Independent business owner; Independent farmer/fisherman; Independent self-employed, traveler; Salaried employee, professional; Salaried employee, high executive (manager, director); Salaried employee, middle manager; and Salaried employee, other employee.

Education The respondent's level of education, one of seven categories (illiterate, basic-incomplete, basic-complete, secondary-middle-technical-incomplete, secondary-middle-technical-complete, superior-incomplete and superior-complete). It is constructed using the answers to the question 'What studies have you done? What is the last year you attended? Was it a technical school? and so on'. The 17 possible answers are: no studies; 1 year; 2 years; 3 years; 4 years; 5 years; 6 years; 7 years; 8 years; 9 years; 10 years; 11 years; 12 years; University-incomplete; University-complete; Superior Institute/academies/ technical studies-incomplete; and Superior Institute/academies/ technical studies-incomplete.

World Values Survey and European Values Survey (1981–84, 1990–92, 1995–97)

The Combined World Values Survey is produced by the Institute for Social Research, Ann Arbor, MI, USA. The series is designed to enable a cross-national comparison of values and norms on a wide variety of norms and to monitor changes in values and attitudes across the globe. Both national random and quota sampling were used. All of the surveys were carried out through face-to-face interviews, with a sampling universe consisting of all adult citizens, aged 18 and older, across over 60 nations around the world. The 1981–83 survey covered 22 independent countries; the 1990–93 survey covered 42 independent countries; and the 1995–97 survey covered 53 independent countries. In total, 64 independent countries have been surveyed in at least one wave of this investigation (counting East Germany as an independent country, which it was when first surveyed). These countries include almost 80 percent of the world's population. A fourth wave of surveys was carried out in 1999–2000. The full set of countries covered is: Argentina, Armenia, Australia, Austria, Azerbaijan, Belgium, Bangladesh, Bulgaria,

Bosnia-Herzegovina, Belarus, Brazil, Canada, Switzerland, Chile, China, Colombia, Czech Republic, East and Unified Germany, Denmark, Dominican Republic, Spain, Estonia, Finland, France, the United Kingdom, Georgia, Ghana, Croatia, Hungary, India, Ireland, Northern Ireland, Iceland, Italy, Japan, South Korea, Lithuania, Latvia, Madagascar, Mexico, Macedonia, Montenegro, the Netherlands, Norway, Pakistan, Peru, the Philippines, Poland, Puerto Rico, Portugal, Russia, Slovak Republic, Slovenia, Sweden, Turkey, Taiwan, Ukraine, Uruguay, the United States of America, Venezuela, South Africa, Moscow, Tambov oblast, Montenegro, Spain, Nigeria, Romania, Moldova and Serbia.

Variable definitions

Capitalists threaten order A dummy variable taking the value 1 if answer (2) is given to the question 'I'd like to ask you about some groups that some people feel are threatening to the social and political order in this society. Would you please select from the following list the one group or organization that you like least?'

1. Jews.
2. Capitalists.
3. Stalinists/hard-line Communists.
4. Immigrants.
5. Homosexuals.
6. Criminals.
7. Neo-Nazis/Right extremists.

Owners decide A dummy taking the value 1 if answer (1) is given to the question 'There is a lot of discussion about how business and industry should be managed. Which of these four statements comes closest to your opinion?'

1. The owners should run their business or appoint the managers.
2. The owners and the employees should participate in the selection of managers.
3. The government should be the owner and appoint the managers.
4. The employees should own the business and should elect the managers.

Less private ownership The answer to the following question: 'Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement

on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between'. 1 = Private ownership of business and industry should be increased; 2, 3, 4, 5, 6, 7, 8, 9, 10 = Government ownership of business and industry should be increased.

Extent of corruption The answer to the question 'How widespread do you think bribe taking and corruption is in this country?' The four possible answers are: 1 = Almost no public officials are engaged in it; 2 = A few public officials are engaged in it; 3 = Most public officials are engaged in it; and 4 = Almost all public officials are engaged in it.

TI CPI The Transparency International Corruption Perception Index for the year 2000. Ranges from 1 to 10 where higher numbers denote less corruption.

EBITDA/GDP Earnings before interest, taxes and depreciation, as a proportion of GDP. The EBITDA data came from the Standard & Poors Compustat database. It has both a US domestic database as well as a global database, called Global Vantage. We used the Global Vantage data for our calculations.

13 Corruption in international business transactions: the perspective of Norwegian firms

*Tina Søreide**

Despite recent efforts to combat corruption in international business, it is difficult to tell whether such corruption is decreasing. It is probably premature to evaluate the general impact of the relatively new international anti-corruption conventions.¹ New rules may take many years to affect attitudes and choices, especially in an area such as corruption. The phenomenon is not only hidden, rules and norms are also inconsistent and variable, firms invoke moral justifications for breaking the law, and politicians and states have been unconvincing in their efforts to combat this crime.

Even so, it is not too early to discuss potential impacts of the new legal initiatives on firms' actual choices. Although improved regulation will enhance business integrity and conformity to professional standards of conduct, we must still expect that business executives will calculate probable gains against possible losses, even for illegal or unethical practices. The cost of being caught in corrupt practice may have increased as a result of the new international regulations. However, unless the probability of being caught in the crime also increases, the impact of these regulations may not be very significant.

Increasing the risk for those involved in international business corruption is a considerable challenge for two reasons. First, the probability of being subject to local prosecution in host countries is generally low. The risk of being detected is low when corruption is common, and if detected, the chances of having charges withdrawn by bribing the prosecutor, or someone above the prosecutor, increases with the level of corruption. Accepting payoffs may also ensure a certain level of income for individuals in key government positions, and hence diminish their motivation to investigate this crime.²

Second, the most important international treaty dealing with cross-border corruption has several weaknesses. This treaty, the OECD Convention Against Bribery of Foreign Public Officials in International Business Transactions, makes it illegal to offer bribes to public officials in foreign countries. It has been ratified by 36 countries, including the home countries of most major multinationals.³ However, most states

wish to increase the probability of ‘their’ domestic companies getting contracts in foreign countries, and thus have few incentives to encourage investigations of ‘their own’ firms, even if contracts are obtained in a way that appear to violate the treaty. When the enforcement of new cross-border rules is the responsibility of each individual jurisdiction, it can, accordingly, be difficult to put this type of international convention into effect. A Transparency International (TI) report which compares the implementation of the OECD convention in the signatory states does describe some progress, but there is significant variation between countries in their level of enforcement, and the total number of cases based on the OECD convention, internationally, has so far been low (Heimann et al. 2005).

To better understand international business corruption and the challenges of curbing this problem, we need more research on details in how the different facets of globalization such as the increase of international trade, cross-border competition and legislative cooperation, affect the differences in business climates across the globe and the strategic choices of the players.⁴ The World Bank’s business surveys are important contributions in this respect (Batra et al. 2003). Nevertheless, a number of issues related to corruption and similar problems are not included in these studies. Given this background, I conducted a survey of Norwegian exporters during 2004, which asked close to 100 questions related to corruption. The study was motivated by the following six questions:

1. *Where are the main grey zones?* The definition of corruption varies, in layman’s language as well as in legal terms. There are different forms of corruption; they have different consequences, and the tolerance of corruption will often vary with the circumstances. This chapter explores three areas in which the judicial status of corruption is unclear. In each area the impact on public officials is very similar to corruption and the persons involved defend the practices as not being corrupt. They are:
 - (i) *Facilitation payments*, or smaller bribes paid to get things done. The defense of facilitation payments is often based on a lack of bargaining power.
 - (ii) *Marketing* targeted at specific individuals, where expensive gifts and excursions are offered to encourage informal relations with the potential client. Many firms claim this kind of marketing to be essential.
 - (iii) *Political pressure*, for instance in the form of subsidies, export–credit deals or aid, sometimes also presented as threats of political sanctions. These practices are difficult to attack legally, as they are carried out by political leaders at the highest state level.

2. *Will competitive pressure make firms more or less inclined to offer bribes?* The link between competition and corruption is not clear in the relevant literature. It has been argued that market power enables corruption because net profits are required to cover the expenses of making bribe payments. However, empirical studies that find a positive correlation between corruption and market power may have failed to include an important dynamic aspect. Firms in competitive markets pay bribes to obtain market power, and thereby change the industrial organization. Given such a correlation, it can be the case that competitive pressures lead to a higher propensity to offer bribes in an effort to obtain monopoly power. Besides, the amount offered in a bribe can be covered by the total contract, and the cost of making a bribe payment will depend on the relative bargaining power of those involved. Competitive pressure is only one of several qualities we shall consider in exploring which firms are involved in bribery.
3. *Which strategy do firms prefer when competitors offer bribes?* And what are the options for a firm that loses important contracts because competitors offer bribes? In general, it can (i) leave the specific market and shift its business to other regions or lines of business; (ii) complain, speak out, and try to improve the underlying situation for the better; (iii) adjust to the local business climate, make the right contacts, and be patient; or (iv) offer a bribe if that seems required. This chapter explores the prevalence of these four reactions, and studies how they correlate with other qualities and choices.
4. *What may explain a reluctance to speak out?* There is reason to take a closer look at option (ii) above, because, while private firms often are the most likely to understand that corruption has taken place between a competitor and a client, they often seem reluctant to speak out about the problem. There are alternative channels for responding to suspected crime. A firm can follow formal procedures and appeal to the client or the tender authorities, or it can encourage local authorities to look into the deal. Given sufficient proof, it can itself bring the case to court, either locally or in the home country of the bribing firm. Other options are to go through intelligence services, embassies, newspapers or anti-corruption groups, or just submit a letter of complaint to the firm that has paid a bribe. Do any of these things happen and under what conditions?
5. *To what extent can procurement rules be expected to prevent corruption?* The bidding process for large contracts is one of the main arenas for business corruption. Many countries have reformed their procurement procedures in recent years in order to ensure fair and unbiased competition for public contracts. This chapter explores the ability of procurement procedures in preventing corruption, and aims at identifying particular

challenges in this respect. It also asks if the presence of tender rules has an impact on the way firms seek to influencing clients.

6. *Do they practice what they preach?* A visible and unquestionable attitude against corruption at the highest levels of a firm is important to prevent the temptation of bribery throughout the organization. However, the promises of business leaders and the words in their codes of conduct will not always have an impact on their actual incentives and choices. This chapter has collected information about various measures introduced internally in firms to prevent corruption, such as codes of conduct and anti-corruption control routines, and has considered these issues in the light of the firms' reported strategies when operating in challenging business climates. By addressing embassy officials, the study also raises the question of countries' political commitments to international anti-corruption conventions. What is the attitude of representatives of states who are located in countries where corruption is considered a significant problem?

The structure of this chapter follows roughly the order of these questions. First, however, in Section 1 I present the methodology and details behind the survey. Section 2 details a summary of the embassies' and firms' reported experience with corruption. The question of which firms are involved in corruption is then addressed. This section includes the results on competitive pressure, but reports also about the significance of other features such as size, sector, length, type of international experience and home-country norms. The third and the fourth research questions, on firms' strategic choices and their reluctance to react against corruption are addressed in Section 3. This section also describes the firms' reported motivation to take part in corruption. Section 4 provides results and comments on corruption and tender procedures, and also includes the results about political pressure. Section 5 examines the responding firms' tendency to practice what they preach. The three grey zone areas are each discussed in their most relevant section. Section 6 concludes.

1. The survey

The survey consists of three parts, (i) a pilot study with interviews at the executive level in seven large firms, three of them being on the FT list of the 500 largest companies;⁵ (ii) a business survey, where executives in 82 firms with headquarters in Norway responded to a questionnaire; and (iii) a survey of Norwegian embassies outside the OECD region, to which 24 embassies responded. The survey was carried out with the cooperation of the Norwegian Confederation of Norwegian Business and Industry (NHO), the largest business association in Norway.

Norwegian industry, chosen for practical reasons, provides an interesting case for exploring the above-mentioned issues. Norwegian industry is outward oriented and well exposed to international attitudes and business cultures. Its most important sectors of operation are among those described by TI's Bribe Payers Index as the more exposed to corruption, such as oil and gas, power transmission and construction. Nevertheless, Norway scores well on international corruption rankings and has been commended by OECD for its implementation of the new anti-corruption treaty. The tension between operating in markets in which corruption is considered a problem and accepting a clear obligation to respect the treaty's restrictions on bribery in foreign markets is thus sharply presented to many Norwegian firms.

About half the individuals responding to the business survey were managing directors, another two out of five were executives responsible for sales and marketing. The remaining respondents had other functions in the management group; they were country managers or members of the board. The respondents, all first contacted individually by the business organization, were supposed to have a direct responsibility for the firm's main areas of operation, other than social responsibility, security issues or public relations. Promises of anonymity and confidentiality were important concerns when arranging for the delivery of and response to the questionnaires, and NHO assisted appreciably in assuring the credibility of these promises. The 82 responses represented a response rate of 16–17 percent of the about 500 CEOs who initially received the questionnaire. Given the length of the questionnaire and the sensitivity of the issues, this compares well to the response rate of several comparable surveys.⁶

The trade and investment patterns of survey respondents' firms correspond with public statistics on Norwegian exporting industries. Most of the firms were mainly Norwegian owned, and 84 percent had their headquarters in Norway. Two out of ten had a state ownership share of more than 50 percent. The firms not owned by Norwegians were mainly owned by other Europeans. The size of the firms varied: 45 percent of the responding firms had an annual turnover of less than NOK 100 million (hereinafter 'small firms'). One third had sales of between NOK 100 million and one billion ('medium-sized firms'), and 23 percent were above NOK one billion in turnover ('large firms') (one billion NOK is about \$150 million). The sectors of operation were as follows: 20 percent of the responding firms operate in construction, 20 percent in oil, gas and power transmission,⁷ 15 percent in agri/food industries, 13 percent in telecommunications and information technology (IT), 8 percent in heavy industry, 8 percent in other types of service, 6 percent in consulting and 5 percent in light manufacturing. Shipping, a significant part of Norwegian industry, is included

in construction, oil, heavy industry or transportation, depending on their main group of clients. Tourism, transportation, civil aerospace, banking, finance, insurance and the pharmaceutical industry are sectors less represented among the respondents to this survey.

All the firms operated internationally. One-third had done so for more than 30 years, and about half for 10–30 years. The surveyed firms operated throughout the world, although most concentrated in Europe and USA/Canada. Other regions were represented in the following order: East European countries and Central Asia, Asia other than mainland China, Latin America and the Caribbean, Sub-Saharan Africa, the Middle East and North Africa, mainland China and Oceania. Almost half the firms produced goods outside Norway. More than one-third said that they carry out projects for foreign governmental institutions.

Competitive pressure is important to understand the behavior of firms but is difficult to measure. This survey attempted to get at this issue through the following question: ‘Are the prices for your main products or services forced to a level that makes it hard to make profits?’. Given this question, 44 percent operated under competitive pressures. There appeared to be no clear pattern of competitive pressures across sectors in the surveyed firms, except in agri/food industries, where a clear majority finds it difficult to make profits. The price pressure was also reported to be strong in construction, oil, gas and power transmission and was lower in telecommunications/IT. The large firms did not appear to be less exposed to pressure on prices than the small firms.

The responses are analyzed using non-parametric statistics and the results do not allow for statistical generalizations. The results outlined here are the reported frequencies in the given data, cross-tabulations in the responses, and the results of probit analyzes. Correlations described as ‘significant’ or ‘clear’ are statistically significant at the 5 percent level or better.⁸ However, the reliability of empirical research on corruption is always uncertain (Søreide 2006a). Respondents have incentives to protect the reputation of their sector and, in this case, Norwegian firms in general. Bribery is usually known only to a very small number of persons, and might also be hidden from high-level employees. The lack of actual knowledge about the phenomenon makes it probable that many respondents base their beliefs on occasional incidents. It may even induce some respondents to overstate the problem and claim corruption to be more widespread than it really is. Thus, when designing or interpreting surveys on corruption, one must recognize that the results, for various reasons, may be biased. One of the goals of the present survey design is to base the value of the material on what the respondents say, while recognizing its limitations in reflecting the firms’ actual choices.

To understand what the respondents say it is important to be aware of definitions and common terminology. In this setting, the pilot study was important to make the questionnaire fit with the perspectives of business executives and their everyday vocabulary. Although this study concentrates mainly on bribery in procurement contracts, it should be noted that it is common to distinguish between the following terms. 'Grand corruption' refers to the bribery of politicians or bureaucrats with influence over large projects and important contracts. High-level corruption is sometimes described as 'crony capitalism', in which political networks dominate important private assets, or 'state capture', in which private firms are able to influence public power to their own benefit.⁹ 'Petty corruption' is at the other end of the scale: small payments offered to or demanded from persons representing a lower level of an institution, such as local tax collectors, customs officers, health personnel or bureaucrats providing firms with the required licenses or permits. The relevant business term is 'facilitation payments', which, according to Transparency International, refers to payments 'made to secure or expedite the performance of a routine or necessary action to which the payer of the facilitation payment has legal or other entitlement'. See, for instance, IBRD/World Bank (2005) for an overview of various bureaucratic obstacles to business in different countries and the types of challenges that are sometimes reduced by a 'facilitation payment'.

A firm bribes *actively* if it offers a bribe where payments are not requested, while *passive* bribery means acquiescing to demands for bribes; the difference between the two will often be unclear. The present study does not make this distinction, since it is assumed that corruption for important business contracts generally is a result of shared understanding between the parts involved.¹⁰ 'Private-private' corruption denotes the situation when one firm bribes a representative of another firm, neither of them representing a public institution. Judicial definitions of corruption will not always include situations in which a public institution is not involved. The participants in this study do not seem to discriminate, finding corruption a challenge irrespective of whether the client is a public institution or a private firm. It is important, therefore, to note that some of the business practices reported in this study may not be covered by international anti-corruption legislation.¹¹

During several of the interviews the term 'corruption' was itself a strain on the conversation. Terms sometimes preferred were 'undue business practices', 'predetermination of contracts', 'bid rigging', 'silent digression from ethical rules', 'extralegal activities', 'ties and connections', 'inducements' and 'shabby' or 'low-quality business climate'. The use of such terms may indicate a lack of exact knowledge about the business practices used by other firms and also a reluctance of executives to describe practices, either

their own or those of competitors, by using terms that describe unquestionably criminal activities.

2. Experience of corruption

This section summarizes the firms' general experience with corruption, the extent to which this is considered a problem, and also responses regarding the firms' direct involvement. The smaller embassy survey complements the business survey by providing an idea of the Norwegian firms' corruption-related challenges from respondents other than the firms themselves, and I shall describe these results before I turn to the firms' responses.

The embassy perspective

Ambassadors are among the public officials who are best able to follow up and monitor the recent improvements on international anti-corruption legislation. Embassy representatives usually reside in a specific country for a significant period of time, they observe its society with the eyes of a foreigner, and they take part in political gatherings. At the same time, they are expected to know the local markets and industries in order to be able to advise home-country firms entering the local market, as well as to inform home-country public institutions. Ambassadors will often become involved if home-country citizens commit some kind of crime locally. What is the embassy representatives' view on local business corruption in their country of operation? Do they ever make any effort to react against the problem?

This part of the study was conducted as a mail survey to which 24 out of 44 Norwegian embassies outside the OECD region responded to nine questions. Eleven of the responding embassies are in developing countries and 13 are in middle-income countries. There are no significant systematic differences between their responses. The participating embassies cannot be identified, and I cannot say for certain if it was the ambassador him- or herself who responded. The main impression from these responses is that local embassy representatives experience corruption in the poor or middle-income countries in which they are located as a real challenge for Norwegian and other foreign firms:

1. Nineteen of these respondents said that corruption is frequently or always part of the business culture, and only three respondents considered this problem seldom to be an issue in local business.
2. Eighteen respondents found the business climate in their country of operation clearly inferior to what they observe in Norway. These 18 respondents also assumed that a refusal to make irregular or informal payments will reduce foreign firms' opportunities to do business in the specific country. A weak majority believed that foreign firms that

- operate in the local market adopt business practices that most likely deviate from their own official codes of conduct.
3. Twenty-one of these 24 respondents assumed that Norwegian firms operating in the specific area are sometimes or often confronted with challenges related to illegitimate business practices, irregular payments and corruption. Adjustment to local practices and informal conventions will, according to a clear majority, often imply business procedures that would be considered less acceptable in Norway.

Given this depressing picture of the local business culture, what would the embassies recommend Norwegian firms to do if entering the specific markets? Would they recommend firms 'to adjust to the local business culture, even if it could imply business behavior that would not be accepted in Norway'? In the given setting it was reasonable to interpret this question as asking whether the embassy respondent would recommend some kind of bribery. Fourteen of the respondents stated that they would never give such advice. More than one-third were in doubt on this issue, and one out of five embassy representatives were prepared to give such an advice.

However, the embassies were also ready to support firms that actually lose contracts because of corruption and give advice on how to handle such a situation. A clear majority would mention the issue to local authorities, and only five would probably not do so. Eleven embassies had actually taken this kind of action and had raised the issue of corruption at high political level. Six of these 11 said they had done so several times.

The firms' experience

With this background, I shall now consider the firms' responses. The results in this business survey are consistent with the embassy survey; corruption is influencing the operations of many firms. Two-thirds of those responding thought they had lost a contract because of corruption; almost half of these were convinced that they had done so.¹² Forty-two percent found unethical business practices to be common; one-third had decided not to operate in a specific country because of corruption or similar problems; and half of those with production located outside the OECD region found corruption to impede these activities. Only one-third of the respondents had seldom or never been confronted with problems related to corruption when operating in foreign areas, and just 26 percent had never had reason to believe that competitors have influenced tender procedures unduly.

Given these reported challenges, does it ever happen that the responding firms take part in corruption themselves? The category of corruption most frequently admitted was 'facilitation payments'. This is a form of corruption which has an unclear legal status to many businesspeople, and

which several respondents and interviewees justified.¹³ Half the respondents said that they never make 'irregular payments to get things done', 24 percent said they seldom do so, and 17 percent admitted that they sometimes or frequently make this kind of payment. The size of facilitation payments varied. The majority would not offer facilitation payments or at least not pay more than \$2000. Some firms would offer payments between \$2,000 and \$8,000, and just a few would pay \$15,000 or more to get things done. There was no clear link between the size of these payments and the size of the responding firms. Almost half of the respondents who paid facilitation payments said that they did not have any problems respecting present regulations in this field.

The respondents were then asked whether it is necessary to offer valuable gifts or pay bribes to clients, directly or through an agent, to be able to operate in certain countries. While many respondents did not have sufficient information, as many as 27 percent of the total found valuable gifts or bribes a prerequisite in certain regions (see Table 13.1 for variation between sectors in this response). This number, even if substantial, appears at first sight to represent a significant improvement compared to a PricewaterhouseCoopers (PWC 1999) survey among the largest Norwegian firms in 1998. This survey found that 62 percent of the respondents considered it necessary to offer gifts to be able to operate in or get contracts in developing-country markets. However, the indicated improvement of attitudes probably does not reflect a similar change in actual business practices. The PWC survey appears to reflect general attitudes in a year when international attention to corruption was still fairly low. The present survey, in contrast, asked about the respondents' own experiences. It also asked for their opinion in the post-Enron year of 2004, after the implementation of the OECD anti-bribery convention and several information campaigns, just after a corruption scandal in a large Norwegian company, and during a time when corporate social responsibility was a main topic of debate. Moreover, it asked the respondents to mark the specific areas where they considered bribes a prerequisite 'to be able to operate', areas in which they actually had business experience. The regions mentioned most frequently were much the same as those pointed out by the respondents to the aforementioned World Bank survey as particularly challenging and where corruption is a real business constraint (Batra et al. 2003: 51). Nevertheless, the World Bank survey finds that there are always many firms that are able to operate in the most challenging markets without having to pay bribes, and we do not know how much effort firms that do pay bribes have put into the reform of their business practices.

When the respondents were asked about their own direct involvement in corruption, 9 percent admitted having accepted a request from an agent, an

adviser or a consultant for money that would most likely be used for bribery; another 6 percent said that they probably had done so. A few firms admitted that during the last decade they had tried to obtain a contract, a license, or a concession in a way that was important to keep confidential.

Which firms are involved in bribery?

The most important differences in attitudes and exposure to corruption are related to company size, competitive pressure, industry group and the extent of experience from international markets. However, the connection between these qualities and corruption is not straightforward; it is not obvious how to separate the impacts of different characteristics, and different categories of firms can be exposed to different types of corruption. These problems should be kept in mind in this section, as we discuss some important factors that determine which firms are most likely to be involved in corruption.

Size

The corruption scandals exposed in the media are often those involving famous and large companies. However, is it really the case that business corruption mainly entails firms of a certain size? Can we actually generalize about corruption in this sense? This study supports a yes to both questions: large firms are significantly more likely than smaller firms to consider the international competition for important contracts biased in their own respective industry. The large firms find themselves more able to influence the outcome of tender procedures, they more frequently think that they have lost contracts because of corruption, and they are clearly more exposed to the problem of political pressure on international tenders.

There are of course a few aspects that have to be considered when large and small firms are compared in their problems with corruption. Large firms will usually be involved in a higher number of projects and they enter into more contracts. Their probability of experiencing corruption now and then will thus be larger *per se*, but not necessarily in each single business transaction. There are also differences between large and small firms in the way they are exposed to or involved in corruption. Large firms will more often operate in markets where alternatives to active bribery are possible, such as political donations or political pressure, and where they can have contacts that make them able to avoid demands for bribes requested at lower bureaucratic levels. Smaller firms may not take part in public tenders on large construction projects, contracts with a relatively high risk of corruption. Being part of a larger bid is still suggested by several of the small firms in this survey as being a common motivation for bribery.

Given these considerations, we can still generalize about size and the results in the present study indicate a clear tendency of large firms of being more involved in business corruption. However, in the aforementioned World Bank study they distinguished between different types of corruption: grand corruption and state capture as ways of influencing laws and regulations, on one side, and lower-level corruption, bureaucratic red tape and facilitation payments, on the other. They found smaller and younger firms to be more constrained by corruption as they were more likely to be the victims of grand-scale corruption and state capture, leading to lost contracts, and reduced transparency and predictability of laws and regulations. Large firms were more likely to be involved in political and 'state capture' forms of corruption (Batra et al. 2003).

Sector

This survey is not able to provide a full picture of the variations in the different business sectors' exposure to corruption. However, business sector comes out as a critical factor in the choices of firms, and certain industries appear significantly more likely to be exposed to corruption than others. Firms in telecom/IT, oil, gas and power generation, and construction clearly have more doubts about the capacity of tender rules to prevent corruption. These firms more often believe that tender specifications are designed to fit with the offer of one specific company, they more frequently think that competitors win contracts by help of political pressure, and they are more likely to negotiate all through the tender procedures themselves. Firms in oil, gas and power generation more often admit that they 'during the last decade have tried to obtain a contract, a license or a concession in a way that is important to keep confidential' (a result that is significant only at the 10 percent level). Table 13.1 describes more variations in firms' frustrations because of corruption, where the total response to certain questions is compared to the answers from firms in 'construction and heavy industry', put together, and 'oil, gas and power transmission', which is treated as one sector in this survey. The percentages are those who have responded *sometimes* or *frequently* to the given questions, as opposed to *seldom* or *never*. The numbers in the sector columns are the share of total response within each sector, that is, holding sector as dependent variable.

The sectors perceived to be most exposed to corruption according to the mentioned TI Bribe Payers Index, are 'public works/construction', 'arms and defense' and 'oil and gas'. Telecommunications and power generation/transmission are ranked numbers five and six. Heavy manufacturing and IT are ranked less corrupt by the TI respondents. Even if the TI ranking is based on a completely different question, the results are comparable with the findings in this study. Also a study conducted by Control Risk Group

Table 13.1 Different sectors, different exposure to corruption

Question	Percentage responding <i>sometimes or frequently</i>		
	All	Constr. & heavy industry	Oil, gas & power
Do you ever have reason to believe that your competitors influence tender procedures unduly?	42	57	53
Has your company ever decided not to operate in a specific country or region mainly because of corruption or similar problems?	34	37	47
Have you ever lost contract(s) because of competitors' unethical business practices?*	67	78	76
When operating in foreign markets, do you ever have to make irregular 'additional payments' to get things done?	17	26	29
Is it necessary to offer valuable gifts or pay a bribe to clients or public officials, directly or through an agent, to be able to operate in certain countries?***	27	40	58

Notes: Several of the indicated correlations in this table are not statistically significant.

* This question is presented in a way that fits with the alternative responses; the reported response here is *probably* or *for certain*. ** The respondents described which regions where this is the case, and the percentages in the table represent those who find this required in one or more regions.

(CRG) in 2002 (see note 11) places the same sectors as being the more corrupt. However, according to the CRG study, 'oil, gas and mining' were the most likely to give up an otherwise attractive investment because of corruption, and also the firms most likely to review their business practices on account of new laws in this field. Telecommunications firms were found to be the least likely to be deterred by corruption, and also the least likely to review their practices (CRG 2002).

Competitive pressure

The large size of business bribes makes it perhaps reasonable that firms with large profits are more involved in this way of making business than firms that are exposed to competitive pressure. Nevertheless, the results in this survey do not support that intuition: firms that consider themselves too

Table 13.2 Exposure to corruption, given differences in turnover and competitive pressure

Response	Total (%)	Turnover (%)			Competitive pressure (%)	
		L	M	S	Low	High
We think/are convinced that we have lost a contract due to corruption	66	84	65	56	47	73
Our firm has decided not to operate in a country mainly because of corruption or similar problems	34	42	39	25	22	42

Note: L, M and S refer to large, medium and small firms. High and low competitive pressure refer to the answers when asked whether prices for main products are reduced to a level that makes it hard to make a profit.

pressured on prices to make profits actually come out as more exposed to corruption, and also more likely to find bribery required to be able to operate in certain markets.¹⁴ Table 13.2 presents some of the results on the reported exposure to corruption as a function of size and competitive pressure.

Firms exposed to competitive pressure more frequently experienced a gap between formal and informal rules, and they more often decided not to operate in a specific country, region or segment of the market because of corruption. By separating the firms that were *strongly* pressured on prices from those just *usually* pressured on prices, we get a similar pattern: the former are significantly (at the 5 percent level) more likely to believe that the tender procedures have been rigged, they negotiate all through the tender procedures themselves (without following the rules), and they more often have problems with corruption in their foreign direct investment (FDI) operations.

This result implies that firms in competitive environments are no less exposed to corruption and similar undue business practices, and thus not less likely to become involved in bribery, compared with firms with more market power. This is interesting because several distinguished authors have suggested a positive correlation between firm profitability and bribe payments in developing countries, see, for instance, Myrdal (1968), Ades and Di Tella (1999), Kaufmann and Wei (1999), Clarke and Xu (2002) and Svensson (2003). There are, however, explanations for these inconsistencies. First, the different studies describe different forms of corruption, and

competitive pressure will have different impacts on lower-level bureaucratic corruption and facilitation payments, on one side, and procurement contracts and higher-level business corruption, on the other. Second, firms exposed to competitive pressure will more frequently lose contracts with products that are close or equal to the winning bid in their price and quality. They will thus be more inclined to believe that they actually had the best offer when they lose contracts, and they will perhaps suspect corruption more frequently. Third, there are some dynamics in the connection between competitive pressure and corruption that is difficult to measure by statistical studies. Corruption may provide the briber with relatively more contracts than what more honest competitors manage to acquire, which means that the firm turns profitable and is no longer in the category of competitive market firms. Companies experience competitive pressures and use corruption to limit their impact. This is a problem that emphasizes the link between corruption and industrial organization, and underscores the role of antitrust bodies in anti-corruption policy decisions.

The length of experience from international markets

The number of years a firm had operated in international markets had a significant impact on several responses in this study. Not surprisingly, firms with long experience have more often lost contracts because of corruption. However, they were also more likely to believe that competitors operate unduly in the present, they more frequently found the outcome of tender procedures to be predetermined, and they more often admitted to having obtained a contract, a license or a concession in a way they considered important to keep confidential. Interestingly, they were more likely than any other category to consider corruption a problem in the competition for Scandinavian procurement contracts. Nevertheless, longer experience did not make the firms more tolerant to corruption. They were close to the average in considering this problem 'never acceptable'.

The type of experience from international markets

Whereas the length of experience from international markets apparently had no impact on the firms' stated tolerance for corruption, the type of experience made a significant difference. Firms with parts of their production located in foreign countries were clearly more inclined to consider corruption acceptable, for instance 'if the contract is necessary to avoid insolvency', 'when there is no other way of operating in the market', or just because it can 'make the firm end up with an important contract'. Firms with production located in foreign countries more frequently believed that 'competitors influence tender procedures unduly', they more often thought that they had lost contracts because of corruption, and they generally had

a lower trust in tender procedures. They did not admit more involvement in corruption than other firms.

Firms that carry out projects for governmental institutions represent a category that many of us associate with corruption. Nevertheless, this type of experience did not seem to make the firms more tolerant to corruption or reduce their trust in tender procedures. However, these firms' responses differed significantly from the average in two ways. They reported far more frequently about demands for *quid pro quos*, such as the use of local resources, the building of additional infrastructure, or other contributions to the local society. And, they more frequently admitted to having obtained a contract during the last decade in a way that is 'important to keep confidential'.

Aid-financed business ventures are another important cross-cutting category. International aid to developing countries is sometimes mentioned as a field particularly exposed to corruption. The risk of corruption is present at several stages of the procedures, beginning with the choice of a contractor for the project. In this survey, only 16 of the responding firms had carried out projects financed by multilateral or bilateral aid. Half of those had the impression that corruption is more common in aid-funded projects than in other projects. In most other respects this category did not differ significantly from the average; they were not more tolerant to corruption, they had anti-corruption codes of conduct in similar degrees as other firms, and they did not differ in their confidence in procurement procedures. However, these firms reported significantly more often, and also more definitely, that they had 'accepted a request from an agent, an adviser or a consultant about money that probably would be used for bribery'.

Home-country norms and activities abroad

A final question in this section is whether firms from countries perceived to be less corrupt have a lower propensity to make bribe payments. Lambsdorff (2001), who linked the level of corruption in import markets with bilateral trade statistics, found significant differences between exporters with regard to their tendency to offer bribes. Also, TI found by their Bribe Payers Survey that firms from different countries differ in their propensity to offer bribes in foreign markets. This implies that we should expect Norwegian firms to be less involved in corruption because the levels of corruption in Norway are perceived to be low. Since it surveyed only Norwegian firms, this survey was of course incapable of testing such a hypothesis. What we did, however, was to ask the businesspeople about their views.

While the firms' 'home-country norm' is difficult to identify, most respondents did not consider corruption an important problem when operating inside of Scandinavia. More than half found the competition

for important Scandinavian contracts to be relatively free and fair. Nevertheless, when it comes to active bribery in foreign countries, 41 percent of the respondents claimed that there is no difference between firms from Scandinavian countries and firms from other OECD countries.¹⁵

When asking the respondents whether Scandinavian firms were more or less exposed to corrupt demands than competitors from other countries, including non-OECD countries, 56 percent said that there is no difference. These results are not qualified to produce general conclusions. When such a large share of the firms admit that home-country corruption levels make no difference, it still questions the strength of this impact on the business practices applied internationally. Given the increasing multinationality of big firms, it also seems likely that the firms' culture of origin will become less important in this regard.

3. Responses to corruption

The presence of a challenging business climate can obviously force a foreign company to make choices that it can avoid when operating in markets where corruption is less common. We have so far discussed which firms are most inclined to be involved in corruption themselves. However, a study of the mechanisms of corruption raises questions that go beyond this information. In this section we shall consider the firms' reported choices when competitors get contracts by offering bribes. We shall also explore the purposes of bribery: what are the actual benefits obtained?

Strategic choices

In general, judicial systems preserve existing values by making already accepted behavior legal or unaccepted behavior illegal. When it comes to corruption, it has not always been clear what the commonly accepted behavior is.¹⁶ In the past, although corruption was illegal locally in most host countries, cross-border bribery was tax deductible under domestic regulations in many home countries. This may explain why there has been, and still is, a certain acceptance of the bribery that goes on in countries where the problem is perceived to be common.¹⁷ New international rules have been vital in raising the profile of cross-border bribery and in criminalizing its practice. One consequence, however, is that it has become more difficult to tell whether firms act in respect of the law, or if they just pretend to do so. A cynical gap between actual and asserted business practices is not a consequence of the new rules themselves, but may perhaps occur if the new rules are not sufficiently enforced. In Europe there are very few court cases involving large-scale corruption or cross-border bribery. Despite improved cooperation in international crime prevention, the probability of being caught is very small for firms involved in corruption.¹⁸

This study approached this issue by asking the respondents if they ever found it difficult to respect the law. Forty-four percent of the total did sometimes find this difficult, 33 percent never found it difficult, while the rest were not familiar with the relevant legal regulations. Table 13.3 combines the subgroup of those who could find it difficult to respect the law with some results on attitudes and exposure to corruption. The percentages in the table are those responding ‘yes’ or ‘frequently’, as opposed to ‘no’ and ‘seldom’.

Those who sometimes found the laws difficult to respect are also those who are more likely to be exposed to corruption or to be actively involved themselves. However, the group of firms that found it difficult to respect the law is also more familiar with the relevant legislation and the OECD

Table 13.3 Corruption and other undue business practices

Question	Total (%)	Not always easy to respect the law (%)
Do you ever experience a gap between formal and informal rules in any of the areas where you operate?	32	52
When operating in foreign markets, do you ever have to pay some irregular ‘additional payments’ to get things done?	17	29
Is it necessary to offer valuable gifts or pay a bribe to clients or public officials, directly or through an agent, to be able to operate in certain countries?	27	32
Has your own company ever accepted a request from an agent, an adviser or a consultant about money that would probably be used for bribery?	15	35
Has your own company, during the last decade, tried to obtain a contract, a license or a concession in a way that is important to keep confidential?	6	13
Are you familiar with the OECD convention against the bribery of foreign public officials?	30	48

Note: The reported response represents those who responded ‘often’ or ‘frequently’. On the third question, however, (‘required to pay’), the response represents those who responded by pointing to specific geographical regions. The dependent variable for the subgroup is response within that category.

anti-bribery convention. This result can be interpreted in at least two ways: (i) those who found the law easy to respect may not be fully aware of the legal status of corrupt practices, or (ii) firms that are more exposed to and frustrated by corruption are also more aware of new rules.

Tolerance of corruption

When respondents were asked directly, their acceptance of corruption was low. Some respondents, about 6 percent, still tolerated or defended corruption if the contract was 'necessary to avoid insolvency' or 'if corrupt practice is common to get contracts'. Other respondents, 18 percent, found corruption acceptable 'if there is no other way of operating in the market'. The majority, 58 percent, found it to be never acceptable.

Even so, the disapproval of the crime is challenged in the respondents' daily business life. Whereas a large share of the firms claim to have lost contracts due to corruption (66 percent), only 5 percent would actively lodge an appeal to the customer or the tender authorities if encountering a competitor who they suspected of bribery. Twenty-six percent would seek a formal explanation from the client under such circumstances. Such an explanation is a routine part of any formal tendering process, however, so a firm request cannot be considered an active response to corruption.

If formal complaints are ignored or rejected, only 13 percent would try to respond in alternative ways, for instance, through political channels or by approaching journalists. As many as 45 percent say that they would prefer not to react in any way if they were in this situation. A majority of these firms agree with the statement 'corruption is part of the game'. Among the persons who claim that corruption is never acceptable, 35 percent say that they prefer not to report or react against the practice. These responses question the reported intolerance of corruption. Many respondents seem to consider corruption a fact of life where their own reactions will have no more than a marginal impact. This assumption is supported by the 65 percent who claim that they would have been more inclined to respond to bribery if it took place in a country where corruption is perceived to be uncommon.

What explains this common lack of response to corruption? If competitors pay bribes, the companies lose not only their fair chance of gaining the contract but also the cost of taking part in the tender, often a significant amount of time and, at least for the large firms, it can amount to several million euros. In spite of these losses, they prefer not to complain or claim for compensation.

The most plausible explanation is perhaps the lack of proof in these cases. It will often be impossible to verify that corruption has taken place, and there is, of course, a general reluctance to accuse somebody of being 'corrupt' without clear evidence. However, firms that have participated in

a tender where the outcome has probably been affected by corruption will often have reason to be confident of their suspicion. They may have been asked for bribes themselves, they pick up reliable rumors, or by other means they realize that the tender procedure is flawed.

In an effort to explore this issue, the respondents were asked to rank alternative explanations. The result is presented in Table 13.4. Lack of proof and concern about sanctions from accused firms are not major factors. The most important reason for staying silent is a worry about future business cooperation. Accordingly, if one loses business because a competitor paid a bribe, it prefers not to react against the practice out of concern for future business cooperation with other firms in the market.

More surprisingly, the firms that never cooperated officially with other firms in the market were just as concerned about losing future business cooperation as those that did occasionally have this kind of cooperation.¹⁹ This worry was somewhat higher among firms able to make more profit than is usually possible in a competitive market. By contrast, the firms that operated under higher competitive pressure on prices were more worried about sanctions from clients than about lost business cooperation with other firms. These differences are interesting because they suggest that profitable firms are relatively more dependent on good relations to other firms in the same line of business; a result that could be explained, for instance, by theories on collusion.²⁰

Table 13.4 Absence of reaction

Question	Answers	%
Independently of the experiences of your own business unit, what do you think is the most common reason for a company to keep quiet when encountering a competitor in bribery?	Concern about sanctions from the bribing company	5
	Concern about sanctions from other companies	5
	Concern about future business cooperation	31
	Concern about sanctions from customers	18
	Lack of knowledge about the illegality of the act	15
	Lack of proof	12
	Other reasons	0
	I do not know	5

Note: The respondents were asked to rank the explanations suggested in the questionnaire. This table describes the total score based on a summary of the alternatives, ranked as numbers one and two.

Adjustment to local business practices and the use of agents and advisers

Given that firms seldom raise their voice to report corrupt suspicions, they are left with two options when operating in challenging business environments: exit from the market or adjust to local business practices. About half the respondents say that they would adjust to the local business culture if they had lost contracts due to corruption – or they would accept corruption as ‘a part of the game’. Table 13.5 describes these responses.

‘Adjustment to local practice’ can of course refer to legitimate ways of behaving and doing business, but it does also include the option of active bribery. One way to get around anti-corruption laws is to go through agents, consultants and joint-venture partners. The firms’ benefit of using such intermediaries was therefore a relevant issue in this project, and the respondents were asked to rank the importance of different qualities that an adviser can have.

The firms were clearly most interested in ties to relevant decision makers. Almost 50 percent of the respondents ranked this alternative number one although they still avoided the relatives of persons in high-ranking positions. Agents able to deal with local formalities were most frequently ranked number two. Other advisers were ranked in the following order: international business advisers and/or country analysts, local business advisers without ties to the government, lawyers with the relevant competence, bureaucrats and politicians. In addition, 44 percent of the responding firms said that they had contacts positioned at, or with access to, a high level of the government in countries where they operate.

The importance of ties to decision makers is often justified by referring to cultural differences in the ways of doing business. As part of globalization, however, business practices are becoming standardized. Work towards a standardized World Trade Organization government procurement agreement is progressing; the European Union has introduced new tender rules, and standardized bidding procedures are already widely applied, including in developing countries. The impact of these initiatives is partly dependent

Table 13.5 Corruption as an obstacle to business

Question	Answers	%
If you generally choose not to complain [about bribery], or if complaints are ignored or rejected, what do you typically do?	No big reaction, corruption is part of the game	28
	We adjust our strategies to the local business culture	24
	We retreat from the country	5
	We report the case in alternative ways	13
	I do not know	28

on the motivation of firms to respect the procedures, rather than just assume that personal ties are what really matters. As long as firms do not recognize this responsibility, the emphasis on agents and ties will continue. And certainly, the more emphasis there is on ties to decision makers, the stronger the suspicion will be that firms are involved in corruption and the less reason there will be to expect free and fair competition.²¹

Motivation behind bribery

Increasing sales is perhaps the main motivating factor for the choice of any business strategy, corruption included. Given this main driving force, there are still differences in what firms seek to achieve with the help of bribery. This study gathered information about the purposes behind corruption, and even about 'the underlying motivation behind the crime'.

Table 13.6 presents the respondents' rankings of given suggestions about the direct purpose of secret ties to clients. The questionnaire did not ask about the respondents' own motivation, but rather that of other companies in their line of business. The present data should therefore not be applied as a basis for general conclusions about the respondents.

If tender rules are applied, it becomes more difficult for representatives of the customer, whether it is a public institution or a large firm, to promise the potential briber a specific contract. Without such a guarantee, the

Table 13.6 The purpose of bribes

Question	Answers	%
If companies in your line of business operate unduly, for instance by establishing secret ties to specific decision makers, what would you suggest that they typically would be aiming at?	Adjustments in tender specifications	14
	Being part of a bid for a larger contract or concession	7
	Improve economic conditions, such as tax reductions	5
	Obtain the contract through direct negotiations	26
	Secret information about evaluation or tender specifications	19
	Secret information about the other companies' bids	15
	Promises of neglected quality controls	1
	Reduced political risk	1
	Other benefits	0
	I do not know	14

Note: The table is a summary of the responses most frequently ranked numbers 1, 2 or 3

‘price’ offered, which in this case is a bribe, is reduced accordingly, sometimes down to the level of ‘marketing expenses’. If a guarantee of the contract is not obtainable, firms are left with less direct ways of influencing the choice of contractor – ways that provide the firm with some kind of advantage *vis-à-vis* competitors. As a consequence, many of the respondents suggest that secret information about evaluation criteria or tender specifications are common purposes of bribery.

However, the respondents suggested that bribes are most often paid to obtain a contract through direct negotiations, which means the abandonment of tender procedures altogether. Common justifications for direct negotiations are the familiarity of operators with similar equipment, the uniformity of spare parts, a preference for previous suppliers, or the fact that a tender procedure would be too expensive or time consuming. Although these justifications can be legitimate, they may also enable corruption. Note also, the firms’ interest in direct negotiations underscores the importance of tender rules for reducing corruption. There is no logic in offering bribes to avoid tender procedures if these rules are not functioning.

The respondents were asked to suggest the most important underlying motivation for companies in their line of business to offer bribes. The survey question is based on Moody-Stuart’s (1997: 21) explanation of why companies pay bribes. The respondents were given three alternatives in addition to the obvious goal of getting a contract. Table 13.7 presents the results.

The third alternative motivation behind bribery, persuading decision makers to buy goods or services which they basically do not need, had a surprisingly low rate of response. However, one might anticipate a bias against this alternative because most producers have a strong belief in their own products. We cannot expect salespersons to believe that their products are not needed. Besides, goods purchased from multinationals will often be expensive and technologically advanced. Moody-Stuart suggests that military hardware is the classic example of this kind of corruption.

Table 13.7 The underlying motivation behind bribery

Alternatives	%
1. The fear of losing contracts because someone else has bribed the decision makers	43
2. The goods or services offered would not have been chosen in a fair competition	21
3. Persuading decision makers to buy goods or services that otherwise would not have been demanded	5
4. I do not know	31

The second alternative, goods that would not have been chosen in a fair competition, refers to products or services that are of poor quality or are overpriced. The buyer demands compensation, a bribe, for choosing the specific product because better alternatives exist. This motivation is probably quite common but still was suggested by only 21 percent.

The alternative suggested most frequently, by more than half of those who had a view, was the concern about losing contracts simply because someone else have bribed the decision makers. The majority of bribers appears to be motivated by a lack of trust in their competitors. This result reveals a considerable information problem, but also a challenge when it comes to the firms' internal controls and the measures they take against corruption.

4. Corruption and tender procedures

This section continues the discussion about how corruption works. What we shall consider now is one of the main arenas of business corruption, and discuss some challenges in its regulation. We have already referred to the tender procedure, where the competition for public contracts is supposed to follow explicit rules to ensure fair and 'clean' competition between the bidders. However, there is little information about the efficiency of procurement rules in preventing corruption, and the distinction between acceptable business practices and corruption is often ambiguous. Firms competing for a contract will often try to influence the tender procedure and the tender specifications, as well as try to influence the officials directly responsible for the contract. Influence on tender procedures is not only conducted by the firms. A considerable fraction of the respondents to this survey also consider political pressure a common problem in international tenders.

Influence on tenders

Marketing strategies verge on corruption when customers' agents are offered benefits of significant private value, particularly when the benefits have a job-related aspect, such as business excursions and tickets to events to which job contacts are also invited. Several of the persons interviewed for the survey admitted that the intention behind these gifts is similar or identical to the purpose behind bribery. Among the respondents, 26 percent offer valuable tickets to clients, while 36 percent offer excursions. These practices are clearly more common in sectors perceived to be more exposed to corruption. The survey explored the meaning of 'gifts' in this setting. During interviews it was made clear that the 'gifts' or 'bribes' requested can be very small, even in countries where the level of corruption is perceived to be high. In countries where gifts are often expected, it can be sufficient

Table 13.8 *Influence on tenders*

Question	Total (%)
Are you ever able to influence or asked to advise clients on tender specifications?	33
Does it ever happen that tender specifications are designed to fit with the offer of one specific company?	41
Will there often be negotiations between tender participants and decision makers during the tender procedure?	49*

Notes: The percentages represent those responding yes/frequently/often, as opposed to no/never/seldom. *Almost a fifth of those reporting communication all through the tender claim that the communication is being copied to all tender participants.

to offer small gifts at values far below what we would call bribery – ‘ridiculous items like cheap souvenirs or chocolate’, in the words of one interviewee. Firms that misinterpret a culture may offer gifts that are too valuable, thus encouraging corruption and disturbing the local business culture. However, the PWC survey of Norwegian firms in 1998 found that gifts of rather small value create a bond between business partners that is able to influence the outcome of tender procedures.

Other ways of influencing clients are less direct. For instance, due to their undoubted expertise, firms are frequently asked to advise clients on technical aspects of tender specifications, even if they are among the competitors for the contract. This consultative service will in some cases represent an opportunity to influence the specifications in a direction that benefits the firm itself or one of its associates. Table 13.8 reports some of the survey findings on firms’ influence on tenders. A majority of those who operate in markets where it is possible to influence tenders, where the winning bidder is determined ahead of time, or where negotiations are common all through the tender procedure, describe the competition in the market as ‘often biased’.

In addition to the results in Table 13.8, two-thirds of the respondents found it essential or an obvious benefit to obtain or maintain a relationship to a potential customer prior to prequalification for a contract; only 24 percent found this to be unimportant. Early contacts were considered more important by respondents in firms that operate under competitive pressure, compared to those in less competitive lines of business.

Predetermination of contracts

Pre-tender contact may reflect biased tender procedures, but this is not invariably an indicator of corruption. Although early and mutual trust is

necessary to make illegal corrupt deals on big contracts, there are also cases where it leads to personal relationships that are more decisive for a customer than a bribe offered by a newcomer. A more obvious sign of unfair competition is the high reported frequency of contracts that are designed to fit with the offer of one specific tenderer (Table 13.8, second question). The technical tender procedure may appear correct on the surface even though the qualifications have been set to give a comparative advantage to the bribing company. This firm will thus offer the lowest price, and the formal procedures appear satisfactory. Such bid rigging will often affect the choice of technology, a choice that typically has more consequences the larger the project. The choice of technology will, for instance, often directly affect what subcontractors are used, and also smaller firms can have incentives to influence the relevant decision makers on large projects. Note, however, that pre-selection of bidders is not necessarily a result of corruption. Clients may be obligated to use tender procedures, regardless of justified preferences for a specific company, for instance because of satisfaction with its past performance. According to the persons interviewed, pre-selection is also applied by clients to control the spread of contracts when there are few competitors in order to reduce their possibilities to operate as a cartel.

Do tender rules prevent corruption?

Pre-selection and pre-tender contact make it reasonable to consider the efficiency of tender rules in controlling corruption. In fact, as many as 55 percent of the respondents did not think that tender rules could prevent this problem. Fifteen percent said that tender rules do function as an obstacle, while only 6 percent considered tender rules to be an *efficient* obstacle to corruption. However, as briefly discussed already, there are significant variations between firms in their opinion about procurement procedures. Firms with production located in several countries and/or many years of experience from trade in international markets had significantly lower confidence in the ability of procurement procedures to prevent corruption. And, the longer the experience from international markets, the stronger was the firms' propensity to negotiate all through the tender procedures.

The most important quality in this regard was the size of the responding firms: the larger the firms, (i) the 'better' their possibility was to influence tender specifications; (ii) the more frequently they suspected that the outcome of a tender was determined ahead of the procurement procedure; (iii) the more often they believed that political pressure had an influence on the competition for important contracts; and (iv) the lower their trust was in procurement procedures to ensure fair competition. These results emphasize the challenge of designing procurement procedures for large

international tenders. What we also can conclude is that common procurement procedures make a significantly better defense against corruption when the participating firms are small and medium sized.²²

The rules of communication

One specific problem that may enable corruption seems to be that rules of communication are often neglected in tender procedures. Although access to information and transparency are important in ensuring fair competition, it is crucial to keep critical information about the bids as secret as possible. Communication rules are supposed to prevent the distribution of such critical information, which for obvious reasons is a frequent object of bribery. A central element in most formal tender rules is the way the contact between client and bidders should take place once the tender process has started. At this stage, the rules often require that communication between one firm and the client is copied to all tenderers. Nevertheless, the results presented in Table 13.8 reveal a high tendency for negotiations to occur at all stages of a tender, too often without having critical information copied to other tender participants.

Also this procurement-related problem is clearly more common among the largest firms. The contracts are of course larger and more complex at this level, and they will often include details that need thorough discussion. These are, however, aspects that will also make it easier to cover up corruption. I discussed this issue with the people interviewed in the pilot study, who represented large firms. They generally associated a lack of respect for these communication rules with unacceptable business procedures, and found it 'very problematic' when the rules were not followed. This group considered the rules of communication particularly important for complex contracts.

Although a low respect for communication rules seems to reduce the efficiency of tender rules designed to prevent corruption, it should, again, be noted that a violation of communication rules is not necessarily a result of corruption or a lack of respect for the rules among firms taking part in a tender. To hold down prices or to make a certain firm win the tender, the client may have an incentive to inform one or several of the competing tenderers about the secret tender information.

Political pressure

The outcome of tenders on big contracts is sometimes affected by political pressure to the benefit of one specific firm, specifically when the client is another government. The pressure takes the form of a subsidy, such as an export credit deal, aid to the buyer linked formally or informally to the purchase, diplomatic or political pressure, commercial pricing issues,

impediments to trade or tied defense/arms deals. This kind of pressure may reduce the prospect of ending up with the outcome most beneficial to the host country's citizens. The link to corruption becomes clear when the privileged firm has paid its own government to put pressure on the client.²³ However, the local welfare implications of such political influence are, of course, independent of the type of ties between the bidding foreign firm and its own government, and even without such a payment, it resembles corruption. The buyer is, in effect, bribed by the contractor's government, while the responsible minister can refer to jobs and exports.²⁴

Only one out of five respondents to this survey had received assistance from Norwegian governmental institutions to guarantee the financial aspects of the deal or to ensure a specific contract in other ways. One third believed that competitors had obtained contracts this way. The TI Bribe Payers Survey found significant differences in the propensity of governments to influence the international business ventures of domestic firms – the USA, France and the UK appear to be particularly active. Several respondents to the present survey considered political pressure to the benefit of international competitors a significant disadvantage and called for more political assistance from Norwegian authorities. Some also said, however, that Norwegian authorities tend to prefer Norwegian firms in governmental tenders and that foreign competitors probably consider this a comparable disadvantage.

Quid pro quo is a different form of political pressure, still connected to big contracts, but now instigated by local political authorities. It refers to a reciprocal exchange in which the chosen firm provides benefits for local governments and their constituents. For example, a multinational firm might promise to build a school or infrastructure, or to use local human resources during their operations in the given country. In the present study, 18 percent reported that they frequently experienced a request for a quid pro quo, 33 percent seldom, and 35 percent never met such a request. Local content demands are clearly more common among the large firms, compared to small and medium-sized ones, and appears – from this limited material – to be more common in construction and oil, gas and power transmission than in other areas of business.

It has been argued that social responsibility, or the inclusion of such local content, is a form of bribery as it may induce a government to choose a particular bidder. About half the respondents to the survey conducted by the Control Risk Group thought that companies made donations to charities now and then for the purpose of gaining a business advantage (CRG 2002). It is, however, legitimate to hope for an improved reputation in return for generosity. And local content will not necessarily influence the choice of bidder. The same local content can be expected from any winning bidder,

independently of which firm is selected. Besides, such benefits are unlikely to provide private profits to the public contracting official although it may benefit incumbent politicians seeking reelection. Even if the development implications of local content in business contracts varies a great deal,²⁵ it is important not to lump this practice together with the criminal act of bribery.

5. Internal control and measures

Although the general emphasis on corporate social responsibility seems to have changed attitudes in many firms, its impact on the extent of international business corruption has not been convincing thus far. Many firms that operate in international markets are still not prevented from taking part in unethical business practices by their own codes of conduct or by home-country regulations. Other firms may continue to pay bribes, in spite of such codes and rules, perhaps in fear of losing contracts because competitors pay bribes. This study explores the responding firms' internal anti-corruption measures and their views of management's responsibility in dealing with allegations of corruption inside their firm.

Codes of conduct, control routines and campaigns

Internal anti-corruption measures introduced by firms vary significantly. Eighty-nine percent of the large firms in this study have internal written codes of conduct that restrict employees from paying bribes, compared to only 19 percent of the small firms. Altogether, 36 percent of the total have such codes. Even more firms, 48 percent, say that they have routines to detect bribery carried out by employees on behalf of the firm. There is a clear overlap between these groups: almost 70 percent of those with routines to detect bribery conducted by employees also have anti-corruption codes of conduct, while those without routines do not have codes either.

However, only 21 percent believed that their routines to detect corruption were efficient. The fact that 74 percent claimed to have efficient routines to detect other economic offences, like false consultancy fees, fake invoices, or illegal transactions made, for instance, to avoid taxes, makes it plausible to assume that firms' control mechanisms are less able to detect bribery than other forms of economic crime. Several of the interviewees also admitted that they needed advice about how to introduce efficient controls to detect corruption offered on behalf of the firm. When it came to the detection of bribes received by employees, 30 percent said they have relevant control routines, and 13 percent had actually detected an employee engaging in corruption.

Almost half the firms encouraged employees to report the case internally if they uncovered bribery or other types of crime carried out by the firm.

Eleven percent would actually not encourage employees to do so, whereas 35 percent said that they did 'not actively' encourage employees to speak out. The category of firms which encouraged 'internal whistle-blowing' overlapped significantly with the group of firms that never offer 'additional payments to get things done'. And, the firms which sometimes offer this type of facilitation payment were mainly in the category which finds it less important to encourage employees to speak out.

During the past decade, NHO, the business organization, has arranged several anti-corruption conferences and informed their members about the problem of corruption and the importance of keeping to professional standards of conduct. When asked about the impact of these campaigns, 35 percent already had a clear attitude against bribery while 26 percent, with a significant majority of large firms, found the campaigns to have influenced their views. A significant ambition of the NHO campaigns was to inform firms about the implementation of the OECD anti-bribery convention and its implications for firms' business practices. Although the questionnaire reminded the respondents about its content, as many as 70 percent of the respondents still were not familiar with the convention. This number is surprisingly large, especially as a considerable share of the respondents claimed to be aware of the NHO's distribution of anti-corruption information. Only 26 percent said that the relevant employees are informed by the company of the content of the OECD convention. These firms were mainly large.

Company culture and the responsibility in case of scandal

When asked about the main reason for not paying bribes when operating in foreign markets, one of the most frequent answers was 'it is not part of our company culture'. Codes of conduct may reduce the demands for bribes as it becomes easier for representatives of the firm to reject such requests, and future expectations about bribes will be reduced. However, does it follow automatically that such codes also reduce a firm's potential for losing contracts because competitors make use of unethical business practices?

The CRG (2002) study finds that firms from countries where anti-corruption codes are common, the USA and the UK, are less exposed to corruption in the sense that these firms report a lower tendency to lose contracts because competitors pay bribes. By contrast, the present survey does not find any lower exposure to corruption among those with best practice codes. There are in fact significantly more losses of contracts reported due to corruption in the group of firms that have implemented anti-corruption codes, compared to the category without such codes. What this means is that the Norwegian firms that have introduced best practice codes are also

most likely to be those that are most exposed to such problems. Moreover, respecting codes of conduct in such a setting is likely to increase a firm's propensity to lose contracts due to corruption. This perhaps obvious implication is often neglected in anti-corruption debates.

The commitment to anti-corruption codes will also depend on the executives' role in and attitude to corruption. Top executives are, in addition to the board, officially responsible for a firm's operations, and there are reasons to believe that decisions about bribery are made at the same level. When CRG (2002) asked which sections of a company were most likely to be involved when bribery occurs, the most common response was 'senior management'. In the present study, the respondents represented senior management, and most of them said that they would have been informed if bribery had taken place on behalf of the firm. More than half, 55 percent – mostly small and medium-sized firms – would 'certainly' have been informed, and 29 percent would 'probably' have been informed if bribery had taken place to obtain a contract or a significant benefit.

Some of the respondents, nevertheless, admitted that it might be difficult to control their agents. Almost one-third (29 percent) thought that they would be unable to discover whether a considerable part of the compensation to an agent was used for bribery, compared to 54 percent who positively thought it would be possible to notice this. Only 16 percent said that they would not know whether the firm took part in corruption, a response that may reflect the fact that several respondents were in charge of just one branch of a multinational firm and thus were not responsible for the operations of other divisions. In addition, some firms have employees in positions that may provide them with incentives to pay bribes out of their private pocket to increase their chance of doing business and hence their personal career opportunities. The bribe in such cases is still paid on behalf of the firm.²⁶

Executives' tendency to avoid unpleasant information about 'grease' payments and bribery taking place in foreign countries of operation was perhaps more common in the past. In this material, only 18 percent had actually considered it a benefit *not* to be informed if an agent applies his/her compensation to questionable payments, compared to 70 percent who would never consider this a benefit.

Accordingly, when there is a deviation between actual and asserted business practice, the accountability appears to lie, both formally and actually, with those who promulgate anti-corruption codes of conduct. The risk of corruption is, therefore, connected to executive decisions and to the probability of being caught engaging in a corrupt practice. Firms that carry out projects as a joint venture or a consortium face the additional risk of cooperating firms who seek to influence clients in an unethical manner.

Of the firms in the survey, 42 percent have carried out projects in a foreign country as a joint venture or as a part of a consortium. One-third of these firms said that they have experienced the problem of a cooperating firm that sought to influence a client in a way that the respondent found difficult to acknowledge. Most of these firms complained to their partners about the specific practice.²⁷

Cases of corruption can cause vast reputational damage, and it is obvious that most firms that face a corruption scandal are cautious about publicity. When asked about the typical reaction from the company if a serious violation of ethical codes, such as corruption, were detected, the responses were as follows: 42 percent would initiate an 'internal inquiry', while 13 percent would have an 'internal discussion'. Only 11 percent thought that they would involve the police, and just one firm would open the way for investigation by an external committee or consultancy. However, the survey question is difficult to answer. The firms' reactions would obviously depend on the actual circumstances, and 32 percent said that they in fact did not know how they would react. The survey reveals a significant anxiety about discussing the problem with persons outside the firm.

6. Conclusion

The aim of this project was to understand the strategic choices and preferences of a group of business leaders in situations when they experience corruption and in similar ways a challenging business climate. Most of these business leaders live in a country with relatively low levels of corruption, and they are thus expected to have 'good home-country norms'. The distinctive feature of this study is its specific focus on such a group's way of handling corruption when operating with trade and investments in international markets. Some of us would perhaps consider this group to be among those who are best able to cope with the problems of corruption – since it is supposed to be 'cleaner' and at the same time able to operate successfully in challenging sectors and countries. However, the impact of home-country norms for choices made in international markets is uncertain. Many firms in this survey did not themselves consider such aspects decisive, and also respondents to the embassy survey described local corruption as a challenge for all foreign firms. Moreover, a significant share of the firms in this business survey said that they consider corruption 'a part of the game' in some foreign markets, and preferred to 'adjust to local practices' when being challenged by corruption, rather than, for instance, leaving the specific market. The barrier to taking action against the practice when losing contracts in such a situation is also high. This attitude was often explained by a 'concern about future business cooperation'.

Many respondents revealed confusion about the legal status of certain forms of corruption. Several respondents found it easy to respect relevant regulations, while at the same time admitted the use of business practices that clearly violate Norwegian or local law. Even so, those firms that found themselves unable to respect the law in certain situations were the most informed about the OECD anti-bribery convention. There were also significantly more losses of contracts due to corruption in the group of firms that had implemented anti-corruption codes, compared to the category without such codes.

The propensity to be involved in corruption differed significantly between different categories of firms. Size, sector, type of international experience, and the number of years in foreign markets proved to be critical factors in this respect. In addition, firms that operated in competitive environments were actually more inclined to take part in corruption, compared to those more able to make profits. This is perhaps surprising, considering the fact that corruption is not a problem when the competition for important contracts is free and fair. However, intuition suggests that firms operating on the margin can have a stronger incentive to take certain shortcuts.

Procurement procedures have been established, and in many countries significantly improved, in recent years to ensure free and fair competition. Nevertheless, tender procedures are not believed to be an efficient obstacle to corruption. Avoiding or influencing such procedures are still the main purposes of bribery. Bid rigging and forged tender procedures appear to be serious problems in international business, and the study emphasizes the challenge of designing procurement procedures that can efficiently prevent corruption. This is particularly an issue in tenders for complex contracts and large firms. The results in this study imply that common procurement procedures are far better able to ensure free and fair competition when the participating firms are small and medium sized. Another matter that is most relevant for the large and complex contracts is the influence of political pressure, which was described by the respondents as an alternative to corruption or as a form of corruption. This problem should obviously be included in debates about the quality of procurement procedures.

Although corruption in tender procedures tends to concentrate on certain advantages *vis-à-vis* competitors, it is also important to understand the underlying driving forces behind corruption. A critical problem in this regard appears to be a worry that competitors will offer bribes. As a logical consequence, instilling anti-corruption commitment in firms should involve a signal of reliable anti-corruption commitment in other firms, which often will require a more creative incentive program than the introduction of internal anti-corruption codes. The survey also found that top

executives are informed and responsible, not only formally, if corruption does take place, and the business risk of corruption is strongly connected to decisions made at this level.

As a final point, this study exemplifies the possibilities of getting responses to a large number of questions related to this very sensitive topic. In that sense I hope it may serve to establish guidelines for future larger or more specific surveys on similar issues. Such empirical studies can have a significant value in supporting or rejecting assumptions, or can make us aware of correlations and mechanisms. Particularly in combination with more theoretical analyzes, this can be a fruitful approach to understanding corruption.

Notes

- * This chapter reports on a study that is part of my PhD project at the Norwegian School of Economics and Business Administration (NHH). The study was conducted in cooperation with the Confederation of Norwegian Business and Industry (NHO), the largest business association in Norway, though it was financed by the Norwegian Research Council. The preparatory studies for the project were carried out under the guidance of Susan Rose-Ackerman during my research stay at Yale Law School in 2003, and I am grateful for her suggestions. Also Kjetil Bjorvatn, Kalle Moene, Jacob Svensson, Odd-Helge Fjeldstad, Arne Wiig and Jens Andvig have contributed with valuable comments.
- 1. The OECD convention against bribery of foreign public officials in international business transactions has been in effect since February 1999. The UN convention, an agreement on the criminalization of a broad range of corruption-related activities and cooperation on investigation, was introduced in 2003. See the paper by Kaufmann et al. (2005) for an investigation of possible improvements in various governance indicators, corruption included.
- 2. The paper by Andvig and Moene (1990) describes this dynamics of corruption levels.
- 3. For more information, see www.oecd.org. The OECD country evaluation reports on the implementation of the OECD anti-bribery convention are particularly interesting in this respect. See also www.u4.no/ for an overview of other important anti-corruption conventions.
- 4. See Rose-Ackerman (2002) for a broad review of corruption-related research and main challenges.
- 5. See <http://news.ft.com/companies>. These firms were Telenor, Statoil and ABB, while the other companies in the pilot study were Jotun, Aker Kværner, Eidesvik Shipping and DNV (Det Norske Veritas). I am grateful for their time and cooperative attitude.
- 6. Like, for instance, Graham and Harvey (2001), CRG (2002) and Batra et al. (2003).
- 7. For the sake of anonymity, oil and power are put together in the same category.
- 8. The cross-tabulations are studied using chi-square statistics. Note also, that most numbers are presented in percentages, even if the number of respondents is below 100. Ten percent is therefore the response from 8 persons. Most respondents responded to all questions, and, n , the total number of responses to each question, is equal or close to 82 in all tables or presentations of the results.
- 9. This is thoroughly discussed in the paper by Hellman et al. (2000).
- 10. Although the issue of bargaining power is important in understanding corruption, as is well described by Rose-Ackerman (1978), it was not a central research topic in this study.
- 11. There is, in spite of vast improvements in the rules, a significant grey zone between legal and illegal business practices, particularly when it comes to payments made to reduce barriers to business or certain marketing strategies directed towards specific individuals. Recent judicial documents, such as the anti-corruption conventions of the Council of Europe, the OECD and the United Nations allow for alternative ways of gaining

- influence by referring to actions that obviously have a 'corrupt intention' or proposals for 'improper advantage'.
12. The response on lost business due to corruption, a question which in this study was not restricted to a specific period of time, is higher than the average result of a business survey carried out by the CRG during 2002. In the CRG study, 27 percent of the responding firms believed that they had lost business contracts because a competitor paid a bribe during the last year, almost 40 percent during the last five years. The responses from the five countries included in the CRG survey differed significantly. Fifty-six percent of Hong Kong firms claimed to have lost business due to corruption during the past 12 months, compared to 16 percent of UK firms (CRG 2002).
 13. The examiners who conducted the OECD evaluation of Norway's implementation of new anti-bribery rules were concerned that information about facilitation payments was not sufficiently communicated to the business sector (OECD 2004: 28). This concern is justified by the present findings. The unclear legal status of facilitation payments and other forms of corruption is not always improved by the literature on business risks. Poole-Robb and Bailey (2002: 59) is just one example: 'It appears that what is and is not a bribe is a matter of presentation and perception in much the same way as the concept of corruption itself'.
 14. The result is controlled for size and sector.
 15. The fact that firms from OECD countries are responsible for about 70 percent of world trade in goods and services (www.unctad.org), makes it relevant to search for distinctions between OECD countries in their firms' propensity to offer bribes. Nevertheless, the OECD convention on cross-border bribery and the vast attention to corporate social responsibility in the OECD region, makes it plausible to find the largest differences between OECD countries, on the one hand, and countries without this kind of restriction, on the other. See also Montigny (2004), who describes the difference between firms from countries with restrictions on cross-border bribery and firms from other countries as a challenge and an obstacle to the development of sound industry and trade in African countries: Many 'clean' firms prefer alternative markets for fear of being involved in corruption, and African countries are left with an 'adverse selection' of foreign investors.
 16. See an interesting and relevant discussion by Bardhan (1997).
 17. One recent example is the Swedish Foreign Ministry's refusal to sanction bribes for exports to Vietnam, claiming that 'one sometimes has to pay bribes to do business in this country' (BBC Monitoring Service, 11 March 2004).
 18. In this regard, the USA comes out as more resolute than Europe. Cross-border bribery has been forbidden for US firms since 1977, when the Foreign Corrupt Practices Act (FCPA) was introduced. There have been a number of court cases in which firms have been heavily penalized. One recent example is Exxon Mobil's bribery of a Kazakhstan public official to get access to the country's largest oil field.
 19. One explanation is the formulation of the question, as it encourages distance from the practices of one's own business unit. However, the high number of firms that claimed to have lost contracts due to corruption makes it reasonable to assume that most answers were based on the firms' own experiences.
 20. See Søreide (2006b) for an analysis of the connection between cartel profits and responses to corruption.
 21. See Rose-Ackerman (2002) for a study of the ethical responsibilities of firms to prevent business corruption.
 22. See Søreide (2005b) where I discuss these results in light of the EU procurement reform. Della Porta and Vannucci (1999) describe many different ways of cheating on tender rules. Corruption can obviously take place in spite of such procedures.
 23. The pressure can also be a threat of political sanctions. According to people interviewed for this survey, in some countries firms sometimes pay their national politicians, for instance in the form of party financing, to sanction a client, or the client's government (when the client is a firm), after the contract has been given to 'the wrong firm', a competitor.

24. '[W]ithout mentioning the fact that such jobs are in fact subsidized' – from an article in *The Economist*, 'Don't be salesmen', 1 February 1997.
25. See for instance the paper by Heum et al. (2003).
26. The unclear liability of the firm in such situations should not be a loophole in laws against corruption. Too many firms have escaped prosecution by placing the guilt on a scapegoat. In Norway, for instance, only individuals had, until recently, been held responsible for the offence of bribery.
27. However, some firms may carry the concept of due diligence a bit too far. Some respondents said that illegal methods, similar to the practices of intelligence services, are applied by firms in international markets to be assured that potential business partners will not operate in a way that may represent a risk to the firm.

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14 Laboratory experiments on corruption

*Klaus Abbink**

Corrupt activities are seldom observed directly. Naturally, everyone involved in such behavior has good reasons to remain silent. Much progress has been made in cross-country econometric analysis on the determinants of corruption (Kaufmann, Kraay and Mastruzzi, this volume; Lambsdorff, this volume). Still, if one wishes to have a closer look at corrupt behavior, problems arise because the subject of study is carefully hidden from the researcher's eyes. To tackle the problem, researchers have recently begun to use an alternative approach to gather empirical data on the issue. In laboratory experiments it is possible to create analogous – although stylized – environments that mimic real-life corruption scenarios and to obtain data in a controlled manner. This chapter surveys that research.

In a laboratory experiment, subjects – typically students, since they are readily available on university campuses – make decisions according to rigid rules that they are given by the experimenter. Depending on the decisions they make, they receive payoffs that are an integral part of the rules of the game. In economic experiments it is common practice to reward subjects in proportion to the payoffs they have achieved in the experiment. This feature ensures that subjects have proper incentives to maximize their payoffs and to make careful decisions. Thus, unlike in most survey studies, subjects play for real money.

The experimental method can be applied for three purposes. The first is to test theoretical models. When modeling a strategic real-life environment, a theorist relies on behavioral assumptions, typically the assumption of fully rational selfish utility (or profit) maximization. If these assumptions are not met, the theoretical results may be distorted. In the laboratory a rigorous test of the behavioral underpinnings of the model can be carried out. Second, laboratory experiments can substitute for field data that often are unavailable when studying corruption. Finally, even if some data are available, laboratory data can be gathered in parallel with field data. The methods are strongly complementary because one method's weaknesses are the other one's strengths. On the one hand, field data are realistic because they are gathered in real life, but they suffer from noise, identification problems and lack of control. The laboratory, on the other hand, allows the use of a controlled environment in which variations in individual factors can be tested while keeping all others constant. Endogeneity problems do not

arise. However, the data are gathered in an artificial environment, which may weaken the external validity of the results.

Corruption experiments are a new field of study, with the first studies carried out in the late 1990s. Overall there are about a dozen experimental economics studies on corruption; five of them are my own work. The upside of this sparseness is that it is still possible to write a survey article that is complete, to the best of my knowledge, and that provides an outline of every completed study. However, this may not be so for too long; several studies are ongoing and were incomplete when this chapter went to press. The field is growing rapidly.

This chapter restricts itself to papers which explicitly address corruption and say so in the title or introduction. Of course, these papers are embedded in a wider literature in experimental economics. Some papers analyze the reciprocity features of a corrupt relationship. These studies would not have been possible without the large literature on trust games (for example, Fehr et al. 1993, 1997; Berg et al. 1995; Dufwenberg and Gneezy 2000; Fershtman and Gneezy 2001; Gächter and Falk 2002; Irlenbusch 2005a, 2005b). In trust (or reciprocity) games, a first mover can send money to a second mover, who in turn can voluntarily reward the trustor by sending money back. The games are constructed such that if they exhibit trust, both players can earn higher final payoffs, but if the players are strictly rational, then in equilibrium no trust and no rewarding will be exhibited. Contrary to the theoretical prediction, the common finding of these studies is that first movers often show trust by transferring money, and second movers often reward them by sending money back, even if the game is played only once and under completely anonymous conditions. These results show that even without explicit enforcement mechanisms (due to its illegality a corrupt contract naturally cannot be enforced) trust and reciprocity can lead to exchanges of favors. While in most experimental trust games reciprocal cooperation is the ‘good’ outcome, corruption is generally regarded as undesirable reciprocity. Despite this difference, the existing literature on trust games provides researchers with a good starting-point for analysing corruption.

Other papers draw on another classic of experimental laboratory games – the ultimatum game – introduced into the experimental literature by Güth et al. (1982; for an overview, see Camerer 2003). In this game, a first mover can propose a division of a cake to a second mover, who can accept or reject the proposal. If the second mover rejects, both players receive nothing. Because any positive amount is better than nothing, the second mover should theoretically accept any offer greater than zero, and the first mover should consequently offer no more than the smallest money unit. There is ample experimental evidence, however, that human second

movers do reject offers they consider too low, and first movers offer substantial amounts often up to an equal split. Thus the second mover has considerable veto power, which can be seen as parallel to the power that a public official has to decline an applicant's request.

Existing experimental studies on corruption can be roughly categorized into experiments addressing individual corruptibility, experiments modeling a bribery scenario, studies on embezzlement and auction design experiments. I discuss each in turn and summarize the papers in chronological order within each category.

1. Determinants of individual corruptibility

The two studies reviewed in this section, both by the same authors, attempt to identify the institutional and sociological factors that make individuals more or less corrupt. Consequently they are designed as individual decision experiments with no interaction between the participants.

Are economists more corrupt than others?

Frank and Schulze (2000) carried out the first controlled experiment on corruption. However, the authors were not interested in corruption *per se* but rather in detecting differences between students of economics and students of other disciplines. Their design involved a very simple individual decision situation that used a corruption story to assess individuals' choices when a tension exists between maximizing their own payoff and acting in the public interest. The approach is somewhere in between a classical laboratory experiment and a typical field experiment. Instead of recruiting participants to show up in the laboratory, the authors conducted their experiment in a lecture hall where the university film club was showing a movie. Before the start of the movie, viewers were confronted with a fictitious decision situation, which is as follows. A DM 200 note (about €100 or US\$100 at the time of the experiment) that is the property of the film club has fallen into a drainpipe. It needs a plumber to get it out. The subject then is asked to imagine that he or she is in charge of calling a plumber, paying him, and delivering the remainder of the DM 200 to the film club. The subject has the choice of 10 offers from local plumbers. The cheapest offer involves a price of DM 20 and no bribe; in the most expensive one the price is the full DM 200 and the bribe DM 144. Recall that the remainder of the DM 200 is paid to the film club. The offers differ in the prices charged and in bribes offered to the subject. The more expensive a plumber, the higher the bribe the decision maker receives. Thus the experimental design creates a conflict of interest: it is in the public (here, the film club's) interest that the decision maker chooses the cheapest offer. However, a selfish decision maker can accept more expensive offers which provide

higher bribes. Only the subject knows the offers made by the plumbers; there is no risk of detection. Thus the authors abstract from the issue of risk attached to engaging in an illicit activity.

The authors conduct two treatments. In one treatment the situation is as described above. In a second treatment the decision maker receives an additional lump-sum payment of DM 40. The rationale for this variation is the conjecture that subjects might feel worse about taking bribes if they receive a substantial reward for doing their job.

The main hypothesis tested in the study is that economics students are expected to take more bribes because selfish profit maximization is a core assumption in much of what they learn. This difference in behavior could be induced by either self-selection (students who are attracted by profit maximization are likely to choose economics) or indoctrination (during their time at the university students are confronted with the assumption of profit maximization so often that they accept it as legitimate). Frank and Schulze (2000) collect data on major, year of study and gender. They use this data to run regressions testing the effect of these variables on the likelihood of bribe taking.

The mean bribe taken by the participants was DM 85, where 12 percent of subjects were perfectly honest and 28 percent took the maximum bribe. The results support the hypothesis that economists are more likely to take bribes than other students and also show that this is more likely to be due to self-selection than to indoctrination. Students who have been exposed to economics for a long time do not behave differently from beginners. The lump-sum payment had no detectable effect on behavior.

Intrinsic motivation versus deterrence

Moving beyond the rather secondary issue of student subject pool differences, Schulze and Frank (2003) next move closer to the heart of the corruption issue. In a follow-up study they analyze the effect of measures to combat bribery. In particular, they ask whether the possibility of detection is a suitable tool to deter individuals from bribe taking. This is far from obvious. There is some evidence that sanctions may be counterproductive because external incentives can crowd out intrinsic motivation. Instead of being a question of right or wrong, the decision problem becomes a calculation of risks and rewards. To test whether the risk of being detected increases or decreases bribery, the authors run a version of their original set-up in which subjects roll a die to determine whether they will be caught. If the decision maker is caught, he or she receives nothing. The more expensive the plumber chosen (hence the higher the bribe taken) the more likely detection becomes. In the parameterization chosen by the authors the probability of detection was quite high, up to two-thirds for

the two highest offers. However, as in the first study, the authors applied a random lottery payment technique. All participants were asked to make decisions as if playing for real, but only one was afterwards drawn to receive money, the others were not paid. Thus the probability of receiving anything was very small.

As in the first experiment, some treatments included an additional lump-sum payment to test for a payment satisfaction effect. The results show that the detection mechanism does not reduce the level of bribes or the incidence of bribery. The average bribe taken is slightly but insignificantly higher with a risk of detection than without it. The distribution of the offers being taken, however, is different. On the one hand, very high offers, with a high probability of detection, are chosen less frequently. Thus deterrence has an effect. On the other hand, very low offers are also chosen less often. Perfectly honest choices, which accounted for about 12 percent of decisions without risk, are virtually non-existent in the treatment with risk. Hence there is some evidence for a crowding out of intrinsic motivation. With the introduction of the detection lottery the choice of offer becomes a trade-off between bribe levels and risks, with the highest expected returns being earned in the middle of the range. Considerations of doing the right thing play a less important role.

Once again the lump-sum payments had no significant effect, and there might be a gender difference. Although women and men take about the same amount in the treatment without risk, women are less corrupt in the treatment with risk. Depending on how much one trusts the way these results were generated (using highly specific econometric *ex post* models), one will find this result either interesting or peculiar.

2. Bribery

Bribery is a private payment to a public official in return for a benefit or the avoidance of a cost. Bribery relies on a reciprocal relationship between briber and bribee that cannot be mediated by transparent, public procedures. This is why most studies reviewed here build on experimental trust games.

An experimental bribery game

Abbink et al. (2002) conducted the first laboratory experiment using an interactive corruption game. Their basic approach is to model bribery as a situation of undesirable reciprocity. Consequently the core of their experimental model is a reciprocity game that they develop into a bribery game. Their game is a two-player sequential game between a potential briber (for example, a firm) and a public official, and it consists of several stages.

At the first stage, the first mover (that is, the firm) decides on whether or not to transfer an amount of money, t , to the second mover (that is, the

public official), and if yes, how much he wishes to transfer. If he transfers a positive amount, he must pay a small ‘transfer fee’ of 2. The fee represents the initiation costs of the briber when he approaches the civil servant to establish a reciprocal relationship. These costs must be paid even if the official rejects the bribe.

The second mover is then asked whether she accepts or rejects the transfer. If she rejects, the transfer is not performed; both accounts remain unchanged except for the first mover’s small transfer fee. If the official accepts, then she receives triple the amount offered by the firm (the tripling reflects a difference in marginal utility between the bigger firm and the official). At the second stage, the public official has to make a binary decision between two alternatives, called X and Y. Y is much more favorable to the first mover, X is slightly better for the second mover. This condition means that the briber’s advantage from a favorable decision is large, but the public official has only a slight preference for the honest alternative arising, for instance, because of the effort necessary to justify a manipulative choice to her superiors.

The authors conduct the experiment in three treatments to isolate the effect of the essential characteristics of corruption. These are (i) the reciprocal relationship between briber and bribee, (ii) the negative externality that the harmful activity inflicts on the public, and (iii) the severe punishment that briber and bribee face when caught. The first treatment consists of 30 repetitions (‘rounds’) of the trust game as described above. The impact of reciprocity can be identified by the extent to which participants engage in the exchange of favors, that is, the transfer of money from the firm to the official and a choice of Y by the second mover. Such exchange is, though mutually beneficial, in sharp contrast to game-theoretic prediction.

The first treatment (which does not much resemble a corruption scenario) serves as a control condition to generate the benchmark to compare with other, more corruption-like, treatments. A comparison of treatments allows one to identify the effects of a corruption scenario that make it different from the mutually beneficial exchange of favors between, say, an employer and an employee. Although in a typical reciprocity experiment the exchange of favors enhances efficiency, in a corrupt relationship between firm and official such an exchange is harmful to the public and thus prohibited. To isolate the effect of damages done to the public, the authors introduce a second treatment in which a Y choice inflicts costs on others. This is done as follows. In each session nine pairs of a firm and an official play the game in parallel. Whenever an official chooses Y, all other participants receive a deduction from their payoffs. In total, the damages done to others exceed the mutual benefits that the two members of the pair can gain, making the Y choice overall inefficient. In the experiment, for

a typical exchange of bribes, the total damage is twice the mutual gain between firm and official. Because bribes are assumed to be paid secretly, subjects are not informed about the damages others have done to them by choosing Y.

In a third treatment, the authors examine the effect of adding severe punishments that briber and bribee face when caught. In the real world, the probability of discovery is very low, but penalties are harsh, ranging from hefty fines and job loss to imprisonment. The authors attempt to model this situation by introducing a lottery that is played every time a bribe has been accepted. With a small probability, 0.3 percent, the two players are disqualified from the experiment without receiving earnings from play.¹

Two main effects can be observed immediately. First, there is no detectable effect of the negative externality. If costs are inflicted on others, this does not significantly affect either the average bribe or the average number of Y choices, which remains essentially constant at about two-thirds. Somewhat surprisingly, subjects do not seem to care about the costs their actions inflict on the other participants.

The possibility of punishment, however, has a strong and significant effect – reducing both the average bribe and the average frequency of the Y choice by about one-third. Thus punishment serves as a strong deterrent against corruption. This result is strengthened by accompanying questionnaire results showing that subjects tend to underestimate the overall probability of disqualification – had they assessed the risk correctly the penalty would probably have been even more effective.

The effect of staff rotation

Two follow-up studies by Abbink (2004, 2005) use the above game for policy applications. Abbink (2004) tests an instrument that was introduced by the German government in 1998. The government implemented a directive requiring regular rotation of staff in sensitive areas. In the laboratory the effectiveness of this instrument can be tested by creating an environment with and without staff rotation, keeping everything else constant. To this end the author conducted an additional treatment of the set-up described above. In the original experiment the pairs of firms and officials remained the same over the 30 rounds. The new treatment involves randomly re-matched pairs in every round. Thus corrupt firms have no opportunity to punish officials who do not choose Y. The data can then be compared to the original set-up. The results show a strong effect of staff rotation. The average bribe decreased from 2.93 to 1.65 talers, and the average number of Y choices fell even more, from 43.8 to 14.3 percent. Strong effects over time cannot be detected. Thus the experiment shows that staff rotation is a very promising tool against bribery, although

in practice these gains need to be weighed against possible efficiency losses due to the upsetting of routines and higher training costs under staff rotation.

The impact of fair salaries on corruption

In a follow-up study, Abbink (2005) uses the bribery game to test a hypothesis put forward by van Rijckeghem and Weder (2001). In their econometric study the authors analyze the effect of public sector salaries on civil servants' corruptibility. They find that higher salaries do lead to lower corruption, but their search for possible reasons did not produce conclusive answers. The authors find some support for what they call the 'shirking' hypothesis: better-paid public officials have more to lose when they are caught and therefore are more reluctant to accept bribes. The second conjecture, dubbed the 'fairness' hypothesis, is not supported by their data. No evidence can be found to support the claim that poorly paid public officials are more corrupt because they feel unfairly paid and therefore find bribe taking legitimate. The authors admit, however, that their dataset does not allow them to detect direct evidence of these attitudes.

Abbink (2005) addresses the fairness hypothesis in an experimental framework. The game is analogous to the one described above, but the damages from the choice of Y are inflicted not on other pairs, but on 'workers' not involved in the interaction between firms and officials. In two treatments the wage paid to the workers is varied. In the high-wage treatment they earn substantially more than the firms and officials; in the low-wage treatment their earnings are always lower. To avoid wealth effects the official's own absolute wage is held constant, but the relative wages is varied.² If fairness considerations were effective, officials should be less reluctant to harm workers who earn much more than they do, so we would expect more corruption in the high-wage treatment. The data, however, do not reveal such an effect. Significant treatment differences cannot be found. In some sense this corroborates the findings of van Rijckeghem and Weder (2001), who also failed to find such an effect in their data.

Instructions framing in bribery experiments

The last bribery experiment in this series deals not with corruption as such, but more with experimental methodology. In all of the experiments described so far in this section, the task was presented in neutral terms, that is, without making any reference to bribery. This has been done to avoid designs that seem to suggest a 'right' answer. However, this approach is open to the objection that one might be 'neutralizing away' important aspects of behavior by presenting the decision situation out of context and reducing it to a system of strategic choices and payoffs. To assess the impact

of framing on the experimental results, Abbink and Hennig-Schmidt (2002) conduct the original experiment by Abbink et al. (2002) using a different set of instructions. In their experiment the situation is presented as one in which a firm applies for the permission to run a plant that pollutes the environment. A civil servant can decline or award this permission. Up front the firm can make a 'private payment' to the civil servant. The authors hypothesize that, since corruption has a clearly negative connotation, the use of explicit language would emphasize corruption as a negative act, and, therefore, we could expect less corruption with loaded framing. The experimental results, however, do not support this hypothesis. Although average bribes and permission frequencies are slightly lower, the difference is not significant. Abbink and Hennig-Schmidt (2002) conclude that the game is rather robust and, therefore, is not particularly sensitive to the way it is presented.

Greasing to speed up bureaucrats

The experiment by González et al. (2004) is an exception in the group of bribery experiments. Their experiment does not focus on the reciprocal relationship between briber and bribee but models a corrupt relationship as a three-player ultimatum game. The authors use a variant of the ultimatum game to study grease payments in the relationship between firms and public officials. Often an official has discretion to speed up or delay a decision, with costly consequences for the firm. It is not uncommon, especially in developing countries, to pay bribes in order to obtain a quicker decision. The authors thus model a situation in which two public officials, A and B, process a file, where both of them have veto power, but only A also has the power to delay a decision. In the game the proposer, taking the role of the applicant, divides a cake (the surplus of a project) between himself and the two public officials. The project is implemented if both officials accept the proposed division. In addition, the second official can, at a minor cost, delay the project and thereby reduce the applicant's payoff by some factor. Official A with delaying power knows the entire offer of the applicant, B only knows his own share. The effect of greasing can be identified by the additional share that official A can extract compared with official B who only has veto power. The experiment was conducted as a one-shot game using strategy elicitation. That is, the officials were asked to specify a decision for every possible offer that the proposer could make before knowing the proposer's decision. Strategy elicitation is a very useful tool to gather more data with the same number of participants; it provides a way to collect data for decision nodes that may be reached less frequently.

In line with the vast number of ultimatum game experiments, the results show that proposals involve substantial shares for the officials. In contrast,

in standard game theory, only the smallest money unit would be offered (and accepted) in equilibrium. More importantly, however, the data show that officials with delaying power tend to demand a premium, and that such a premium tends to be offered. The highest acceptance rate without delay is observed for full-equity offers, stressing the importance of equity norms in experimental games (and possibly in reality as well). Rejections occur for very low offers, a result that holds for both officials. Delays are frequently observed when official B, with no delaying power, receives a share that is higher than that of A, apparently as a way of punishing the proposer without harming the other official.

Loyalty conflicts in bribery

Another recent study on bribery extends the model of Abbink et al. (2002). Jacquemet (2005) introduces a third player, the principal, explicitly to address the agency relationship that facilitates corrupt acts. The game, therefore, is slightly more complex than the original game. The full-fledged variant consists of four stages. First, Nature draws one of two states, good or bad. In the good state all players' payoffs are, *ceteris paribus*, higher by a constant than in the bad state. Because only the agent knows the outcome of the draw, the agent can hide his actions from the principal. The payoff combinations are chosen so that the principal cannot infer the state of Nature from the payoff she receives. At the next stage, without knowing the draw, the principal sets the agent's wage. Then a third player, the briber, can offer the agent a transfer (bribe) that the agent can accept or reject. Finally, the agent chooses one of three actions. He can either do nothing (shirk) and save the costs of exerting effort. Or he can take one of two costly actions and implement one of two projects. One of them favors the principal and the other one the briber. In the (extreme) equilibrium prediction the agent always shirks and hence the briber never offers a bribe and the principal offers the lowest wage. However, this prediction only serves as a benchmark because it is well known that in this type of reciprocity game subjects do manage to set-up mutually beneficial relationships off the equilibrium path.

Jacquemet conducts two basic treatments with some parametric variations. In one treatment the game is played as described above. In the other one the principal's decision node is removed and the wage the agent receives is exogenously determined. This variant allows one to examine the effect of the reciprocity conflict the agent faces. When accepting a bribe, the agent must betray one of the other players. He can either choose the action favored by the principal who pays his wage, but then he disappoints the trust of the briber. Or he can respond to the briber's payoff, which means betraying the principal.

The results show clear evidence of a ‘delegation effect’. If a high wage has been explicitly chosen by a principal, then agents tend to be significantly less prone to accept bribes. If the principal has chosen low wages, then agents reciprocate negatively and are more likely to be corrupt. The data show that the wage effect solely stems from the reciprocity relationship between principal and agent. If the wages are exogenously given, higher wages lead to even more corruption (the author conjectures that this is because better-paid agents in the experiment can afford the costs of implementing a corrupt decision more easily).

A cross-cultural comparison

Corruption is often seen as a cultural phenomenon. Indeed, there are countries with similar economic systems and performance that nevertheless exhibit very different levels of corruption. Previous experimental studies have been conducted in a single country and have therefore not been able to capture cultural differences. Cameron et al. (2005) address this issue. They design an experiment based on a reciprocity game that allows them to detect different attitudes towards corruption in different cultures. They are interested in people’s propensity to engage in corrupt acts as well as in their willingness to tolerate corruption by others. To this end they construct a three-player, three-stage game between a firm, a public official and a citizen. At the first stage the firm can offer a bribe to the public official. The official can then either reject the bribe or accept it. If he accepts, two consequences follow. First, the outcome most favorable to the firm is implemented (the official does not have the option to take the bribe and default), and second, the citizen’s payoff is reduced. At a last stage (and this is the fundamental difference from the other reciprocity-based bribery experiments) the citizen has the opportunity to punish the official. However, the punishment is costly. If the citizen spends an amount P on punishment, then the official’s payoff is reduced by $3P$. The game is played one-shot. Therefore, in equilibrium a rational selfish citizen would not punish, but previous experiments in other contexts have shown that humans are willing to sacrifice money to punish ‘wrong’ behavior, either out of moral considerations or negative reciprocity.

The authors conduct three treatments of their experiment, varying two dimensions. In the baseline treatment bribery is welfare enhancing, that is, the gain that firm and official make from bribery exceeds the damage done to the citizen. This game is played in two variants. From the first to the second treatment the punishment opportunities are increased, in a way that the feasible range of punishment amounts is widened. Finally in the third treatment, which is played with the wider punishment range, bribery is welfare reducing, that is, the damages to the citizen exceed the gains for firm and official.

The experiment is conducted in four countries: Australia, India, Singapore and Indonesia. These four countries were selected because two of them rank among the least corrupt countries in the world (Australia and Singapore), and the remaining two are persistently among the most corrupt ones. In addition, the choice of countries allows one to examine the effect of institutional change. Singapore has had corruption levels similar to India, but the government has recently fought corruption with an iron hand. Indonesia, on the other hand, has recently become a democracy with a free press, and as a result awareness of corruption in the public has risen tremendously, though this has not (yet) led to significantly less corruption.

The results of the cross-cultural comparison are somewhat mixed. The significant differences are as follows.³ Australians offer slightly higher bribes than Indians (though the percentage of bribers among firms is not different). Australians also punish bribe taking more often than Indians, and also spend higher amounts on punishment if they do. Singaporeans are less likely to punish than both Australians and Indonesians. Finally, Indonesians are more likely to reject bribes than Singaporeans. These differences are very hard to interpret and look rather unsystematic, despite being statistically significant. Further, differences, where insignificant, often are in opposite directions. Apparently there is no clear and robust relationship between the level of corruption in the four countries and subjects' behavior in the experiment.

Treatment effects are detected in the Australian sample only, where a wider range of punishment opportunities reduces bribe taking and accepting, and, interestingly, higher negative externalities *reduce* the amounts spent on punishment. Although bribery is much more harmful to the citizen in the treatment with high damages, it seems that citizens feel less inclined to reduce their payoffs even further after they already have been hit hard.

3. Embezzlement

In the bribery experiments described above, bribers actively offered money to officials in the hope of inducing a favorable decision, but they were unable to hold the officials to account if they failed to deliver the expected benefit. The case of embezzlement does not involve such an active briber. Rather, the official diverts resources to his own personal use that are meant to benefit the public.

Embezzlement and monitoring

Currently three experimental studies have addressed embezzlement. The first was carried out by Azfar and Nelson (2003). The experimental set-up they use is far more complex than the individual decision setting employed by Frank and Schulze or the reciprocity games reviewed in the previous section.

Azfar and Nelson introduce a multi-stage game with eight players in different roles. At the outset of each round, three of the eight players are randomly selected to stand as candidates in an election to select the executive. After short campaign speeches the other five players elect one of them. Another player, either appointed by the executive or elected by the voters (which is a treatment variation), is made 'attorney general', in charge of monitoring the executive. The remaining six players are voters for the rest of the round.

After the roles have been assigned, the executive rolls a die to determine how many valuable 'tiles' he (or she) will receive to distribute among the voters. This number is private information only known to the executive. The valuable tiles are then combined with worthless tiles. The executive chooses six of the tiles to be distributed among the voters. He is free to choose worthless tiles and keep valuable tiles for himself. This act constitutes embezzlement or corruption in this game. The six tiles are put into a bag and each voter draws one tile out of the bag.

The attorney general's task is to flip up to four of the tiles remaining in the executive's hand. The value of these tiles is exposed to the voters, and valuable tiles exposed become worthless. The first two tiles that the attorney general flips are free of charge, for the third and the fourth the attorney general has to pay a cost.

At the end of the round the voters elect an executive (and in half of the sessions also an attorney general) for the following round. The current executive and attorney general are automatically candidates, and they are challenged by one randomly selected voter. After brief campaign speeches, the voters choose one of the candidates. The next round then follows exactly the same structure as the previous one.

The experiment consists of two blocks of six rounds each. From one block to the next the appointment regime for the attorney general is varied. In one block the attorney general is elected, in the other one he is appointed by the executive. The order of the blocks is changed across sessions to control for sequence effects.

The design allows one to test the effectiveness of policy measures to combat corruption. The authors are interested in how different levels of transparency affect the corrupt behavior of executives. The number of worthless tiles that are added to the valuable ones is varied such that the total number of tiles was 10, 14 or 22 in different sessions. The number of tiles determines how well the executive can hide embezzlement from the attorney general. If the valuable tiles the executive has diverted to himself are hidden among many worthless tiles, then it is unlikely that the monitor will flip a valuable tile that exposes the executive's embezzlement. Another treatment variable already mentioned is the way the attorney general is chosen. A monitor appointed by the executive may feel grateful for being

selected, thus he may not spend effort in monitoring the executive. A monitor who stands for reelection, on the other hand, has a strong incentive to appear vigilant to the voters (the attorney general had better earnings in the experiment than the voters). A third dimension was the wage level of the executives and the attorney general; in half of the sessions it was much higher than in the other half. It is often hypothesized (with some empirical evidence as support) that poorly paid officials are more likely to engage in corrupt activity. Several reasons are advanced for this claim. The result might hold because the officials have little to lose when they get caught, because they cannot live on their low salaries, or because they do not consider corruption to be illegitimate given the little recognition the employer gives to their work.

In the experiment, executives were surprisingly honest and monitors vigilant. Despite the costs of turning tiles, most attorneys general flipped more than the two free tiles. The majority of executives did not divert valuable tiles to themselves, and those who did typically embezzled small amounts. Despite this general rule, the researchers could identify important treatment differences. The experimental results strongly support the hypothesis that transparency and accountability discourage corrupt behavior. Executives embezzled less when there were fewer worthless tiles, such that it was harder for them to hide embezzlement from the monitor. Executives found to be corrupt were rarely reelected, so getting caught meant a considerable financial loss. Thus executives were keen to avoid detection. In line with this, higher wages for executives also reduced corruption. However, it made no significant difference whether the attorney general was elected, despite the finding that elected monitors were more vigilant than appointed ones.

Corruption in health services

Barr et al. (2004) closely follow the approach introduced by Azfar and Nelson (2003), but try to make the game more realistic. The controlled anonymous conditions characteristic of most standard laboratory experiments are often difficult to implement in the field, and these researchers do not seek to replicate those conditions. Because they are interested in health-care delivery in poor countries such as Ethiopia, they modify the original game in order to adapt it to that situation. Consequently, they do not use university students from a Western country as subjects, but rather they use Ethiopian nursing students. These students are likely to experience in their future working life the situation modeled in the experiment. Azfar and Nelson's set-up is particularly suited for experiments in the field because it is conducted using face-to-face interaction and without a computer network.

The basic structure of the game is the same as the one in Azfar and Nelson but with the 'health worker' substituting for the executive. A health

worker receives resources meant to be distributed among citizens but can divert part or all of the resource to him- or herself. The major modifications of the original game are as follows.

- The health worker is randomly selected. However, if the incumbent has not been found stealing, his or her chances of retaining his or her position are much higher than the chances of other players. If embezzlement is detected, the health worker is prevented from being the health worker in the next round.
- The monitor is either elected or randomly selected but is never appointed by the health worker.
- Each tile the monitor flips is costly; there are no free tiles.

The treatments are similar to those used by Azfar and Nelson. The health worker's wage is set high or low (where the high wage is three times the low wage). The total number of tiles is set at either 10 or 18, and, as noted above, the monitor may be elected or selected randomly. In addition to these treatments, the authors vary treatments along an additional dimension. In half of the sessions neutrally worded instructions were used; in the other half the situation was explained in the context of the health worker's task.

The downside of this richness in variations is that the number of sessions conducted with each treatment combination was small. Indeed, among the eight sessions not a single one was replicated using exactly the same combination of treatment variables. This sparseness of data is partly due to the resource-intensive nature of data collection in Ethiopia, which is not the homebase of any of the authors. This limits the number of sessions that can be conducted. However, the authors gave high priority to using an authentic subject pool, which in their view enhances the external validity of their results.

With these limitations in mind, the statistical analysis provides some interesting results. As in Azfar and Nelson (2002), health workers receiving a high wage embezzle less, although the effect is small. An interesting result, not found in the previous study, is a positive relationship between the agent's wage and the monitor's effort. Monitors facing reelection are more vigilant than those selected at random because monitors who put more effort into their task are more likely to be reelected. There is no overall effect from the way the instructions were framed, but the variance seems to increase when the experiment was explained as one dealing with healthcare.

The donor problem in development

The third paper in this category is by Abbink and Ellman (2004). In their much simpler set-up the authors test some very specific hypotheses.

A donor who wants to deliver goods to poor villagers often needs to rely on an intermediary (typically a local village leader) to select the neediest recipients. Combining selection and delivery poses a potential problem. If the intermediary is dishonest, he (or she) might try to divert funds to himself. To maximize his own wealth, he may deliberately select richer villagers as the recipients because they feel more grateful for being selected (knowing that they do not deserve it) and are therefore less likely to complain. As a result there are two negative effects of embezzlement. Not only do the recipients get less than they should, but also the aid goes to the wrong people.

Abbink and Ellman test this hypothesis in a simple laboratory experiment with five players: one intermediary and four 'villagers'. Two of the villagers are poor and are given no endowment at the start, and two are relatively rich and are endowed with 50 talers each. The intermediary is the richest villager, who has 100 at the start. In addition, he receives 100 to be distributed to the two poor villagers. He is, however, free to select rich villagers and also free to allocate less than 50 to the villagers he selects. The remainder then goes into his own pocket. Villagers who receive less than 50 can file a costly complaint. If one complaint is filed, then an investigation discovers the intermediary's embezzlement, and the intermediary is punished. Villagers know about their own allocation and whether they are selected, but are not informed about other villagers' allocations. To avoid suggestive instructions, intermediaries were not explicitly told how they were supposed to behave, but equity is a very well-established fairness norm in experimental games, so a strong moral and social norm to pick the poor and allocate 50 to each of them can be assumed. Further, the rules of the game ensured that zero embezzlement was the only way to be safe from complaints.

The results show that rich villagers are indeed less likely to complain about embezzlement, and there is significant diversion of funds to rich villagers. Rich and poor villagers are selected about equally often. Thus, although the intermediary has the information needed to select poor villagers, selection is not improved over a merely random selection of recipients.

A control treatment with such a random selection of recipients reveals that random selection outperforms selection by the intermediary. Although the distortion from selecting the wrong recipients is about the same, random selection significantly reduces the amounts embezzled. If intermediaries are not in charge of selection, they know that villagers have no reason to be grateful for being selected. Thus they fear complaints more and embezzle less. This leads to an improved allocation of resources, though the effect of the selection method on actual complaint behavior is smaller than the intermediaries seem to expect. Overall, the authors draw the conclusion that selection by an outsider has the potential to be superior

to selection by the intermediary, even though outsiders often lack the information needed to identify the needy.

4. Procurement

The procurement of inputs for public projects presents a distinct set of corrupt incentives, especially when bidding mechanisms are used. Thus, the work reported in this section stands on its own because it does not focus on the interpersonal relationship between officials and their clients. Rather, it compares three mechanisms that are feasible for procurement auctions.

By its very nature, public procurement is one of the most sensitive areas in public administration. Officials decide how to allocate large amounts of money, but, being paid a flat salary, they do not directly benefit from lower prices. Büchner et al. (2005) model a procurement auction with two sellers. The bids the sellers submit are composed of two parts: a price that the government has to pay (p) and a bribe offer (b) to the buyer expressed as a share of the selling price.

A seller's payoff, if his (or her) offer is chosen, consists of his bid minus his costs minus the bribe he has paid. A seller who does not win the auction gets a payoff of zero. The buyer, a public official, has a utility function that takes into account both the social value of the contract and his (or her) own monetary payoff through the bribe. The buyer's utility function has a weight that specifies importance of the social value in his preferences. The higher this parameter, the less sensitive he is to bribes. The buyer will choose the offer that he prefers according to this utility function with regard to both parts of the offer, price and bribe.

Following standard assumptions in auction theory, in each auction each seller's cost parameter is drawn randomly and independently from a uniform distribution over the interval $[0, 1]$. Each seller's costs are private information, that is, a seller knows only his own costs, but not those of the competitor (but he knows that the competitor's costs are drawn the same way).

The authors first solve the model for the symmetric game-theoretic equilibrium and find that the equilibrium price offer increases with the cost parameter and that the bribe is lower the higher are the costs. Then laboratory experiments are designed to test the theoretical prediction. In all experiments only the sellers are represented by human participants; the buyers are robots maximizing the utility function mentioned earlier. For each experiment the auction game was repeated 30 times. Beyond testing the equilibrium prediction, treatments were designed to test the effect of certain institutional changes. One treatment highlighted the socially negative effect of bribery. For this, the sessions were divided into subgroups of three pairs of bidders. Every ten rounds each subgroup was compared with another subgroup. The subgroup in which bribes were higher received

a lower exchange rate from experimental into real currency in the next block of ten rounds. A second treatment variation was the matching protocol. Each variant of the game is played using a partners' scheme (fixed pairs of bidders) and a strangers' scheme (random re-matching every round). The partners' scheme can be expected to be more conducive to collusion.

The results in general support the theoretical prediction. Asking prices rise and bribes fall with higher costs. Quantitatively, prices tend to be slightly below the equilibrium bid. This is in line with previous findings from auction experiments, in which participants bid more aggressively than in equilibrium. Interestingly, bribes are also lower than predicted, which corresponds to less aggressive offerings. This holds for the treatments with and without negative externalities. In the treatment with variable exchange rates (thus explicit social costs of bribery) bribes tend to be slightly lower. Thus bidders do take the damage they do to their groups into account. The matching protocol had no impact on prices and bribes, as it is generally difficult to establish collusion in a competitive auction environment in which costs are private information.

5. Outlook

Experimental work on corruption is only just beginning and lacks a critical mass. Given the vastness of the phenomenon and the plethora of situations in which it occurs, a dozen papers can barely scratch the surface. This is particularly true because the papers are very different, and each one is only a snapshot of a particular environment. For a more comprehensive picture we need to develop a research program that systematically covers a variety of different, but related, issues in a common environment. Given the ongoing activity in the area, this is likely to happen in the future, but we are not there yet.

There are several methodological issues to be addressed. First, the experimental community continues to debate the right way of wording instructions to the participants. Should they be phrased 'neutrally', using only abstract terms and not mentioning corruption, or should they be presented in the context of a corrupt transaction? In an area so heavily loaded with moral values, this question may be more important than in, say, a market experiment. On the one hand, one may argue that loaded instructions are always prone to be suggestive and hence will tempt subjects into making particular decisions. On the other hand, neutral instructions may eliminate those moral values that are so relevant to corrupt behavior and that cannot be induced by the payoff structures only. Evidence is mixed so far. Abbink and Hennig-Schmidt (2002) do not find significant differences; Barr et al. (2004) identify a small effect. It seems that there is

no common answer for all corruption experiments, but that the effect depends on the particular game. More research is needed to ascertain the right way to proceed for the scenarios we wish to capture.

Second, future work should study the impact of culture on corrupt behavior in experiments. An important first step has been made by Cameron et al. (2005), but their inconclusive results suggest that cultural effects are subtle and complex, such that much more research is still needed to understand them. Note that the possibility of cultural influences does not invalidate results gathered from one-country studies. In most cases, experimentalists do not look at absolute levels of corruption (which are not very informative given that most games are played with invented parameters), but at the differences between treatments. Thus, experimental results would only be invalidated if different cultures responded differently to the treatment variations. Although it is plausible that cultural differences induce different levels of corruption, it is typically less plausible that different cultures would respond to changes in a particular variable in opposite ways. (It cannot be entirely ruled out, of course.) If changes in particular variables lead to similar effects in different cultures, then the use of one particular subject pool can even turn out to be a virtue of experimental methods. Drawing the participants for all treatments from the same subject pool then controls for cultural differences that could distort cross-country field studies. Nevertheless, identifying the effect of different cultures on behavior in corruption experiments is an interesting area for further future research.

For the future it also seems promising to create stronger links between field and laboratory research. This is very ambitious given that field data are so hard to come by for corrupt behavior. Often the motivation for designing a laboratory experiment is precisely that real-world data are prohibitively hard to get. It may not be impossible, however. Recent progress in the econometric analysis of corruption may open up opportunities to study aspects of corruption in field and laboratory in parallel. Although it is naturally impossible to prove the external validity of experimental results, such parallel investigations could dramatically add to the robustness of the stylized facts we can identify in laboratory experiments.

Notes

- *. This work has been carried out while the author was a visitor at the Institut d'Anàlisi Econòmica (CSIC), Barcelona. He gratefully acknowledges their hospitality and support.
- 1. For simplicity, the probability is independent of the size of the bribe.
- 2. Effects of an official's own wage are studied in other papers discussed in this chapter, for example, Jacquemet (2005) in a similar setting.
- 3. This refers to the comparisons backed by straightforward difference-in-means tests. The authors also run regressions to extract additional significances from their data. Their robustness is questionable, however, as they very much depend on the specification of the model.

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PART V

SECTORAL ANTI- CORRUPTION POLICIES

15 How corruption affects service delivery and what can be done about it

*Ritva Reinikka and Jakob Svensson**

Lack of accountability breeds corruption in service delivery programs. Therefore, improving the accountability of service providers both to beneficiaries and to government officials is a crucially important policy issue. Unfortunately we know little about how to achieve this goal. One way to learn more is with systematic evaluations of service delivery innovations designed to increase accountability. Such research can show what works, what doesn't, and why – a first step to success. As an example, this chapter discusses an innovative policy experiment in Uganda to strengthen accountability in the primary education sector.¹

How is accountability achieved in the public sector? To begin to answer this question, compare how accountability is achieved in many market contexts. In the market, dissatisfied consumers can successfully use the exit option; that is, if the price is too high or the quality too low, the consumer can choose not to buy the good or buy from another producer. If many consumers act in the same way, this will influence the producer's profitability and, in the end, its survival in the market. The exit mechanism, however, may not work well in the public sector. First of all, in many cases there may be no easily available alternative to the local public provider – say, a primary school. Second, the link between the public provider's performance and its financial position (or its staff's remuneration) is typically weak or non-existent. Finally, in the public sector the end producer is to a significant degree affected by the behavior and actions taken by various upper-tier government bodies. For example, in Uganda financial support to primary schools is channeled through district educational officers.

Governments have tried to compensate for the lack of a well-functioning exit mechanism by increasing control. That is, they create or strengthen legal and financial management institutions (judiciary, police, financial auditors) to improve their ability to monitor public sector performance. This is a top-down approach where some government agencies are assigned to control and monitor others. In many poor countries, however, legal and financial institutions are weak and often highly corrupt. Providing more resources (or training) for anti-corruption reforms may therefore not be the

right solution. Not surprisingly, there are few recent examples of successful efforts to combat corruption or to limit the diversion of funds in public programs (Svensson 2005).

How can one address corruption in these circumstances? In this chapter we present the case of Uganda and its attempts to combat corruption in the primary education sector. There are several reasons why the Ugandan case is interesting from an anti-corruption perspective. Specifically:

- An innovative survey tool was pioneered in Uganda in the mid-1990s to estimate the diversion of public funds earmarked for primary schools. The findings were striking. On average, over the 1991–95 period, primary schools received only 13 percent of central government funds nominally spent on the program (a capitation grant program). Most schools received nothing.
- The Ugandan case illustrates the power of quantifying corruption as a spark for reform. In response to the high degree of local capture of education funds, the central government implemented various reforms of the system. Most interestingly, it launched a newspaper campaign to inform parents and others of the monthly transfers of capitation grants to districts.
- The newspaper campaign in Uganda represents a complementary approach to the standard anti-corruption programs, as it takes the users of public services as a starting-point. That is, rather than focusing on service providers' accountability to policy makers, the idea is to engage citizens by providing easy access to information on the workings of public programs intended for their benefit. This improves citizens' ability to monitor service quality and to challenge abuses by officials.
- Since corruption in the education program was dramatically reduced, although not fully eliminated, the Ugandan case can be exploited to illustrate the returns from fighting corruption.

The rest of the chapter is organized around these four points. First, we explain the per student capitation grant program in Uganda, which is the focus of this chapter. The next section describes the tool, a public expenditure tracking survey (PETS), developed to estimate the diversion of public funds as well as the key results of the first PETS study. Then we highlight the information (newspaper) campaign launched by the central government soon after the large-scale diversion of education funds became known. We present evidence both on the impact of the newspaper campaign on reducing the misuse of funds and on the effects of the reduction in corruption on school enrollment.

1. The capitation grant program

In the 1960s, Uganda had a well-functioning public service delivery system. The system gradually broke down during the political and military turmoil of the 1970s and early 1980s. In primary education, parents increasingly took over the running of public schools. Data from the first PETS, which was carried out in 1996 and covered the 1991–95 period indicate that in 1991 the situation had not changed much. Parent–teacher associations (PTAs) were the primary decision makers at the school level, and funding by parents was, on average, the most important source of income (Reinikka and Svensson 2004a).

For a long time, Uganda has had a national policy of financing instructional material and other non-wage spending at primary schools through a capitation grant. The grant is a nationally set annual allocation per student and is intended to go to the schools, either in-kind or as a direct financial transfer. District offices are used as distribution channels. Although there are some differences across years, funds for the capitation grant program are disbursed by the central government nine times per year.

Prior to the newspaper campaign, the central government's policy regarding the capitation grant was not well known to parents, particularly outside the capital city. Even if parents knew about the policy in principle, many similar policy statements were not implemented in practice at that time. Little information was available to the public, for example, on the mandated spending items within the cash budget system.² Local officials and politicians could exploit this gap in information by reducing disbursements or procuring few non-wage items for schools, expecting that such actions would not attract public attention.

In 1991–95, parental contributions toward primary education consisted of PTA levies for investment and recurrent costs, top-ups to teachers' salaries, and tuition fees. The PTA fees and salary top-ups were entirely school specific and set by each school's PTA, depending on the parents' ability to pay and the needs of the school. Parental contributions were clearly the mainstay of finance in government-aided primary schools. On average, parental contributions accounted for over 60 percent of total expenditures in primary education in 1991–95. The PTA, which was critical to primary schooling, derived its authority from parents. In the mid-1990s, a typical PTA was run by an executive committee with about six members elected at a general meeting, and the headmaster.

In the late 1990s, a major expansion of primary schooling took place thanks to the universal primary education initiative (World Bank 2003). It also meant an increased share of public funding at the school level, particularly for school construction and teachers' salaries.

2. Public expenditure tracking survey as a tool to quantify capture of funds

In all governments, resources earmarked for particular uses flow within legally defined institutional frameworks. Typically, funds pass through several layers of government bureaucracy down to service facilities, which are charged with the responsibility of spending the funds. In developing countries, however, information on actual public spending at the frontline level or by program is seldom available. To remedy this problem, a so-called public expenditure tracking survey was developed (Reinikka 2001). A PETS is designed to follow the flow of resources through various strata of government to determine how much of the originally allocated resources reach each level. It is therefore a useful device for locating and quantifying political and bureaucratic capture, leakage of funds, and problems in the deployment of human and in-kind resources. It can also be used to evaluate impediments to the reverse flow of information needed to account for actual expenditures (Dehn et al. 2003).

The first PETS was implemented in Uganda in the mid-1990s. The study was motivated by the observation that despite a substantial increase in public spending on education, the official reports showed no increase in primary enrollment. Specifically, the hypothesis was that actual service delivery, proxied by primary enrollment, was worse than budgetary allocations implied because public funds were subject to capture (by local politicians and public officials) and did not reach the intended facilities (schools). To test this hypothesis, a survey was conducted of 250 randomly chosen primary schools.³ The survey collected five years of data on spending (including in-kind transfers), service outputs, and provider characteristics. These data were then linked to survey data from 18 local governments (districts) and detailed disbursement data from three central government ministries.

Detailed records were available at both the central level and the schools. At the district level, the survey team was able to obtain book-keeping information on receipts from the central government, but during the time of the first survey these offices lacked reliable records of disbursements to individual schools (Reinikka and Svensson 2004a).

There are at least two advantages of focusing on the capitation grant program. The first is that the capitation grant was a national program with district offices used as distribution channels. At the district level, local officials and politicians had the opportunity to capture funds. The second is that, unlike many other government programs at the time, the capitation grant was a rare liquid money infusion into a local administrative and political system, thus facilitating the capture of funds. Other public programs were primarily in-kind (for instance, health clinics were provided with drug kits directly from the central government).

Our school-specific measure of capture is:

$$(\text{capitation grants received})/(\text{intended capitation grants from the center}),$$

where a low value indicates extensive capture.⁴

Does the capitation grant information derived from the school survey adequately reflect what the schools actually received? Although misreporting clearly cannot be ruled out, there are several reasons to believe that the data are fairly accurate. First of all, the public expenditure tracking surveys collected data directly from the school records using a uniform instrument for each year. These records were kept for the schools' own needs and did not have to be submitted to any district or central authorities. Nor did they constitute the basis for current or future funding. In other words, there were no obvious incentives for the schools to misrecord funds received in their own books. Particularly in the 1990s, parents contributed the majority of school income and also demanded financial information and accountability from the school (or PTA); thus, school records were usually relatively well kept. Unlike in 2001, a large part of the public resources schools received from districts in 1991–95 were in-kind (textbooks, stationery, chalk and so on). The information on all these inputs was collected from school records and subsequently valued (using market prices). A concern is that the head teachers might have underreported school income in order to extract resources for themselves. We did not find any systematic evidence of this being the case based on interviews of PTA representatives and others during the survey work. This is not surprising because the PTA was typically the principal decision maker, at least during the 1991–95 period. This of course made it more difficult for individual head teachers to capture school funds.

Monthly reports from the Uganda Computer Centre, based on issued cheques, reveal that the capitation grants were fully released by the central government on a monthly basis. Because central releases were subject to relatively elaborate pre-audit procedures in the Ugandan treasury system, central ministries or individuals were unlikely to be able to capture them. In addition, since the capitation grant program was given a priority program status as part of the World Bank's structural adjustment programs, World Bank staff also externally audited the releases from the center. Maybe most importantly, survey data from the district level confirmed that the disbursed amounts were actually received by the districts.

The initial PETS revealed a rather gloomy picture of governance in the education sector. Table 15.1 depicts information on the capture variable, the *share of intended capitation grants received*. On average, only 13 percent of the total yearly capitation grant from the central government reached the

Table 15.1 Summary information on capture: grants received as share of entitlements to grants (in percent), 1991–2001

All schools	Mean	Median	Std dev.	Obs
1991–95	12.6	0	26.7	944
1995	23.9	0	35.1	229
2001	81.8	82.3	24.6	217

Source: Reinikka and Svensson (2004a,b).

schools. Eighty-seven percent either disappeared for private gain or was used for purposes unrelated to education. A majority of schools received nothing. The picture looks slightly better when constraining the sample to the last year of the sample period. Still, only 24 percent of the capitation grants from the central government were reaching the schools in the mid-1990s.⁵

Where did the money go? As discussed in Reinikka and Svensson (2004a), there was no evidence of increased spending in other sectors. From numerous newspaper articles about indictments of district education officers after the survey findings went public, there was indirect evidence of theft. However, both anecdotal and case study evidence suggest that most of the funds were used for patronage politics and for the funding of various local political activities.

As argued by Melissa Thomas (1998, 1999), in Sub-Saharan Africa in general, and Uganda in particular, district government power is concentrated among a small elite that needs financial resources to maintain power. The cost of maintaining power takes different forms, from the diversion of public resources to finance their own political campaigns and those of friends and family to the use of funds to finance local and private causes, including the distribution of private goods such as salt, sugar and beer to overcome voter dissatisfaction. African political parties – in Uganda, the National Resistance Movement – must also supply patronage goods to their members. An effective political organization in a rural setting depends on a personal presence in the area, which typically means a well-staffed institutional hierarchy all the way down to the village level. This requires substantial resources, and diverted public resources are often the only source of funding available (see also Bayart 1993).

Although, on average, a small share of non-wage spending reached the schools in 1991–95, the amount that actually ended up in the schools varied widely. How can this variation be explained? Reinikka and Svensson (2004a) argue that economic development, here conceptualized as the community's ability to organize and exercise voice, affects the local

government's incentives for corrupt actions. To test this hypothesis, they run regressions of diversion of funds on income (mean consumption level in the district—urban—rural location), controlling for other community and school-specific fixed effects.⁶ The hypothesis finds strong support in the data. Schools in better-off communities experienced a significantly lower degree of corruption and the size of the effect is economically important. Local capture thus has obvious equity implications. Specifically, poor students suffered disproportionately because schools catering to them received even less funds than others.⁷

The second public expenditure tracking survey, which was implemented in 2002 and covered school (calendar) year 2001, replicated the first PETS with a few exceptions. First, not all schools in the original sample could be resurveyed because of security concerns. Second, an additional 170 schools from nine of the original 18 districts were also surveyed. Finally, in addition to measuring the difference between actual and intended resources, that is, the capitation grant disbursed by the central government and resources actually received by the school, the second PETS collected data on access to information and the means of acquiring information on the grant program, partly by administering a knowledge test to head teachers.⁸

3. Information campaign

Hard evidence of corruption or capture is difficult for governments to simply brush aside. The Ugandan case illustrates this nicely. When the extent of district government diversion of education funds became known in 1996, the central government reacted swiftly. Interestingly, the response was not the typical one – to improve the financial management system through increased monitoring by central government agencies. Instead, the central government decided to engage the citizenry. Led by the ministries of local government and finance, it began to publish data in the national newspapers on the monthly transfers of capitation grants to districts. Later on, the Ministry of Education proposed extending the information campaign to all school communities. Primary schools (and district administration headquarters) were required to post notices on actual receipts of funds for all to see. In short, in this two-part campaign, information on entitlements transferred by the central government was made available through newspapers, while information on what each school actually received was posted at schools to inform parents.

How would improved access to information help? For bottom-up monitoring to be effective, at least two conditions need to be fulfilled. First, the individuals must be able to observe outcomes. In the case of the school grant program, this implies that they must be aware of the amount of their entitlement and how much the school actually receives. Second, the

expected return to monitoring must be higher than the returns to the alternatives – doing nothing or sending one's children to an alternative school. The relative returns depend on both the availability of an exit option and the community's ability to take collective action. It also depends on the readiness of a population to complain and on the existence of institutions and mechanism to transmit complaints cheaply and effectively. Finally, it depends on citizens' ability to either directly or indirectly sanction the district officers and/or local politicians. Such sanctions can take several forms, from informal forms of social pressure (verbal complaints) to formal ones, such as electoral-induced sanctions (local politicians' fear of losing an election), to career concern (public officials' fear of losing their job or not getting promoted or getting a lower wage or wage increase).

As discussed in Reinikka and Svensson (2004b), these conditions suggest that in the case of Uganda, the information campaign could be highly successful in reducing fund diversion. First, schools exposed to the newspaper campaign should be aware if funds are being diverted, enabling them to make an informed choice about whether to protest. Second, most households in Uganda, particularly in rural areas where most of the schools in the sample are located, have no easily available alternative to the local public school. While private schools exist, they are located in larger urban centers. This lack of an exit option increases the likelihood of voice as the response of choice to dysfunctional services (Hirschman 1970). Third, the collective action problem is likely to be a less important constraint in primary education than in other social sectors. PTAs already exist in most villages, parents and school staff interact every day for years, and all schools have the institutions to handle collective decision making in the form of school management committees, consisting of parents and the head teacher. Finally, the combination of (at least limited) political competition at the local level, local politicians' discretion to hire and fire education officers in charge of implementing the program, and the signal of strengthened oversight by the central government and the priority it has accorded to education (through publicly informing beneficiaries of their entitlements and the indictment of at least a few district education officers), suggests that communities could in principle sanction local officials.

Data from the second public expenditure tracking survey indicate that the voice mechanism is indeed at play. Half the schools reported that they did not receive the full amount of their capitation grant in 2001 (Reinikka and Svensson 2004b). Of these schools, 47 percent complained or protested to some formal or informal authority that could transmit the complaints onwards or act on them. These included central government officials, politicians, school inspectors, village or other local officials, village elders and tribal leaders. Even the threat of voice may discourage the local political

elite from diverting resources intended for the schools. Thus, in equilibrium, the incidence of voice and local diversion of funds may not be correlated.

Summary statistics indicate that the capture of the capitation grant has been reduced dramatically since the mid-1990s (Table 15.1). Schools, which had received on average only 24 percent of the total yearly grant from the central government in 1995, received more than 80 percent in 2001. The improvement is even more striking for the median school. In the mid-1990s it received nothing. In 2001, it received 82 percent of its entitlement.

As stressed above, the communities' improved access to information cannot alone account for the large reduction in capture. Instead, the improvement should be attributed to the combination of better-informed users with (at least a perception) of strengthened oversight by the central government and possibly increased political competition at the local level (as a result of a decentralization process during the 1990s). Unfortunately, assessing the separate impact of these joint factors is impossible without information on the counterfactual outcome, that is, what would have happened if these changes had not taken place. However, we can assess the (marginal) impact of improved access to information, since the extent to which communities were exposed to information on the capitation grant program varies. We turn to this issue next.

4. Impact of the information campaign on local capture

To assess the causal effects of improved access to information, Reinikka and Svensson (2004b) exploit the fact that availability of newspapers and year jointly determine a school's (community's) exposure to the information campaign. The information campaign was initiated in 1997 and broadened in the following year. Prior to 1997, a PTA's knowledge about the grant program was largely a function of its effort and ability. Newspaper access varies greatly across schools and this is also evident from the survey data. In the sample of schools, around 50 percent of the head teachers report having access to a newspaper on a regular basis. One of the determinants of whether the head teacher (and the community) has such access is the cost and ease of accessing a newspaper, which in turn is partly a function of distance to the nearest newspaper outlet from the school. For example, some villages had no outlets while others had easily accessible outlets. Combining these sources of variation over time (between the pre-campaign year 1995 and the post-campaign year 2001) and across schools (distance to the nearest newspaper outlet) gives us school-specific variation in, or an instrument of, degree of exposure to the newspaper campaign. In other words, in 1995 no school had access to public information about the capitation grant program. In 2001, all schools had access to information in principle, but that access varied according to distance from a newspaper outlet.

To serve as a legitimate instrument, distance to the nearest outlet should affect the school's (head teacher's and parents') exposure to information about the grant program but have no direct effect on its ability to claim funds from the district. Reinikka and Svensson (*ibid.*) present evidence in favor of this hypothesis.

First of all, Reinikka and Svensson show that distance (in kilometers) to the nearest newspaper outlet is highly correlated with the likelihood that the head teacher has access to newspapers on a regular basis. The effect is quantitatively important. A head teacher in a school located in a village where newspapers can be bought is 35 percentage points more likely to report access to a newspaper than the head teacher in a school one standard deviation, or 30 kilometers, further away from such an outlet. This result is consistent with the assumption that the cost and ease of accessing a newspaper is one important explanation for why some communities have regular access to newspapers while others do not.⁹

At the same time, it is possible that the logistical factors that determine the placement of newspaper kiosks are correlated with household or village characteristics that have a direct bearing on the school's ability to claim funds. Although this is in principle a serious concern, in a sample of predominantly rural schools, the risks appear to be minimal. As reported in Reinikka and Svensson (*ibid.*), only a handful of rural villages in the sample have a newspaper outlet within one kilometer. The median distance is nine kilometers. Moreover, if these village characteristics are fixed, this will again tend to work against finding an effect, because we look at the differences in the diversion of funds as a function of distance to a newspaper outlet.¹⁰ More importantly, in the period before the campaign, that is, between 1991 and 1995, when no public information about the grant program was disseminated through newspapers, there is no relationship between distance to the nearest newspaper outlet and change in diversion of funds. That is, before the newspaper campaign, schools/communities closer to a newspaper outlet were not more successful in claiming funds from the district as compared to schools/communities further away from such an outlet.

Based on data from tests administered to head teachers, Reinikka and Svensson (*ibid.*) further show that head teachers serving in schools close to a newspaper outlet are better informed about the formula used for deriving the capitation grant and about the timing of the release of funds by the central government. However, the same pattern is not observed when analyzing the relationship between distance and head teachers' knowledge of local affairs or knowledge of general (sociopolitical) issues typically not reported in newspapers. As argued by Reinikka and Svensson, although these tests do not provide a comprehensive assessment of head teachers' knowledge and abilities, the findings suggest that information on the grant

program disseminated through newspapers (and correlated with distance) accounts for the observed effects rather than some unobserved characteristic such as teachers' ability.¹¹

Reinikka and Svensson show further that distance to the nearest newspaper outlet does not appear to be a proxy for some other important geographical characteristic, such as remoteness. In fact, once proximity to a newspaper outlet is controlled for, distance to the district capital and distance to the nearest urban center have no effect.

Finally, the authors note that distance to the nearest newspaper outlet has an independent effect over and above increasing the likelihood that the head teacher has access to a newspaper. This result is consistent with the claim that a school (that is, head teacher) may be well informed about the grant program even without having newspapers, if parents in the community where the school is located have access to them (which is more likely if the community where the school is located is closer to a newspaper outlet).

Equipped with a valid instrument of exposure, it is possible to link exposure to information to changes in the share of funds diverted through the following empirical model:

$$info_j = \delta_0 income_j + \delta_1 distance_j + \epsilon_j X\theta, \quad (15.1)$$

$$s_{jt} = \beta_0 income_{jt} + \beta_1 info_j + \beta_2 \sigma_{2001} + \beta_3 \sigma_{2001} info_j + \mu_j + \eta_{jt}, \quad (15.2)$$

where s is share of the grant reaching the school, $info$ is a composite measure of information about the formula used for deriving the capitation grant and the timing of the release of funds by the central government, $distance$ is proximity to nearest newspaper outlet (logarithm of the distance in kilometers), $income$ is a proxy for community average income, σ_{2001} is a dummy taking the value 1 in period 2001 and 0 in period 1995, μ_j is a school-specific fixed effect, and ϵ_j and η_{jt} are error terms.

The identifying assumptions in the empirical model (15.1)–(15.2) are that proximity to a newspaper outlet in 2001 determines the extent of exposure to the newspaper campaign and thus knowledge about the program (equation 15.1). Apart from increasing the exposure to information about the grant program, however, proximity to a newspaper outlet has no independent effect on the schools' ability to claim funds from the districts (as discussed above). The knowledge about the workings of the capitation grant program in turn determines to what extent schools can monitor their local officials and thus the reduction in capture since the mid-1990s (equation 15.2).

Reinikka and Svensson (*ibid.*) estimate the model (15.1)–(15.2). They find that proximity to the nearest newspaper outlet ($distance$) has a strong

negative effect on head teachers' knowledge about the grant program. The predicted school-specific outcome, *info_j*, which is attributed to *distance_j* and therefore reflects factors outside the school's (community's) control, is then used as an explanatory variable in regression (15.2). Schools that were more exposed to the newspaper campaign, and therefore more informed, experienced a significantly larger reduction in capture of funds after the campaign started. Again, the quantitative effect of improved access to public information is large. The instrumental variable (IV) estimate (β_1 in regression 15.2) implies that a 1 standard deviation increase in *info* results in a 1.1 standard deviation increase in spending reaching the schools (a 44.2 percentage point increase in funding reaching the school between 1995 and 2001).

5. Reduction in capture and improvement in school outcomes

The internationally set Millennium Development Goals call for universal primary school enrollment by 2015. But what are the most effective ways to achieve this? There is by now a large literature on schooling in developing countries, but apart from some recent contributions based on quasi- or randomized experiments, this literature provides few reliable insights about what governments in developing countries should prioritize to raise educational attainment.¹² In Reinikka and Svensson (2005a,b), we argue that innovations in governance of social services may yield the highest return because social service delivery in developing countries is often plagued by inefficiencies and corruption. The newspaper campaign in Uganda is used to illustrate this possibility.

Specifically, Reinikka and Svensson link the degree of exposure to information on the program to changes in diversion of funds. They then link the predicted changes in diversion that are attributed to exposure to changes in enrollment. The empirical model is thus (15.1) and (15.2) combined with an outcome regression:

$$student_{jt} = \gamma_0 income_{jt} + \gamma_1 s_{jt} + \beta_2 \sigma_{2001} + \beta_3 \sigma_{2001} s_{jt} + \mu_j + \theta_{jt}, \quad (15.3)$$

where *student_{jt}* is enrollment in school *j* at time *t*, μ_j is a school-specific fixed effect, and θ_{jt} is an error term. We can difference away the school-specific effects. Thus, equations (15.1) and (15.2) can be restated as:

$$\Delta s_j = const + \beta_0 \Delta income_j + \beta_3 info_j + \Delta \eta_j, \quad (15.4)$$

and

$$\Delta student_j = const + \gamma_0 \Delta income_{jt} + \gamma_3 \Delta s_{jt} + \Delta \theta_{jt}, \quad (15.5)$$

Reinikka and Svensson show that this model fits the data very well. The predicted school-specific change in the share of spending reaching the school $\Delta\hat{s}_j$, attributed to $distance_j$, is highly significant and the effect is large.¹³ A one standard deviation increase in Δs_j results in a 0.66 standard deviation increase in school enrollment. Interestingly, when looking at the reduced-form relationship, that is, the relationship between proximity to a newspaper outlet and changes in enrollment between 1995 and 2001, there is a strong relationship between $distance_j$ and increase in school enrollment since the newspaper campaign started. However, $distance$ is uncorrelated with changes in enrollment during the five-year period prior to the campaign (1991–95). That is, being located near a newspaper outlet had no impact on school enrollment prior to the campaign, but a large effect once the campaign had started.

Martina Björkman (2004) presents complementary evidence. Björkman's study is based on data on all seventh grade students in Uganda, combined with district-specific data on newspaper circulation. By looking at district averages she can, to a large extent, get around problems of sorting and selection. Similar to the identification strategy used in Reinikka and Svensson (2004b), Björkman exploits the fact that exposure to information about the per student capitation grant, and thus about the funds actually received (according to the results reported above), varied by district. Specifically, she uses the variation in newspaper circulation per district as an instrument of exposure.

Controlling for income, in the pre-newspaper campaign year 1995, there is no significant relationship between the number of grade seven students and newspaper penetration, defined as newspaper circulation per school. However, in the post-newspaper campaign year 2001, districts with higher newspaper circulation also have significantly more grade seven students in primary school. The difference-in-differences estimate suggests that one more copy of a newspaper per school district results in 20 more grade seven students. Thus, enrollment increased significantly faster in districts with higher newspaper penetration because those districts were more extensively exposed to public information about the grant program and were thereby less subject to capture.

6. Concluding remarks

The Ugandan case provides, to our knowledge, the first quantitative assessment of local diversion in a large public expenditure program in a developing country. The analysis also confirms that resource flows are endogenous to schools' sociopolitical situation. Rather than being passive recipients of flows from the government, schools use their bargaining power *vis-à-vis* other parts of the government to secure larger shares of funding. Resources are therefore not allocated according to the rules

underlying government budget decisions. This finding has substantial equity implications. Specifically, the Ugandan evidence shows that poor students suffered disproportionately due to local diversion of funds because schools catering to them received even less than others. Several other studies have also shown that capture is not a specific problem for Uganda (World Bank 2005). In fact, local diversion of funds in educational programs appears to be a serious problem in all other African countries where similar public expenditure tracking surveys have been implemented. A common denominator in these education programs is that, at best, users have limited knowledge about the public funding to which they are entitled.

The contribution of this body of work is not only empirical. A methodological contribution is the design of a new survey tool – the public expenditure tracking survey – that can be used to gather data on government resource flow and service delivery, including identifying missing funds. In countries with poor accounting systems, such a survey can provide policy makers with valuable information both on the financing and the performance of the service delivery system. It also provides a new type of data for empirical research.

Further, the Ugandan case demonstrates that information disseminated directly to the public can play a critical role in improving spending outcomes. The findings of the public expenditure tracking survey prompted a strong response from the central government. It began to publish monthly transfers of public funds to districts in newspapers. It also required primary schools to post public notices on all inflows of funds. This promoted accountability by giving schools and parents access to information needed to understand and monitor the workings of the grant program. Evidence from an evaluation of the information (newspaper) campaign suggests markedly improved outcomes.

Through the relatively inexpensive policy action of a mass information campaign, Uganda dramatically reduced district government diversion of public grant funds aimed at improving primary education under its universal education policy. Schools in poor communities benefited the most. They were less able than others to claim their entitlement from district officials before the campaign but just as likely to be funded in 2001. Moreover, the reduction in capture had a large impact on primary school enrollment. Of course, publicity cannot solve all the problems of corruption and diversion of funds in the provision of local services. First, success in Uganda depended upon the existence of local PTAs, or school management committees, with active parents willing to monitor school funding. Information provision will not work unless there are members of the public willing to make use of the information. Second, transparency can just produce cynicism if those diverting funds operate with impunity. In the

case of Uganda, informed communities used a variety of methods to voice their complaints. The communities also had different ways to sanction public officials/politicians, ranging from informal forms of social pressure to local electoral sanctions. Thus, when a community became more informed about its entitlements, the likelihood that district officials would get caught and punished if public funds were diverted away from the school increased. The evidence suggests that the local official responded rationally by reducing fund diversion

Thus, while publicity is not a panacea for anti-corruption, information campaigns that increase the transparency of government spending programs appear to be a promising direction for reform that can tap into the beneficiaries' interest in avoiding the wastage of funds.

Notes

- * Views expressed here do not represent official opinions of the World Bank. We wish to thank the World Bank Research Committee and the Swedish International Development Agency, Department for Research Cooperation for funding the research reported in this chapter.
- 1. This chapter summarizes the basic findings in Reinikka and Svensson (2004a,b, 2005a,b).
- 2. Uganda implemented cash budgeting in 1992 which, in many cases, produced rather volatile monthly releases of funds from the Treasury. However, as part of the World Bank's structural adjustment programs, non-wage recurrent expenditures for primary education were given a priority program status, which protected schools from within-year budget cuts.
- 3. For the first public expenditure tracking survey covering 1991–95, two general criteria governed the choice of procedure in selecting the sample of 250 schools from the set of eligible (that is, government) schools (see Reinikka 2001 and Ablo and Reinikka 1998 for details). First, the sample should have a broad regional coverage. Second, the sample should be representative of the population of schools in the specified districts. To account for these considerations, a stratified random sample was drawn. In the end, 250 schools were surveyed from 18 districts.
- 4. See Reinikka and Svensson (2004a) for details.
- 5. The data refer to 1995, or if information for 1995 is missing, to 1994.
- 6. Mean consumption level in the district–urban–rural location constructed using data from the 1995 and 1999/2000 Uganda National Household Surveys.
- 7. A benefit incidence study using budget allocation data indicated that the distribution of public funds in primary education was relatively neutral, while in reality, based on the actual grants received, it was highly regressive (World Bank 1996).
- 8. See Reinikka and Svensson (2004b) for details of the survey.
- 9. Information about the capitation grant program was also disseminated through radios. However, this information was seldom very detailed (for example, there was no information about the timing of releases of funds from the center or about the exact rules of the capitation grant program) and was not coordinated by the central government. All schools (head teachers) in the sample have access to a radio.
- 10. For example, if schools with high-ability head teachers are more likely to be close to a newspaper outlet and also more able to make a claim for the grant independent of the newspaper campaign, then they would have received a higher share of the grant both before and after the newspaper campaign but the difference over time would likely fall since at the most the school can receive a 100 percent of its entitlements (in principle). Thus, the existence of fixed school-specific effects that are correlated with distance and the probability of claiming grants would result in a downward bias in the estimate of interest.
- 11. Specifically, one concern with the result that schools closer to a newspaper outlet have more information about the capitation grant program is that the head teachers serving

in these types of school may be more knowledgeable in general. The results reported above do not support this claim.

12. See Glewwe (2002) and references given therein.
13. A potential problem with evaluating the impact of reduced corruption on school enrollment using survey data is sorting. That is, it may be the case that school enrollment in aggregate does not increase but that students sort into schools with more resources. While problematic, in reality there are reasons to believe that this problem is not so severe. The sample consists almost exclusively of rural schools and the pool of potential students served by these schools does not typically have much choice with respect to primary school. Still, there is likely to be some sorting in the sample and this should be kept in mind when assessing the results. As discussed below, when using district averages as in Björkman (2004) (in which case sorting is much less of a concern) similar effects are observed.

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16 Corruption and the management of public works in Italy

*Miriam Golden and Lucio Picci**

It is a fair guess that, historically, Italy has confronted levels of political corruption higher than those found in other countries at similar levels of development. Thanks to the availability of comparative rankings of countries according to the degree of perceived corruption starting in the 1990s, we can be confident in our assertion that contemporary Italy is a relatively corrupt country. In 2000, Italy ranked as the world's most corrupt wealthy democracy, its degree of perceived corruption on a par, apparently, with countries a good deal poorer, such as Uruguay and Hungary.

However, summary national measures capture only part of the story. In large, diverse countries corruption is likely to vary widely across regions and governments. In this chapter we use a new measure of corruption to investigate the geographic dispersion of cumulative fraud and malfeasance affecting public works construction across Italy's 20 regions. Public works construction projects are especially vulnerable to collusion between elected officials, bureaucrats and private contractors, as evidenced by the fact that 'corruption in contracting occurs in every country – even those at the high end of the honesty index' (Rose-Ackerman 1999, p. 28). Transparency International's 2002 Bribe Payers' Index found that public works/construction was the sector most vulnerable to corruption in emerging economies worldwide.¹ Where corruption in government contracting is widespread and frequent it necessarily involves collusion among elected political representatives, public sector bureaucrats, and of course private contractors in the construction sector. Hence, in such situations, political and bureaucratic corruption intermingle.

The central argument of this chapter extends this observation. If corruption – by which we mean the use of public office for personal gain – is geographically widespread and temporally persistent, national elected public officials are necessarily regularly involved in it. As a result, extensive and persistent corruption in public works cannot be seen as an isolated phenomenon, hived off from the broader political environment in which it arises. It is not merely an outgrowth of poor institutional design, an inadequate legal structure, or the insufficient political monitoring of bureaucrats, as standard principal–agent theories contend. A more appropriate

analytic framework begins with the premise that public officials may take advantage of their control over the monopolistic provision of infrastructure goods to engage in rent seeking (Krueger 1974). In such a framework, corruption involves a non-benevolent principal rather than bureaucratic or institutional slippage from a benevolent one (Aidt 2003). Reducing corruption thus requires substantial changes in behavior by elected public officials, as well as corresponding modifications of the incentives facing bureaucrats and businesses. Whether such changes have occurred in Italy, even in the wake of judicial revelations exposing widespread corruption, remains for us an open question.

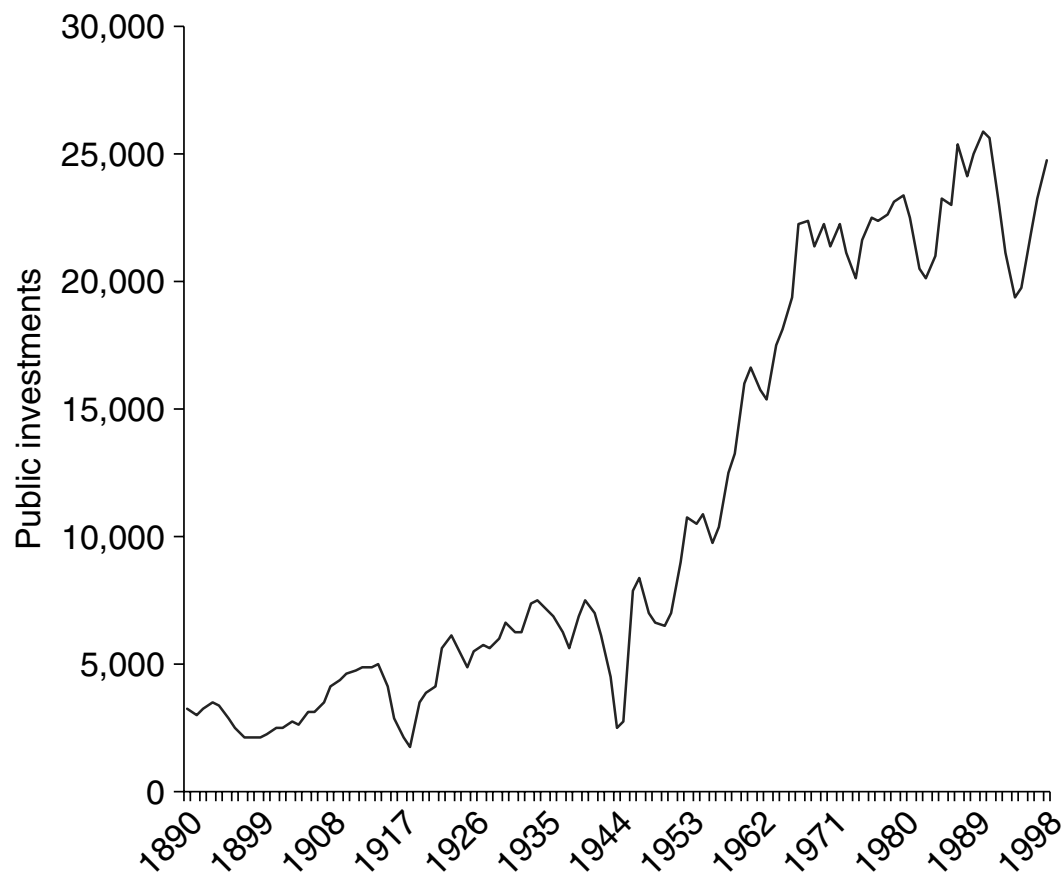
Our chapter proceeds as follows. In Section 1, we present a brief historical account of public infrastructure investments in Italy from the country's 1861 unification onwards. As a late industrializer that also experienced delayed national unification, much Italian public construction occurred in core sectors, such as roads and railways, well into the twentieth century. As a result, continuing opportunities for corruption existed in Italy that may well have been closed off in countries that industrialized and unified earlier. Section 2 maps infrastructure corruption across Italy's 20 regions as of the late 1990s using a novel measure: the difference between the cumulative amounts of public monies allocated to capital expenditures and the actually existing amounts of physical infrastructure. We use this measure as evidence of ongoing discrepancies between the North and South of the country in the extent of political corruption. Section 3 focuses on the early 1990s with what is called *Tangentopoli*, when thousands of Italian politicians, public officials and entrepreneurs were investigated by the judiciary for suspected corruption in an operation known as 'Clean Hands'. We map the geography of political corruption according to the Italian judiciary and offer an interpretation of some interesting differences between what the judiciary revealed and our measure of corruption in public works construction. We also assess the extent to which political corruption is statistically associated with infrastructure corruption. In Section 4, we describe legal changes governing public works construction that occurred as a result of the Clean Hands operation and speculate about their possible impact on Italian corruption. Finally, Section 5 draws out some implications of our analysis for policy and anti-corruption efforts generally.

1. Historical background: late unification, late industrialization

When Italy unified in 1861, its infrastructure was minimal and, more importantly, unevenly distributed. The first travelers from the North to the post-Bourbon South were appalled by the poor road conditions and general lack of infrastructure. Under the previous regime, infrastructure in the southern part of the country had been deliberately neglected. As the

prominent Italian intellectual and politician Francesco Saverio Nitti later commented, ‘the Bourbons were convinced that roads would bring to the people not only new needs but also dangerous tendencies, and as a consequence they not only discouraged new construction but they sometimes actively prevented it’ (Nitti 1900, p. 31; our translation).

One of the first tasks of the new Italian political elite was to try to correct this situation, despite deep public debt and the scarcity of resources typical of an unindustrialized country. In Figure 16.1, we graph public investments between 1890 and 1999 at constant prices.² Despite the two marked downturns in public investment that occurred during the twentieth century’s world wars, investments exhibit an upward trend over time. One of the main political goals over the entire period was to use infrastructure investments to correct regional imbalances and help promote economic growth in the less-developed regions of the country. From the outset, the infrastructure problem was thus conceived of as part of a larger ‘southern



Sources: Rossi et al. (1993); for years after 1992, see Picci (2002).

Figure 16.1 Public investments, 1890–1998, aggregate (constant 1990 prices in millions of lira)

question': how to bridge the gap between the more developed North and the backward South. It is perhaps noteworthy that complaints about the infrastructure gap between North and South persist to the present.

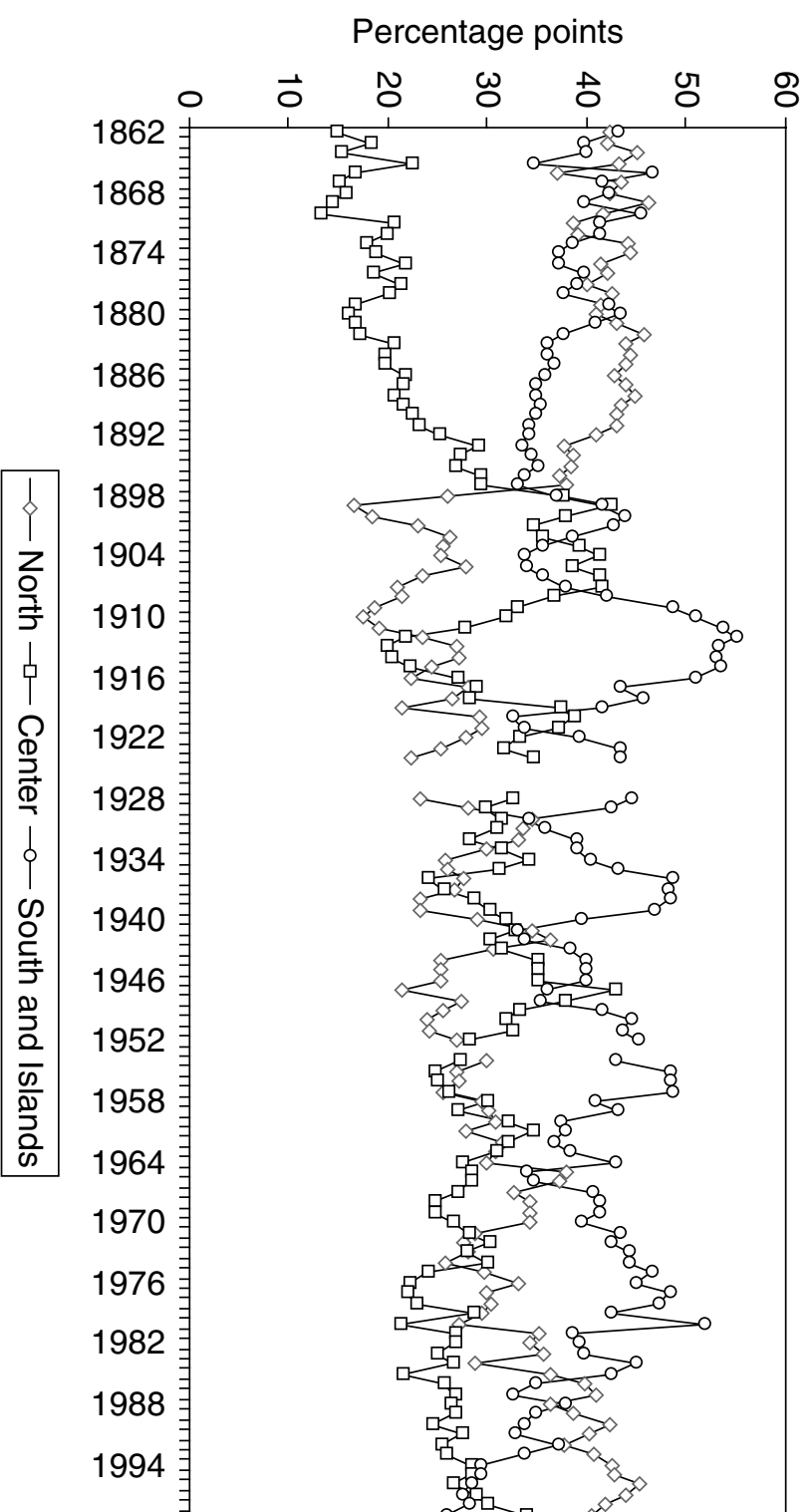
Although the first published assessment of the distribution of public investments by Nitti (1900, p. 31) complained that 'the greatest part of expenditures took place in Northern and Central Italy', more recently compiled evidence tends to dispute his view, showing instead that in the decades immediately following unification, public investments in the South were disproportionately high (Picci 2002). The tendency to direct public investments at the South became even more pronounced after the turn of the century, as the percentage shares depicted in Figure 16.2 document.

Although the attempt to bridge the regional infrastructure and development gap constitutes a constant theme from Italian unification to the present, the types of public investment receiving relatively more resources shifted over time. This was due to changes in available technologies as well as alterations in political priorities. We use these shifts to periodize public construction. At the cost of some simplification, we identify the main periods in Italian infrastructure construction with the categories of infrastructure receiving the highest share of resources.

1861–1895: railroads and roads

Unlike France, pre-unification Italy had not yet developed an extensive railroad network, and as of 1861 there was a total of only 2,186 kilometers of railroads. Of these, 1,606 kilometers were in northern Italy, while the regions south of Tuscany, with the exception of Lazio and Campania, had no railroads at all (Amoruso 2004).³ After political unification in 1861, railroads were seen as a way to physically integrate Italy's lengthy peninsula, and the latter part of the nineteenth century witnessed an expensive effort by the newly united country to build an extensive railroad network.⁴ As a result, by 1866, Italy boasted 4,400 kilometers of railroad, or more than double the kilometers present only five years earlier. By 1905 the country's railroad network extended over 11,230 kilometers, roughly equivalent to half of the maximum extension that the network reached in the 1950s (*ibid.*). The network was national, in the sense that it linked all the country's regions from Sicily to Piedmont. However, there was still an important regional difference in the density of railroad construction. In the North the network, which served the economic needs of the then-industrializing regions, was effective in covering the full territory, while in the South the reach of the railroad network remained mainly confined to its backbone lines.

The 1880s witnessed the most pronounced effort in railroad construction. There were some years in the decade when railroad construction absorbed over 80 percent of total public investments made by the central



Note: The data refer to three different subperiods: 1862–1924, 1928–52, and 1954–99. Data for the years 1925–27 and 1951 are missing. Until 1952, the data include only investments by the central administration.

Source: More information about data sources and definitions are in Picci (2002).

Figure 16.2 *Public investments, 1862–1999, geographic split (North, Center, South and islands)*

government.⁵ Roadbuilding accounted for a large share of the remaining public investment funds. The share of road construction in non-railroad public investment hovered around 50 percent until the early 1890s, dropping to a still respectable 30 percent in the mid-1890s.⁶ Railroads and roads were the major public investments made by the newly established Italian state.

As the data in Figure 16.1 show, the amount of money going into public investments in those early years was modest compared to expenditures in later periods. Public expenditures were constrained by the economic and financial situation, as well as by military needs, especially since Italy was at the time committed to territorial expansion to the Italian-speaking parts of the peninsula not yet under central government control.⁷

1900–1924: buildings and social infrastructure

The beginning of the twentieth century represented a turning-point in Italian politics, with a shift to governments (under Prime Minister Giovanni Giolitti) that were less authoritarian and that demonstrated some social policy commitments. Public investments reflected this change in political priorities, giving greater importance to social investments. These included public buildings of various types that had previously been neglected in favor of railroads and roads.

Expenditures on public buildings had expanded even earlier, in the beginning of the 1890s.⁸ At the same time, a shift in the geographic distribution of public investments further benefited the South, corresponding to a slow-down in the railroad expenditures that had privileged northern Italy.⁹

1924–Second World War: the empire, restored

The March on Rome – the event that marks the beginning of Italy's fascist regime – took place in October 1922, following a period of postwar turmoil and uncertainty. Twenty years later, as the Italian war effort stepped up in 1941, civilian policies including public investments virtually ceased. The intervening two decades, known as the *ventennio* in Italian historiography, witnessed the formation of an ambitious public investment policy under Benito Mussolini. The regime's rhetoric of the restoration of the Roman Empire attributed an important role to public buildings, in particular, and infrastructure, in general, which were seen as tangible signs of imperial power and opulence. Just as imperial Rome had left behind a grandiose architecture, so fascist Rome mimicked its style with architecture characterized by a monumental conception of space. As ancient Rome had constructed an empire, so fascist Rome presented itself as a constructor of roads in colonial Africa and as a modernizer of Italy. In this period the first few Italian freeways were built for a country that was entering the era of

mass consumption, thereby anticipating themes that would become more obvious during the postwar economic boom of the 1950s and 1960s.

Under the fascists, significant progress was made in the electrification of the country, and an important role, at least in official propaganda, was played by a program of large-scale land reclamation that also contributed to the eradication of malaria. A series of very efficient financing organizations, the *Consorzio di Credito per le Opere Pubbliche* (Crediop) being the most important (Asso and De Cecco 1994), provided the necessary institutional and financial framework for such policies, particularly in the years following the 1929 crash.

Overall, the total resources dedicated to public investment during the interwar period were not appreciably higher than earlier (see Figure 16.1). The geographic distribution of investments again prioritized the South, particularly during the second half of the 1930s, when the South received about half of total public investments made by the central government, with the Center and the North receiving about a quarter each. The situation began to change as the war loomed: public investments decreased to make room for more pressing military expenditures. Particularly after 1941, military spending to a great extent crowded out public investments.

Second World War–1990: freeways and the economic miracle

Italy emerged from the Second World War militarily defeated and financially exhausted. In addition, its infrastructure had been severely damaged. The ‘economic miracle’ that occurred subsequently describes a country not only able to recover from war’s destruction but also to proceed at full speed with industrialization and modernization processes that had previously been only partial and geographically limited. By the end of the 1980s, Italy still had a visible North–South gap along multiple dimensions, but its industrial base had deepened and extended out from the traditional ‘industrial triangle’ of Milan–Turin–Genoa to what had been predominantly agricultural regions, such as Emilia-Romagna and the Veneto. The overall result has been a vastly greater national income that allowed for a steep increase in public investments beginning in the 1950s, documented in Figure 16.1.

Until the mid-1980s, roads represented the most important expenditure category of the postwar era, peaking in the early 1970s when this category alone consumed over half of the share of total public investments (see Picci 2002, figure 11). This major effort to construct an extensive network of freeways went hand in hand with the popularization of the automobile as the transportation means of choice. The showpiece of the day was the *Autostrada del Sole*, running from Milan to Naples, which was finished in 1964 after only eight years of work (see Menduni 1999).

The early 1980s marked a turning-point in public investment policies. Resources dedicated to infrastructure leveled off and then decreased. In addition, the South's share of total public investments started to decrease. Both changes were amplified as of the early 1990s when the scandals known as *Tangentopoli* caused a near-collapse of the system guiding infrastructure investment decisions. Before we discuss the collapse of that system, however, we turn to a discussion of corruption in public works construction.

2. From spending to infrastructure: how much did all that money buy?

Data on expenditures are only part of the story. We also need to know how much public infrastructure was actually built with all this public money. The historical account presented in the preceding section documents that policies aimed at mitigating the North–South infrastructure gap emerged soon after Italy's 1861 unification. Despite more than a century of effort, however, it is commonly conceded that the South's infrastructure endowment is still below that found in the northern part of the country. In addition to offering a glimpse into one of the structural problems of the development of the Italian economy – namely, the North–South imbalance – this is a useful starting-point for considering the dispersion of corruption.

The impression that the South is less well endowed in public infrastructure compared with the national average is confirmed by an analysis of data that has been collected over a period of nearly three decades by Maurizio Di Palma and Claudio Mazziotta (see Biehl et al. 1990; Mazziotta 1998; Di Palma and Mazziotta 2002). Di Palma and Mazziotta construct an index of physical infrastructure across Italian regions, measuring the overall infrastructure endowment of each of the country's 20 regions. Their index comprises a meticulous accounting of kilometers of roads (highways as well as national, provincial and municipal roads), railroads (double and single track, electrified and non-electric), airports (square meters of runways and of parking areas), schools (number of school rooms in elementary, middle and high schools, as well as university personnel), health (number of hospital beds), child-care facilities (number of cots), stadiums, theaters, and other public utilities and buildings. Although their data collection efforts began in the 1970s as part of an effort by the European Commission to evaluate which regions of member countries were underserved by which types of infrastructure (see Biehl 1986; Commission of the European Communities 1986), Di Palma and Mazziotta have continued their data collection since then, substantially enlarging an initially rather small set of measures to the 47 indicators of infrastructure currently collected.

Di Palma and Mazziotta combine the measures of these various types of public goods to create an overall index of physical infrastructure for each

of Italy's regions. The actual creation of the index involves a complex and lengthy set of calculations (for details, see Mazziotta 1998; also described in Golden and Picci 2005, appendix B), in which the various types of goods are normalized either by population or by area (square kilometers) served, and then standardized and aggregated, so that all of them are ultimately indexed to the national average, which is set at 100. We shall not describe the details of the construction of the index here; interested readers should consult the relevant technical materials we reference. But note that an index value of 124 indicates an endowment of physical infrastructure that is 24 percent higher than the national average, whereas a value of 79 means an index value that is only 79 percent of the national average. In Table 16.1,

Table 16.1 Di Palma–Mazziotta regional index of physical infrastructure, 1987 and 1997; perpetual inventory index, 1987 and 1997; Golden–Picci ‘corruption’ index, 1997

Region	Year 1987		Year 1997		
	Physical index	Perpetual inventory	Physical index	Perpetual inventory	Corruption index
PI	117.4	65.763	118.4	74.318	1.638
VA	146.1	112.180	132.6	159.320	0.855
LO	118.1	105.740	118.4	109.640	1.161
TA	141.3	82.217	122.9	108.240	1.236
VE	110.2	92.342	115.3	97.356	1.220
FR	120.2	111.380	125.5	117.750	1.077
LI	137.0	206.080	127.3	199.180	0.669
EM	137.7	102.010	144.1	101.140	1.611
TO	120.8	84.190	112.8	81.902	1.613
UM	98.2	66.608	109.0	64.203	1.783
MA	110.1	88.388	109.7	85.925	1.312
LA	130.3	129.350	111.3	132.120	0.817
AB	93.2	106.680	92.3	98.889	0.956
MO	71.8	112.180	62.1	109.010	0.583
CM	69.1	151.540	51.1	140.340	0.362
PU	65.5	91.417	63.3	87.450	0.722
BA	72.2	133.670	70.0	135.230	0.533
CL	65.8	133.740	50.3	123.750	0.409
SI	61.2	109.820	66.1	108.150	0.607
SA	74.8	87.635	66.5	89.434	0.838

Note: For regional abbreviations, see Appendix 16A.

Sources: Di Palma and Mazziotta (2002) and Golden and Picci (2005).

we report the Di Palma–Mazziotta index of public infrastructure endowment for each of the 20 Italian regions as of 1987 and 1997.

As the data reported in Table 16.1 indicate, Italy's southern regions – the country's 20 regions are listed in conventional order, that is, from north to south – are substantially less endowed with public capital than its northern regions. The index values fall as we move down the table from north to south, both in 1987 and in 1997. Comparing the data from 1987 with 1997, we see that overall, the southern regions had only 67 percent of the national average in 1987 and 63 percent in 1997. This suggests that the South became relatively worse off with regard to its physical infrastructure during the 1990s. Di Palma and Mazziotta's data on physical infrastructure also exhibit considerable regional variations by type of infrastructure. In Table 16.2, we report their index for what they classify as economic infrastructure (roads, railroads, airports, ports, other transportation infrastructure, telecommunications, energy, oil and natural gas pipelines and water supply), as opposed to social infrastructure (schools, hospitals, kindergartens, sports facilities, theaters, museums, parks and other types of cultural facilities).¹⁰ For simplicity, we do not reproduce the values for each of the nine specific types of infrastructure goods available in the Di Palma–Mazziotta data (transportation, telecommunications, energy, water supply, education, health, social infrastructure, sports facilities and cultural venues). Overall, the data in Table 16.2 show that, while both social and economic infrastructure are relatively less in southern than northern regions, the South is more disadvantaged in economic goods than social goods.

Our next step is to develop a cumulative measure of what government has spent to build public infrastructure using the perpetual inventory method (PIM). The PIM essentially sums up expenses, at constant prices, back in time for as many years as the assumed service life of a given capital good. We detail the procedure in Golden and Picci (2005: 46ff.), where we construct an index of government infrastructure expenditures that parallels the physical index created by Di Palma and Mazziotta. The measure of infrastructure spending that we compute uses standard and well-established techniques (see, for instance, OECD 1993, 2001).

Our cumulative expenditure index for 1987 and 1997 is reported in columns 3 and 4 of Table 16.1 as perpetual inventory. The contrast between the measures of cumulative expenditures and the physical amounts of infrastructure characterizing Italy's 20 regions is notable for both 1987 and 1997. Although southern Italy has less physical infrastructure, it has received the lion's share of financial resources over the years. We interpret this as suggesting that much of the monies allocated to the South with the intended goal of constructing public infrastructure, in fact, had very little practical effect in contributing to a reduction of the geographic gap.

Table 16.2 Physical infrastructure index by type of infrastructure, 1997

Region	Economic	Social
PI	123.9	114.1
VA	121.0	142.8
LO	126.0	112.7
TA	94.2	152.0
VE	135.2	101.6
FR	131.4	121.0
LI	146.8	113.6
EM	140.0	147.4
TO	106.7	117.9
UM	98.3	118.5
MA	107.6	111.4
LA	108.8	113.3
AB	81.4	102.0
MO	46.5	78.4
CM	54.6	48.4
PU	61.7	64.7
BA	56.8	82.7
CL	43.2	56.9
SI	66.1	66.1
SA	49.8	83.8

Note: For regional abbreviations, see Appendix 16A.

Source: Di Palma and Mazziotta (2002).

Where did all the money lavished on the South end up? In Golden and Picci (2005) we interpret the difference between existing physical infrastructure and cumulative infrastructure expenditures as a measure of corruption. There we compute a ‘corruption index’, as of 1997 based on the ratio between the two measures of infrastructure, after adjusting for regional differences in costs.¹¹ Our measure of corruption thereby reflects the discrepancy between what government cumulatively pays for public infrastructure and the physical quantities of infrastructure that exist (after controlling for regional variations in the costs of construction). The intuition underlying our measure is that, all else equal, governments that do not get what they pay for are those whose bureaucrats and politicians are siphoning off more public monies in corrupt transactions during the process of infrastructure construction.

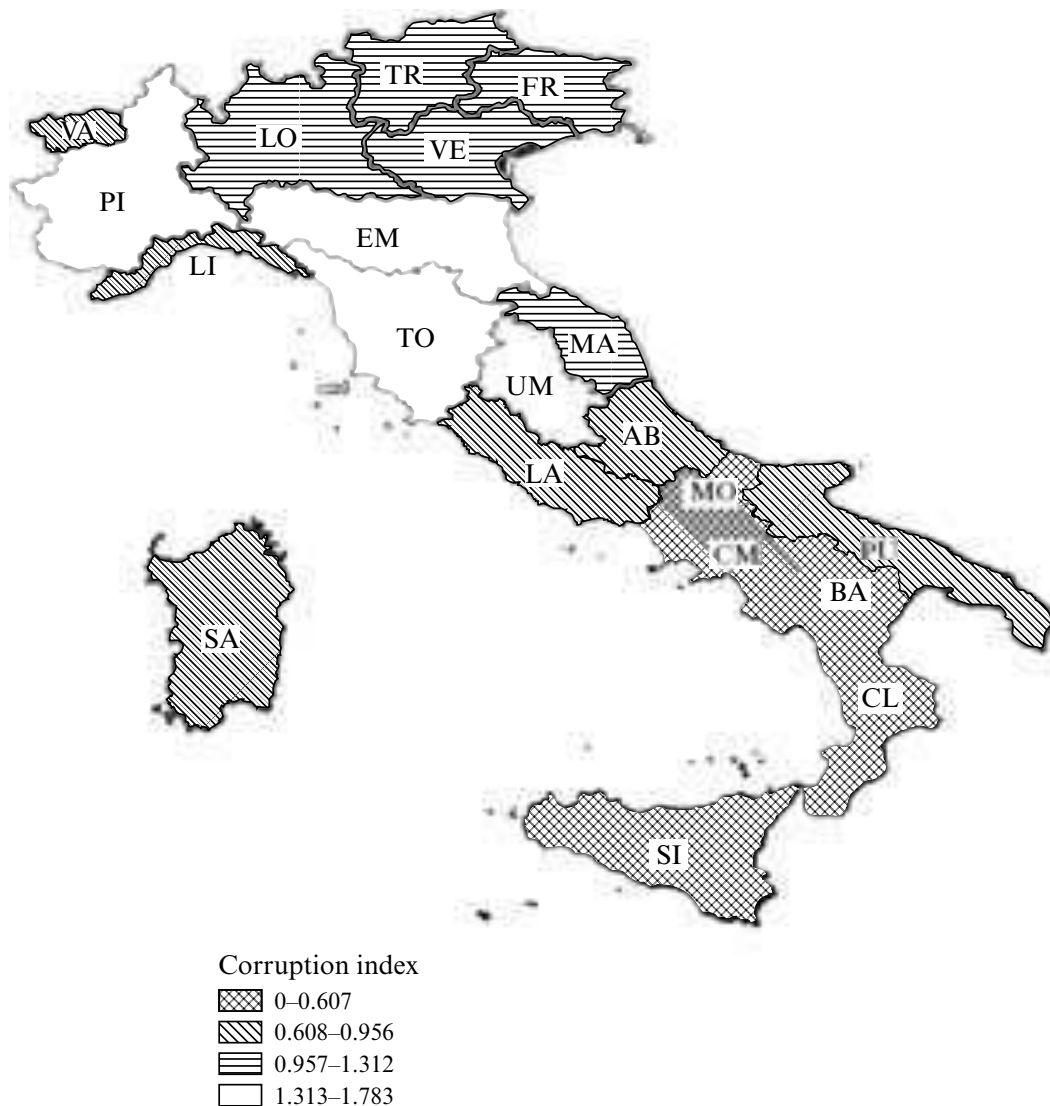
Although our measure was originally created for 1997 to coincide with the availability of the Di Palma–Mazziotta index of physical infrastructure

as well as cost control variables, it represents the accumulation of corruption in public works contracting over a long period of time. The measure itself does not provide information about when the corruption took place: it could have occurred at a single point of time, or, as is more likely, over many years. The measure does not tell us who was involved in corrupt transactions or who benefited or where the monies ended up, but rather just that in some regions public expenditures failed to produce the same amount of public capital as in others. Nonetheless, our corruption measure is informative because it conveys hard information about the relationship between expenditures and output independently of what may be widely known or believed.

Our measure of corruption in public works as of 1997 is reported in the final column of Table 16.1; a lower value implies greater corruption. For ease of interpretation, we have normalized our index so that a value of 100 represents the national average, as Di Palma and Mazziotta did with their index of physical public goods. In order to visualize the geographic dispersion of corruption, Figure 16.3 maps the corruption index across Italy's regions.

Our corruption measure reveals considerable geographic variation. The range on the index runs from a low of 0.36 (Campania) to a high of 1.78 (Umbria). The index values can be interpreted as meaning that in Campania, for instance, there is only 36 percent of the physical infrastructure one would expect if government had paid the national average, whereas in Umbria, there is 78 percent more infrastructure than would have been the case had the Italian government paid the national average for the public works existing there. In other words, the most corrupt region spends nearly 5 times more per unit of public capital than the least corrupt region. This suggests that massive amounts of fraud as well as inefficiency have characterized public construction in some parts of the country but not others.

As the values listed in the final column of Table 16.1 document, our measure of corruption suggests considerably greater corruption in the southern half of Italy than in the northern regions. All the southern regions – the South begins with Lazio, the region that houses Rome, and extends down from there – exhibit values under 1, meaning that government expenditures on infrastructure are used to produce fewer units of public capital than the national average in those regions. With the exception of the Valle d'Aosta and Liguria, all the northern regions, by contrast, exhibit values greater than 1, indicating that monies allocated to infrastructure construction in the North generate better than average amounts of public goods. Our index, in other words, reveals a very marked divide in the cumulative amounts of corruption that appear to have occurred in the northern as opposed to the southern regions of the country.¹²



Note: For regional abbreviations, see Appendix 16A.

Source: Golden and Picci (2005).

Figure 16.3 Regional map of corruption index, 1997

To some extent, of course, the fact that our measure should turn up a massive North-South divide in the extent of public works corruption in Italy is hardly surprising. The South of Italy has long been known for widespread criminality, especially in the form of the Mafia and analogous organizations, while at the same time corruption scandals have plagued local and regional governments there on and off for many decades (Chubb 1982; Arlacchi 1986; Walston 1988). However, the judicial investigations that took place in the early 1990s documented widespread political

corruption in many northern regions as well. It is to these investigations that we now turn. These investigations provide an alternate type of data on public works corruption, embodied in the charges of malfeasance lodged by the judiciary against national legislators.

3. *Tangentopoli* and the exposure of widespread political corruption

In February 1992, a small-time Socialist politician in charge of an old-age home in Milan's public sector was caught taking a small bribe from the home's cleaning company. After years of pursuing political corruption only to face repeated dead ends, the Milanese public prosecutors who had set-up the sting successfully used this single incident to unravel massive networks of political corruption that ultimately incriminated a third of the country's lower house of representatives, five previous prime ministers, and thousands of businessmen, especially those associated with firms that contracted with the government for the provision of services or the construction of public works (Della Porta and Vannucci 1999). The judicial investigations radiated out from Milan to offices elsewhere in Italy and dominated the press for years to follow. Ultimately, the political parties that had governed Italy since the end of the Second World War collapsed on the heels of the investigations, as virtually their entire leadership was implicated in systematic wrongdoing. In the elections held in 1994, the postwar political elite vanished and with it the Christian Democratic Party and the Italian Socialist Party, among others. The only traditional party to survive was the Italian Communist Party, which transformed itself, albeit with significant losses, into the Party of the Democratic Left.

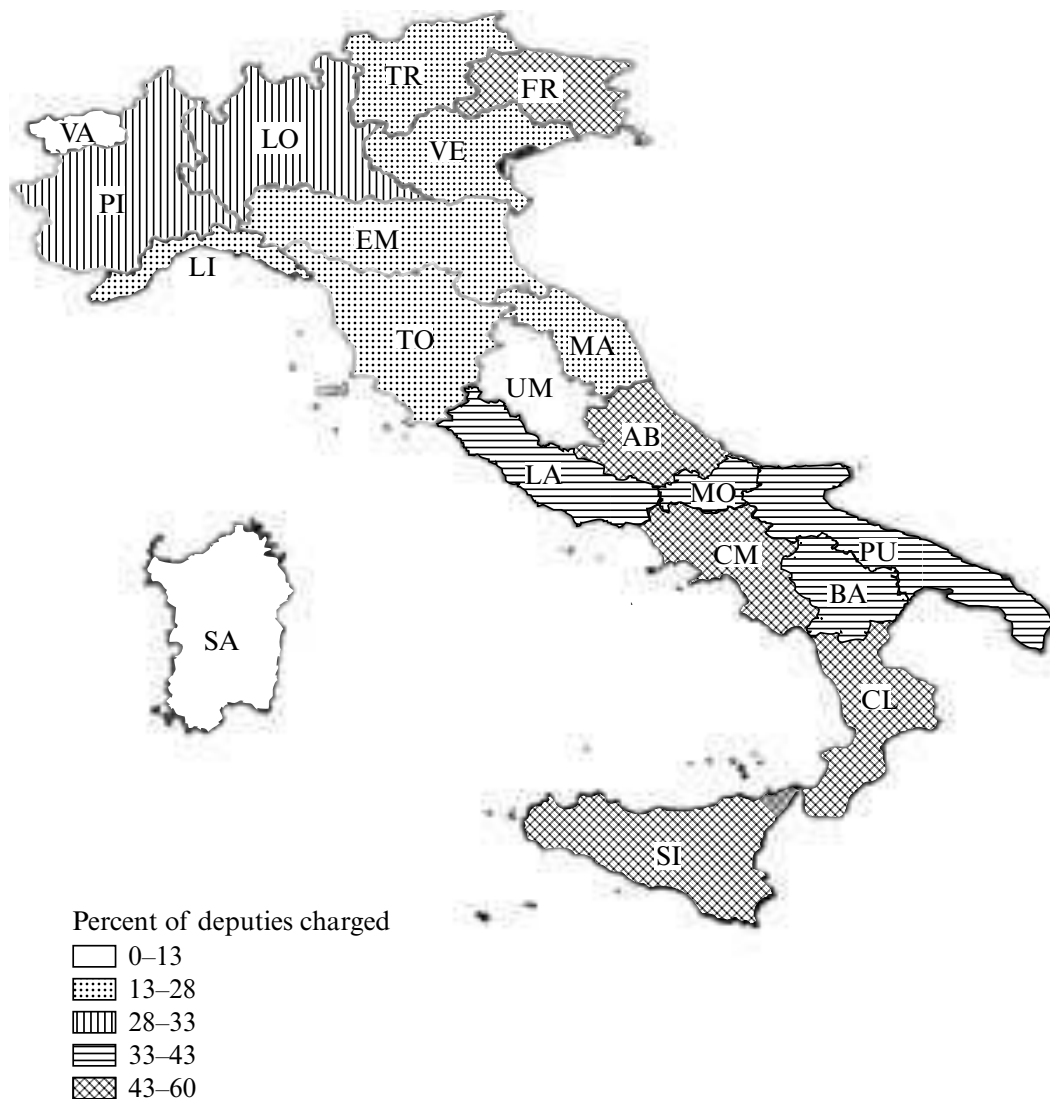
Between February 1992, when the Clean Hands investigations began, and the fall of 2002, the Milanese prosecutors prepared cases against 4,520 persons, of whom 1,300 were indicted and another 1,320 were passed to other jurisdictions. Half of the indictments led to convictions (Barbacetto et al. 2002: 704–5). Except for the judicial area of Milan, which kept meticulous records, we do not know how many persons were implicated, how many indicted, how many tried, or how many convicted, and similar information on events in other judicial districts is not available. Nationally, however, systematic information on the charges of wrongdoing that were lodged by the judiciary against members of the Chamber of Deputies, Italy's lower house, is available (Golden 2004). These charges are known as *richieste di autorizzazione a procedere*, or RAP, and the data exist because of the immunity protections enjoyed by Italian members of parliament in the postwar era. For the judiciary to officially investigate a member of parliament for suspected violations of specific criminal statutes required a majority vote by those present in the chamber of which the deputy was a member.¹³ Over the course of the twentieth century, the Italian judiciary lodged

thousands of requests for the removal of parliamentary immunity in order to proceed with investigations and arrest warrants against legislators. These requests are made through the Ministry of Justice by prosecutorial offices based in any one of Italy's 29 judicial districts and name a deputy or group of deputies they wish to charge with a specific criminal charge or charges.

In using these data, we have, like others before us (including Cazzola 1988 and Ricolfi 1993), distinguished charges involving opinion crimes, such as libel and slander, which easily arise during the professional life of a politician, from other typically more serious charges.¹⁴ We have not tried to distinguish those charges specifically involving corruption or abuse of office from other types of charges for two reasons. First, many parliamentarians had acquired so much legislative seniority by the XI Legislature (seated from 1992 to 1994), when the Clean Hands investigations took place, that they believed that their immunity would never be lifted. Because parliament had denied requests in the overwhelming number of cases over many decades, these deputies were practically encouraged to willfully break the law. In these circumstances, distinguishing corruption – the use of public office for personal gain – from other sorts of malfeasance becomes almost impossible. Second, we do not know the extent to which the judiciary, although suspecting corruption and abuse of office, may have lodged other types of charges against deputies because of an inability to collect adequate evidence. We do know, however, that suspected political corruption was the primary motivation behind the judicial investigations. We present a map of the proportion of deputies charged in Figure 16.4.

The data depicted in the map show that southern regions had a generally higher proportion of their national legislators charged than did northern regions. However, a high proportion of legislators were charged with wrongdoing in selected northern regions as well, including Piedmont, Lombardy (where Milan is located), and especially Friuli-Venezia Giulia, a traditionally Christian Democratic stronghold.

In Figure 16.5 we present a scatterplot of the proportion of deputies charged with potentially serious malfeasance during the XI Legislature (1992–94) against the Golden–Picci index of public works corruption for Italy's 20 regions.¹⁵ It can be seen that there is a very strong, almost linear relationship between the extent of political corruption as measured by judicial charges and the degree of corruption affecting public works construction. As a higher proportion of deputies are charged, public works corruption rises. The relationship is especially notable if we remove three outliers. Valle D'Aosta and Sardinia both had fewer deputies charged with malfeasance than one might expect given the degree of public works corruption observed, whereas Friuli-Venezia Giulia had an unusually high proportion of deputies charged. With the removal of these three outliers, the



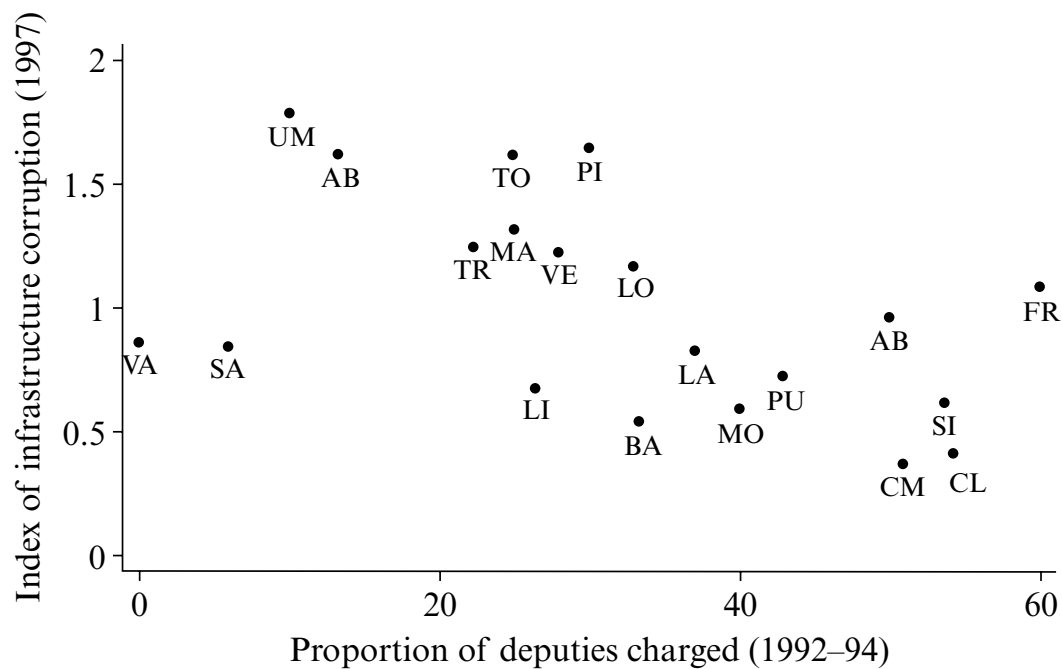
Note: For regional abbreviations, see Appendix 16A.

Source: Golden (2004).

Figure 16.4 Regional map of proportion of deputies charged with malfeasance, XI Legislature

correlation coefficient between the proportion of deputies charged and the index of infrastructure corruption is -0.80 and is highly significant (recall that the variables are scaled inversely, thus producing a negative coefficient). Even without the deletion of outliers, the correlation coefficient between the two variables is -0.49 , and is also highly significant ($p = 0.03$).

Even though our infrastructure index of corruption is nominally calibrated for 1997, we have already noted that, in fact, it measures decades of



Note: For regional abbreviations, see Appendix 16A.

Sources: Golden (2004), Golden and Picci (2005).

Figure 16.5 Scatterplot of deputies charged and corruption index, by region

accumulated corruption in public works construction. The data depicted in Figure 16.1 document that spending on infrastructure investments temporarily collapsed after the Clean Hands operation exposed widespread fraud and corruption in those activities. Indeed, many of the charges that were lodged against deputies in the XI Legislature, which sat from 1992 to 1994, involve the very corruption in public construction that our index captures as of 1997, by which time corrupt activities had probably ceased. The RAP, in other words, represent the political exposure of the underlying illegal activities that our infrastructure index measures. This is illustrated by the opening words of the request to remove parliamentary immunity from the prosecutorial offices of Milan, who repeatedly contended:

[A]n organic link between institutions, politicians and firms has emerged. This link is characterized not by occasional interactions, but by a planned strategy in which those individuals in leading positions of public bodies or publicly-owned enterprises were assigned specific roles by national political figures, who procured financing from those bodies with the aim of obtaining not only the public good but also private and illicit ‘returns’. (Doc. 4, n. 223-A, 15 July 1993, lodged against Gianni De Michelis by the judicial district of Milan, signed by Di Pietro, Davigo, D’Ambrosio and Borrelli)

The prosecutors went on to identify kickbacks in public construction as a systematic and regularized mechanism by which party leaders in the governing political parties – especially the Italian Socialist Party and Christian Democracy – raised monies for both personal gain and party coffers.

Our index of public works corruption and the charges of wrongdoing against national legislators measure similar but not identical phenomena. We note three important differences. First, and most obviously, the RAP reflect judicial activism, especially apparent in the hardworking and dedicated Milanese prosecutorial offices, and not only actual wrongdoing by legislators. To some extent, that is, the RAP may be a less valid indicator of ‘true’ corruption than is our infrastructure index. We have tried to correct for this by dropping multiple charges against the same deputy during the life of the legislature, and focusing on the proportion of deputies charged with serious malfeasance even once. The number of deputies charged repeatedly was quite high. Of the 222 deputies (out of a total of 630 in the Chamber) who were charged during the two-year period we examine, 120 (or 54 percent) were charged more than once with non-opinion crimes. We consider multiple charges a clear measure of judicial determination. But even with that correction, the geographic distribution of RAP to some extent reflects the judicial zeal of the local prosecutorial offices. In this sense, the infrastructure index is a more ‘objective’ measure of corruption.

Second, political corruption comprises a larger category of crimes than kickbacks in public works construction, although the latter was probably the modal corrupt transaction in pre-*Tangentopoli* Italy. In this regard, the RAP represent a more valid measure of corrupt activities than the infrastructure index, which is necessarily limited to corruption only in public works construction. Our measure of public works corruption is not able to capture such illegal political activities as the promise made by a deputy to a temporary public employee that his job would be converted to a permanent one if the deputy was subsequently reelected (Doc. 220, lodged against Angelo Mazzola on 10 March 1993 by the judicial district of Lodi), the use of government monies by a local government official later to be elected deputy to buy office furniture from a specific firm without open bidding (Doc. 183, lodged against Antonio Miceli on 28 January 1993 by the judicial district of Messina), or the provision of free lunches to hundreds of public employees in local health clinics by a deputy during her election campaign (Doc. 133, lodged against Anna Nenna D’Antonio by the judicial district of Chieti).¹⁶ These examples illustrate the fact that our measure of public works corruption is necessarily limited in the range of corrupt activities that it captures. Public works corruption may have been

the heart of the system of kickbacks to the postwar governing parties, but political corruption nonetheless involves a more extensive set of illegal activities.

Finally, there is some reason to believe that the differences in the geographic distribution of RAP and our corruption index may stem from a recent diffusion of public works corruption, especially corruption under the control of organized crime, from the South to the North. Corruption in public construction was long a well-known feature of some large southern cities; Palermo is a notable example. In such a setting, the firms winning construction bids were typically under the control of organized crime (Chubb 1982). This was true even as early as the late 1950s and 1960s, when Palermo enjoyed a boom in publicly financed construction. Only much more recently did public construction in the North fall under the control of organized crime (suggested in Colombo 1995). If this is the case, then the newly arrived corruption affecting public works in northern cities would be captured better by the RAP than by our corruption index because the latter is a historically cumulative measure.

We may think of the Clean Hands operation that took place from 1992 to 1994 as, in part, exposing the levels of fraud and waste that we observe in the corruption index. Although the index was created as of 1997, it actually reflects longstanding patterns of public works corruption. What impact did the judicial revelations have on corrupt practices? In the next section, we describe the legal environment regulating public works contracting both before and after *Tangentopoli* and attempt to assess whether there has been a permanent decline in political corruption.

4. *Tangentopoli* and after: has corruption declined in Italy?

The exposure of massive political corruption with the scandals of the early to mid-1990s provided the impetus for substantial legislative reform governing public works construction in Italy. The original legal framework for public works was established by an act dating from the early years of unified Italy (Law 2248, adopted 20 March 1865). However, a host of new laws were subsequently added, so that by the 1980s the overall legislative framework was Byzantine.¹⁷

Beginning with the 1957 Treaty of Rome, European-level regulations and directives were also in effect in Italy. Such legislation prohibits a series of practices that would limit competition in public works contracting (see Lauria 1998). However, although in principle it was possible to seek legal redress for breaches of European laws and treaties from the Italian judiciary, this rarely occurred. Such a procedure would be lengthy and costly, and the outcome uncertain given the existence of conflicting Italian legislation.

This legislative confusion facilitated discretionary behavior, and as one of *Tangentopoli*'s most prominent prosecutors remarked:

[C]ollusion between administrators and entrepreneurs has been made possible by the total inadequacy of our laws on public contracts . . . that allowed projects to be assigned to 'friendly firms' using a variety of mechanisms, such as the unjustified recourse to urgent procedures; overly detailed specifications of the requirements to participate in the bidding process, together with tenders tailored to the intended winner; price variations as the works were already underway that allowed for the compensation of very low bids that had in turn anticipated these later price adjustments; the choice of private bidding procedures, made possible by easy circumvention of the existing regulations. (D'Ambrosio 1998, p. 1; our translation)

Although it is comparatively easier to circumvent complex regulations, the direction of causality also goes in the opposite direction. Because legislative and regulatory complexity facilitates corruption, rationalization efforts will be resisted by those vested interests who are extracting rents. In fact, efforts to simplify and rationalize the legal and regulatory framework in Italy were successful only in the aftermath of *Tangentopoli*, when the postwar political elite was in a shambles with the revelations of systematic, widespread and nationally coordinated kickbacks in public construction.

In 1991 a referendum, opposed by the parties in government, reduced the number of preference votes that electors could cast in national elections from three (or in large districts, four) to one. The intended aim of the referendum was to reduce the scope for the corruption and clientelism that stemmed from intraparty competition, especially within the ruling Christian Democratic party (Golden and Chang 2001). At the same time, the referendum's outcome offered a clear indication that the electorate was shifting against the political establishment. In 1993, in the aftermath of *Tangentopoli*, the electoral system was transformed from pure proportional representation to a mixed system in which a quarter of legislative seats were allocated proportionally and three-quarters by plurality. The 1994 legislative elections that followed would mark the official ending of Italy's First Republic, the disappearance of traditional parties such as the Christian Democrats and the Italian Socialist Party, and the emergence of the newly formed Forza Italia under the leadership of Silvio Berlusconi.

In this changed political context, new legislation was adopted regulating public works contracting. Reform of public works legislation was long overdue, as relevant actors were well aware.¹⁸ Law no. 109 was passed on 11 February 1994 (known as Law 'Merloni I', after the then minister of public works). It made some important changes in public works contracting, not only because it finally presented a coherent legislative framework in a single text but also because it established a series of principles to regulate the procedures used.

The law made it more difficult to avoid open bidding as the instrument of choice for selecting firms, and likewise made it more difficult to alter the established price of a project on the grounds that 'unforeseen conditions' had occurred during construction. Moreover, the law made a clearer distinction between the public administration, which was given important responsibilities in establishing general infrastructure needs as well as planning individual projects, and the firms which were to execute them. Finally, a new independent body, the *Autorità Indipendente di Vigilanza e dell'Osservatorio dei Lavori Pubblici*, was established with the responsibility of monitoring and supervising the entire process.¹⁹

Whether these changes have succeeded in curbing corruption and in ensuring more effective management of public works remains an open question. Initially, the drastic drop-off in public construction that followed the Clean Hands revelations must have limited corruption, purely by virtue of the fact that so little new construction was occurring. But we have very little systematic information with which to assess whether the investigations led to a permanent reduction in corruption. One modest indication is Italy's ranking in the Corruption Perceptions Index, prepared by Transparency International (TI) on an annual basis. In 1995, the first year for which data are available, Italy had a score of 2.99 and ranked 33rd out of 41 countries considered. In 2004, Italy had a score of 4.8 (higher scores imply less corruption) and ranked 42nd out of 145 countries (data taken from TI's website: www.transparency.org/surveys/index.html#cpi). Given changes in the underlying data used to create the index, it is difficult to compare values over time, but these data suggest some improvement in the extent of corruption in Italy relative to other countries.

With respect to legislative effectiveness, however, attempts to simplify the legislative framework and to reduce discretion do not appear to have had much impact. The speed and ease of the process of public construction has worsened over time, as illustrated by the eight years it took to build the *Autostrada del Sole*, at the height of the economic boom, and the never-ending quibbles that have characterized the construction of more recent works.²⁰ The Merloni laws appear not to have had a salutary effect, and the trend towards federalism, as exemplified by Constitutional Law no. 3 of 2001, has contributed to the creation of a complex multi-level governance structure that does not permit prompt planning and execution of infrastructure.

Finally, even promising legislative reforms may stall in the implementation phase. The *Autorità per la vigilanza sui lavori pubblici* was eventually established in 1999 with the authority to monitor public construction, and after six years it can be safely said that it has fallen short of expectations. It has not substantially improved transparency in public works, and the

creation of data on 'standardized costs', a key component to allow for benchmarking of single works, is still at a preliminary stage.²¹ From the point of view of, say, a journalist interested in public works, the existence of the *Autorità* is almost inconsequential.

Such a situation is, at least in part, explained by the loss of public interest in the issue of corruption in Italy after the heady days of *Tangentopoli*. Once the judicial investigations tapered off and the political climate changed, the public works sector no longer received much public attention. At the same time, the underlying incentives for relevant actors have changed with the alteration of the electoral system from pure proportional representation to a mixed proportional representation–majoritarian system, but with controversial effect. The literature on the impact of electoral system characteristics on corruption is currently inconclusive (Persson et al. 2003; Kunicová and Rose-Ackerman 2005; Chang and Golden 2006). In our view, the search for preference votes in Italy's previously open-list system of proportional representation provided incentives for corruption. These have been removed with the new electoral system, and this has likely been reflected in an overall decline in the extent of corruption affecting Italy. However, the legal and political environment still leaves room for opportunities for corruption.

5. Final considerations

Based on the Italian case, we conclude that when corruption is widespread and persistent, it is likely to involve elected public as well as bureaucratic officials. The hundreds of national legislators accused of involvement in malfeasance by the judiciary in the early 1990s were the same men who, working with their local counterparts, effectively conspired to make bid-rigging common in public construction. In Italy there probably were more overlapping pieces of legislation regulating the process than may have been the case elsewhere, and this may have allowed for greater slippage and confusion. Nonetheless, the laws regulating the construction process were not much different from elsewhere, and the activities that eventually brought down the Italian political elite were as illegal in that country as in the rest of Europe. In that regard, the Italian case illustrates that the 'right' laws are insufficient by themselves to prevent widespread corruption from taking hold.

When combinations of laws and institutions permit an entire political elite to become more interested in rent seeking than in protecting the public good, the wholesale replacement of that elite may well be necessary to break deep-seated patterns of corruption. But without very substantial institutional reforms occurring simultaneously, even that may prove inadequate. And as the Italian case reminds us, even political reform, legal

innovation and leadership change together may only partially break long-standing patterns of malfeasance. A critical factor in ensuring the ongoing success of anti-corruption efforts may be the creation of a political elite that has a vested interest in ensuring meritocratic observance of regulations and legislation governing public service, public construction and public procurement, as suggested by Samuel Kernell and Michael P. McDonald's research on the eradication of patronage in the US postal system (Kernell and McDonald 1999). Designing the institutional incentives that give a substantial fraction of the political elite a vested interest in honesty should be a priority for future research.

In recent history, Italy has failed badly in monitoring the performance of public works construction. Had this not been the case, the intervention of the judiciary in the early 1990s would not have had the spectacular effects that it did.²² The objective corruption measure described above (drawn from Golden and Picci 2005) suggests one possible way forward. Better information on the variation of the productivity of public spending can be used to pressure poorly performing regions to improve. The burden of proof can be put on national and local politicians from such regions to justify the divergence on the basis of costs or the character of public spending.

Monitoring of behaviors on a regular basis, however, cannot proceed on the basis of ad hoc assessments, such as the one described, and needs appropriate institutions that are capable of systematically collecting and organizing the relevant data. Such a need was certainly present in the minds of the Italian legislators who, in the aftermath of *Tangentopoli*, introduced the *Autorità per la vigilanza sui lavori pubblici* and gave it precise monitoring responsibilities.

A prerequisite for success in this, or any other, institution-building effort, is the presence of a firm political will whose lack is probably the main culprit for the failure of the *Autorità*. Within these limitations, however, there is ample space for experimenting with creative solutions. In particular, the use of up-to-date information technologies could alleviate the difficulties of institution building by providing stable monitoring instruments that are incorporated in an information system that would allow for the management of public works. A proposal along these lines is offered in Picci (2005), where the behaviors recorded by an appropriate public works management system are automatically recorded and summarized, and such information establishes a set of incentives that effectively constrain the behavior of the relevant actors.

Notes

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1. See www.transparency.org/cpi/2002/bpi2002.en.html (last consulted on 29 August 2005). Respondents in emerging economies were asked 'which are the sectors in your country of residence where senior public officials would be very likely, quite likely or unlikely to accept or extort bribes?'. On a scale of 0 to 10, with 0 worst, public works/construction scored 1.3, just below arms and defense with 1.9. No sector was above 6 (see also Galtung 2003: 268).
2. Comparable data are not available for the years preceding 1890.
3. Lazio (the region housing Rome) joined Italy in 1870.
4. For a general account, see Fenoaltea (1985).
5. See Picci (2002, Table 4).
6. See Picci (2002, Figure 6).
7. The Veneto became part of Italy after the 1866 war with Austria (the so-called 'Third War of Independence'); Lazio (and Rome) joined in 1870; and Trento, Bolzano, Trieste and Istria joined after the First World War.
8. See Picci (2002, Figure 5).
9. See Picci (2002, Figures 7 and 8).
10. In Golden and Picci (2005), we refer to these as 'space-serving' and 'people-serving', respectively.
11. We lack the control data on costs of construction to compute a similar index for 1987, despite the availability of the physical measures for that year.
12. Liguria and Val d'Aosta are both characterized by mountainous terrain that presumably adversely affects the cost of public works.
13. The Italian constitution was modified in November 1993, following the barrage of charges stemming from the Clean Hands operation, so that subsequently a majority vote was required to prevent the judiciary from pursuing their investigations. Until then, a majority vote of those present was required to lift immunity. The change had the effect of substantially reducing the number of requests made.
14. We code as opinion crimes charges that list articles from the Italian penal code numbers 269, 272, 278, 286, 290, 303, 340, 341, 342, 403, 405, 595 and 596, as well as anything related to fascist activities. We are grateful to Davide Petrini for this classification. In the present analysis, we ignore multiple charges against the same representative. For a descriptive analysis, see Chang and Golden (2006).
15. To aggregate the data from Italy's 32 electoral districts into its 20 regions, we had to assign whole electoral districts to regions. District 11, encompassing the provinces of Belluno, Gorizia and Udine, was assigned to Verona even though Belluno is actually part of the Veneto, and district 18 was assigned to the Marche, although one province actually falls in Lazio.
16. The document numbers are attached to the immunity requests made by the Ministry of Justice to Parliament. Data collected by Golden, available in Golden (2004).
17. Significant modifications included Decree no. 827 of 23 May 1924, Decree no. 1063 of 16 July 1962, and Law no. 14, 2 February 1973. See Mariani and Mastromarino (2000: 80ff).
18. See, for example, what Merloni (who later, as minister for public works, gave his name to a series of laws reforming the sector) recalls of the period, in Merloni (2001).
19. The Law of 1994, called the 'Merloni Law' after its main author, was followed by two additional pieces of legislation, Law no. 216, 1996, known as '*Merloni bis*', and Law no. 415, 18 November 1998, or '*Merloni ter*'). In addition, a set of 'technical rules' (*Regolamento tecnico*, Decree of the President of the Italian Republic, 21 December 1999, no. 554) completed the new legislative framework. In 2002, yet another law (Law of 1 August 2002, no. 166), somewhat inappropriately called '*Merloni quarter*', modified Law no. 109 of 1994. Constitutional Law 18 October 2001, no. 3, gave sweeping constitutional powers to regions in matters related to public works.
20. An example is provided by the doubling of the number of lanes in the highly congested portion of the *Autostrada del Sole* between Bologna and Florence. First discussed in 1970 and planned in the following years, works are only now under way.

21. Information drawn from the organization's website (www.autoritalavoripubblici.it/) (visited 3 May 2005), and confirmed by a telephone interview (3 May 2005) with an official working on the project.
22. The interventions of the judiciary represented a sort of *ex post* monitoring or, in other words, a closing of the door well after the horse had left the stable.

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Appendix 16A Regional abbreviations used in tables and figures

AB	Abruzzi
BA	Basilicata
CL	Calabria
CM	Campania
EM	Emilia-Romagna
FR	Friuli-Venezia Giulia
LA	Lazio
LI	Liguria
LO	Lombardy
MA	Marche
MO	Molise
PI	Piedmont
PU	Puglia
SA	Sardinia
SI	Sicily
TO	Tuscany
TR	Trentino-Alto Adige
UM	Umbria
VA	Valle d'Aosta
VE	Veneto

17 Corruption in tax administration: lessons from institutional reforms in Uganda

*Odd-Helge Fjeldstad**

Over the past two decades many developing countries have implemented comprehensive reforms of their tax administrations in order to increase revenue and curb corruption. This chapter examines recent experiences in the fight against corruption in the Uganda Revenue Authority (URA). It argues that the technocratic remedies supported by donors have underplayed the degree to which progress in tax administration depends upon a thorough ‘cultural change’ in the public service. The motives of individual actors are often inextricably tied to the interests of the social groups to which they belong. In the URA, patronage runs through networks grounded on ties of kinship and community origin. As such, people recognize the benefits of large extended families and strong kinship ties, even as their social and economic aspirations may be indisputably modern. This implies that such social relations may undermine formal bureaucratic structures and positions. If these problems, which are rooted in social norms and patterns of behavior rather than in administrative features, are overlooked, the result may be to distort incentives. As a consequence, the government’s commitment to reforming the tax administration may also be undermined.

In most developing countries, national tax collection is carried out by line departments within the Ministry of Finance (MoF). However, over the past two decades more than 20 developing countries, especially in Latin America and Africa, have established revenue authorities whereby the tax administration function is moved out of the MoF and granted to a semi-autonomous entity (Devas et al. 2001; Taliencio 2004).¹ Although each country that has established a revenue authority has done so under differing circumstances, there are some general patterns with respect to underlying political and economic circumstances. First, governments have been greatly dissatisfied with the performance of revenue collection, especially in the face of fiscal deficits and expanding public expenditure needs, and with the chronic inefficiencies of the existing tax administration arrangements placed in the MoF (Mann 2004). Second, perceptions of widespread corruption and tax evasion, combined with high taxpayer compliance costs, led to calls for wholesale reform of the tax administration (Ghura 1998;

Barbone et al. 1999). Third, in some aid-dependent African countries the shift to a semi-autonomous revenue authority model was also attractive to foreign donors because it created opportunities for more-widespread reforms of the tax administration (Therkildsen 2004).

The revenue authority model is designed partly to limit direct political interference in day-to-day operations by the MoF and partly to free the tax administration from the constraints of the civil service system (Devas et al. 2001; Taliercio 2002). A revenue authority is not meant to be as autonomous as a central bank or as dependent as departments in line ministries. It is 'semi-autonomous'.² But a revenue authority is meant to be quite independent of the financing and personnel rules that govern the public sector in general. A semi-autonomous revenue authority (SARA) can in principle recruit, retain and promote quality staff by paying salaries above civil service pay scales, and can also more easily dismiss staff. Such steps are expected to provide incentives for better job performance and less corruption. Moreover, a single-purpose agency is meant to integrate tax operations and focus its efforts on collecting revenues more effectively than is usually possible under civil service rules.

Studies from a number of countries in Latin America (Taliercio 2002, 2004; Mann 2004) and Africa (Chand and Moene 1999; Terpker 1999; Hadler 2000; Fjeldstad 2003; Therkildsen 2004) show that the reforms appeared to be successful in the initial years. But the initial successes were in many cases not sustained. The first years after the establishment of a SARA often witnessed sharp increases in revenues. Reported corruption also seemed to decline. Thereafter, revenue enhancement stagnated and in some countries revenues as a percentage of GDP dropped. There are also clear indications that corruption is on the rise again in many revenue administrations, especially in Africa (Waller 2000). This pattern, initial increases in revenue collection followed by stagnation or decline, often took place despite continued economic growth, reforms of important tax legislation in line with 'best practices' as prescribed by the International Monetary Fund (IMF), and accumulated operational experience in the new revenue administrations.

This chapter examines the experiences of the URA in controlling fiscal corruption. The URA, established in 1991, is the oldest integrated revenue authority in Sub-Saharan Africa.³ Hence, it is possible to assess the reform initiative on the basis of developments over a relatively long period of time. The reform appeared to be a success in URA's first years of existence. Reported revenue increased sharply – from 7 percent of GDP in 1991 to around 12 percent in 1997 (Katusiime 2003). Corruption also seemed to decline. During this period many observers referred to the URA as a model for other Sub-Saharan African countries (Silvani and Baer 1997; World

Bank 1997; Barbone et al. 1999). Since then, the URA has failed to meet its targets and revenue has dropped as a percentage of GDP amid accusations of increasing corruption.⁴ An evaluation commissioned by the British Department for International Development (DFID) points to the continued public perception of a high level of corruption, reflected in the widespread availability of 'duty-free' goods on local markets and arrests of senior URA officers (EME 2000: 20). The Ugandan government seems to support this view. For instance, in March 2000 President Yoweri Museveni is reported to have called the URA 'a den of thieves' (Therkildsen 2004: 82). Likewise, in March 2003 the former commissioner general of the URA, Annebritt Aslund, listed corruption as 'problem number one' in the organization.⁵ Frequent media reports support the perception that corruption is endemic in the URA.

Rising levels of corruption may help explain why the growth in revenue has tailed off in recent years.⁶ But there are clearly other explanatory factors at work as well. First, tax revenue depends on external factors over which the tax administration has no control. For instance, general economic trends affect tax bases such as income tax, value-added tax (VAT) and import duties. Import restrictions and politically allocated tax exemptions for different sectors and businesses also contribute to reducing the tax base. Furthermore, staff productivity may have changed, possibly due to falling motivation – whether this is unrelated to, causes, or is caused by an increase in corruption is not known. However, there are many indications that an increase in fiscal corruption has contributed to the drop in reported revenues as a percentage of GDP. Thus, a closer look at the pattern of corruption may shed light on the development of tax revenues.

Reliable information on levels of corruption and tax evasion is obviously hard to come by. Given the sensitive issues at stake one cannot work towards an understanding of the phenomena discussed here by the standard methods of random sample, structured questionnaires and formal interviews. A combination of informal and formal methods is often required.⁷ This analysis, therefore, is based on a variety of sources of information collected during fieldwork in Uganda: official reports and data on tax revenues; available grey literature produced by the government, the URA, donors and business communities; personal interviews and discussions with present and past tax officers and board members of the revenue authority, staff at the MoF, businesspeople and customs-clearing agents in Kampala, aid workers, tax consultants and researchers; and newspaper articles on tax issues and the URA.

Section 1 describes the state of affairs in the tax administration in Uganda prior to the establishment of the URA. Section 2 examines key elements of the tax administrative reform. Section 3 focuses on patterns of

corruption in the URA, and Section 4 seeks to determine which factors are crucial in explaining the extent, types and causes of corruption in the tax administration. Finally, Section 5 concludes with a discussion of ways to improve the URA's performance in a situation where the broader social, political and economic environment, as well as the public sector in general, is seriously detrimental to good performance.

1. Factors leading to the establishment of the URA

Preliminary work on reforming the Ugandan tax administration began soon after the downfall of the Idi Amin regime in 1980. Over the next ten years at least two government commissions and three consultancy studies dealt with the problem of tax administration in the face of increasing fiscal problems (Republic of Uganda 1983, 1990; MoF 1989; CLD 1991). Together these reports describe 'the decline of a previously highly regarded Ugandan civil service into a sorry state of inefficiency, irresponsibility, indiscipline and corruption' (Therkildsen 2004: 68).

The reports identified four main causes of poor tax administration:

- *Lack of taxpaying culture among taxpayers* This was partly caused by a tax system perceived as unfair. Relatively high rates and a complex and partly incoherent set of rules, especially for customs and corporate taxes, resulted in large potential rewards for taxpayers willing to bribe to cut their own tax burden and/or speed up customs clearance of their goods.
- *Low wage levels* The poor salaries at the tax administration compared to the private sector invited corruption. The average public employee's salary in 1989 was about 20 percent of the corresponding salary in the private sector, and was only 5 percent for unskilled staff.
- *Poor working conditions and little encouragement for staff to exercise initiative* Working conditions were generally characterized by a lack of technical equipment and poor office facilities. Moreover, the criteria for recruitment, promotion and rewards of staff and management were unclear and subject to substantial discretion.
- *Low probability of detection and punishment for corruption* Internal auditing and monitoring functions had become for the most part non-operative and ineffective due to weak management and poor information. In practice, the probability of being detected and punished for corruption was virtually non-existent.

The suggested remedies were first and foremost increased salaries and better management. According to Ole Therkildsen (2004: 68), the idea for the establishment of a revenue authority was inspired by the IMF and by

experiences from Ghana. The arguments for an autonomous revenue authority were (Harvey and Robinson 1995: 48–9):

[B]y moving away from civil service terms and conditions of service and management practices . . . many . . . problems can be overcome. In particular, with higher salaries staff will not need to seek alternative sources of income; coupled with stricter discipline this should reduce corruption, increase morale and productivity and thus the revenue intake.

It was expected that the revenue authority model would provide ‘stronger and more effective management of staff and resources, supported by better facilities and information and with adequate checks and auditing of both staff and taxpayers’ (CLD 1991, executive summary).

2. Key elements of the tax administration reform

The URA was set-up on 5 September 1991 by the Uganda Revenue Authority Statute No. 6 of 1991 as a central body to assess and collect specified tax revenue, to administer and enforce the laws relating to such revenue, and to account for all the revenue to which those laws apply. In practical terms, the main objective of the URA was to reach given revenue targets, expressed as a ratio of tax revenue to GDP. These targets were to be revised annually on the basis of negotiations between the URA and the MoF and reflected in the finance minister’s budget speech. The URA was also required to advise the government on matters of revenue policy.

A key element of the administrative reform was to move the existing revenue departments out of the MoF into a semi-autonomous revenue authority overseen by a fairly independent board of directors.⁸ The objective behind this move was mainly to provide incentives for the staff to improve its performance and thereby increase revenues. A revenue authority, established outside the civil service system, is not bound by wage rates and employment regulations that apply to other sectors of government (Devas et al. 2001: 214). This meant that the URA, in principle, could pay rates which would enable it to attract and retain highly qualified staff. Hence, the consultants involved in setting up the URA recommended that management and professional staff remuneration should be competitive with the private sector (Therkildsen 2004: 71). Other staff should be paid a ‘living wage’. Accordingly, they recommended a pay increase of up to 1,800 percent for low-level staff and 600 percent for mid-level staff. However, because commissioners in the MoF were already very well paid compared to the private sector and also received generous tax-free benefits, a pay decrease of 30 percent was suggested for this category. These suggestions implied a dramatic decrease in the compression rate (that is the pay difference between the top and bottom positions in the organization). The

pay for the top positions would decrease from the excessive 729 times the pay at the bottom in the MoF to 34 times in the new URA (*ibid.*). Although these recommendations were only partly implemented, the staff that moved to the URA received dramatic increases in pay rates – some categories of staff received salaries that were 8–9 times higher than salaries for corresponding positions in the civil service.

The reform also strengthened accounting and internal monitoring systems and curtailed the opportunity of tax officers to use their own discretion in dealing with cases. The general scarcity of qualified accountants, lawyers and information technology experts meant, however, that the URA would also have only a small number of these professionals. Finally, working conditions for employees were improved by upgrading offices, expanding computer services, purchasing service vehicles and so on. Thus, the initial focus was mainly on internal matters; less attention was paid to the URA's external relations.

Drastic measures were put in place to break the 'culture of corruption' in the administration. All former MoF revenue staff, including the revenue commissioners, were transferred to the URA and employed on a probation basis (Therkildsen 2004: 70). During the probation period everybody was screened. Out of the approximately 1,700 people who had worked in the former revenue departments of the MoF, some 200 tax officers and 40 secretaries were dismissed during this exercise, a screening process in which the board was heavily involved. The Customs and Excise Department registered the largest number of staff dismissals. This created 'shock waves' among those who were left. Moreover, after one year of operations only two out of eight top-level positions were occupied by Ugandans (*ibid.*).

The hiring of expatriates was initially pushed by foreign donors who were heavily involved in financing the administrative reform through technical assistance. Hence, the first commissioner general (1991–97) was a Ghanaian, and later (2001–04) the URA was led by a Swede. The idea behind the use of expatriates was that it would contribute to improved professionalism and integrity. When the Swedish-born commissioner general, Ms Annebritt Aslund was appointed in 2001, President Museveni is reported to have remarked that she came from a 'very distant tribe' (Taliencio 2002). Given tribal interests and the prevalence of patronage in the public sector, the president thus indicated that it was necessary to hire an outsider in order to undertake serious reform of the tax administration.

The autonomy of the original board of directors led to conflicts between the board, the MoF, and the commissioner general (CG). The URA statute set-up conflicting responsibilities for the board, which was responsible for both the formulation and implementation of URA. Moreover, the MoF came to see the board as problematic, partly because powerful members of

the board who were not appointed by the ministry disagreed with the ministry in some cases, and partly because the ministry perceived that the board did not possess the required technical expertise on taxation matters. Thus, when the statutes were amended in 1998, the MoF's primacy as tax policy organ became more clearly established and the board became less independent (Therkildsen 2004: 69).⁹

Under the legislative changes in 1998 the MoF increased its presence on the board by controlling four out of seven seats, as opposed to four out of nine under the original statute. To provide for taxpayer representation, parliament also gave the Uganda Manufacturers Association (UMA) a seat on the board. As a consequence, the role of the board changed from being responsible for the formulation and implementation of the policy of the revenue authority to being responsible for monitoring the revenue performance of the authority and for determining the policies related to staffing and procurement. The board also received more powers *vis-à-vis* the CG to intervene in staffing matters. Furthermore, it was responsible for complying with any directives given by the minister of finance. Consequently, these legislative changes, which implied that the minister of finance appointed the majority of the members of the board and also gave directives to the board, laid the foundation for conflicts between the board (that is, the MoF) and the CG. In practice, the new legislation gave day-to-day management authority, especially in staffing matters, to both the board and the CG.

3. Corruption in the URA

Although the level of corruption was perceived to drop during the initial phase, corruption has been considered a problem in the URA since its outset. For instance, a survey conducted in Kampala in 1993, two years after the authority was established, revealed that there was 'a general impression that URA is a corrupt institution, high-handed and inconsiderate' (Zake 1998: 77). In a household survey covering the 1995–97 period, the URA was rated as relatively corrupt – less corrupt than the courts and the police, but worse than the health services and local government (Cockcroft and Legoretta 1998). Moreover, in a business survey conducted in 1998 covering 243 firms, 43 per cent said that they were paying bribes to tax officers occasionally or always (Gauthier and Reinikka 2001: 22).¹⁰

Exemptions increased in prevalence and importance from 1995 to 1997 (*ibid.*) – despite official policies to the contrary. In particular, large firms have benefited from exemptions. Although the Income Tax Act of 1997 provided more effective means to reduce exemptions, the introduction of accelerated depreciation allowances have diminished this reduction (EME 2000: 17).

Revenue fraud in the form of smuggling, undervaluation and underdeclaration of income and taxable goods, misclassification of goods and so on, has been a rising problem. The government itself has increasingly focused on this problem in recent budget speeches and background papers on the budget. According to the UMA, smuggling accounted for a revenue loss of 10 percent per year in the late 1990s (*ibid.*).¹¹ The Customs Department in particular has consistently had difficulties in meeting its targets (Obwona and Muwonge 2002: 27). Hence, various forms of revenue fraud, which imply the involvement of customs officers, are likely to be part of the explanation for the tax-share stagnation in recent years.

Senior managers seem to be heavily involved in corruption in the URA. This is, for instance, reflected in the court case in 2003 against five senior officers attached to the Large Taxpayers Department (LTPD) who were accused of defrauding the URA of US\$ 338 million. The accused included the commissioner of the LTPD, three assistant commissioners for audits and business analysis, and the public relations officer (*The New Vision* 11 March 2003, p. 4). However, according to officials in the URA, this court case is only the 'tip of the iceberg'.¹²

As a measure to combat corruption, all URA staff members were requested in January 2002 to fill out an asset declaration for themselves and their relatives. This is something members of parliament are supposed to do as well,¹³ although several MPs refuse to comply (Musamali 2002; Mwenda 2002; Osike 2002). Asset declaration has proved to be a very difficult process in the URA as well. Many staff members own property that is not registered in their own name and sometimes not even in the name of their spouses or other relatives. As part of the anti-corruption program, 'Integrity councillors' are supposed to 'carry the message' to the rest of the staff. A letter was distributed in 2002 within the URA asking all staff members to tell what they knew about misappropriation of tax revenues. According to the then CG, this initiative resulted in a good deal of information. The CG also established a separate e-mail address to which only she had access, and where the general public could report. Several newspapers have published information on this address (Mpagi 2002).

In March 2002 a Commission of Inquiry of Corruption in the URA was appointed by the government. On this occasion, the BBC News Online wrote (BBC 2002): 'A three-month judicial probe into Uganda's tax authority has started to root out "massive" corruption and boost tax revenues'. The Commission was chaired by High Court Magistrate Julia Ssebutinde, who had previously headed inquiries of corruption in the police force and the army. Judge Ssebutinde was assisted by two co-commissioners, Fawn Cousenes and James Kahoza. The Commission started its work in May 2002 and was expected to deliver its report and recommendations after 3–4

months. However, the enquiry took a much longer time than expected and was followed by rumors and accusations, including an alleged assassination attempt on Judge Ssebutinde.¹⁴

The much delayed and feared report was presented to the government in February 2004. However, Ssebutinde's two co-commissioners distanced themselves from the report's conclusions, and the public did not get access to it. Moreover, its legality was questioned by MPs and some of those that Ssebutinde accused of wrongdoing. Later in August 2004, the High Court nullified the report. Thus, the initial enthusiasm and expectations which met the Commission vanished. There are also indications that the long-drawn-out investigations carried out by the Commission and the rumors surrounding it, contributed to further eroding staff morale within the URA. In a farewell e-mail sent to the URA staff in September 2004, the departing CG, Annebrit Aaslund, expressed her frustration at the way Justice Ssebutinde's Commission lost credibility following bickering between the commissioners. According to Aaslund, corruption 'remains a stain on the URA's reputation', but '[u]nfortunately an exercise, which I had hoped would help promote reform, has become a weight around the URA's neck' (*The Monitor*, September 2004).

Leaks from the Commission's report suggest that around 100 corrupt individuals are named, which, according to some people interviewed, were fewer than what one 'hoped for', considering the total number of the staff (about 2,200) and the size of the problem. Moreover, some of the known offenders did not appear to be mentioned in the investigation. Some observers therefore suspected that the Commission's inquiry had become so politically sensitive that its conclusions under any circumstances were unlikely to have a positive impact on the fight against corruption in the URA. According to Darryn Jenkins (2003), other methods are required to break the cycle of corruption. He argues that a major re-staffing is needed to 'eliminate' corrupt staff (ibid.: 15): 'This measure will also send a signal that the URA management is serious', and he adds, '[t]hat signal is awaited by the core of good staff'. However, according to senior officials interviewed in the URA, there is only a limited pool of qualified people who can fill the positions of the corrupt officers if they are to be retrenched. In other words, it is hard to replace corrupt staff. The URA cannot recruit expertise, but must take on the costs of training new hires. Another issue emphasized by senior officials interviewed is that there are corrupt officers who are efficient, and non-corrupt officers who simply 'do not do anything'.

4. Understanding corruption in the URA

After the initial success, tax revenues have stagnated and in recent years dropped as a percentage of GDP. Moreover, corruption and tax evasion

seem to be increasing at all levels of the URA. According to taxpayers interviewed, there is also an increase in the number of tax collectors *openly* demanding bribes after presenting taxpayers with unreasonably high assessments. How can this relapse be explained? The following factors may shed light on this development:

- declining real wages;
- bonus systems and revenue targets;
- hiring and firing of staff;
- human resource management and job security;
- political interference;
- patronage; and
- taxpayers' compliance.

Declining real wages

Despite a dramatic increase in pay rates compared with normal rates in the public sector, it was not enough to compensate for the potential gains from corruption. The situation worsened even more by the erosion of the initial pay rates by inflation. Between 1991 and 1998 nominal wages remained unchanged. Hence, although the URA staff on average received salaries 8–9 times higher than salaries for corresponding positions in the civil service in 1991, this had shrunk to a factor of 4–5 in 2000 (EME 2000: 20). Furthermore, compared to the salaries in other autonomous authorities in Uganda, for example the Wildlife Authority and the Human Rights Commission, the URA pays less (Mitala 2001). This erosion of salary differentials is likely to have contributed to the erosion of staff motivation. It is therefore no surprise that the initial wage reform seems to have had only a limited impact on restraining the extent of corruption in the tax administration. But, irrespective of wage rates, the tax administration remains a very attractive workplace. The tax collection departments are particularly attractive. There is also considerable internal competition within the URA for vacancies in the operational departments. Thus, the erosion of wage rates is not sufficient to explain the prevalence and growth of corruption.

Bonus systems and revenue targets

Generally in a principal–agent setting, bonuses improve the performance of the agent by making the right sort of effort more rewarding in monetary terms. There are different ways in which to fashion a bonus system. One important distinction in this context is between individual and group bonuses. With individual bonuses each tax officer is rewarded for his or her individual effort. The upside to this bonus system is the direct link between

what a tax officer does and what he or she receives. Possible downsides are opportunism and a lack of coordination between collectors, as each pursues the tasks that are most personally rewarding. With group bonuses, tax collectors are rewarded for the performance of a group as a whole. The upside is greater coordination of tasks, the downside a possibility of free-riding behavior, as each officer sees only a marginal effect of his or her own effort on the bonus. Which of the two systems is chosen depends on several factors, of which an important one is the ease of monitoring individual versus group output. The question of what bonuses are tied to is also important. If they are tied to a revenue-collection target, performance depends on both effort and factors outside the revenue authority's control, such as fluctuations in the overall economic activity in the country.

In the case of the URA, group bonuses have been used. Performance is gauged in terms of a revenue target measured in term of tax revenues as a percentage of GDP. A 10 percent salary bonus to staff was paid in 1998 when the revenue target was met. However, in the 1991–99 period, the URA reached its revenue targets in five out of eight years, while only one bonus payment was made (URA 2002: 18). To the staff this was regarded as a broken promise.

Since 1998, there also seems to be a growing perception among staff and management that revenue targets are set unrealistically high, based on desired government expenditure levels rather than on the ability to tax (Therkildsen 2004). URA staff interviewed pointed to the shaky empirical basis for the revenue targets set by the MoF, and they complained about their lack of influence in setting targets. This has been a major source of conflict between the URA and the MoF (*ibid.*: 78). Hence, a sustained upward revision of revenue targets could prove detrimental to staff motivation. Moreover, revenue targets set in terms of revenues to GDP may be too broad a measure of performance. For individual staff members, the perceived ability to influence the percentage of revenues to GDP is likely to be limited, and bonuses based on this performance measure may not have much of an effect on staff effort and corruption. If group bonuses are to be used, bonuses awarded according to departmental revenues may provide a closer link between effort and reward.

To summarize, pay reforms are likely to have had little impact on staff performance and corruption in the URA, since the conditions under which pay would affect performance do not seem to hold. The bonus system was too general to provide effective incentives for individual staff members.

Hiring and firing of staff

More than 85 percent of the staff who had worked in the former revenue departments within the MoF were re-engaged when the URA was estab-

lished, despite the fact that corruption was entrenched in the former tax administration. So when corruption was perceived to drop during the initial phase of the URA, it may have been due to the fact that most employees were working on a probation basis and, additionally, had yet to learn how the new system worked. Thus, although their attitudes toward corruption may not have changed, it was perceived to be more risky to get involved in corrupt dealings at that stage. Tax officers did not know how the internal control mechanisms worked or how the top management would execute the rules and whether they stood in danger of losing the prospect of a permanent job. These points were also confirmed in interviews with present and former URA staff. It was stressed that many employees in the operational departments used their probation period to study how the system worked while 'waiting for better times'.

Looking at trends in employment at the URA, the initial shakeouts where staff were dismissed have not been sustained in the years following the establishment of the revenue authority, except for top-level managers (Therkildsen 2004). This seems to indicate that dismissals are not as extensively used to discipline unproductive staff behavior as in the initial phase. Thus, there is reason to believe that the staff perceive that the risk of being fired for misconduct is dwindling.

Although the level of unemployment in Uganda is quite high, this might not be directly relevant to former staff of the URA seeking employment. Former tax officers are attractive to the private sector, due to their knowledge of how the tax administration works and their connections in the tax administration. The time a sacked tax official spends in unemployment might therefore be relatively short. Taken together, the dwindling probability of being fired and the ease with which former tax officials, especially customs officers, can get new employment, suggest that pay increases in the tax administration would have to be very large to elicit more effort from staff.

Timothy Besley and John McLaren (1993) propose a model of corruption in tax collection which offers additional insights into the evolution of corruption in the URA. In this model, a proportion of tax collectors is corruptible and chooses between taking bribes and not taking bribes. A tax collector who takes bribes is caught and fired with a certain probability. Tax collectors, thus, compare bribes received to the expected loss from being fired, when deciding whether or not to take bribes. An increase in wages in the revenue authority means that losing your job is more costly, and therefore makes taking bribes less attractive. If wages are sufficiently high, all corruptible tax collectors will choose not to accept bribes. The level of wages sufficient to deter bribe taking then depends on the level of bribes and on the probability of being caught and fired when a bribe is accepted.¹⁵ The higher the bribes received by corrupt officials, the higher must the

wages be to deter corruption. And more, the lower the probability of being sacked for corruption, the higher are the wages needed to make tax collectors desist from taking bribes. Therefore, a given pay increase has less of an impact on corruption if bribes are high and the risk of being caught low.

The bribe levels in certain parts of the tax administration, especially in customs, are very high compared to wages (McLinden 2005). As for the probability of being sacked for corruption, recall that the initial wave of dismissals has not been sustained. In addition, the appointment of executives known for their integrity in the initial stages of the reform has been undermined by recent examples of politically motivated appointments and interference in revenue authority affairs. A perception of a more lenient attitude towards corruption may, thus, have formed among the URA staff. The initial pay increases in the URA might consequently not have had much of an impact on corruption, and the subsequent decline in real wages has most likely eroded any initial impact.

An explanatory factor related to hiring and firing mechanisms is the impact of corruption networks. Corruption in public institutions is often conducted by reasonably well-organized networks, where trust and reciprocity is found between network members (Rose-Ackerman 1999; Gehlbach 2001). Such relationships are likely to reduce transaction costs, as well as any moral costs that may arise from allowing oneself to be involved in corruption. Furthermore, the peer networks often function as 'repositories of knowledge' for members, for example on the attitudes of the top management to corruption, how the internal monitoring unit works, who is potentially bribable among staff members and management, and so on.

The reforms probably managed to break up a few existing networks, but did not hinder new networks from emerging – both within and outside the URA. Furthermore, new networks gradually formed between URA staff and former employees in the tax administration. Many of the dismissed people were attractive to the private sector due to their inside knowledge of the workings of the system. For example, former customs officers were recruited by clearing agencies or set-up their own agencies. These persons had intimate knowledge of the tax administration, loopholes and so on. Because many of their former colleagues remained in the tax administration, good connections to the inside were assured.

Human resource management and job security

The URA is perceived by staff members to be a top-down organization characterized by submissiveness. Promotion is in general based on seniority. Younger staff members are given few opportunities to develop their skills. Incentives are in general weak in the sense that good performance is

not rewarded and bad performance is not punished. According to interviews conducted during the 2000–03 period, the core of committed staff who would be willing to participate in change either are induced by peer pressure to conform to corrupt practices, or are turned off by an apparent lack of interest by a management – and a board – that seems mainly concerned about maintaining the status quo.

As noted above, the establishment of the URA reduced the extremely high pay differences between top- and bottom-level staff compared to the former tax administration. However, a wage gap of 3,300 percent between the top and bottom grades is still high and contributes to maintaining the distance between the executive management and the staff. Moreover, the bonus payment in 1998, equivalent to 10 percent of each individual staff member's gross salary, amplified the already high wage differentials. In interviews, this was mentioned as a source of much resentment by URA staff. Moreover, in the view of a broad section of the staff, the commissioners lack detailed knowledge of how the organization actually works on the ground.

Although the turnover of ordinary staff members has been reduced after the initial shakeouts, job insecurity seems to have increased for top managers. This may help explain corruption at the managerial level in the URA, in spite of the fact that the top managers are among the best-paid officials in Uganda, even excluding their tax-free benefits such as housing and transport. In 2000/2001, for instance, a top manager in the URA was paid 3.6 times more per month than the corresponding position in the central government (Mitala 2001). Changes at the top level have been pervasive throughout the URA's history. There are reasons to believe that the uncertainty which is thereby created has contributed to the observed high-level corruption as managers try to enrich themselves while they are in a position to do so.¹⁶

The presence of corrupt managers may also have a contagious effect on the general corruption level within the revenue authority. First, corrupt leaders may not worry very much about corruption at lower levels in the organization. Hence, the probability of being detected for corruption is likely to be lower for the rank-and-file tax officers. Second, corrupt leaders contribute to a reduction in the moral and stigma costs connected with corruption. In such a situation we would expect the general level of corruption to increase.

Political interference

Few public agencies are as powerful and as interwoven with society as the tax administration, which monitors and appraises the economic activities of many of the citizens and businesses in the country. For instance, the tax

administration often has important financial information about the economic operations of these actors. Hence, having political control over the tax administration can pay high political dividends (Taliercio 2002: 17). Politicians can, for example, intervene in the tax administration to grant favors such as tax exemptions to supporters or to harass political opponents through audits. Political interference in the recruitment process has been a source of dissatisfaction and unease among staff, who see this as causing job insecurity and also further exposing the URA to accusations of corruption.

A reform of the tax administration is costly to sustain in terms of increased pay and the purchase and maintenance of equipment. However, the costs of forgone opportunities for patronage and discretion in matters of taxation are probably at least as important to the delegating institutions. And arguably, the more successful a revenue authority is in increasing tax revenues, the higher are the costs of forgone patronage, because higher revenues provide more opportunities for embezzlement. Hence, the URA has become an attractive target for political interference, especially in personnel matters, because the authority offers both relatively well-paid jobs and considerable rent-seeking opportunities.

The URA has been riddled with political interventions, especially in managerial appointments and dismissals. In 1997, for instance, the president personally intervened in the appointment of the new GC, although the person appointed by the president was not among the candidates listed for interview by the board and was not the preferred candidate of the minister of finance (Therkildsen 2004: 80–81). He also had close family ties to the president. Thus, President Museveni did what other members of the elite continuously try to do: influence staffing in the URA. Moreover, as noted above, the president on several occasions publicly criticized the URA staff for being corrupt. This certainly had a major negative impact on taxpayers' perceptions of the revenue agency. The URA lost its legitimacy in the eyes of taxpayers. It also lost its formal and informal authority *vis-à-vis* the MoF and the state elites.

Patronage

Certain tribal networks are strong in the URA and influence promotions and transfers within the organization. Many tax officers and managers remain under the strong influence of traditional patterns of social relations and recognize the benefits of large extended families and strong kinship ties. This implies that such social relations operate at cross-purposes to formal bureaucratic structures and positions. For instance, according to some informants, one of the commissioners of the URA is fully controlled by a lower-ranking official in the department, because this person ranks

above the commissioner in the kinship system.¹⁷ The traditional system rules over the formal 'modern' one. Fiscal corruption may therefore, to some extent, be understood in the context of a political economy in which access to social resources depends on patron–client links which exist independently of the URA yet influence its performance.¹⁸

Generally, kinship and other social relationships of reciprocity are used to mobilize affective ties for instrumental political and economic purposes (Smith 2003). Such relationships combine moral obligation and emotional attachment. They also serve to perpetuate an ethic of appropriate redistribution that fuels corruption (Olivier de Sardan 1999). The importance of such ties may be growing rather than withering away as the country tries to modernize and democratize in a context of economic instability and uncertainty.¹⁹ Thus, many people rely on the social connections of their extended families to secure admission to schools and to get help in paying school fees, to gain employment, obtain business contracts or benefit from government services.

But although kinship and social networks are pervasive at all levels of the URA, their most obvious impact is at the top. Serious cases of corruption, involving high-level, politically well-connected officers are rarely investigated. Thus, with a few exceptions such as the recent court case against five senior officials of the URA's LTPD, investigations into fiscal corruption only touch the surface. For instance, the Inquiry of Corruption in the URA (the Ssebutinde Commission) did not investigate systemic corruption and the role of family relations and nepotism in sustaining corruption networks. Consequently, neither key stakeholders in the central government nor donor representatives interviewed expected that the Ssebutinde Commission would have much impact.²⁰

To some degree the URA has contributed to strengthening existing social networks. For instance, when someone gets a job in the tax administration he or she is expected to help his or her kin and family. Because Ugandans perceive that URA officers receive high salaries, extended family members expect to get their share of the high wages. It is one's social obligation to help and share. URA staff are therefore seen by their family members and social networks as important potential patrons who have access to money, resources and opportunities that they are morally obliged to share. A person in a position of power is expected to use that influence to help his or her kin and community of origin. Hence, increased salaries may lead to increased social obligations, which again may 'force' tax officers to take bribes to compensate for the higher expenses. What looks like corruption from the outside is undertaken by some tax officers in a context where the reciprocal obligations of kinship and community loyalty require such behavior in order to be regarded as a 'good person'. Hence, as argued by

Daniel J. Smith (2003), the standard definition of corruption as ‘the abuse of public office for private gain’ assumes a rigid dichotomy between public and private that glosses over a complexity that characterizes the relationship between the individual and society in many African bureaucracies.

In the Ugandan context, to accumulate, even in corrupt ways, is not necessarily bad in itself. It is accumulation without distribution that is considered unethical (Barber 1997). Only someone who accumulates can redistribute and be identified as ‘a man of honor’ or ‘a big man’. In an interview, Annebritt Aslund, the former GC of the URA, gave the example of two URA employees from the same family. One of them is honest, the other is corrupt. The one who has not accumulated more than he could from his official wage, is, according to her, ‘regarded as a fool by the society’ and earns no respect whatsoever (Fjeldstad et al. 2003: 36). He cannot offer needy relatives or friends much assistance. In their eyes his incorruptibility is not only foolish but is, in essence, selfish.

Furthermore, it is in the tax officer’s own interest to help others because he or she might be the one who needs help the next time around. Thus, a manager in the tax administration may ‘forgive’ a tax collector who is caught taking bribes or embezzling money, because next time he or she may be the one who needs forgiveness (Tripp 2001). This may explain why the quite extensive use of dismissals in the initial phase of the URA has not been sustained (Obwona and Muwonge 2002). Instead of being fired, several tax officers detected for corruption have been transferred to other positions within the tax administration. Favors of this kind may also be understood as a way of consolidating and building social capital. In other words, tax officers are building up networks made up of family, friends and acquaintances that are based on trust and reciprocity as a way of banking assistance for the future. The larger the network, the greater the accumulation of social capital that can be drawn on in a future time of need. Thus, one possible explanation for the persistent corruption in the URA may be the fact that people at the middle and low end of the political–economic spectrum are just as involved in vertical networks of patronage as the elite patrons who benefit the most.

Why do people continue to depend so greatly on their kin? What motivates people to follow social norms and patterns of patronage? The simple answer is that it is rational. The state is perceived to be unreliable when it comes to delivering basic services and assistance through formal channels. The use of kinship and other social relationships enables ordinary people to get access to resources that they might otherwise be denied (Smith 2003: 707). It is, in part, the very demands of the clientelistic networks to deliver public resources, including employment, based on moral obligations and affective attachments, that make it difficult for officeholders to run their

office in accordance with Weberian principles. Hence tax officers and managers in the URA find themselves in a schizophrenic situation. Their administrative and professional legitimacy is derived from their training and work in a modern bureaucratic organization and therefore in its values concerning 'public service' (Olivier de Sardin 1999: 48). This widespread adherence to abstract official norms of Western origin thus coexists with an equally prevalent pattern of behavior in conformity with social norms and family obligations. Many tax officers may be sincerely in favor of respecting the public domain and may want the tax bureaucracy to be at the service of citizens, but still they participate in everyday actions that reproduce the system that they denounce. Thus, a spiral is created in which networks of kin and tribe undermine efforts to modernize the tax administration and thereby create an ongoing need for these very networks to continue to operate.

Taxpayers' compliance

In Uganda, as in many other African countries, the frequent use of the tax administration for political purposes has helped erode taxpayers' confidence in the fairness and impartiality of the tax administration, which has itself contributed to undermine tax compliance. An important element of the revenue authority reform in Uganda was therefore to give the new management of the tax administration autonomy from undue political influence. The establishment of a semi-autonomous revenue authority might be interpreted as an attempt by politicians to create a credible commitment to taxpayers that the tax administration will be more competent, effective and fair by delegating power to tax bureaucrats (Taliencio 2004). The promise of autonomy enables politicians to make the commitment credible because tax administration traditionally has been characterized by high levels of political intervention. The failure to sustain the autonomy of the URA may reflect the particularly difficult problem of credible commitment in these matters.

The formal autonomy awarded the URA upon its inception and the degree to which this autonomy was exerted in the initial phases of its existence, could very well have had a favorable impact on taxpayers' perceptions of the tax administration's operations, and hence possibly on compliance rates. In particular, the initial increases in wages and the extensive use of dismissals arguably would be easily observable indicators of a high degree of personnel autonomy. Similarly, the appointment of board and management from outside the tax administration and from abroad, and the recruitment of individuals publicly recognized for their integrity, would be a signal of a high degree of managerial autonomy. The initial reform could therefore be expected to have had an impact on taxpayers' perceptions of fairness and competence in collecting taxes.

However, failure to sustain the initial reform efforts has provided a powerful signal to the contrary. The fact that nominal wages in the URA have been stagnant until recently and that the use of dismissals has decreased substantially both point to a decreasing degree of personnel autonomy. Increasing board and government interference in staffing matters has had a similar effect and also signals a lesser degree of managerial autonomy. In addition, managerial autonomy has been substantially undermined by the increasing use of tax exemptions granted by the politically motivated appointment of new board members. Several instances of political interference in the operations of the URA have been heavily featured in the local press. There is thus reason to believe that any initial improvement in taxpayer perceptions due to the administrative reforms was reversed in later years. To the extent that taxpayers were able to foresee this backlash, the reforms might not have had much of an impact on tax compliance in the first place, which indicates that any initial rise in tax revenues should be attributed to other factors.

5. Concluding remarks

Several factors have contributed to the disappointing results of the URA, and it is difficult to distinguish among them and determine their appropriate weights. However, one lesson to be learned from the URA's first 15 years of operation is that even with relatively respectable salaries and working conditions, corruption may still thrive. The study shows that pay level is only one of several factors affecting the behavior of tax officers. In an environment where the demand for corrupt services is extensive and monitoring ineffective, wage increases may end up functioning as an extra bonus on top of the bribes taken by corrupt officers.

Recent economic research on human behavior indicates that reformers and economists have an inclination to exaggerate the impact of monetary incentives because of an overly narrow understanding of intrinsic motivation and group dynamics (Frey 1997). In Uganda, however, the failure of reforms that stress monetary rewards and incentives may have a more straightforward explanation. Because of the importance of family networks, increased pay rates may imply more extensive social obligations, and in some cases actually result in a net loss to the individual. This state of affairs can develop into a vicious circle with higher wages leading to more corruption because the tax officer has to make up for the loss caused by such obligations. An outsider might conclude that officials lack intrinsic motivation to perform well and do not respond to incentives. However, a more careful study of the situation would instead conclude that the tax officials are responding very well to monetary incentives in a situation where higher nominal pay actually makes the official poorer. This might be

a reason for the popularity of in-kind benefits among civil servants, which may be harder to share with one's kin (Platteau 2000: 208–11).

We have seen that norms, as reflected in patronage and social obligations in the URA, are liable to discourage the development of a professional tax administration. At the same time, the experiences of the URA emphasize the particular importance of breaking the influence of kin-based networks on the operations of the revenue administration. One suggestion is to introduce rotation systems for the staff, where revenue collectors remain only for short periods in the same post (Das-Gupta and Mookherjee 1998). But a danger of the rotation system is that the uncertainty which is thereby created for employees may result in increased corruption as collectors try to enrich themselves while they are stationed in the most 'lucrative' posts. The rotation of officials may also give corrupt superiors undue power. For instance, they might 'sell' assignments to attractive positions or reassign officials to remote stations as a punishment for honesty (Rose-Ackerman 1999: 84). The scarcity of qualified personnel like auditors and accountants further reduces the potential of rotation schemes in the poorest countries. Under such conditions it is little wonder that the revenue authority performs poorly because its behavior is shaped by conditions over which it has little control. It is difficult to insulate the revenue administration from contexts in which graft and corruption are normal in public sector operations.

Must we conclude then that it is generally impossible to overcome traditional social restraints on the development of a professional, modern tax bureaucracy in a country like Uganda? If it is true that similar conditions were widespread in Western societies before modern public finance management took root, the answer to that question must be negative. Also, observations of contemporary African societies suggest that the impact of traditional values and social obligations on the behavior of public officials has fluctuated and can be changed (Platteau 2000). There are revenue authorities in poor African countries that perform relatively well despite dauntingly unfavorable contexts and an overall poor public sector performance.

The experience of the Zambia Revenue Authority, for instance, shows that expatriate senior advisors and top managers who are in place for a predefined and limited period of time can contribute to effective change by building integrity and professionalism in the organization through systemic changes (Wulf 2005). Placing expatriates in key management positions might also help to reduce the impacts of patronage and predatory authority. Strong expatriate leadership may more easily confront political and bureaucratic pressures, and thus provide a 'buffer zone' within which systemic changes and new forms of staff behavior are implanted. The URA's experiences with expatriate top management, however, are mixed.

As the Ugandan case shows, it should be recognized that tax administrative reforms often are highly political processes that will inevitably pose a threat to important domestic stakeholders. The successful implementation of such reforms therefore requires political will to back them up (Tanzi and Pellechio 1997). The reforms are unlikely to succeed if the main source of energy and leadership comes from outside. In general, strong leadership of the revenue authority is essential for overcoming the political and bureaucratic obstacles that confront the URA. This also requires a better demarcation of management authority between the board and the CG. A board acting as the chief executive is certainly not a recipe for the strong and effective daily leadership which the revenue authority needs. The present problems of micro management by the MoF and the board's involvement in day-to-day operations must therefore be addressed. This may imply a recomposition of the board that better matches the expectations of the government about the status and performance of the tax administration. Such measures, however, do not imply the end of mutual cooperation between the URA and the MoF. The revenue authority possesses unique datasets on taxpayers and revenue bases, and this information is essential for improving tax policy and legislation. But, the role of the ministry in formulating and designing tax policy, and the responsibility of the revenue administration to implement this policy, must be unambiguous and mutually respected.

The argument in favor of stronger managerial autonomy of the URA is consistent with recent studies on why some public organizations work well and others do not in developing countries. For instance, in a study of 29 organizations in six countries Merilee Grindle (1997) found that organizations with higher salaries paid to their staff did not perform better than public organizations which conformed to the low general public sector remuneration scales.²¹ Instead, good performers had well-defined missions, where the employees internalized the organizations goals and saw themselves as vital contributors to their accomplishment (*ibid.*: 486). Effective managerial practice and high expectations about employee performance were factors that led organizations to perform well, while some autonomy in personnel matters allowed a mission to be identified and enabled skilled managers to have some room to maneuver in setting standards for their organizations. This underscores the importance of leadership styles and internal performance management practices that focus on results.

Encouraging the development of a positive organizational culture may thus be an important way of improving the URA's performance in a situation where the broader environment, including the public sector in general, discourages good performance. If the enabling environment is weak, managers tend to drive performance. Therefore, internal leadership and culture

are likely to be keys to establishing meritocratic and performance-oriented organizational behavior in situations where the formal political and administrative institutions are weak. Accordingly, a reasonable hypothesis would be that if the URA was given more real autonomy in personnel matters, this would contribute to greater capacity to set performance standards for its employees and hold them accountable to the organization for meeting those standards. Autonomy in personnel matters can here be understood as a facilitating condition that provides the URA and its managers with the ability to build cultures that allow the organization to rise above the norm for the public sector in Uganda (Grindle 1997: 488). Required measures would include a rigorously planned and executed re-staffing process, also at the senior management levels, and introduction of human resources policies relating to transparent recruitment, adequate remuneration, pension/retirement schemes and so on. Such measures ought to take place before proceeding with traditional forms of technical assistance such as the design and implementation of integrated computer systems, organization of formal training courses and on-the-job training, and process re-engineering in a wide range of areas, including better forms and filing, auditing and management of revenues, taxpayer education programs and so on. The experiences with the latter forms of technical assistance for revenue enhancement and capacity building in tax administrations are mixed in Africa.

Tax administrative reforms take time to achieve and are often contested, high-profile measures. They therefore require political will and support from the highest level of government. The URA was set-up in 1991 by external consultants who arrived with a prefabricated 'blueprint' for tax administration reforms. Although the reforms were supported by the political leadership and senior officials in the MoF for a number of years, this support soon began to erode, beginning with the change in the role and composition of the board in 1997. Thus, it is reasonable to ask whether the political support behind the establishment of a semi-autonomous revenue authority was genuine from the outset, or whether it reflected the bargaining power of donors. The assumption that donors can build state capacity despite the lack of effective internal demand for a more effective tax administration is questionable.²²

Many observers conclude that a lack of a taxpaying 'culture' is the largest obstacle to building a firm long-term revenue base in Uganda. The opposite may, however, also be the case: as long as the tax administration culture is perceived to be influenced by sectarianism, nepotism and corruption, it is unlikely to contribute to the fostering of a more conducive taxpaying culture. Despite quite comprehensive changes in the tax structure (rates and bases) in recent years, the tax system is still complicated and non-transparent (Obwona and Muwonge 2002). Tax legislation is unclear and

causes random and partly ad hoc collection procedures (Kasimbazi 2003). Assessors have wide discretionary powers to interpret tax laws, for instance, to allow or disallow expenses or charges, or to exempt items from import duties. These factors, combined with a perception of limited tangible benefits in return for taxes paid, legitimate tax evasion.

In such circumstances it is not surprising that taxation takes place in an atmosphere of distrust and fear between taxpayers and revenue officers. Extensive use of force is often required to collect revenues, as reflected in the use of special military units to enforce taxes and fight smuggling. Thus, the government's credible commitment about the use of tax revenues and its procedures to design and implement tax policy non-arbitrarily are crucial to regain legitimacy. The credibility or trustworthiness of the revenue administration's sanctions against tax defaulters is also important in this context (Slemrod 2003). Reforms of tax legislation and collection procedures, including measures to improve transparency in the taxpayer–tax officer relations, should therefore take place concurrently to reduce opportunities for corruption and the demand for corrupt services. When the government decides what measures to take as part of its tax reform program, it should bear in mind the state of the economy and the resources at hand. Uganda, like most poor countries, has neither the political capital nor the administrative capacity to sustain more than a limited range of concurrent initiatives. But an incremental process of change can add up to a radical transformation if it is sustained for long enough.

A strong bond of accountability between citizens (taxpayers) and the public sector may contribute to generate demand for tax administrative reforms. For instance, business communities, taxpayers' associations, trade unions and other influential domestic institutions have a potential to put pressure on the revenue administration to do a better job. For taxation to have a positive effect on accountability between government and taxpayers, taxation must be 'felt' by a majority of citizens in order to trigger a response in the form of demands for greater accountability and improved public service delivery (Moore 1998). But the tax reforms during the last decade have not done much to widen the tax base. It has proved especially difficult to incorporate both the many informal business operators and the professionals, such as lawyers, doctors and private consultants, into the revenue base. Only formal business corporations appear to be visibly affected by the central government tax reforms. Still, there are indications that an organized voice and response to the revenue policies is developing within the business and trading communities. The fact that some tax issues are being treated through formal, public organizations, rather than through bribery and private deals may indicate the beginning of a link between economic elites and government in issues of revenue generation.

Notes

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- 1. In Latin America, revenue authorities have been established in Jamaica (1981), Argentina (1988), Bolivia (1987, re-established in 2001), Peru (1988/1991), Colombia (1991), Venezuela (1993), Mexico (1997), Ecuador (1999), Guatemala (1999) and Guyana (2001). In Africa, the revenue authority model has been instituted in Ghana (1985), Uganda (1991), Zambia (1994), Kenya (1995), Malawi (1995), Tanzania (1996), South Africa (1997), Rwanda (1998), Zimbabwe (2001), Ethiopia (2002), Sierra Leone (2002) and Lesotho (2003). Burundi and Mauritius are planning revenue authorities and several West African countries may follow.
- 2. The revenue authority model is motivated by the executive agency model, which is one institutional model of the new public management, which is inspired by the radical public sector reform programs of the 1980s that began in the UK, the USA, Australia and New Zealand. Autonomous agencies are seen as a remedy for a number of institutional problems that plague the public sector, such as multiple layers of principals and agents, Byzantine rules and regulations, and poor incentives. It is a way of separating certain governmental functions into arm's-length units, giving management the autonomy to operate the activity like a business, emphasizing economic norms and values. McCourt and Minogue (2001) examine the conceptual and practical problems connected with such policy transfers to developing countries.
- 3. In 1985, Ghana established the first revenue authority in Africa, but each major tax (for instance, income tax and customs duties) was collected by its own agency (Terpker 1999).
- 4. Still, in the URA's corporate plan for 2002/03–2006/07, the target is to achieve a tax-to-GDP ratio of 17 percent in 2006/07, which implies an annual increase in revenues by 1 percent of GDP (URA 2002: 27). One should, however, be careful about drawing a too confident conclusion about successes and failures on the basis of the tax-to-GDP ratio, since it tends to be a relatively imprecise measure of performance (Stotsky and WoldeMariam 1997). Nevertheless, increase in revenues measured as a percentage of GDP is the major performance criterion publicly announced by the Ugandan government, clearly reflected in the budget speeches of the ministers of finance and also in the URA's strategic plan. Moreover, the International Finance Institutions and various bilateral donors usually refer to the tax share as the key performance indicator.
- 5. Personal interview, Kampala, 20 March 2003.
- 6. In theory an increase in fiscal corruption may contribute to an increase in tax revenues. The essential link, studied by Mookherjee (1997) among others, is based on the idea that the possibility to negotiate bribes from evasive taxpayers motivates corrupt tax officers to work harder in order to detect evasion. This will be anticipated by the taxpayers, and hence tax evasion will be less attractive because it is more likely to be detected. Thus, it is claimed, corruption works to make tax evasion less appealing and thereby may increase tax revenues. Other scholars, however, argue that accepting fiscal corruption as an instrument for raising revenues in the short run may undermine tax collection in the longer run (Fjeldstad and Tungodden 2003).
- 7. Wade (1982) provides an excellent account of methodological challenges and approaches for analyzing systems of corruption in public sector institutions.
- 8. Initially the board was composed of nine persons: the chairperson appointed by the minister of finance; the CG of the URA; the secretary to the Treasury; the principal secretary of the Ministry of Commerce; the Commissioner for Industry; the Governor of the Bank of Uganda; and three members appointed by the minister of finance (Republic of Uganda 1991: 5). The main functions of the URA, its organizational structure, composition of the board and so on are detailed in Fjeldstad et al. (2003: 21–5). See also www.ugrevenue.com/.

9. After the amendment of the Finance Bill, the board is composed of seven persons (Republic of Uganda 1998): the chairperson, appointed by the minister of finance; the CG of the URA; one representative of the MoF; one representative of the Ministry of Trade and Industry; one representative of the UMA; two other persons appointed by the minister of finance who are not public officers but who are made members of the board because of their special knowledge and experience in taxation matters.
10. The survey was conducted by the World Bank and the Uganda Private Sector Foundation. Businesses from four major economic sectors were interviewed: the manufacturing sector (66 percent of the sample); commercial agriculture (13 percent); tourism (12 percent); and construction (9 percent). The firms were interviewed on their activities in the 1995–97 period, including issues such as infrastructure services, physical investments, taxation, regulation and corruption.
11. During the 1990s, successions of more or less militarized units have been established to deal with smuggling and tax evasion (Therkildsen 2004: 80). These units include the Anti-Smuggling Unit (ASU), until 1996; the Revenue Protection Service (RPS), until 1998; and the Special Revenue Protection Service (SRPS), thereafter. Although the RPS was under URA control, the SRPS is outside the URA and employs mainly people from the army, the Internal Security Organization and the External Security Organization. These militarized units are extremely unpopular among ordinary citizens, due to their often extensive use of force. They are also unpopular within the URA because the units have a dual mandate (i) to track tax evaders, and (ii) to ‘check those big shots in URA who collaborate with smugglers’ (*The Monitor*, 28 June 1998).
12. Personal interviews, Kampala, March 2003.
13. Leadership Code Act of July 2002.
14. On Friday night 10 October 2003, Justice Ssebutinde’s home was reported to have been attacked by six gunmen. No one was hurt. In an interview, Ssebutinde linked the attack to the inquiry of corruption in the URA: ‘I don’t think it was an attempted robbery. Otherwise they would have begun with my neighbours who are richer, do not have armed guards and have expensive cars parked in their compounds. But the report [on the URA] is ready and will be out anytime. We shall stand by our positions and leave the rest to God’ (*The Monitor*, 13 October 2003).
15. Besley and McLaren (1993) assume that fired workers are re-employed at market wages, so unemployment does not play a part here, though one could easily fit this idea into the model.
16. This is supported by historical evidence from Germany and the Nordic countries (Rothstein 1998) and more recently in an econometric study by Rauch and Evans (2000) on bureaucratic structure and performance in a sample of developing countries. Here it is shown that increased job insecurity for public officials goes together with increased corruption.
17. Personal interviews, Kampala, March 2003.
18. In an influential study, Chabal and Daloz (1999) argue that politics in Africa must be understood as driven by vertical ties of patronage. The power of these ties is maintained by redistributing resources accumulated through ‘corruption’ to clientilistic networks according to rules of reciprocity that have their origin in a kinship-based social organization and morality. According to Chabal and Daloz (p. 27), people’s reference unit in Africa remains family and kin based, which is the fundamental ‘circle of trust’ within which individuals operate. Moreover, political elites seek to establish principles of mutual aid, of patron–client reciprocity, based on kin and family relations.
19. See Susan Rose-Ackerman (1998: 317–23) for a discussion of the role of traditional networks in reform processes.
20. Personal interviews, Kampala, March 2003. According to an MP interviewed in May 2003, the lack of support for the Commission from senior politicians is because the top management of the URA is perceived to support the government. This contrasts with the government’s support for the investigation into corruption in the police, since the police force, and in particular the top brass, was perceived to house widespread opposition.

21. The six case countries were Bolivia, Central African Republic, Ghana, Morocco, Sri Lanka and Tanzania.
22. In a recent review of the experiences with IMF-supported programs of fiscal adjustment, Ales Bulir and Soojin Moon (2003: 24) conclude that 'revenue enhancing measures, and perhaps also technical assistance provided to program countries, failed to provide a sustainable increase in the revenue-to-GDP ratio'.

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18 The economics of anti-corruption: lessons from a widespread customs reform

*Dean Yang**

Corruption is pervasive in developing countries and is widely considered to be a major barrier to economic development.¹ Yet systematic empirical evidence on the effectiveness of anti-corruption efforts is scarce. The seminal theoretical work of Becker and Stigler (1974) identified a pair of generic remedies for bureaucratic corruption in government: increased monitoring and higher wages.² But for many reasons, anti-corruption reforms may fail in practice. For example, consider a reform that increases monitoring of potentially corrupt officials. Such a reform might fail if the monitors themselves are corrupt and so provide inaccurate information to higher authorities. In addition, higher-level officials may themselves be corrupt and not put the information gathered to good use. The monitoring program may simply be implemented to demonstrate the government's anti-corruption credentials. What is more, even if enforcers are honest, corrupt officials may be able to find alternative methods of continuing their corrupt dealings. Empirical work is therefore necessary to determine the effectiveness of any given anti-corruption effort.

When there is a high probability that lower-level agents monitoring corrupt activity may themselves be corrupt, it may be reasonable for higher authorities to use monitors from outside the government – in particular, private firms. Hiring private firms to monitor potentially corrupt activity may make sense if competition among the private monitors generates incentives for integrity. A widely recognized example of government-mandated monitoring by private firms is auditing by private accounting firms of the financial statements of publicly traded companies, an essential foundation of securities regulation.

Can 'hiring integrity' from the private sector to collect information for government anti-corruption efforts be effective? This chapter analyzes a reform adopted by the customs services in many developing countries that does just that. Within a developing-country government, the customs agency – the organization responsible for taxation of imported goods – is often singled out as having particularly severe problems with bureaucratic corruption. Revenue drains due to customs corruption can have important consequences, since customs duties are important for public finances in the

developing world. In 1990, customs duties accounted for an average of 23 percent of central government revenue across developing countries.³

In the past two decades, dozens of developing countries have adopted a specific approach to combating corruption in their customs services, with the ultimate goal of raising import duty collections: hiring private firms to conduct pre-shipment inspection of imports (known as PSI). When a government implements a PSI program, foreign inspectors verify the tariff classification and value of individual incoming shipments before they leave their country of origin, and forward this information to the client government. Client governments seek to take advantage of the inspection firms' reputation for honesty, essentially 'hiring integrity' from private firms to provide objective data on the contents of imported shipments. In nearly all cases, however, the responsibility for collecting customs duties remains in the hands of the importing country's customs officials. PSI reports simply improve the information available to higher-level enforcers, who can use the reports to hold individual customs officers accountable for collecting the correct amount of duty on shipments. In addition, the PSI reports may improve the bargaining power of importers against customs officials seeking bribes. This could facilitate trade and raise the total amount of taxable import activity.

In this chapter I survey my own research on the aggregate, country-level impact of PSI services worldwide, and also discuss empirical evidence on the microeconomics of PSI's impact within two countries. At the aggregate level, I find that countries implementing PSI programs subsequently experience large increases in the growth rate of import duties. Empirical analysis uses panel data at the country level to examine the relationship between the implementation of PSI programs and import duty collections between 1980 and 2000. After the implementation of PSI programs, import duties increase by 15–30 percentage points on average. Additional evidence suggests that reductions in corruption are the cause of the import duty improvements: PSI programs are accompanied by declines in underinvoicing and in misreporting of goods classifications in customs. PSI also appears to be cost effective: improvements in import duties in the first five years after program implementation were 2–3 times larger than program costs. I summarize these findings below; the complete analysis is presented in a separate paper (Yang 2005a).

Although the country-level evidence indicates that PSI programs are generally effective, success is not guaranteed, and examining situations where PSI failed to produce the desired results can shed further light on the conditions under which such programs are likely to succeed. My microeconomic empirical studies focus on the experience of two countries: the Philippines and Colombia. These within-country analyses find that when

the increase in enforcement (enabled by PSI) is only partial – in that it addresses only a subset of potential methods of avoiding import duties – then there can be substantial displacement to alternative methods of avoiding import duties.

The first of these micro-level studies examines efforts to evade PSI in the context of a PSI program in the Philippines. In 1990, the Philippine government reformed its PSI program to close a loophole that had previously been exploited by importers seeking to avoid paying import duties. The reform constituted a quasi-experiment because the increased enforcement applied only to shipments from a subset of countries, so that corresponding shipments from all other countries serve as a comparison group. Increased enforcement reduced the targeted method of duty avoidance but led to substantial displacement to an alternative duty-avoidance method (shipping via duty-exempt export-processing zones), amounting to 2.7 percent of total imports from treatment countries. The hypothesis that the reform led to zero change in total duty avoidance cannot be rejected. Displacement was greater for products with higher tariff rates and import volumes, consistent with the existence of fixed costs of switching to alternative duty-avoidance methods. I summarize these findings below; the complete analysis is presented in a separate paper (Yang 2005b).

The second within-country study examines the implementation of PSI in Colombia. Here, the measure of the extent of duty avoidance is the ‘import capture ratio’, that is, the ratio between Colombia’s reported imports of a product, and other countries’ reported exports to Colombia of the same product.⁴ Identification of the impact of enforcement on displacement exploits the fact that PSI was required for only a subset of product groups; other import categories serve as comparison groups. For importers of products requiring PSI, potential methods of duty avoidance included misclassifying their shipments as products not requiring PSI, as well as outright smuggling (avoidance of formal customs channels). Displacement to either duty-avoidance method should lead to lower import capture ratios for displaced products. Import capture ratios for products requiring PSI decline more when the products have higher tariffs, and when enforcement was lower against product misclassification. These findings have not been published elsewhere, and the complete analysis is presented below.

Aside from shedding light on the effectiveness of a widely used anti-corruption reform in customs, these findings also suggest lessons for anti-corruption efforts more broadly. In PSI programs, foreign inspectors simply provide additional information to higher levels of government while keeping duty collection and enforcement in the hands of government employees. These studies indicate that information is a key constraint facing anti-corruption enforcers, and policies that find innovative ways to

alleviate information constraints can have large returns in terms of reducing corruption. In addition, the evidence demonstrates that private firms can successfully be used to generate information for anti-corruption efforts. Finally, the PSI experience in the Philippines and Colombia suggests that to be successful, anti-corruption reforms should be ‘broad’ in the sense of encompassing a wide range of possible alternative methods of committing the illegal activity of interest; otherwise, displacement to alternative methods can negate the original goals of the reform.

This research is part of an emerging empirical literature on the impact of monitoring on bureaucratic corruption worldwide. Di Tella and Schargrodsky (2003) examine the impact of increased enforcement on corruption in hospital procurement in Argentina. Olken (2005) developed field experimental evidence on how different types of monitoring affect corruption in Indonesian road projects. In Uganda, Reinikka and Svensson (2004) find that diversion of government funds intended for education is reduced when intended funding levels are publicized in newspapers. In a US private sector context, Nagin et al. (2002) use a field experiment to document the impact of increased monitoring on opportunistic behavior by telephone call-center employees.

This research also relates to research on avoidance of taxes on international trade. Pritchett and Sethi (1994) find that collected import duties as a share of import value rise less than one-for-one with the tariff rate, and interpret this as evidence of tax evasion or avoidance. Fisman and Wei (2004) find that the extent of import underinvoicing rises as the tariff rate rises for Chinese imports from Hong Kong. A number of authors examine tax-induced transfer pricing within multinational firms (for example, Bernard and Weiner 1990; Hines and Rice 1994; and Clausing 2001). In the related realm of income tax evasion, Klepper and Nagin (1989) examine cross-sectional correlates of income underreporting on specific line items of US tax returns, and Slemrod et al. (2001) examine the impact of closer monitoring of income tax returns on tax payments in a randomized experiment in Minnesota.

The remainder of this chapter is organized as follows. I begin in Sections 1 and 2 by providing background on PSI programs worldwide and discussing the potential positive effects of PSI as well as the potential for unintended negative consequences (in particular, displacement to alternative duty avoidance methods). Section 3 summarizes the cross-country evidence on the effectiveness of PSI from 1980 to 2000. I then turn to my detailed analyses of individual countries. Section 4 outlines the microeconomic empirical evidence on displacement in the case of the Philippines, and Section 5 provides detailed evidence on the correlates of displacement of duty avoidance in the Colombian PSI program. Section 6 concludes with

a discussion of the implications of these findings for anti-corruption efforts more broadly.

1. Background on pre-shipment inspection

Corruption in customs takes two generic forms. The first is simply theft of government resources. A corrupt customs bureaucracy may turn over to the government treasury only a fraction of monies collected from importers, simultaneously falsifying import documentation to mask the revenue theft. The second form of corruption is the extraction of bribes from importers. Customs may delay incoming shipments (often under the pretext of problems in import documentation) to extract bribes, potentially discouraging import trade. The net result may be less import duty revenue than would have been collected in the absence of corruption.⁵ Countries implement PSI programs to combat both types of corruption in customs.

A handful of multinational inspection firms – all headquartered in Europe – provide PSI services. Implementing a PSI program involves hiring one or more of these firms to inspect incoming shipments, using their established worldwide network of inspection agents. PSI programs are typically initiated and supervised by a country's finance ministry (or occasionally its central bank), often upon the recommendation of multilateral funding institutions. When governments institute PSI programs, importers are required to have their incoming shipments inspected by a certified firm's agents before they leave the country of origin. Importers inform the PSI firm's local office of the pending shipment, and the PSI firm arranges for its own or affiliated agents in the origin country to inspect the shipment before departure.

Shipments are typically inspected at the premises of the exporting firm or at the port of departure. PSI firms assess the tariff classification, quantity and total value of individual shipments, and send their assessments to the client government. Many programs require that tamper-resistant seals be placed on shipping containers after inspection. In nearly all PSI programs, the PSI firm does not collect the import duties; rather, actual duty collection remains the responsibility of customs officials in the shipment's destination country. When the shipment arrives in the destination country, the client government can use the PSI firm's assessment to identify customs officials who may be complicit in allowing misreporting of shipment contents and underpayment of import duties. PSI contracts specify the specific product categories and types of shipment that are subject to the inspection requirement. Often, shipments below a minimum value threshold (ranging from \$500 to \$5,000) are exempted from PSI. Data on the share of imports for which PSI is required are not generally available, but when it has been reported the percentage is usually in the 80–90 percent range (see Rege 2001).

In return for their services, PSI firms typically charge a fee of about 1 percent of the value of imports inspected, usually with a minimum charge per shipment in the vicinity of \$250. The client government pays the fee in most PSI programs, but in some countries importers pay the fee. Across all PSI-using countries between 1990 and 2000, estimated PSI fees amounted to an average of 1.3 percent of central government tax revenues. Total fees paid worldwide to PSI firms were on the order of US\$500 million annually during the same years.⁶

In 1985, Indonesia became the first country to require PSI of imports for customs purposes. The Philippine program followed soon afterwards, and was active from April 1987 to March 2000. In total, over 50 developing countries have implemented customs PSI programs for some period of time.⁷ As of mid-2002, such programs remained active in nearly 40 countries.

2. Potential positive and negative effects of PSI

There are various channels through which PSIs can reduce the incentives for customs corruption, and eventually lead to higher import duty collections. First, PSI improves the monitoring ability of higher-level enforcers. It generates an independent source of information that higher levels of government can use to discover and prosecute corrupt practices by customs officers and importers. In the absence of PSI, uncovering corruption in customs requires time-consuming investigative work, and is made particularly difficult by the large number of import transactions. PSI helps investigators identify import transactions where duties calculated from the PSI report diverge substantially from duties actually collected by customs officials, suggesting that investigations should be targeted at such transactions.

Second, the existence of PSI-generated information may encourage imports by reducing importers' costs (in terms of bribes and delays). A primary tactic used by corrupt customs officials to extract bribes from importers is to delay the clearance of shipments from customs, often on the pretext that there is some discrepancy between the importer's customs declaration and the shipment's actual contents. A PSI generates independent information on the contents of a shipment that could increase an honest importer's bargaining power *vis-à-vis* a corrupt customs officer, potentially reducing customs clearance times. Jenkins (1992) and Low (1995) cite survey evidence that PSI was accompanied by dramatic reductions in customs clearance times in Indonesia.

However, the success of PSI programs is far from guaranteed. Success requires client governments to use the PSI-generated information to seek out and prosecute corrupt actors. Governments may simply hire PSI firms under pressure from multilateral funding institutions and may not actually use the

data generated. Higher-level enforcers who receive the PSI reports may not have the expertise to use the information effectively, or they may themselves be corrupt. It is also possible that customs corruption may be cost *reducing* for importers, if importers' bribe-inclusive payments to customs are lower than legally required duties on shipments. PSI may raise importers' costs, reduce import volumes and, depending on supply elasticities, ultimately reduce duty collections. Furthermore, importers whose costs are raised by PSI may seek out alternative methods of avoiding import duties.

3. International evidence, 1980–2000

How effective has PSI been in helping countries raise their import duty collections? Is there evidence that PSI helps reduce corruption in customs and stimulate trade? I summarize here evidence on the impact of PSI across many countries over two decades (for details, see Yang 2005a).

The most important element of this analysis is information on the existence of PSI programs across countries, and the dates those programs operated. I assembled these program dates via phone interviews and documentation provided by the four largest multinational firms that offer PSI services, for all programs through end of year 2000. These firms are Bureau Veritas, Cotecna, Inchcape Testing Services (ITS) and Société Generale de Surveillance (SGS). The handful of remaining PSI firms had contracts that entirely overlapped with those of the four largest firms, so that these four firms' contracts provide a complete accounting of past programs.

Because the ultimate goal of PSI programs is to raise customs revenue, the primary outcome of interest in this analysis is annual import duty collections at the national level. Subsidiary outcomes include total imports and measures of misreporting in customs. These data come from publicly available sources, including World Development Indicators 2004 and the World Bank's Trade and Production dataset.

The analysis focuses on 19 countries for which data on import duties are available before and after the start of their PSI programs.⁸ These countries and their program dates are listed in Table 18.1. The remaining countries serve as controls, and primarily contribute to the estimates by helping to pin down year effects and the coefficients on various control variables (such as other tax revenues and tariff rates). I include no developed countries in the sample for empirical analysis because PSI is purely a developing-country phenomenon. The first PSI contract started in 1985, so I limit the analyzes to the years 1980 through 2000.

Effect of PSI on import duties

In estimating the impact of PSI on country-level variables (such as import duties), a central methodological concern is that countries implementing

Table 18.1 Active dates for PSI programs (as of end of 2000)

Country	Start date	End date
Indonesia	11 Apr 85	01 Apr 97
Bolivia	21 Apr 86	
Philippines	01 Apr 87	31 Mar 00
Cameroon	01 Dec 88	
Madagascar	01 Jan 89	
Pakistan	18 Apr 90	15 Nov 97
Sierra Leone	15 Nov 90	
Peru	15 Jan 92	
Burkina Faso	23 Sep 92	
Côte d'Ivoire	11 Mar 93	
Congo, Rep.	09 Jun 93	
Uganda	15 Jan 94	
Kenya	31 Jan 94	
Colombia	09 Jun 95	09 Jul 99
Congo, Dem. Rep.	15 Jun 95	
Paraguay	06 May 96	09 Jun 99
Belarus	06 Jan 97	31 Mar 99
Argentina	23 Sep 97	
Georgia	15 Aug 99	

Note: Start and end dates for countries' PSI programs obtained by author directly from the four major PSI firms. Unspecified end date means contract was still active as of end of year 2000. Three countries experienced interruptions in their PSI programs: Pakistan between 30 November 1991 and 1 September 1994; Rep. of Congo between 31 May 1998 and 4 March 1999; Madagascar between 31 July 1992 and 4 December 1992. Only countries with data on import duties before and after contract start date are listed.

PSI programs are likely to be quite different from countries that do not. For example, countries that implemented PSI programs at some point between 1985 and 2000 were poorer and more corrupt on average (as measured in 1980–84). Thus it would be invalid to simply compare an outcome such as import duty collections for countries that do and do not have PSI programs at a single point in time, and to infer that any differences reflect the causal impact of PSI programs.

Instead of relying on cross-country comparisons at a single point in time, the analysis instead estimates the impact of PSI based on changes over time within PSI-implementing countries. Specifically, the estimated impact of PSI focuses on the change in outcomes (for example, import duties) from before to after the start of a PSI program.

The results indicate that the import duties increase by 15–30 percentage points on average in the five years after the start of a PSI program. PSI

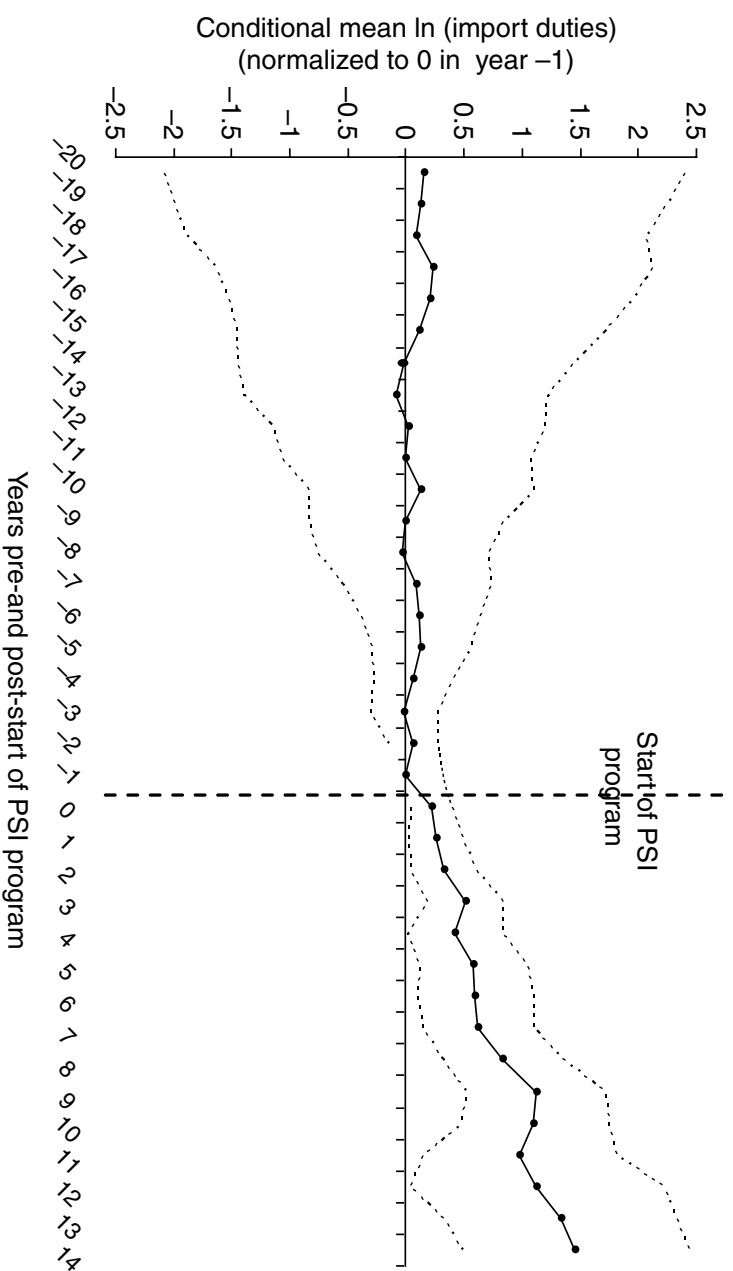
appears to have been quite cost effective, with improvements in import duty collections in the first five years of the program equal to 2.6 times program costs.

A graphical view of the relationship between import duties and PSI programs provides a summary of the main finding. In Figure 18.1, the solid line plots the conditional mean of log import duties in a range of years before and after the start of a country's PSI program. The conditional mean is normalized to zero in year -1 . (Year -1 is the year immediately prior to the starting year of the program, year 0 is the starting year and so on.)⁹ Figure 18.1 reveals that the conditional mean of log import duties for countries using PSI shows a marked positive change immediately after the PSI program is put in place. By contrast, there is no such change prior to the beginning of the PSI contract. This fact is helpful, as it provides evidence that the later increase in import duties is unlikely to be driven by mean reversion. Each coefficient on indicators for years after the start of PSI is statistically significantly different from zero at the 95 percent confidence level, while none of the coefficients for years prior to PSI start is statistically significant.

Even though the focus on this analysis is on within-country changes that result from PSI programs (rather than on differences across countries that do and do not have such programs), it is still important to ask whether the association between PSI programs and growth import duties indeed reflects the causal impact of PSI. For instance, if countries implement PSI programs at the same time as they make substantial public finance reforms, the observed increase in import duty growth may not be due to PSI, but rather to other actions the country takes at the same time. Two main approaches address such concerns.

First, one might be worried that PSI coincides with other policy or macroeconomic changes that also affect import duty collections. For example, overall tax revenues (including import duties) could rise due to concurrent general reforms of public finances or an increase in economic activity, and not because of the causal effect of PSI. As evidence against this concern, I show that there is no appreciable change in other tax revenues (exclusive of import duties) when PSI is introduced. In addition, the regression results are highly robust to controlling for the current level of other tax revenues (which may be considered a proxy for other policy and macroeconomic changes affecting tax collections).

Second, concurrent reforms specific to the customs agency (other than PSI) might be the true causal factor behind the change in import duties. To test this hypothesis, I make use of data on an important determinant of customs duty collections: tariff rates. I find no indication that the average tariff rate changes alongside PSI introduction, and the estimated impact of



Note: Plotted points are coefficients on indicator variables for each year before and after the start of a PSI program, in regression with ln (import duties) as dependent variable. Year 0 is first year that a PSI program has been active for more than half a year. Omitted year indicator is 'year -1' (year immediately prior to PSI start year). Dotted lines depict 95 percent confidence intervals. Other right-hand-side variables are: year fixed effects, country fixed effects, country-specific linear time trends, and an indicator for observation occurring in a year after the end of a previous PSI program. Unit of observation is a country-year, see text for sample composition.

Figure 18.1 *PSI and import duties*

PSI on import duties is essentially unchanged when controlling for the current average tariff rate.

Finally, there may be still be other unobserved policy changes taking place alongside PSI that are the true causal factors behind the increase in import duties. An innovation of this research is to examine the impact of PSI in the midst of periods where countries' economic policies are likely to be relatively stable, to better help establish that PSI was the causal factor behind the concurrent increases in import duties. I define distinct 'policy regimes' for each country as periods when key leaders who might affect import duty collection (the national leader, the finance minister and the head of the customs agency) were unchanged. The regression results are robust to estimating PSI's association with import duties only from variation within so-defined policy regimes, further bolstering the case for PSI's causal impact.

PSI's effects on import misreporting and on import volumes

If PSI is accompanied by a growth in import duty collections, we would like to know how these improvements came about. Improvement in duty collections can occur in a number of ways: either theft of import duties by customs officers declines, or bribes paid by importers decline (which lowers market prices and raises import demand), or both.

If the customs agency turns over to the government a fraction of true import values that is lower than the official tariff rate, it must alter its records to hide evidence of such theft. Thus evidence that misreporting of import data has declined is indirect evidence of a decline in customs corruption. I focus on measures that are likely to capture two types of misreporting: (i) misreporting of import values ('undervaluation'), and (ii) misreporting of goods classifications.

Import duties are typically assessed as a fraction of declared shipment values, so a main method of duty avoidance is simply to declare on a customs declaration that an imported shipment has a value lower than its true value (undervaluation). A natural measure of undervaluation is the fraction of the value of imports sent to a country (as reported by trade partners) that are actually recorded in a country's import statistics. Specifically, I construct what I call the 'import capture ratio': a country's total reported imports in a given year, divided by the total reported *exports* of trade-partner countries to the same country. All other things equal, countries with less undervaluation in customs should have higher import capture ratios.¹⁰

Undervaluation is not the only method of concealing the avoidance or theft of import duties, however. Another generic strategy is to misreport the goods classification of a shipment, to make it appear that the shipment is

in a category subject to lower tariffs. As a quantitative measure of the extent of misclassifying of goods, I use the *coefficient of variation* of import capture ratios across goods within a country. The basic insight is that misreporting increases the *dispersion* of import capture ratios across goods, *vis-à-vis* a benchmark situation where there was no misreporting. Import capture ratios fall for goods with higher tariffs (as goods are misreported as being in other categories with lower tariffs), and import capture ratios rise for goods with lower tariffs. All other things held equal, then, an increase in the misclassification of goods should lead to an *increase* in the coefficient of variation of import capture ratios across goods within a country, while declines should lead to a corresponding *decrease*.

In addition to these two measures of import misreporting, I also examine the impact of PSI on the total volume of imports, to identify any trade-facilitating effect of the program which may flow from declines in importers' costs (due to declining bribe payments). To separate PSI's trade-facilitating effect from its effect on misreporting, it is useful to use an import measure that is less prone to undervaluation. Thus I use the total value of *exports* recorded by all other countries as destined for the country in question as the import measure (which I call 'partner-reported imports').

The empirical results detailed in Yang (2005a) indicate that PSI programs are indeed associated with improvements in import capture ratios and in reductions in the coefficient of variation of import capture ratios across goods in the first five years of PSI programs. Total imports also tend to improve, but these improvements come some years after PSI implementation, so that any causal link between PSI and import volumes (a trade facilitation effect) is more speculative.

4. Microeconomic evidence from the Philippines

Although the international evidence outlined above documents that PSI programs can yield substantial benefits in terms of increases in import duties and reductions in misreporting, these results are averages across countries and over two decades. But success with PSI is not guaranteed. It therefore makes sense to look in detail at specific country experiences with PSI to get some insight into how a PSI program can fail. Here, I outline microeconomic empirical work on the impact of a PSI expansion in the Philippines, which is more fully elaborated in a separate paper, Yang (2005b). In the following section, I present new empirical analyses on the partial implementation of PSI in Colombia.

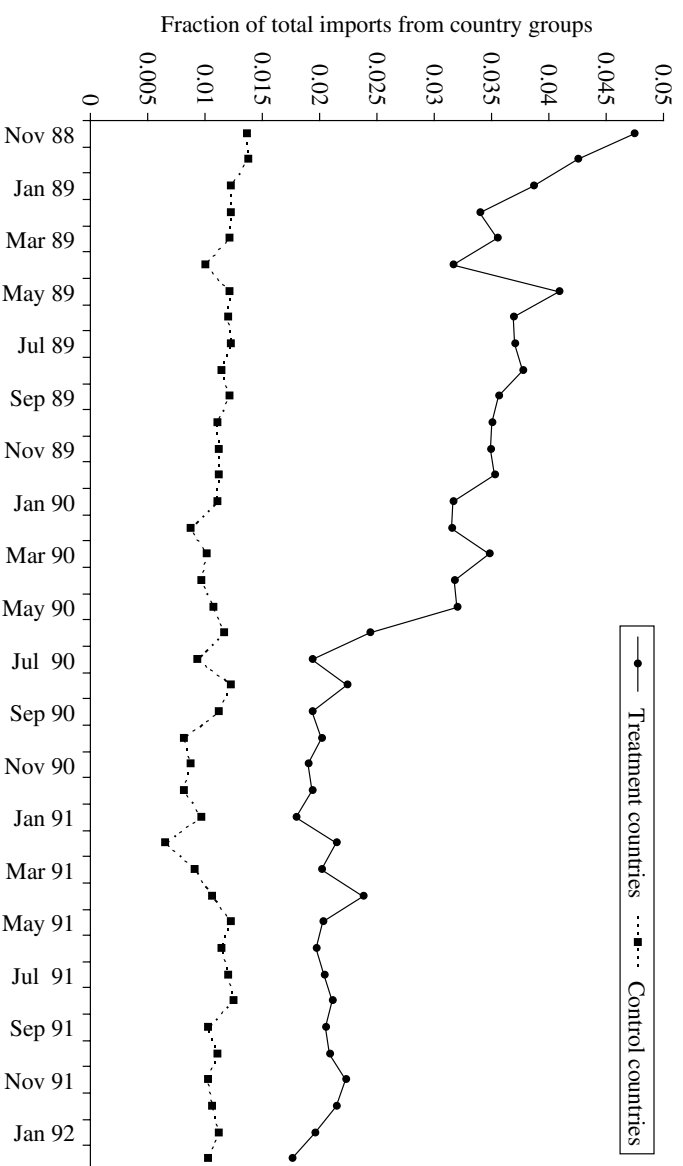
A frequent concern in crime studies is that increased enforcement could lead criminal activity to be displaced to alternative lawbreaking methods (Repetto 1976). A simple model predicts that, when alternative law-breaking methods involve fixed costs of entry, crime displacement should

respond positively to the size of illicit profits threatened by enforcement. But there is little empirical evidence on the relationship between crime displacement and basic economic factors. For the most part, empirical analyses of enforcement's impact address displacement as a mere sidenote, at most examining the existence or amount of displacement.¹¹ Evidence on the determinants of crime displacement could shed light on the importance of economic motives in the decisions of lawbreakers more generally. Moreover, existing studies typically conclude that displacement is a minor phenomenon, finding either no evidence of displacement or that it is small in magnitude. For example, DiNardo and Lemieux (2001) find small amounts of displacement from alcohol to marijuana consumption in response to increases in state-level drinking ages. But in theory, increased enforcement can actually backfire, leading crime rates to be unchanged or even to increase. This perverse outcome can occur when alternative methods have higher fixed costs but lower variable costs than previously used methods.

The PSI program in the Philippines allows an empirical study of such unintended consequences of law enforcement. Prior to 1990, shipments valued under the minimum value threshold for inspection, US\$5,000, were exempt from PSI. Thus a common method of avoiding the inspection was to split shipments into pieces so each could be valued below that level. Over a six-month period in 1990, the government clamped down on this loophole, reducing the minimum value threshold for inspection first to \$2,500 and then to \$500.

Because only shipments from a subset of countries were subject to PSI in the first place, the reform constituted a quasi-experiment. The increased enforcement applied only to shipments from some countries, so that corresponding shipments from all other countries serve as a comparison group. Increased enforcement reduced the original method of duty avoidance (valuation under the old minimum value threshold), but led to substantial displacement to an alternative duty-avoidance method (shipping via duty-exempt export processing zones). The shift amounted to 2.7 percent of total imports from treatment countries. I cannot reject the hypothesis that the reform led to zero change in total duty avoidance. Displacement was greater for products with higher tariff rates and import volumes, consistent with the existence of fixed costs of switching to alternative duty-avoidance methods.

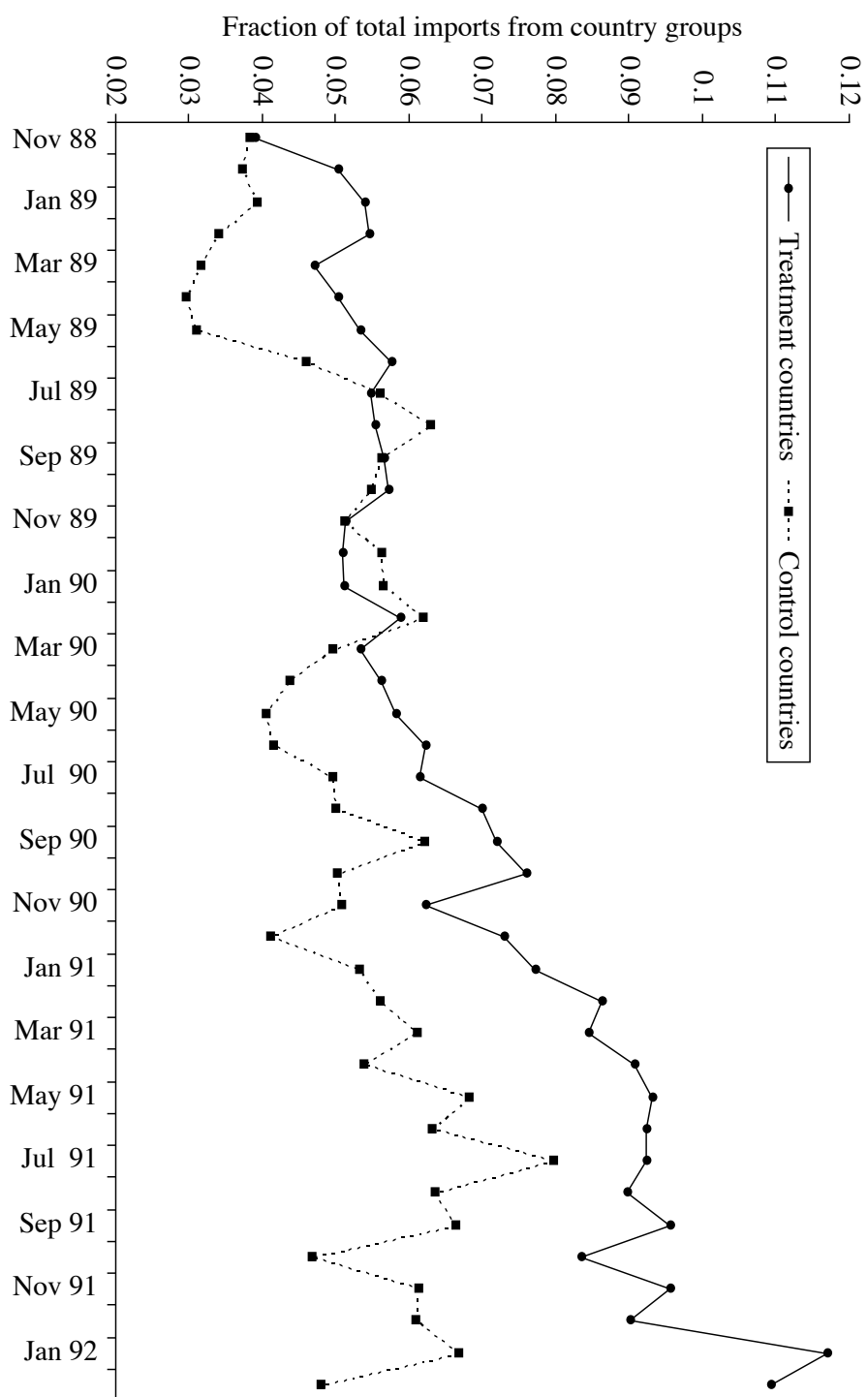
Figures 18.2 and 18.3 illustrate the fundamental aspects of the empirical results with simple summary statistics and graphs for imports from treatment and comparison countries. Figure 18.2 displays the fraction of total imports entering the Philippines in shipments with declared values equal to or above \$2,500 but below \$5,000. The solid line is the fraction for



Note: Figure plots fraction of total imports by value entering in shipments valued between \$2,500 and \$5,000 in the given month, from treatment (PSI) countries and from control (non-PSI) countries. Treatment countries during the period depicted are Hong Kong, Japan, Taiwan, Brunei, Indonesia, Malaysia, Singapore, South Korea and Thailand. All other countries are control countries. Shipments in overlapping shipment types (for example, shipment is both 'under \$500' and 'destined for export processing zone') are allocated to the low-value types (either 'between \$5,000 and \$500' or 'under \$500').

Source: Shipment database of the National Statistics Office of the Philippines.

Figure 18.2 Fraction of total imports entering in shipments valued between \$2,500 and \$5,000 (November 1988–February 1992)



Note: Figure plots fraction of total imports destined for export processing zones in the given month, by country group. Data are smoothed to reduce noise (each data point is a three-month centered moving average). For all other notes, see Figure 18.2.

Figure 18.3 Fraction of total imports destined for export processing zones (November 1988–February 1992)

treatment countries, while the dotted line is for control countries. The most striking aspect of this graph is the decline in the fraction of total imports in this value range for treatment countries after May 1990, just as the minimum value threshold for PSI was lowered. By contrast, the fraction of total imports from control countries declared to be in this value range displays no similar change during these months. The explanation for these differential patterns is quite certain: prior to May 1990, some fraction of imports from PSI countries was being intentionally declared as valued in this range to avoid the PSI requirement. When the minimum value threshold was lowered, this practice ceased, as it was presumably impractical to split shipments into shipments small enough to be valued below \$500.

Figure 18.3 displays the fraction of total imports from the two country groups that were destined for export processing zones. A differential increase in export processing zone shipments from treatment countries is apparent, suggesting that importers from these countries may have been encouraged to take advantage of the PSI exemption for export processing zone shipments as the minimum value threshold was lowered. Imports brought into the export processing zones could then have been smuggled out of the zones for sale in the domestic market.

Conservative estimates of tariff revenue gains and losses (net of PSI fees) suggest that the minimum value threshold reductions were a starkly uneconomic proposition, leading to significant losses in net revenue for the Philippine government. I estimate that the minimum value threshold reductions led to a net loss of \$36.8 million for the government.¹²

5. Microeconomic evidence from Colombia

Data from Colombia indicate that smuggling displacement increases with the size of profits threatened by enforcement and declines with enforcement levels on alternative methods of duty evasion. My analysis exploits the fact that when the Colombian government implemented its PSI program, it only required PSIs for a defined subset of products ('PSI products'). The analysis in this section asks how PSI affects duty avoidance on PSI products, using as a control group other products for which PSI was not required ('non-PSI products').

First, I discuss the measurement of duty avoidance and smuggling displacement in Colombia, alongside other measurement and data issues. Then I describe the empirical approach and discuss regression results.

Measuring duty avoidance and smuggling displacement

Colombia's PSI program started in mid-1995, and the list of PSI products was finalized in March 1996.¹³ The product-level measure of the extent of duty avoidance is the 'import capture ratio': Colombia's reported imports

of a product, divided by other countries' reported exports of the same product to Colombia. Lower values of this ratio indicate that more of that good was diverted compared to other goods. The source for trade data is the UN Comtrade database.¹⁴

Essentially, the export reports of trade partner countries become the benchmark against which the corresponding import data are compared. But due to transport costs and export misreporting, cross-sectional differences between product-level import capture ratios cannot be completely ascribed to differences in undervaluation. Import data include the cost of freight and insurance (CIF, or 'cost, insurance, and freight'), while export data collected by origin countries do not (they are FOB, or 'free on board'). That said, fixed effects included in the estimation will account for level differences in the import capture ratio across products. So transport costs and misreporting of partner country exports will not be problematic if *changes* in these factors are not correlated with the imposition of PSI for specific products. Using a measure such as the import capture ratio also presumes that undervaluation does not occur in the customs declarations in the country of export. This assumption is most plausible if customs officers (not importers) are primarily the ones falsifying import data in customs, as Colombian customs officers should have no ability to alter export data in the shipment's origin country. Even if importers play a role in making false statements on customs declarations, they have no direct reason to falsify their declarations to the exporting country. There is essentially no sharing of export and import statistics between origin and destination countries for the purposes of customs enforcement.

All else equal, a product's import capture ratio should be lower when importers conceal the value of shipments from customs authorities to reduce their import duty payments (typically assessed as a percentage of reported value). Three alternative methods of duty avoidance should lower a product's import capture ratio. Importers may:

- falsely provide import values lower than true values (undervaluation),
- falsely classify products into other product categories that are not subject to PSI (misclassification), or
- avoid formal customs procedures entirely (outright smuggling).

When PSI is required for a certain product, it becomes more difficult to reduce one's import duties via the first method, undervaluation. However, the remaining two methods are still available: importers may still misclassify shipments into false product categories, or engage in outright smuggling. Even if PSI reduces underinvoicing, helping raise import capture

ratios, any displacement to either misclassification or outright smuggling should lower import capture ratios of PSI products; so the net effect on PSI products' import capture ratios is ambiguous.

The empirical analysis examines whether – as predicted by theory – PSI raises the import capture ratios of PSI products *less* when the illicit profits threatened by enforcement are larger, and raises import capture ratios of PSI products *more* when enforcement is higher on alternative methods of duty evasion.

The size of profits threatened by enforcement is simply the tariff rate on the PSI product. To avoid confounding empirical estimates with any endogenous changes in the tariff rate, I use a product's mean tariff rate prior to the start of the program (in 1993–94), which is highly correlated with tariff rates during the program. Tariff rates are the simple average tariff across tariff lines within the product category. In 1993 and 1998, tariff data are unavailable, and for these years the tariff rates used in the analysis are the simple average of tariff rates in the two years immediately before and after. Tariff data are from the UNCTAD Trains database.

The measure of enforcement levels on alternative duty evasion methods is the mean PSI coverage in the PSI product's aggregate product group (where the product group is the 3-digit SITC Rev. 3 level). This measure is sensible, as it should be easier for importers to successfully misclassify products as other products in the same product group. For example, an importer of a PSI product such as 'new pneumatic car tires' (SITC Rev. 3 code 6251) should find it easier to misclassify the shipment as a non-PSI product in product group 625 (such as 'used pneumatic tires', code 62593) than as an entirely unrelated product. Fisman and Wei (2004) provide evidence that misclassification tends to be towards similar products, documenting that import capture ratios for Chinese imports from Hong Kong are higher for products where other products in the same aggregate product group have higher tariffs (making misclassification less desirable).

Empirical analysis of Colombian import capture ratios

The average impact of PSI requirements on PSI products was estimated via the following difference-in-difference regression equation for the log of the import capture ratio, for product i in year t :

$$\ln g_{it} = b_0 + b_1 (PSI_i * AFTER_t) + b_2 (SIM_i * AFTER_t) + h_i + u_t + e_{it}, \quad (18.1)$$

where g_{it} is the import capture ratio. Because there is wide variety in the import capture ratio across products, it is more sensible to examine the log of the import capture ratio as the outcome variable.¹⁵ PSI_i is the indicator

for a PSI product, and $AFTER_t$ is an indicator for the years of full PSI implementation (1997–98). A positive coefficient on b_1 would suggest that PSI was effective in reducing duty evasion.

If importers respond to PSI by misclassifying PSI products as non-PSI products, then import capture ratios of these ‘recipient’ non-PSI products should *rise*. For this reason, the non-PSI products that are the recipients of such misclassification are not likely to be the best control group. As discussed above, it should be easier for importers to misclassify PSI products as non-PSI products that are in some sense ‘similar’. Therefore, I estimate a separate effect of the PSI program on non-PSI products that are in the same aggregate product group as a PSI product. I include in the regression an indicator variable (SIM_i) for a non-PSI product being in the same 3-digit SITC Rev. 3 group as a PSI product, interacted with the $AFTER_t$ indicator.¹⁶ The control group then becomes the omitted category: non-PSI products that *do not* have a PSI product in the same aggregate product group (and thus are less likely to be ‘recipients’ of misclassification). If there is still some misclassification of PSI products into this omitted category, the estimated impact on PSI products’ import capture ratios will be biased in a negative direction. However, such a negative bias is not problematic if the goal of the analysis is simply to determine whether *any* displacement has occurred. This negative bias will only occur if some amount of misclassification is going on. So finding any *negative* effect of PSI on PSI products’ import capture ratios in this setting should be taken as evidence of displacement.

h_i is a product fixed effect, and captures time-invariant differences across products in log import capture ratios. u_t is a year fixed effect, and captures changes in log import capture ratios common across all products within a year. (Main effects for PSI_i , SIM_i , and $AFTER_t$ are absorbed by these product and year fixed effects.) e_{it} is a mean-zero error term. It is possible that error terms may be serially correlated among observations for the same product (Bertrand et al. 2004), so I calculate standard errors clustered by product. So that the estimates can more accurately reflect the impact of PSI on Colombia’s overall imports, observations are weighted by the product’s mean annual dollar imports in 1993–94.

Products subject to PSI were in fact not chosen randomly, and certain types of products were more likely to require PSI than others. For example, those with higher tariff rates prior to the PSI program were more likely to be included under the PSI program. In addition, those with higher pre-PSI import capture ratios were less likely to be included.¹⁷ The proportion of PSI products among ‘manufactured goods’ in the sample is 0.30, while for ‘machines and transport equipment’ products it is 0.13. Because PSI products differ in their initial characteristics from non-PSI products, it is crucial

that identification of the impact of PSI focuses on *changes* in import capture ratios accompanying the introduction of PSI requirements on certain products, not on cross-sectional *level* differences. The identification assumption is that, in the absence of the PSI program, changes in import capture ratios would have been similar for PSI products and for non-PSI products that are not in the same (3-digit SITC Rev. 3) aggregate product group.

To examine heterogeneity in the impact of PSI, I also estimate regressions where the PSI variable (PSI_i) and the indicator for being similar to a PSI product (SIM_i) are interacted with the pre-PSI (1993–94) tariff rate (t_i^{pre}) and the mean PSI coverage in the 3-digit product group (PSI_i^{agg}):

$$\begin{aligned} \ln g_{it} = & a_0 + a_1(PSI_i * AFTER_t) \\ & + a_2[(PSI_i * AFTER_t) * PSI_i^{agg}] + a_3[(PSI_i * AFTER_t) * t_i^{pre}] \\ & + a_4(SIM_i * AFTER_t) \\ & + a_5[(SIM_i * AFTER_t) * PSI_i^{agg}] + a_6[(SIM_i * AFTER_t) * t_i^{pre}] \\ & + a_7(AFTER_t * t_i^{pre}) \\ & + h_i + u_t + e_{it}. \end{aligned} \quad (18.2)$$

The interaction term $AFTER_t * t_i^{pre}$ is included to capture any changes over time in import capture ratios related to a product's initial tariff rate.¹⁸

The economic model of crime displacement predicts that, in response to increased enforcement, displacement to alternative methods will be lower when enforcement is higher on alternative lawbreaking methods. Products with higher PSI_i^{agg} face higher enforcement against an alternative duty-avoidance method, misclassification. So we should expect that $a_2 > 0$ (PSI coverage on a product should raise its import capture ratio more when PSI coverage is higher in its aggregate product group).

A further theoretical prediction is that displacement to alternative methods will be higher when the illicit profits threatened by enforcement are higher. Profits from duty evasion rise with tariffs, so we should expect that $a_3 < 0$ (PSI coverage on a product should raise its import capture ratio less when it has a higher tariff rate).

Constructing import capture ratios at the highly disaggregated product level invariably generates extreme import capture ratios for some products (that may be generated by inconsistencies in data reporting between Colombia and trade partners). Including such products in the analysis is likely to generate substantial noise that could obscure evidence of PSI's impact. So I exclude from the dataset all products whose mean import capture ratios prior to the PSI program (in 1993–94) were extremely high

or low.¹⁹ As the products to be excluded are determined on the basis of characteristics prior to the start of the PSI program (and so are not affected by PSI itself), their exclusion should not harm the internal validity of the estimates. The analysis must also exclude products with missing data on Colombia-reported imports and trade partner-reported exports.

Since the PSI product list was in flux during 1995 and 1996, I do not use data from those years. The empirical analysis simply compares import capture ratios in two pre-PSI years (1993 and 1994) with those in years when the rules were fully in place (1997 and 1998).

The empirical analysis includes 2,427 products, of which 19.4 percent are PSI products. Summary statistics for the regression sample are presented in Table 18.2. The median import capture ratio is 1.10. Ratios above unity should not be surprising, because import data (in the numerator) include freight and insurance costs while export data (in the denominator) do not. The mean import capture ratio is 1.76, reflecting the existence of some quite large import capture ratios. Very large import capture ratios will result from misclassification of imports into product categories whose true import volumes are small.²⁰ The mean tariff rate is 12.13 percent. Twenty-nine percent of products were 'similar' to (in the same 3-digit SITC Rev. 3 group as) a PSI product.

Coefficient estimates are presented in Table 18.3. Column 1 displays the coefficient on the $PSI_i * AFTER_t$ variable in equation (18.1). On average across PSI products, there is no evidence that the introduction of product-level PSI requirements is associated with changes in import capture ratios: the coefficient on $PSI_i * AFTER_t$ is essentially zero and is not statistically significant.

As it turns out, though, column 1's estimate conceals heterogeneity within the set of PSI products. Column 2 displays regression coefficients from estimation of equation (18.2). The coefficient on the interaction term with 3-digit group PSI coverage is positive and highly statistically significant. This result is consistent with displacement of duty avoidance for PSI products from underinvoicing to misclassification, if importers find it easiest to misclassify their imports as similar (but non-PSI) products. If similar products have higher levels of PSI coverage, importers fear that misclassification will be more easily detected, leading PSI to have a greater positive effect on the import capture ratio. The coefficient in column 2 on the interaction term with the initial tariff rate is negative and statistically significant. When the profits threatened by enforcement (import tariffs) are higher, PSI may make importers more likely to seek alternative means of avoiding import duties, leading to greater declines in import capture ratios.

These coefficient estimates imply that when PSI products faced relatively high tariffs (higher potential profit from displacement) and had relatively

Table 18.2 Summary statistics for Colombian import data, 1993, 1994, 1997 and 1998

	Mean	Median	Std dev	Minimum	Maximum
PSI product (indicator)	0.19	0	0.40	0	1
Similar to PSI product (indicator)	0.29	0	0.46	0	1
Import capture ratio	1.76	1.10	14.99	0.00	1,334.21
Ln (import capture ratio)	-0.09	0.09	1.13	-11.17	7.20
Tariff rate	12.13	12.50	5.87	0.00	35.39
Trade-partner-reported exports to Colombia	4,335,819	956,127	20,913,226	533	892,013,124
Colombia-reported imports	4,676,492	936,865	19,703,477	10	684,459,547
Number of product-year observations:	9,314				

Note: An observation is a 4/5-digit SITC Rev. 3 product in a particular year. 'PSI product' is indicator for PSI being required for an HS (1996) tariff line within SITC 4/5-digit product. 'Similar to PSI product' equal to 1 if product is in same 3-digit product group as a PSI product, and 0 otherwise. 'Import capture ratio' is Colombian own-reported imports divided by trade-partner-reported exports to Colombia. 'Tariff rate' is unweighted mean of tariff rate across tariff lines within 4/5-digit product. Tariff data are unavailable for 1993 and 1998, tariff rates in these years are replaced by simple average of tariff rates in adjacent years (1993 data are mean of 1992 and 1994; 1998 data are mean of 1997 and 1999.) Trade data are in nominal US dollars. Summary statistics are for exact observations used in empirical analysis. Products are excluded from analysis if their initial (1993–94) average import capture ratio was below 0.08 or above 3.67: respectively, 5th and 95th percentiles of 1994 distribution of import capture ratio (distribution weighted by initial dollar imports).

Sources: Trade statistics are from UN Comtrade database. Tariff data are from UNCTAD Trains database. PSI coverage data are from Colombian government Decree 567 (March 1996).

Table 18.3 Impact of PSI coverage on product-level import capture ratio, Colombia (weighted fixed-effects estimates), 1993, 1994, 1997 and 1998

<i>Dependent variable: Ln(import capture ratio)</i>				
	(1)	(2)	(3)	(4)
(PSI product) * (After)	−0.001 (0.060)	−0.024 (0.124)	0.003 (0.056)	−0.019 (0.124)
(PSI product) * (After) * (PSI coverage in 3-digit group)		0.456 (0.172)***		0.447 (0.173)***
(PSI product) * (After) * (Pre-PSI tariff rate)		−0.022 (0.010)**		−0.033 (0.022)
(PSI product) * (After) * (Current tariff rate)				0.012 (0.021)
(Similar to PSI product) * (After)	0.051 (0.072)	0.092 (0.186)	0.051 (0.072)	0.091 (0.186)
(Similar to PSI product) * (After) * (PSI coverage in 3-digit group)		0.267 (0.761)		0.266 (0.761)
(Similar to PSI product) * (After) * (Pre-PSI tariff rate)		−0.008 (0.018)		−0.016 (0.032)
(Similar to PSI product) * (After) * (Current tariff rate)				0.009 (0.027)
(After) * (Pre-PSI tariff rate)		0.012 (0.008)		0.008 (0.023)
(After) * (Current tariff rate)				0.003 (0.023)
Current tariff rate			0.005 (0.012)	−0.007 (0.019)
Observations	9,314	9,314	9,314	9,314
R-squared	0.69	0.69	0.69	0.69

Note: Unit of observation is a 4/5-digit SITC Rev. 3 product in a certain year. Standard errors (clustered by product) in parentheses. Each observation weighted by initial (1993–94) mean annual dollar imports. Years 1993–94 are prior to the imposition of PSI requirements. PSI program started in August 1995. Years 1995 and 1996 excluded from analysis because list of products requiring PSI changed over this period (list finalized in March 1996). PSI program operational for all of 1997 and 1998, and ended in July 1999. ‘After’ is indicator for 1997 or 1998. ‘PSI coverage in 3-digit group’ is fraction of 4/5-digit products within 3-digit SITC Rev. 3 group with any PSI requirements. All regressions include fixed effects for year and product. (After)*(PSI coverage in 3-digit product group) not included because redundant. See Table 18.2 for variable definitions, data sources and other notes.

* significant at 10%; ** significant at 5%; *** significant at 1%.

low PSI coverage in the aggregate product group (low enforcement against displacement via misclassification), the imposition of PSI requirements actually led to *declines* in import capture ratios. Column 2's estimates imply that for a PSI product at the 75th percentile of the initial tariff rate distribution (35.4 percent) and the 25th percentile of the 3-digit product group PSI coverage distribution (0.72), the differential decline in its import capture ratio was -0.483 (standard error 0.227).²¹

At this point, it is important to address a potential omitted-variable concern: other product-level trade policies may have changed for PSI products, and may affect import capture ratios as well. For example, the government could have raised tariffs and other trade restrictions differentially on PSI products. If such trade restrictions themselves encouraged displacement to alternative methods of duty avoidance, the estimated impact of PSI on import capture ratios would be biased downwards. Although time-series data on all forms of trade restrictions are unavailable, time-series tariff rates are available by product, and tariffs are likely to be the most salient form of product-level trade policy in the minds of importers. So the remaining columns of the table include controls for a product's current tariff rate, as well as the interaction between the current tariff rate and the $PSI_i * AFTER_t$ and $SIM_i * AFTER_t$ variables. The inclusion of these additional controls leaves essentially unchanged the coefficient on the $(PSI_i * AFTER_t) * PSI_i^{agg}$ term. The coefficient on $(PSI_i * AFTER_t) * t_i^{pre}$ (in column 4) is larger in magnitude and its sign is still negative, but its standard error has risen so that it is no longer statistically significantly different from zero. This latter change is not particularly worrying, as pre-PSI tariff rates and current tariff rates are highly correlated, so that insufficient variation remains in the regression for precise estimation of the pre-PSI tariff rate coefficient. Adding current tariff rate controls makes little difference for the conclusions from Table 18.3; differential changes in trade restrictions for PSI products do not seem to be driving the results.

If PSI products are being misclassified as non-PSI products in the same SITC 3-digit product group, import capture ratios should rise for these non-PSI products, so that the coefficient on $SIM_i * AFTER_t$ should be positive. We might also expect that import capture ratios would rise *more* for such non-PSI products when the share of PSI products in the 3-digit product group is higher, as more PSI products would be misclassified into the remaining non-PSI products in the group (the coefficient on $(SIM_i * AFTER_t) * PSI_i^{agg}$ should be positive). Finally, misclassification into a certain non-PSI product should be less prevalent when the non-PSI product in question itself has a higher tariff rate (the coefficient on $(SIM_i * AFTER_t) * t_i^{pre}$ should be negative).

The coefficient estimates in Table 18.3 for $SIM_i * AFTER_i$ and its interaction terms indeed have the predicted signs. However, standard errors are quite large, so that none of the coefficients is statistically significantly different from zero. Due to the imprecision of these estimates, these results should be taken as inconclusive. At the same time, these results provide no reason to doubt the interpretation of the positive and statistically significant coefficient on the $(PSI_i * AFTER_i) * PSI_i^{agg}$ term as due to increased effectiveness of PSI (at raising import capture ratios) when enforcement against misclassification is greater.

In sum, the evidence presented in this section documents that displacement of duty avoidance in Colombia rises with the size of illicit profits threatened by enforcement, and declines with enforcement levels on alternative methods of duty evasion. The distinctive feature of the Colombian PSI program is that it required inspections for only a subset of products, leaving large categories of products uncovered by the program. Thus, importers could continue to evade import duties by misclassifying imports into non-PSI product categories. I find that the higher the illicit profits threatened by PSI (proxied by the product's tariff rate), the greater is misclassification to alternative product categories. In addition, when enforcement levels are higher on alternative methods of duty evasion (when PSI is also required on other similar product categories), there is less misclassification to other product categories.

6. Conclusion: implications for anti-corruption efforts more broadly

This chapter has surveyed new research on a widespread approach to combating corruption in customs: the use of PSI services. PSI improves the information available to higher-level enforcers on the contents of incoming shipments, and so has the potential to help reduce corruption in customs, raise import volumes, and ultimately raise import duty revenue. In a study of PSI-implementing countries over two decades, I find that implementation of PSI programs leads to increases in import duties, and is accompanied by declines in underinvoicing and in misclassification of goods classifications in customs. The programs appear to be highly cost effective on average. However, such programs are not guaranteed to succeed. In micro-level studies of the workings of PSI programs in the Philippines and Colombia, I identify conditions under which such programs may fail.

Aside from shedding light on the effectiveness of a widely implemented anti-corruption reform in customs, these findings also suggest lessons for anti-corruption efforts more broadly. In PSI programs, foreign inspectors simply provide additional information to higher levels of government while keeping duty collection and enforcement in the hands of government employees. As such, PSI is a specific case of a potentially large category of

interventions that improve the information-gathering capability of anti-corruption entities. The evidence outlined in this chapter points to the conclusion that the PSI-generated information is used, in that it changes the incentives of customs agents and importers in all the situations studied. On average across countries, PSI programs lead to increases in import duties collected and reductions in indicators of corruption and fraud in customs. However, in some circumstances (Colombia and the Philippines), the reactions of importers or customs agents can offset the information improvements. But even in the Philippine and Colombian cases, the fact that importers or customs agents are reacting means that the information is being put to some use by enforcers. Overall, the evidence indicates that information is a key constraint facing anti-corruption enforcers, and policies that find innovative ways to alleviate information constraints can have large returns in terms of reducing corruption.

The PSI experience in the Philippines and Colombia suggests that to be successful, anti-corruption reforms should be ‘broad’ in the sense of encompassing a wide range of possible alternative methods of committing the illegal activity of interest. Otherwise, displacement to alternative methods can negate the original goals of the reform.

Finally, the experience of PSI in customs demonstrates that private firms can successfully be used to generate information for anti-corruption efforts. This finding suggests a new direction for anti-corruption initiatives. I am aware of no other anti-corruption effort that relies on private firms to generate information for improved enforcement, but concerns about the corruptibility of enforcers or monitors from within the government extend far beyond the customs context. Although private firms certainly have their own problems with corruption, competition among private firms providing monitoring services may provide them with strong incentives to root out corruption among their employees. There does not appear to be any strong reason why anti-corruption efforts should not experiment more broadly with using private firms as monitors, in areas such as government procurement, provision of licenses, public works or other forms of taxation.

Notes

- * Jose Berrospide provided excellent research assistance for the Colombian section of the empirical analysis.
- 1. For recent overviews of the relationship between corruption and development, see Bardhan (1997) and Rose-Ackerman (2004).
- 2. More recent contributions along these lines include Mookherjee and Png (1992 and 1995), Besley and McLaren (1993) and Polinsky and Shavell (2001).
- 3. The sample used to calculate this statistic is described in Section 4, below.
- 4. Studies that use a similar measure include Morgenstern (1950), Bhagwati (1964), Naya and Morgan (1969), De Wulf (1981) and, most recently, Fisman and Wei (2004).

5. However, it is also possible that importers may end up paying less than the legislated tariffs on their imports due to corruption, in which case corruption could encourage imports.
6. For these fee calculations, I use data from the IMF's Direction of Trade Statistics and a historical database of PSI programs I collected. The estimate of PSI fees paid in year t by country j is $Fees_{jt} = (0.01) \times (0.8) \times M_{jt} PSIfrac_{jt}$, where M_{jt} is the total value of shipments recorded as destined for country j in year t by trade partner countries, and $PSIfrac_{jt}$ is the fraction of year t that country j had an active PSI program. I assume that PSI is only required for a fraction 0.8 of imports, and that the PSI fee is a fraction 0.01 of total imports inspected. The annual worldwide total of $Fees_{jt}$ averages \$547 million per year from 1990–2000.
7. A small number of countries retain PSI firms to verify national quality or safety standards, to help enforce foreign exchange restrictions, or for other non-customs purposes.
8. Because countries with better data availability may also have more competent governments, allowing data availability to define the sample may suggest that the results should apply mainly to countries with comparable public institutions. That said, the list of countries in Table 18.1 includes both relatively rich developing countries (such as Argentina) and some of the very poorest ones (Paraguay, Burkina Faso).
9. Formally, the conditional means are generated by running the following regression, where the outcome variable is log import duties:

$$\begin{aligned}
 Y_{jt} = & q_{-20}PSI_20_{jt} + q_{-19}PSI_19_{jt} \dots \\
 & + q_{-1}PSI_1_{jt} + q_0PSI0_{jt} + q_1PSI1_{jt} \dots \\
 & + q_{13}PSI13_{jt} + q_{14}PSI14_{jt} \\
 & + g_jTREND + m_j + d_t + e_{jt}.
 \end{aligned}$$

The variables PSI_20_{jt} , PSI_19_{jt} , . . . , $PSI14_{jt}$ are indicators for the observation occurring a certain number of years before or after the start year of a country's PSI program, for 20 years before and up to 14 years after (the complete set of before and after years observed in the data). These indicators are all zero if the country has never used PSI. The remaining variables are year fixed effects, country fixed effects, and country-specific linear time trends. The points comprising the solid line in Figure 18.1 are the coefficients θ_{-20} through θ_{-14} on these indicator variables, and the dotted lines depict the 95 percent confidence intervals of each coefficient estimate.

10. On the likely sources of error in import capture ratios and their implications for empirical analysis, see the discussion of the Colombian case in Section 5, below.
11. See Chaiken et al. (1974); McPheters et al. (1984); Ayres and Levitt (1998); Levitt (1998); Braga et al. (1999); and Di Tella and Schargrodsky (2004), among others. See also Hesselning's (1994) overview.
12. While in retrospect the minimum value threshold reductions were clearly uneconomic from the standpoint of raising import duties net of fees, it is not obvious that the Philippine government could have known this in advance. At the time of the changes, Philippine customs was not computerized, the number of shipments in the under \$5,000 value range might not have been known exactly, and so it might have been difficult to estimate the cost of the additional inspections. It was also unclear *ex ante* what fraction of shipments under \$5,000 was declared as being in that value range purely to avoid the PSI requirement. Finally, the large displacement to export processing zones was probably unanticipated.
13. Implementing legislation is contained in Colombian government Decree 861 of 26 May 1995. Changes in the list of PSI products were made via Decrees 1574 (18 September 1995) and 567 (21 March 1996). The program was cancelled in July 1999 in the course of

- large-scale modernization and simplification of Colombian public administration (Decree 1122, 26 June 1999). Colombian government Decree 567 lists Harmonized System (HS) (version 1996) codes requiring PSI, from the 2–10-digit level. The trade data I use is in the SITC (Rev. 3) system, at the level of 4/5-digit products, so the measure of PSI coverage must also be at that level. I simply define a 4/5-digit SITC product as a ‘PSI product’ if PSI is required for some HS (1996) tariff line within the 4/5-digit product. (For 94.2 percent of PSI products, PSI is required for all HS (1996) tariff lines within the product.)
14. All trade data used in this section are in nominal US dollars.
 15. Fisman and Wei (2004) also examine a similar outcome variable in log form.
 16. In other words, the indicator is zero for all PSI products and for all non-PSI products with no similar PSI products.
 17. A regression of the PSI indicator on a product’s initial (1993–94) mean tariff rate yields a coefficient on the tariff rate of 0.030 (standard error 0.002). A regression of the PSI indicator on a product’s initial (1993–94) mean import capture ratio yields a coefficient on the import capture ratio of –0.136 (standard error 0.080). (Regressions are OLS and weighted by product’s initial (1993–94) mean dollar imports.)
 18. Main effects for PSI_i and SIM_i (and their interactions with t_i^{pre} and PSI_i^{agg}) do not need to be included as they are absorbed by product fixed effects. Also, it would be redundant to include an interaction term for $AFTER_i * PSI_i^{agg}$. Because $PSI_i^{agg} = 0$ for all non-PSI products that are not in the same product group as some PSI product, $AFTER_i * PSI_i^{agg}$ is a linear combination of the year effects, $(PSI_i * AFTER_i) * PSI_i^{agg}$ and $(SIM_i * AFTER_i) * PSI_i^{agg}$.
 19. Below the 5th percentile and above the 95th percentile of the 1993–94 mean import capture ratio distribution by product, where each product is weighted by its 1993–94 mean dollar imports.
 20. Of course, inconsistencies in data recording across countries can also lead to extreme import capture ratios. As long as such inconsistencies are for the most part unrelated to intentional misclassification for the purpose of duty evasion, their main effect on the analysis should be to decrease the precision of coefficient estimates.
 21. Distributions of initial tariff rate and 3-digit product group PSI coverage weighted by initial (1993–94) mean dollar imports.

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Appendix 18A Robustness checks for the Colombia analysis

To address potential concerns about the robustness of the regression results for the Colombian analysis, I experimented with alternative definitions of the sample. Table 18A.1 shows that similar coefficient estimates and levels of statistical significance result for alternative sample definitions. For comparison, the first column of the table repeats the coefficient estimates of Table 18.3, column 2; all remaining regressions include independent variables identical to those in Table 18.3, column 2. The focus here is on the extent to which the coefficients on the key triple interaction terms $(PSI_i * AFTER_i) * PSI_i^{agg}$ and $(PSI_i * AFTER_i) * t_i^{pre}$ (the second and third rows of the table) differ substantially from the original specification in the first column.

The second column of Table 18A.1 reports coefficient estimates when the sample is expanded to include observations from the two additional pre-period years for which data are available, 1991 and 1992. The inclusion of these additional years potentially allows a better estimate of pre-period import capture ratios, and could in principle change results if 1993–94 were unusual years in some way. As it turns out, the coefficients on the key triple interaction terms are close in magnitude to the original specification and maintain their levels of statistical significance.

The third column of the table reports coefficient estimates when the sample is expanded to include observations for which import capture ratios were previously missing, because of missing data on either Colombian-reported imports or partner-reported exports to Colombia. Products where data are missing on Colombian-reported imports but with data on partner-reported exports to Colombia can be thought of as having ‘very low’ import capture ratios, so I let their import capture ratios be the 1st percentile of the distribution of non-missing import capture ratios (weighted by 1994–94 mean dollar imports), which is 0.07. Products missing data on partner-reported exports to Colombia but with data on Colombian-reported imports in principle can be thought of as having ‘very high’ import capture ratios, so I let their import capture ratios be the 99th percentile of the distribution of non-missing import capture ratios (weighted by 1994–94 mean dollar imports), which is 4.39. Although the coefficients on the key triple interaction terms are somewhat smaller in magnitude than those in the original specification, they are still of the same sign and remain statistically significant at conventional levels.

Construction of import capture ratios generates some extremely large and small values. If these extreme values are due to inconsistencies in data reporting between Colombia and its trade partners, they generate noise that can reduce precision and obscure the true impact of PSI. The main sample for analysis therefore excludes products that have very large or small

Table 18A.1 Impact of PSI coverage on item-level import capture ratio, Colombia (additional specifications) (weighted fixed-effects estimates)

Dependent variable: Ln(import capture ratio)							
	Alternative definitions of sample for analysis				Pre-test		
	Original (from Table 18.3, col. 2)	Including observations for 1991 and 1992	Replace missing import capture ratio	Not dropping products outside 5th–95th pctile of pre-period import capture ratio	Dropping products outside 10 th –90 th pctile of pre-period import capture ratio	1991–92 is ‘before’ period and 1993–94 is ‘after’ period	
<i>Specification:</i>							
(PSI product) * (After)	–0.024 (0.124)	–0.025 (0.128)	0.003 (0.139)	0.124 (0.282)	–0.03 (0.122)		–0.011 (0.194)
(PSI product) * (After) * (PSI coverage in 3-digit group)	0.456 (0.172)***	0.514 (0.157)***	0.300 (0.132)**	0.322 (0.251)	0.496 (0.185)***		0.179 (0.195)
(PSI product) * (After) * (Pre-PSI tariff rate)	–0.022 (0.010)**	–0.023 (0.011)**	–0.015 (0.009)*	–0.023 (0.021)	–0.022 (0.009)**		–0.001 (0.010)
(Similar to PSI product) * (After)	0.092 (0.186)	0.159 (0.180)	0.115 (0.200)	0.085 (0.282)	–0.059 (0.108)		0.098 (0.176)
(Similar to PSI product) * (After) * (PSI coverage in 3-digit group)	0.267 (0.761)	0.377 (0.742)	–0.139 (0.646)	0.364 (0.696)	–0.039 (0.657)		–0.382 (0.398)
(Similar to PSI product) * (After) * (Pre-PSI tariff rate)	–0.008 (0.018)	–0.014 (0.017)	0.000 (0.018)	–0.01 (0.026)	0.005 (0.011)		0.000 (0.015)

Table 18A.1 (continued)

Dependent variable: Ln(import capture ratio)							
Specification:	Alternative definitions of sample for analysis					Pre-test	
	Original (from Table 18.3, col. 2)	Including observations for 1991 and 1992	Replace missing import capture ratio	Not dropping products outside 5th–95th pctile of pre-period import capture ratio	Dropping products outside 10 th –90 th pctile of pre-period import capture ratio	1991–92 is ‘before’ period and 1993–94 is ‘after’ period	
(After) * (Pre-PSI tariff rate)	0.012 (0.008)	0.012 (0.009)	0.01 (0.008)	0.014 (0.020)	0.009 (0.006)	0.000 (0.008)	
Observations	9,314	13,684	9,603	10,918	7,599	9,138	
R-squared	0.69	0.58	0.61	0.76	0.64	0.66	

Note: Unit of observation is a 4/5-digit SITC Rev. 3 product in a certain year. Standard errors (clustered by product) in parentheses. Each observation weighted by initial (1993–94) mean annual dollar imports. Years up to 1994 are prior to the imposition of PSI requirements. PSI program started in August 1995. Years 1995 and 1996 excluded from analysis because list of products requiring PSI changed over this period (list finalized in March 1996). PSI program operational for all of 1997 and 1998, and ended in July 1999. 'After' is indicator for 1997 or 1998 (except in last column, when it indicates 1993–94). 'PSI coverage in 3-digit group' is fraction of 4/5-digit products within 3-digit SITC Rev. 3 group with any PSI requirements. All regressions include fixed effects for year and product. (After)*(PSI coverage in 3-digit product group) not included because redundant. See Table 18.2 for variable definitions, data sources and other notes.

* significant at 10%; ** significant at 5%; *** significant at 1%.

import capture ratios, as evidenced by their being below the 5th percentile and above the 95th percentile of the 1993–94 mean import capture ratio distribution (weighted by 1993–94 mean dollar imports). To show the importance of this sample restriction, the fourth column of Table 18A.1 presents coefficient estimates where products with extreme 1993–94 import capture ratios are included. The coefficient on the $(PSI_i * AFTER_t) * PSI_i^{agg}$ term is somewhat smaller in magnitude than in the original specification (0.322 versus 0.456), while the coefficient on the $(PSI_i * AFTER_t) * t_i^{pre}$ term is essentially the same as in the original specification. Standard errors have risen substantially, however, so that neither coefficient estimate is statistically significant at conventional levels. This result is likely simply to be due to the substantial increase in noise generated by including products with very poorly measured import capture ratios.

The fifth column of Table 18A.1 illustrates the impact on the coefficient estimates of further restrictions on the range of products included in the sample on the basis of pre-period import capture ratios. This sample drops products whose pre-period import capture ratios were outside the 10th–90th percentile of that distribution. Compared to the corresponding coefficients in the original specification, the coefficient on the $(PSI_i * AFTER_t) * PSI_i^{agg}$ term is approximately the same in magnitude, the coefficient on the $(PSI_i * AFTER_t) * t_i^{pre}$ term is essentially identical, and both coefficients have similar levels of statistical significance.

Finally, the last column of the table answers a different question. Is there evidence that similar changes in import capture ratios were occurring in a period *prior* to the introduction of the PSI program? The coefficient estimates in this column are for observations from the pre-period (1991–1994), where 1991–92 is taken to be the ‘before’ period, and 1993–94 is taken to be the ‘after’ period. PSI coverage and tariff rate variables are as defined before. As such, this ‘false experiment’ is a partial test of the identification assumption that these patterns would not have been observed in the absence of the PSI program. The coefficient estimates on the key triple interaction terms are substantially smaller in magnitude than in the original specification, and are not statistically significant from zero. The lack of statistical significance does not stem from a decline in precision, as coefficient standard errors on the triple interactions of interest are similar to those in the original specification. There is therefore no indication that similar differential changes in import capture ratios were occurring prior to the PSI program.

19 Prescription for abuse? Pharmaceutical selection in Bulgarian healthcare

*Patrick Meagher**

In early 2004, a Sofia newspaper reported, ‘Foreign medicine importers and manufacturers accused the state of racketeering and of forcefully redistributing the medicine market in favor of Bulgarian producers’.¹ This complaint surfaced in connection with the central government’s process of selecting medicinal drugs for use in state-financed healthcare. It was one of many accusations of unfair competition and corruption that continue to reverberate. These complaints seem to spike with each major step, or change, in Bulgaria’s pharmaceutical selection processes.

The complaints point to the corruption risks inherent in state-provided drug benefits, risks that multiply as global pharmaceutical trade increasingly meets with policy controls on quality and price in emerging markets. In this chapter, we illustrate this problem with a case study of medicinal drug policy implementation in Bulgaria. We focus primarily on the two major selection processes at the national level: the Positive Drug List (PDL) and the National Health Insurance Fund (NHIF) Reimbursement List. In order to draw out the implications of drug selections, we also look briefly at the further stages in the process of getting medicines to the patient, especially drug procurements by hospitals.

Our key conclusion is this: the market conditions and drug policy arrangements provide a breeding ground for corruption – a prescription for abuse. There is a dangerous juxtaposition between competitive and political pressures on national systems of pharmaceutical policy, on the one hand, and a highly technical process of policy implementation (selection and procurement) on the other. Information constraints and rewards of success (drug sales) are high. At the same time, a transition country such as Bulgaria would have difficulty, even in the best of circumstances, refining procedures and strengthening oversight mechanisms so that they are adequate to the task of ensuring integrity. The outcomes to date suggest that the struggle is ongoing.

We proceed as follows. First, we situate this work with respect to prior studies of healthcare corruption in transition economies and of pharmaceutical policies and markets, and then we describe our approach. This discussion leads into an institutional analysis of Bulgaria’s pharmaceutical

selection processes and their impact. Here, as in other highly technical decision processes, information constraints play a prominent role. The case study couples analysis of the administrative structure with an assessment of political–economic driving forces, analyzes the competitive incentives of drug firms, and examines the outcomes produced by the system. Our findings lead to a concluding discussion of prospective analytical and policy strategies.

1. Healthcare and corruption in transition

The situation in Bulgaria reflects region-wide difficulties in transforming social services such as healthcare in a time of systemic political and economic transition.² Kornai (2000) suggests that, across the transition region, political and economic transformation had to take top priority. Thus, healthcare reform started in partial, haphazard fashion – with systemic restructuring being taken up only after several years' delay. In the case of Hungary, partial reform created a social-market healthcare system with mixed incentives and gaps in oversight. Pending fundamental reform, the introduction of market discipline by emergent private healthcare and health insurance markets was the leading edge of change toward greater efficiency in provision.

Elster et al. (1998) see the move to social insurance funds in transition countries as creating a new triangular relationship among the state insurance system, the healthcare provider units and the insured clients. The Central and East European countries went through a hard, iterative process of transforming healthcare from being a government function paid through official salaries to a system of independent providers being paid for services. The shift to 'off-budget' financing of healthcare was meant to help mobilize additional resources for the sector – but contributions were rarely sufficient, and so the state had to continue subsidizing healthcare provision. Next came the introduction of market forces – and policy makers were even more cautious about this.

Regarding healthcare-related corruption, the literature has focused largely on informal payments to physicians. It also deals to a lesser extent with other forms of corruption in hospitals and clinics, such as bribery to non-medical staff, absenteeism, theft and sale of supplies, and corruption in procurement of drugs and other goods and services. An overview of the issues is provided in Vian (2002). The most thorough treatment is the volume by Di Tella and Savedoff (2001) on corruption in Latin American hospitals. The authors analyze a range of corruption issues in samples of healthcare facilities in several Latin countries, relating evidence of corruption to health unit governance and financing, and to incentives facing doctors and other staff. Evidence of corruption generally comes from

survey responses, with indirect evidence derived from hospital budgets, treatment patterns and procurement prices.

Some empirical studies have been done in the post-socialist transition countries. The Moscow Public Science Foundation (2003) provides an in-depth treatment of informal payments to physicians in Russia. Kornai (2000) analyzes such payments in Hungary, suggesting that these are a continuation of a longstanding habit of patients providing 'gratitude payments' to doctors. This pattern survived due to the delay in structural reform of the healthcare system. According to Elster et al. (1998), self-regulation of the medical profession has rarely been effective in the transition region. As a result, the practice of 'tipping' doctors has been hard to eradicate. Thus, corruption provides an improvised solution to transacting parties dealing with rigidities and inconsistencies in a partially reformed system.

Few contributions have focused on pharmaceuticals, and most of these deal with problems in procurement and supply management, as in the case of Di Tella and Savedoff (2001). In contrast, Cohen et al. (2002), provide a comprehensive framework for evaluating the corruption vulnerability of pharmaceutical approval and supply systems, from market authorization to selection, procurement and distribution. They apply their model, based on international standards and best practices, in an evaluation of Costa Rica's systems. Vacroux (2004) focuses more narrowly on pharmaceutical regulatory processes. Looking at the behavior of Russian drug and medical supply firms across regions and localities, Vacroux suggests that Russia's reforms in this sector provided 'slack' for officials and firms to revert to the use of informal rules for administering the sector – including corrupt practices. The firms adopted a strategy of capturing local regulatory authorities, then defending their positions as insiders or winners, through regulatory policies, administration and appointments.³

This focus on regulatory capture more closely relates to our analysis of selection processes in the present chapter than does the literature on informal payments. Corruption in drug regulation appears to have a different etiology from corruption in medical treatment. It is less about providing efficient bilateral 'solutions' to parties faced with perverse administrative systems (administrative corruption), and more related to transacting in imperfect political 'markets'. Rather than contend in a transparent, regulated arena of political influence, commercial interests have built on the communist-era model of secret exchange networks. Regulatory capture ensures an acceptable flow of benefits to relevant business and government insiders, while squeezing potential competitors. The processes for selecting essential drugs appear susceptible to similar forms of manipulation, and the same seems to hold true for high-level drug tenders (for example, for

vertical programs run by health ministries). It is possible that this applies as well to hospital-level procurement, although the stakes are comparatively much lower at the level of the individual hospital. Here, drug suppliers would have much to gain by moving up the administrative chain to gain control over decisions at a 'wholesale' level – that is, the region or indeed the national level.

Pharmaceutical markets: competition and governance

Pharmaceuticals comprise a significant portion of healthcare expenditures worldwide. Publicly funded healthcare systems, through drug policies and prescription benefits, regulate (if not allocate) pharmaceutical product markets. This is true whether government pays for drugs all the time or only some of the time. Thus, an obvious inducement towards corruption in pharmaceutical systems is the monopoly control exercised by a group of officials over the entry of products into the publicly financed market. From this many things follow – including large investments by firms in advertising and lobbying and intense pressure on the selection processes.

The pharmaceutical industry operates on the basis of oligopolistic competition – with a small number of large firms coexisting, and even cooperating, in the broad market, but with sometimes fierce competition in particular submarkets (for example, families of drugs, treatment for particular categories of conditions, generics). The decline in the pace of innovation, along with rising costs of drug development, produced a spate of mergers and acquisitions in the pharmaceutical industry beginning in the 1980s. Other features of the market include price inelasticity and information constraints. These arise from the privileged position of the physician as prescriber, the fact that the industry has better information about its drugs than the government, and the irrelevance of price to many patients in those countries with third party payment systems (McIntyre 1999).⁴ In the US, moreover, the growing predominance of volume bidding (for example, by Health Maintenance Organizations (HMOs) and pharmacy benefit managers) for prescription drugs has raised new antitrust concerns about price coordination among drug firms and vertical integration or exclusive dealing arrangements in the supply chain (Levy 1999). This reinforces tendencies toward industry 'capture' of regulators, as well as the intermingling of commercial and political interests.

Although much pharmaceutical research has been done by governments and universities, the production of drugs is largely in the hands of corporations. For companies, getting established or defending a position in the market is of all-consuming importance. Gaining a share of the huge markets (for example, \$200 billion per year for prescription drugs in the US) requires tremendous capital outlays for a combination of research and

development on innovative drugs (although the amount invested in R&D is often exaggerated), marketing to physicians, and influence activities aimed at policy makers and medical associations. In recent years, drug companies in the US have also unleashed a wave of advertising aimed directly at patients – especially the elderly, known to be an exceptionally demanding and politically mobilized cohort when it comes to health issues (Angell 2004).

Once a drug is established, patent protections and stable demand can make it hugely profitable for many years – with marginal costs of production being extremely low. Little wonder, then, that drug companies focus heavily on developing patentable variants of existing ‘blockbuster’ drugs so as, in effect, to extend the life of their pharmaceuticals beyond patent expiry. This is the phenomenon of ‘me too’ drugs (*ibid.*).

Pharmaceutical marketing practices have become embedded at several points in medical research and practice. One practice that has elicited increasing concern is pharmaceutical company sponsorship of drug trials, medical journal articles,⁵ physician conferences, and other scientific and marketing events that can influence pharmaceutical prescription patterns. For example, a US researcher found that about half of the 44 drug effectiveness studies examined were sponsored by pharmaceutical companies. The company-sponsored studies were eight times less likely to reach unfavorable conclusions – due in part to contractual restrictions on methodologies used, and company control over the release of research findings (Krimsky 2003).

Drug producers’ influence extends from physicians and pharmaceutical researchers to government agencies charged with the vetting and approval of drugs. In this area, worrying findings were reported in a study of Food and Drug Administration (FDA) advisory committees in the US. Of 159 meetings of these panels examined between 1998 and 2000, nearly all involved members with financial interests in the subject matter. At half of the meetings, fully one-half of committee members had financial interests in the pharmaceutical products being evaluated (despite ethics regulations aimed at preventing persons with financial interests from participating in such decisions). Many committee members with conflicts of interest had been given legal waivers (*ibid.*).⁶

In developing and transition countries, the situation is in many ways significantly worse. Clinical trials and cost-effectiveness studies may be unaffordable, and so authorities may rely on studies done elsewhere. Training opportunities for physicians are often so limited that pharmaceutical companies provide essentially the only continuing education that qualified physicians receive (McIntyre 1999). Further, physician salary levels are typically paltry; thus doctors are likely to be more susceptible to

commercial influence. International trade liberalization, which brings important economic benefits overall, is often not matched by effective domestic policy frameworks to ensure that drug expenditures reflect health priorities. In the absence of comprehensive national drug policies, there is little to stop commercial incentives – favoring the sale of expensive innovative drugs, including ‘me too’ products – from crowding out medicines likely to be more cost effective in developing country circumstances (Chowdhury 1995; McIntyre 1999).

A countervailing influence is the existence of a local pharmaceutical industry. This is more typical of the larger and middle-income developing countries (for example, Brazil, India) as well as the transition region (Bulgaria, Romania), and less so of the poorest countries (for example, Malawi). The existence of domestic production provides some pressure – both in the markets and at the political level – for greater use of domestic products, which are predominantly low-cost generics.⁷ These counterpressures can bring about greater balance in drug policies, but they also pose their own risks of rent seeking, policy distortion and corruption.

Analytical approach and methodology

Drug selection is a regulatory process (usually centralized) by which government implements essential drugs policy through the listing of drugs to be procured or reimbursed by public sector agencies and by state-financed healthcare units. The process is a hybrid. It bears some similarity to licensing or regulatory approval, on the one hand, and certain procurement processes (for example, pre-qualification or indefinite quantity contracts) on the other. The selection committees act as gatekeepers, deciding which drugs will be admitted to this state-financed market. In principle, they make their choices based not on competitive bidding but on the basis of objective criteria concerning essential drugs, pharmaco-economics and cost.

Thus, prior to sales, drug companies must deal with a sequence of control points, that is, agencies and committees with a monopoly of authority over drug approval, pricing, selection and reimbursement. With respect to the structure and incentives of these bodies, the core economic literature on corruption (see Rose-Ackerman 1978; Klitgaard 1988) stresses the importance of monopoly power, discretion and transparency obligations on the part of such administrative and policy-making bodies. The selection committees, like old-style foreign investment regulators, control access to potentially large national markets for drug supply to government-financed healthcare providers and their patients.

Monopoly power attracts market players eager to capture control or to influence decisions – if necessary by bribery and other illicit means. This appears to be a risk inherent in pharmaceutical approval and supply systems,

one that can be addressed institutionally through hierarchical review (for example, appeal to the courts), enhanced transparency and accountability, process streamlining and other preventive measures. The amount of 'slack' in such systems appears to vary considerably – one could, for example, compare the regulatory processes in the Russian regions discussed in Vacroux (2004) with the minutely designed and carefully monitored processes of the US FDA. However, the scramble for profits is sufficiently intense that, coupled with the ingenuity of pharmaceutical companies in finding new forms of influence (see Krinsky 2003), it can at times overcome the strongest integrity systems. Thus, as we argue below, while institutional integrity factors are critical, they are not the whole story – the analysis needs to bring in broader considerations of market structure and political economy.

Once past the selection hurdles, firms with listed drugs can then bid for sales to government and to hospitals in Bulgaria's national health insurance system – and these processes are competitive. In fact, drug producers do not typically deal directly with procurements. This is usually handled by agents – distribution companies – that market several products, often from multiple producers. The distributors have varied relationships with the producers, some more arm's length than others, but the incentives of the distributors to earn sales commissions appear largely the same. The biggest difference is between regional and Bulgarian firms and their distributors, on the one hand, and multinationals and their distributors on the other. The former derive a larger share of their income from sales in Bulgaria and thus have a stronger motivation to retain a significant share of that market.

The use of independent agents can change the dynamics. Distributors – at least those that are not owned or closely affiliated with a given producer – are intermediaries. In markets characterized by corruption, intermediaries have an incentive to magnify the complexity and criminality of the processes that they manage on behalf of their principals in order to justify high commissions (see Wade 1982).⁸ At the same time, the distributors are under pressure to win sales.

Our analysis of research data deals principally with outcomes and with aspects of institutional integrity, and to a lesser extent with corruption 'drivers'. We assess each of these and examine relationships between them in order to determine the extent and genesis of corruption in the system, and to make recommendations to policy makers and donor agencies. The logic of the analysis is as follows: political-economic drivers – such as the pressure by public and private actors to capture control of the large state-financed portion of the Bulgarian pharmaceutical market⁹ – lead to undesirable outcomes, such as corruption and the attendant distortion of selection and procurement decisions, in the presence of low integrity (high vulnerability) in the relevant institutional arrangements.

The three components (drivers, outcomes, integrity) necessitate an array of methodologies. Our findings are mainly based on interview responses, responses to official information requests under the Access to Public Information Act (APIA), and other data and documents. The interviews included initial ‘key informant’ interviews for background, as well as some 30 structured interviews with officials and firms, primarily on issues of institutional integrity (see below). We also draw on findings from a survey of 148 hospitals (out of 236 medical institutions in Bulgaria) conducted by the IRIS Center (Center for Institutional Reform and the Informal Sector, University of Maryland) and its Bulgarian partners. The respondents at the hospitals included doctors, nurses, pharmacists, members of tender evaluation committees, hospital directors and suppliers. The survey and its results are reported separately in Meagher et al. (2005).

Further information, particularly on drivers and process outcomes, came from a ‘media analysis’ conducted by our Bulgarian research partner (Sacheva 2004). This involved a review of Bulgarian media reports on drug selection and marketing practices during the 12 months from mid-2003 to mid-2004, with a smaller follow-up review covering the rest of 2004. The review covered more than 5,000 media reports, including coverage of several scandals in the pharmaceutical system. Last, we solicited an analysis by a pharmacy expert of two drug selection outcomes that are likely to be affected by corruption: the technical soundness of drug choices, and reimbursement price levels set by the NHIF.

The emphasis on qualitative methodology was dictated by the nature of the central listing processes. They are few in number and involve a finite group of officials, experts and drug companies. Thus, no statistically valid survey was feasible, and a flexible approach was necessary in order to collect information from persons who might not agree to respond to a questionnaire. There are further complications. In the selection processes, it is a question of capture or grand corruption. There would be serious legal, political and personal consequences for anyone implicated (as contrasted with low-level bribery, which is often tolerated). Thus, reticence is a serious concern that we tried to mitigate in the interviews (mainly through the ordering and wording of questions).

2. Drug selection in Bulgaria

Drugs comprise a large and growing share of Bulgarian healthcare expenditure. They account for some 25–30 percent of government healthcare costs. In turn, the public sector plays a major role in the pharmaceutical market: public expenditure accounts for some 74 percent of total drug expenditure. The overall market for medicines in Bulgaria was estimated at US\$373 million for 2002, including \$276 million for government

expenditure on drugs. The NHIF accounts for 60 percent of total state expenditure on drugs (Grace 2003).

The market for medicinal drugs in Bulgaria reflects the overall transition in economic and healthcare management. As government has reduced its role in the economy since the change of regime in 1989, it has also restructured the healthcare system to bring market forces to bear. Healthcare reform started slowly but gathered speed after the financial crisis and alternation of governments in 1997.

Bulgaria has moved from a pure state-provided healthcare system (the Soviet *Semashko* model) to a mixed arrangement in which private provision and private insurers are legalized, but the bulk of healthcare is still financed (if not provided) by the state. This system includes health facilities such as hospitals and medical practices with mixed private and government ownership, earning revenue based on their provision of services. Patient exams and medical procedures are compensated according to the terms of the National Framework Contract (NFC). Increasingly, funding for this system comes from the compulsory social insurance system, although the state and the lower-level governments continue to subsidize hospitals and to supply certain categories of drugs and equipment. Bulgarian public health expenditures were estimated at 3.6 percent of GDP in 2000, with unofficial estimates of overall health expenditures ranging from 4.4 to 5.1 percent of GDP, and the public sector's share of overall spending estimated by the World Health Organization (WHO) at 82 percent for 1997 (Koulaksazov et al. 2003).¹⁰

Health sector reform has captured significant public and governmental attention in Bulgaria since the late 1990s.¹¹ A new health policy was adopted in the Law on National Health of 2002. This introduced major changes, many of which only began to be implemented in 2004. For example, the reforms introduced free choice: patients can now go to hospitals, physicians and pharmacies anywhere in Bulgaria. Also, to date, Bulgaria has had no reliable, evidence-based costing method, although it is moving in this direction.¹²

Within this overall structure, medicines are provided to patients in four main ways: (i) direct state provision of free drugs for defined categories of patients and diseases; (ii) supply of in-patient medicines by hospitals (as part of free or co-paid treatment); (iii) reimbursement, in whole or in part, of out-patient prescription drugs by the NHIF; and (iv) private sales, whether of formally registered or grey-market pharmaceuticals. In all of these cases, market access and competition by drug producers have an important role. In the first two categories, producers and distributors reach the patient by means of public tenders. In the third case there are three competitive thresholds involved in reaching the patient: placement on drugs

lists; contracting and price negotiations between distributors and retailers on the one hand, and the NHIF on the other; and marketing of the product to doctors and patients across Bulgaria.

Getting drugs to market: initial hurdles

While our focus is on the central government drug selection processes, those selections occur mid-way along the route from the producer to the patient (see Figure 19.1 for an overview of the process).

Market authorization This first step – the equivalent of what the FDA does in the US – certifies the quality, efficacy and safety of pharmaceuticals entering the Bulgarian market. As of late 2002, Bulgaria allowed 4,475 drugs to be sold on its market.¹³ Drug producers who have dealt with the Bulgarian Drug Agency (BDA) report that its procedures are generally up to European Union (EU) standards, but that stated timetables are often not adhered to, that the paperwork burden is heavy (requiring dossiers of 50,000 pages), and that the agency has insufficient staff.

Price controls The second step for any drug to be sold in Bulgaria is entry into the price regulation system. Price controls are decided by a Price Commission appointed by the Ministry of Health (MOH), and including representatives of MOH, the NHIF, the BDA, and the Finance Ministry. The Commission deals with *all* pharmaceuticals, whether publicly financed or not, and whether prescription or over-the-counter (OTC).¹⁴ These controls set ceiling prices within which actual sale prices are subject to competition and negotiation. Prescription drug prices are considered more carefully. The Commission fixes them at the level of the lowest price existing within the 45 member countries of the Council of Europe. This process is officially required to be completed within 50 days, but is typically said to last about six months. The Commission has a continuing responsibility to monitor prices in the marketplace. These procedures are widely viewed as too cumbersome, and it is worth emphasizing that these procedures cannot begin until *after* authorization by the BDA.

Central selection processes

The *Positive Drug List* (PDL) designates all drugs considered essential for the healthcare system, in the light of Bulgaria's health profile and needs. All medicines used in state-financed health facilities and programs, or covered in whole or in part by the National Health Insurance system, must be on the PDL. The Commission on the Positive Drug List (CPDL) operates under a broad mandate to list drugs consistent with the effective implementation of healthcare policy – while leaving it to the NHIF to determine

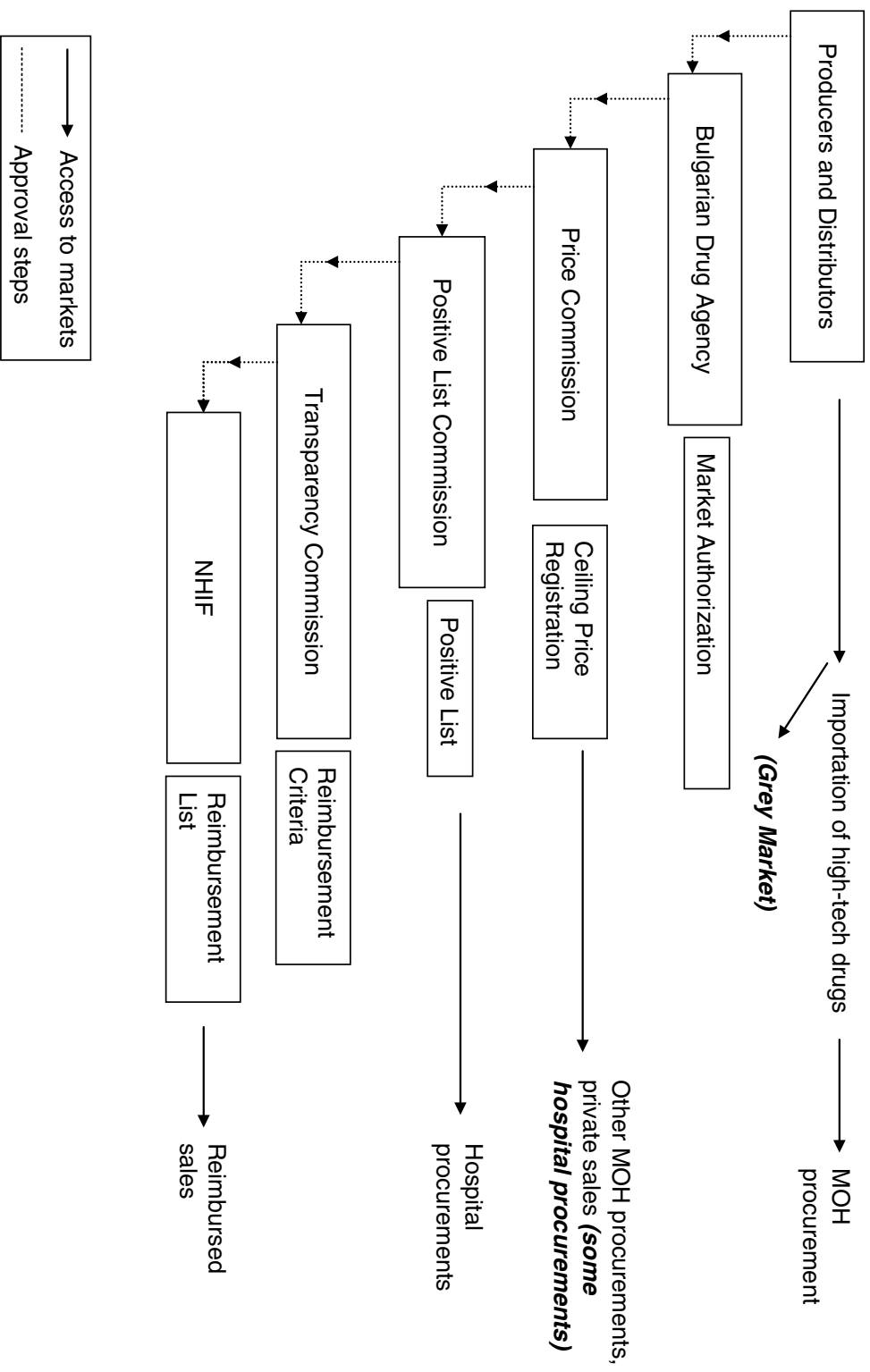


Figure 19.1 Getting drugs to market

which drugs it can afford to reimburse, in the form of a separate Reimbursement List (see below). Somewhat unusually, the PDL contains brand names, both those justified as having no effective generic equivalent, and those found to be useful on pharmaco-economic grounds.

The PDL selection process is as follows. The list is compiled by the independent CPDL. The Commission should have 13 members. A supermajority vote of the Commission is required to include a drug on the list.¹⁵ These votes are subject to approval by the minister of health.¹⁶ We analyze this and the other selection procedures in more depth later on in the chapter.

The *NHIF Reimbursement List* designates a subset of drugs on the PDL – all of them for outpatient use – as those that the NHIF will reimburse, in whole or in part. The process of compiling this list is less transparent – and time-bound – than the PDL process (PPR 2004). The NHIF covers an increasing portion of all healthcare system costs, including those for hospitals (see Meagher 2004).

The NHIF used an ad hoc list up until 2004, when it formalized its process of compiling and updating the list.¹⁷ The Fund's rules envisage the appointment of an internal commission to handle the key processes such as setting selection criteria and negotiating with suppliers. The NHIF proposed a set of reimbursement criteria in early 2004, and these were reviewed by an organ of the Council of Ministers known as the Transparency Commission. At that time, no draft was published (based on the view that the rules were discretionary). However, unofficial copies circulated, and eventually the criteria were incorporated into a formal regulation.¹⁸ Once this regulation was approved, the NHIF could then develop the list, based on the content of previous lists, proposals from the pharmaceutical companies, and the NHIF's own information.

A few other lists exist, notably the *Ministry of Health Expensive Drugs List*, which provides drugs for the treatment of 13 high-priority diseases and conditions, including HIV, cancer, and kidney conditions requiring dialysis. The cost of these drugs is fully covered by the national budget. The applicable regulation¹⁹ deals with the methods of prescribing and dispensing the drugs at the hospitals, but does not define procedures or standards for the selection of drugs on the list. The present list was created by an internal MOH working group, comprised of experts and administrators appointed by the minister.²⁰ In 2003, the MOH procured an estimated US\$60 million in medicines for the expensive drugs program.²¹

Distribution and procurement

The selection procedures are linked ultimately to procurements and prescription sales. The competitive incentive for a company to have its products treated more favorably than others thus begins with BDA authorization and

runs through the other central processes, and then down to the hospitals, physicians, pharmacies and patients. As one moves down the system, other concerns also enter the picture. These include, for example, doctors' incentives to defraud the NHIF, and the risk that hospital staff might waste or misuse drug supplies. The last two steps in getting medicines to the patient – distribution and procurement – are not sequential but parallel. Further, pharmaceuticals sold privately need not be on the Positive List – in fact, out-of-pocket, non-reimbursed sales are said to account for the bulk of the market in Bulgaria (Koulaksazov et al. 2003).

At the retail level, pharmacies are licensed by the MOH and inspected by the NHIF and the BDA. Pharmacists get licenses in specific locations, and pharmacies apply annually to contract with NHIF to supply reimbursable drugs. New pharmacies need contracts with wholesalers in order to sell NHIF-reimbursed drugs. Up to half of Bulgarian pharmacies belong to a chain, most of them controlled by wholesalers. Harsh price competition among pharmacies (within the ceiling prices) puts pressure on smaller retailers to cut corners and to sell on the grey market.²² It is also commonly reported that people may buy almost anything in a pharmacy without a prescription.

Hospitals procure drugs for in-patient treatment, using a combination of government subsidies and (increasingly) NHIF payments for 'clinical paths' to cover the cost. The medicines procured are listed on hospital formularies, which must in turn be selected from the PDL (unless the hospital operates outside the national health insurance system). The NFC lists in an annex the diseases for which the various medicines can be prescribed, and the clinical paths specify (among other things) the categories of drugs to be used in particular treatments. To meet their pharmaceutical needs, hospitals let tenders according to the regulations in the Public Procurement Law, and Ministry of Finance (MOF) auditors vet the procurements.

The procurement process is usually conducted for each calendar year. A list of the medicines and quantities needed are drafted into tender documents, which are signed by the director and published in the State Gazette and at least one daily newspaper, as well as sent to the public register. By law, hospitals must appoint an evaluation commission for reviewing the bids. External experts are allowed, as is remuneration of members. From the supplier side, the procurement process includes reviewing the tender documents, which must be purchased from the hospital, and gathering an enormous amount of paperwork. Key informant interviews suggest that the process is very time intensive and tedious, and also something of a gamble. Bidders may appeal decisions within seven days after the decision is announced through the hospital. Evaluation is based primarily on the supplier's price, but can also include payment terms and delivery schedules.

Systemic pressures and opportunities

In Bulgaria, market and political pressures combine to create significant risks for the governance of the pharmaceutical system. This is borne out in media reports²³ and in our interview findings. An example of the dangers is discussed in Box 19.1.

Pharmaceutical producers and wholesalers aggressively market their goods. Drug company representatives operate in major Bulgarian cities. The companies use physicians as their representatives, and as in the West, they sponsor medical seminars at resorts. They use city hall and other official venues to promote their goods. Producers often diversify their product outlets by using multiple distributors. Exclusive distributorships are offered in return for the wholesalers' promises to get the producers' goods onto the central drug lists and into the hospitals (with no questions asked).²⁴

BOX 19.1 BULGARIAN DRUG SALES: SHELL COMPANIES AND MORAL HAZARD

The media have reported a number of fraudulent competitive practices that throw the system's integrity into question. In one scheme, a group of fictitious distribution companies submitted fraudulent low bids (that is, bids that could only have produced losses if accepted) in drug tenders. When the bidding was won by legitimate companies, the promoters of the shell companies filed protests with the aim of harassing the winning companies into accepting out-of-court settlements in order to avoid delays and lost sales (Sacheva 2004).

Additional concerns arise from the economic uncertainties and hazy business–government relations typical of transition. For example, Magined, a Bulgarian drug supplier, became insolvent and was found to have evaded over 9 million BGN* in value-added tax (VAT). Investigations revealed that Magined owed some €10 million to drug manufacturers, and in turn it was owed some 10 million BGN by various healthcare institutions (probably impecunious hospitals) in Bulgaria. The company held an estimated 28 percent share of government procurement orders for pharmaceuticals when it became insolvent. It had essentially no assets, since it depended entirely on government funding (and, allegedly, high-level official contacts) for its sales, and defrauded its creditors, notably the government (ibid.). This presents a messy work-out situation in which the government and the producers will have to compete for repayment by an insolvent company and a group of

healthcare institutions that are at least cash-poor, and probably insolvent.

Meanwhile, another major Bulgarian drug distributor, Commercial League, is demanding payment of arrears from its client hospitals (*ibid.*). Typically, the hospitals lack the means to pay – but their failure to pay poses the risk of insolvency to the over exposed distributor. In both the Magined and Commercial League cases, the government faces the possible failure and liquidation of some combination of hospitals and major domestic supplier firms – unless government conforms to past practice by offering a bailout. This result would likely go against the long-term public interest, but the short-term pressure to provide a bailout is intense – given the ‘too-big-to-fail’ scenario, and its public fallout. Unlike the first example above, these cases have not been shown to involve fraud or corruption, but there remains the distinct possibility that the companies (Magined in particular) have abused their position as wholesalers of state-financed drugs.

Note: *BGN = Bulgarian lev, US\$1 = 1.46 BGN.

International trade policy has become a focus of drug industry lobbying. Foreign firms formed associations to press for lower trade barriers and stronger intellectual property protections, and the relevant diplomatic missions got involved. Bulgaria’s generic drug producers have lobbied aggressively for favorable market access for themselves. Meanwhile, smuggling and counterfeiting are said to be rife. Bulgaria is harmonizing its pharmaceutical-related legislation and procedures with EU standards (although the delivery of healthcare in general is not subject to EU directives). The harmonization process has significant costs.²⁵

The run-up to EU accession can be expected to intensify competitive pressures. Bulgarian producers face special pressure because the phase-in of international quality standards is increasing the costs of production and imposing tough scrutiny on remaining production units. Bulgaria has also extended its 20 percent VAT to all sales of drugs and medical supplies. Supporters of this move hoped, among other things, that requiring VAT receipts for all medicines would level the playing-field for imports and domestic sales, thereby helping reduce smuggling, counterfeiting and illegal re-export.

The governance of hospitals – which has a strong impact on drug procurement processes – appears to be a weak link. In general terms, corruption surveys from 2003 (Coalition 2000; Vitosha 2003) show physicians and

healthcare to be among the five most corrupt categories of officials and sectors.²⁶ Research on Bulgarian hospitals (reported in Meagher et al. 2005) affirmed the presence of some of the same informal and corrupt practices documented in other transition and developing countries, such as gratuities given by patients to doctors and hospital staff. Focus groups discussed patients' providing 'gifts' or 'donations' in order to get scheduled for surgery or to get care sooner, or paying doctors or 'authorized' hospital staff to get treatment or to get medicine that they are otherwise told is unavailable.²⁷ In surveys, doctors were asked how many doctors in their hospital request informal payments from patients – to which 42 percent responded that none do, 27 percent very few, and the rest (12 percent) some, most or all do so. Asked the same question, 44 percent of nurses said none and 36 percent said very few, while the rest said some or all do (19 percent).

Governance at the hospital level is shaped by overall health sector administration and oversight. Since the health system reforms of the late 1990s, some health facilities continue under full state control. Hospitals are required to be incorporated; a few are privately owned, while a majority have a mix of state, municipal and private ownership. They are administered by a manager or board of directors (depending on corporate form), and the latter appoints the doctors and other personnel. Increasingly, the bulk of (formal) hospital revenue comes from NHIF payment for documented treatments according to 'clinical paths' (and the newer 'diagnosis-related groups'). NHIF funding to the hospitals is disbursed and controlled by the network of regional health insurance funds. Additional oversight is provided by inspectorates at the MOF and the MoH.²⁸

Up to 2004, the hospitals typically ran large deficits, which were covered not by the municipalities that owned the largest share of hospitals, but by subsidies from the MOH. Indeed, municipalities and hospitals reported lobbying for these subsidies. Several explanations of the funding shortfalls are possible, including the political imperative for municipalities to keep excess medical facilities running (resulting in a high ratio of hospital beds to population across most of Bulgaria), and waste in hospital operations. This arrangement of ownership and financial control appears to discourage hospitals (and municipalities) from maintaining tight expenditure discipline, including in the procurement area. There have, however, been a few initial attempts by municipalities to exercise stronger oversight (Semerdjiev 2003; Meagher 2004).

3. Selection process outcomes

We now turn to a review of key results that the Bulgarian pharmaceutical system produces. We are concerned with such issues as appropriate drug choices and procurements, whether prices are in line with the regional

market, the integrity of the procedures in practice, and the prevalence of conflicts of interest and corruption.

Appropriate drug selections

We evaluate drug choices generally on the basis of the ‘essential drugs’ concept developed by the World Health Organization (WHO) as a component of primary healthcare (see Box 19.2). A test of the appropriateness of an essential drugs list would be its conformity with these principles,

BOX 19.2 WHO: ESSENTIAL DRUGS

The WHO Essential Drug Program was launched in 1977 as one of the pillars of the WHO’s Primary Health Care Strategy. The Essential Medicines List is a list of drugs deemed to be necessary for the safe and effective treatment of the majority of communicable and non-communicable diseases that affect the world’s population. An essential drug must, in addition, be available in a stable and easily managed form, and made with only one active ingredient (unless there is a compelling reason). The drugs on the list are selected with due regard to disease prevalence, evidence regarding safety and efficacy and comparative cost effectiveness. The list is intended to serve as a model (in other words, a baseline) for individual countries to adapt to their particular needs. An expert panel reviews the list every two years, incorporating therapeutic advances, and changes in disease prevalence. The first Essential Drug List included 208 drugs, whereas the 13th list, published in 2003, lists 316 individual medicines including 12 anti-retroviral agents.

Given the differing epidemiological profiles of countries around the world, deviations from the WHO list may be justified but need to be explained openly and transparently. A number of past studies have compared drug purchases in developing countries to the WHO or other formularies. For example, a study in Bangladesh estimated that some 70 percent of annual drug sales were for preparations deemed therapeutically useless by drug approval authorities in the UK and the US. Another study compared medications sold in developing countries to the WHO list. Only 16 percent of drugs sold by the 20 largest European pharmaceutical companies in 49 countries were deemed essential (Patel 1983 and Hartog 1993 studies, cited in McIntyre 1999).

embodied in the WHO Model List of Essential Drugs. In the case of Bulgaria, we have compared the three government lists (NHIF, MOH and PDL) to the WHO list, keeping in mind the different purposes of the lists.²⁹

The objective of analyzing drug choices is not to second-guess policy decisions made in good faith. Rather, it is to highlight choices that are seemingly irrational or inefficient – like statistical outliers. The presence of such decisions would lead us to expect distortions in the drug selection process that suggest the possibility of corruption. We would not expect this analysis to prove the existence of particular corrupt acts, or of corruption more generally. Many of the drug selections are clearly justified in the light of rational drug policy – but others are not. Problematic choices fit into two categories: under and overinclusion.

Cases of *underinclusion* involve the selection of newer (usually more expensive) pharmaceutical agents to the exclusion of older agents that remain cost effective in many situations (and continue to be recommended by the WHO). An example of this is the inclusion in the PDL of the antibiotics clarithromycin and azithromycin but not erythromycin – a long-standing first-line treatment for pneumonia and pathogens that cause other respiratory infections and some soft tissue infections. Normally, one would expect an essential drug list to also include erythromycin, the prototype medicine of its class (macrolide antibiotics), since it remains a useful, relatively low-cost, and cost-effective antibacterial agent. Another questioned choice is the inclusion of medium and high potency corticosteroids but not the (relatively inexpensive) compounds indicated for first-line treatment. Such choices seem to cut against the policy objective of cost effectiveness.³⁰

Cases of *over-inclusion* involve two scenarios. One is the selection of compounds that are deemed by international medical opinion to have only questionable efficacy (and do not appear on the WHO list), of which there are a few on the PDL. The other is listing a large number of alternative compounds within a given therapeutic drug category. Examples include the appearance on the PDL (and in some instances the NHIF list) of multiple brands of statins (five), ACE inhibitors (seven),³¹ enalapril and others. The NHIF list also includes eight brands of ibuprofen (and includes some medicines that can only be administered in a hospital setting, contrary to its outpatient function).

The inclusion of alternatives is often sensible in the light of differences in response across patients. However, a long list of alternatives (even if ranked by pharmaco-economic criteria) seems to defeat the policy objectives of having a *selection* process to begin with – that is, limiting choices so as to provide essential drugs cost effectively.³² Where multiple brand names can be listed, the system appears insufficiently disciplined. It practically

invites lobbying by pharmaceutical interests, especially since the PDL and the NHIF list essentially ‘license’ the sale of a drug within the publicly funded healthcare system.

Setting prices in the selection process

Governments globally are dealing with rising pharmaceutical costs and typically have regulations in this area (for example, reference pricing systems (Germany), international comparisons (Canada) and caps on profits (United Kingdom)). The Bulgarian media placed major emphasis on drug costs in 2003–04, with most stories reporting that Bulgarians paid higher prices for medicines than did patients in several West European countries, notably Germany.

At the same time, there were many media reports about budget shortfalls at the NHIF and the MOH, caused by large increases in drug expenditures (a staggering 180 percent over 4 years), and the consequent attempts by those agencies to put downward pressure on drug prices (Sacheva 2004). With funds running low due to inadequate budgeting and forecasting, the NHIF in mid-2003 withdrew over 48 million BGN from its reserve fund (kept at the central bank as part of the state fiscal reserve), in addition to tapping its emergency reserves.³³ Adding to this fiscal complexity, the NHIF in mid-2004 reported that ‘unregulated payments to the healthcare system’ equaled the total annual healthcare budget of 1.6 billion BGN for that year.³⁴

Is Bulgaria making cost-effective choices and controlling its drug costs? An important dimension of this is the prices paid per unit of medicine. We used international price comparisons in order to test whether prices were within a reasonable range.³⁵ We compared NHIF reimbursement prices for 2005 with those of five out of the eight countries for which the NHIF is required to conduct its own comparisons in order to set prices.³⁶ The NHIF sets a reference price based on the lowest acceptable bid from applicant firms, and then determines the maximum reimbursement by selecting the lower of (a) the reimbursement price used by the NHIF in the previous year or (b) the average price covered by public health funds in eight comparator countries. Bulgarian researchers initially chose a set of 20 international non-proprietary names (INNs) to use for both the international comparison and our parallel study of procurement prices paid by Bulgarian hospitals. Of these, seven appeared on lists in both Bulgaria and other countries in our group of five. This sample is not scientific but indicative.

We took the average cross-country differential in the price of each drug in our sample that appeared on both the NHIF list and equivalent lists in our comparator countries. Drugs in Poland and Slovenia appear quite expensive in comparison to Bulgaria – although these differences would

Table 19.1 International price comparison

Comparison country (number of brand name products)	Average price differential <i>vis-à-vis</i> Bulgaria %
Czech Republic (7)	–23
Poland (11)	+ 56.6
Romania (7)	–78.5
Slovakia (9)	–8
Slovenia (5)	+ 113.6

diminish if we accounted for higher per capita incomes in those countries. The others are quite cheap in comparison to Bulgaria (cheaper still if per capita income were taken into account). These results are consistent with the view that Bulgaria pays relatively high prices for drugs.³⁷ A summary of findings from this price comparison appears in Table 19.1.

Several possible explanations have been offered for relatively high drug prices in Bulgaria. The domestic market is relatively small (population approximately 8 million), and the Law on Drugs (Art. 4) requires medicines to have labels and leaflets in the Bulgarian language (there is said to be a phase-in for new products). On the other hand, drugs do not appear to be produced or imported in batches tailored to this market – indeed, standard packet sizes are cited as a problem for pharmacists. Thus, it is questionable whether a fixed costs–small volume rationale applies. Several interviewees suggested, alternatively, that corruption in the regulatory process raises prices. One analysis suggests that Bulgaria's high drug costs and rapid price increases are due to the absence of mechanisms to discipline spending such as exist elsewhere – for example, fixed budgets, prescription guidelines, and regular prescription audits. Unpredictability in the MOH tendering and NHIF negotiation processes may also drive up prices, as suppliers seek to offset risks (Grace 2003).

We also looked at price differences within Bulgaria, between the NHIF lists of 2004 and 2005. The 2005 list was the first one compiled using new standards and procedures developed in 2004. Of the 17 products that appear on both lists (name brands within the seven INNs mentioned above), nine stayed the same in price, one (an imported drug) increased in price (by 5.5 percent), and seven saw reductions – by an average of 29 percent. Of the latter group of seven drugs, six were produced by Bulgarian firms. This suggests that the new procedures for the NHIF list are constraining prices. But only the prices of domestic products show signs of being limited – and there is little evidence that Bulgaria is controlling overall drug expenditures more effectively than in previous years.

Governance of selection processes

Bulgaria's PDL, introduced in late 2003, provoked intense controversy. The NHIF's practice had been to compile a single reimbursement list, including a large number of brand-name drugs (instead of listing only INNs). The first PDL carried over much of what had been on previous lists, but some 280 brand names were dropped. Complaints and lawsuits ensued, with foreign companies crying foul, pointing out that 90 percent of the de-listed drugs were imported. The current list still contains brand names, both those justified as having no effective generic equivalent, and those found to be useful on pharmaco-economic grounds (Decree no. 81, 2003). Inclusion of brand names encouraged one kind of suspicion (drug companies cultivating access), while the purging provoked another kind of outrage (different risks and effectiveness levels of the generics as compared to the previously listed brand names). There apparently have been conflicts between the MOH and the NHIF over what should be included in, or eliminated from, the PDL. Patients' rights groups organized protests, while the foreign producers accused government of distorting competition in favor of local firms (www.capital.bg/weekly, various issues, 2003–04).

In addition to these substantive criticisms, there have been many concerns raised about the process of constructing the PDL by the relevant Commission. Suspicions have been raised about the influence of lobbying and conflicts of interest in the CPDL – with the relative ease of organizing a veto in the Commission providing much of the incentive for those seeking influence (Grace 2003).³⁸ The Ordinance on the Positive List (Decree 81 of 8 April 2003) specifies the use of pharmaco-economic criteria in the PDL deliberations. Most observers of the PDL process, including many in government, suggest that the Commission has no expertise in PE analysis, and that the basis of its deliberations in this area is unscientific and vague – in addition to being secret. The criticisms suggest that drug policy is being developed on an unsound basis. Further, discretion and non-transparency in decision making are said to be permitting more scope for the exercise of personal and political influence than is ideal.

In Bulgaria, corruption in the healthcare and pharmaceutical systems is often reported and lamented – in the media and in private conversations. The media leveled a host of accusations against the NHIF and the MOH in 2003–04. Official inquiries have been conducted in some of these cases, including investigations by the Parliamentary Commission against Corruption.³⁹ One of the most sensational allegations was that the then-minister of health served as representative for a foreign drug company in private pharmaceutical deals. Another report suggested that NHIF officials helped arrange exclusive distributorships for particular imported drugs. According to the report, these officials essentially promised the producers slots on the 'free' list (that is,

the drugs reimbursed 100 percent by the NHIF) in return for their agreeing to the exclusive arrangements. In a third case, the ex-director of the NHIF alleged that a Bulgarian drug company and the plurality party in parliament colluded to secure his dismissal. After his departure, according to the report, the value of new tenders won by that company increased by about 60 percent.

Lastly, a bid protest by the drug supplier Commercial League-National Pharma Center devolved into corruption accusations against the MOH early in 2005. The MOH justified its decision to disqualify the firm's bid – to supply drugs for the Expensive Drugs program – due to the omission of required documentation. Commercial League sued and won an injunction on implementation of the contract. It then released information on its investigation of the firm that won the tender, stating that the company had received its supplier license only a few weeks before the bidding – with the implication that it was a politically connected shell company (Sacheva 2004, 2005).

These reports, of course, do not amount to proof of the alleged behavior. They do, however, fit with other patterns of corruption that have been established or admitted, and those cited in some of our interviews. For example, the minister of health argued for a health insurance reform that would require larger co-payments – reasoning (among other things) that this would help reduce corruption in the system, including side-payments to physicians.⁴⁰ Also, in the first three quarters of 2003, nine MOH drug tenders were the subject of lawsuits – consistent with media reports that distributors reached private agreements to fix a high floor price for sale of these drugs to the MOH (Sacheva 2004). Some concerns are based on the government's own oversight reports. The Bulgarian media reported in 2003 that an audit of the NHIF expenditures in 2002 turned up irregularities – including a significant proportion of expenditures made without proper documentation, and nearly one-quarter of total drug expenditures directed to companies under four contracts that were not tendered, as they should have been, under the Public Procurement Act (Sacheva 2004).⁴¹

From selection to procurement

Here, we look a bit more closely at a further set of outcomes – the quality of governance in hospital procurement processes. These procurements must be made from hospital formularies derived from the PDL, hence they are closely linked to selection processes. Thus, procurements by the hospitals shed additional light on the stakes and results of selection. The data presented here are taken from Meagher et al. (2005).

Suppliers and pharmaceutical manufacturers' representatives in Bulgaria visit hospitals, often leaving samples or donations of medicines (a practice that appears to be common worldwide). Flagging a concern about possible undue influence here, the IRIS survey asked 'What is the

influence of the drug donations on procurement?'. The responses, summarized in Table 19.2, seem to justify the concern about influence.

Hospital officials were also asked the following questions:

- *Was the hospital fined for [making mistakes in procurement]?* One in four hospital directors said yes, whereas fewer than one in 10 (7.7 percent) of the evaluation committee members said yes.
- *In your opinion, how likely is it that a member of the evaluation committee is punished [as a result of being reported for taking] a bribe or an informal payment?* In a hospital with a high level of accountability, we would expect large numbers to say that it is very likely to happen or it definitely would happen. Six out of 10 (61.5 percent) hospital directors said it was very likely or would definitely happen, while 53 percent of evaluation committee members said the same, and fewer than half (47.4 percent) of pharmacists.
- *What is the most likely punishment for taking an informal payment from a drug distributor?* Answers covered a range of possibilities from arrest to no punishment. Interestingly, directors report a higher likelihood of dismissal and of the person merely being dropped from the next year's evaluation committee (see Table 19.3).

IRIS researchers constructed a corruption measure based on survey responses by doctors and nurses to questions about informal payments and influence related to hospital procurements.⁴² Doctors and nurses were asked: 'In your opinion, how often do the following receive informal payments or expensive gifts from distributors? . . . Evaluation committee members, Hospital directors, The hospital'. The answers were on a scale of 1 to 5 (Never–Rarely–Sometimes–Often–Always). They were also asked about the influence of the drug donations on procurement (see above). The data were subjected to consistency and reticence tests; then, a corruption index by hospital was constructed (see Meagher et al. 2005 for a description of the methodology). Figure 19.2 shows the corruption measures.

Table 19.2 Influence of drug donations on procurement

Amount of influence (%)	None	A little	Some	A lot	Enormous
Doctors	21.2	36.8	29.2	9.5	3.3
Nurses	26.8	30.3	28.9	10.7	3.3
Pharmacists	59.4	26.1	11.6	0.0	2.9

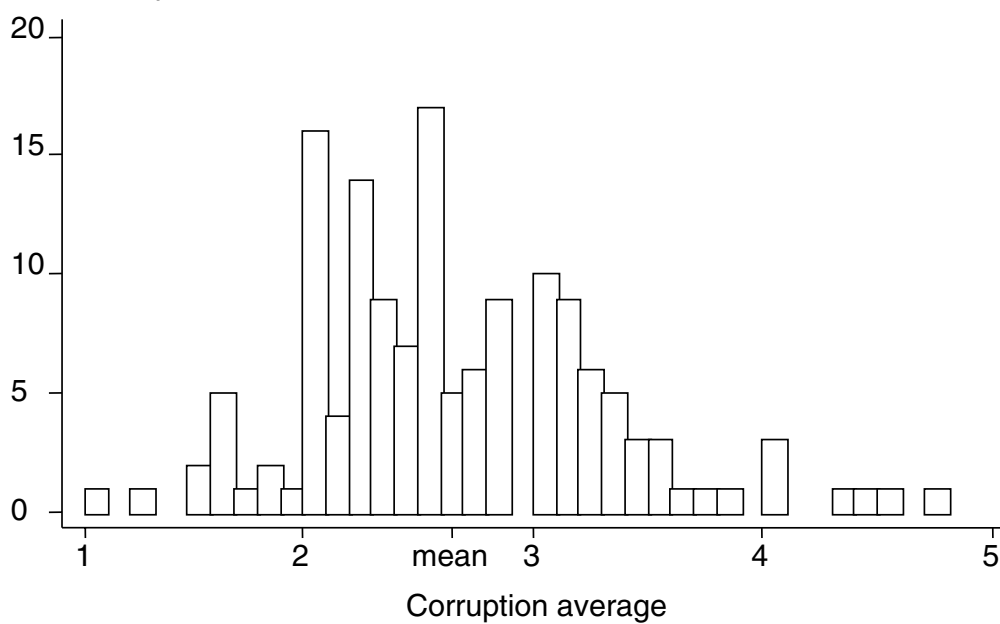
Source: Meagher et al. (2005).

Table 19.3 Likely punishment for taking an informal payment (% of respondents)

Possible punishments in decreasing order of punishment	Evaluation committee	Pharmacist	Hospital director
Arrest	2.8	0.0	2.4
Dismissal	24.8	27.3	40.0
Suspension	4.3	9.1	7.1
Demotion	2.8	3.6	7.1
Fined	7.5	7.3	5.9
Warning	18.5	32.7	7.1
Dropped from next year's committee	23.2	9.1	24.7
No punishment	5.1	5.5	1.2

Source: Meagher et al. (2005).

Number of hospitals



Note: Indicator values denote increasing severity on a scale of 1 to 5.

Source: Meagher et al. (2005).

Figure 19.2 Corruption indicator by hospital: non-reticent doctors and nurses

The survey responses just discussed seem to justify widespread concerns about corruption in drug procurements by Bulgarian hospitals. This links back to the selection processes, as it increases the overall sales that an unscrupulous operator can secure. Further, while government auditors cannot easily detect corruption in hospitals' procurements, they do seem to restrict hospitals largely to buying drugs that are on the PDL. Thus, corruption at the hospital level would tend to make getting a drug on the PDL especially profitable for the unscrupulous – and perhaps also for those who prefer not to inquire into the methods used by their local distributors.

4. Institutional analysis of selection processes

We now turn to the relationship between pressures and outcomes, on the one hand, and the institutional structure of the system on the other. We address this question through a close examination of those institutional arrangements, using the findings from our research on selection processes. We assess the integrity of the selection processes – conversely, their vulnerability to corruption. This analysis focuses mainly on the PDL and the Reimbursement List.⁴³ We address a series of specific questions about the selection processes, grouping them in three broad categories: transparency, accountability and prevention (of corruption) – the key components of institutional integrity in the anti-corruption literature.⁴⁴ We rate the responses to these questions on a four-point scale (poor, average, good, excellent), based on comparisons of Bulgaria's system with 'best' practice as set forth in international standards and the literature on healthcare administration.⁴⁵ These ratings are intended to be informative, indicating the likelihood of corruption, without necessarily being conclusive. (A table of questions and rankings on all the factors appears in Appendix 19A1.)

Our analysis of selection processes draws mainly on interviews and the documents applicable to these procedures (some published, some obtained through formal requests). In key informant interviews, those outside the selection processes frequently cited corruption as a major cause of concern. Our structured interviews of officials and firms were less candid. We posed questions about the integrity of selection decisions from several angles, including kinds of contacts between firms and selection officials, extent of political influence exercised in the process, persuasion tactics used by companies, and compliance with anti-bribery rules and sanctions. As appropriate, the interviewers followed up these questions by probing about the existence of corruption. Officials generally denied that there was corruption, although a few said that they were not certain how clean some of the processes (not their own) were. Firms were open about informal meetings with officials, and expressed general concern about some processes (NHIF and MOH selections), but did not admit direct knowledge of corruption.

Transparency

Transparency includes two kinds of openness: (i) substantive, referring to the extent to which the content of government policies and procedures is made known to stakeholders; and (ii) procedural, referring to the extent to which official decisions are in fact reached in the open, where the public can follow the proceedings and make its views known. As part of the study, we made official requests for information on aspects of the pharmaceutical selection system in Bulgaria – see Box 19.3 for a description of our experience with these requests.

As with the other components of integrity, we sought information from interviewees, documents, and data on several aspects of transparency in this field. The guiding questions appear in Appendix 19A1. Detailed responses to all the integrity questions appear in Meagher (2005). Here, we shall simply review the salient points. The regulations governing the three lists (PDL, NHIF and MOH) state broad guidelines for inclusion, mainly related to the kinds of diseases and conditions that the drug lists are intended to address. Participants in these processes, and knowledgeable observers both within and outside Bulgaria, describe these criteria as inadequate. Drug company representatives complained of vagueness, citing an industry association lawsuit challenging the PDL and suggesting that official discretion was such that a PDL applicant's initial rejection could be overturned with the submission of additional information. The other two lists (NHIF and MOH) appear still more opaque, with both (until recently) operating on the basis of unpublished rules. Also, the researchers had to file APIA requests to obtain the names of CPDL members – while this information was not accessible for the other commissions.

BOX 19.3 REQUESTS FOR OFFICIAL INFORMATION

Freedom-of-information legislation, such as Bulgaria's APIA, is central to transparent governance. We tested the procedures under the APIA as part of this study. Researchers at the International Healthcare and Health Insurance Institute made formal APIA requests for some 16 sets of documents and data from the Council of Ministers (COM), the MOH, the NHIF, and the Agency for State Internal Financial Control (some of these addressed the other component of our study, on hospital procurements of drugs). Officials responded to all of the requests. Not all of the responses were either positive or timely. For example, the NHIF refused to provide its draft regulation on the Reimbursement

List, citing the APIA provision that materials used in the preparation of a normative act can be kept secret. This interpretation sounds dubious on the face of it, but we did not seek an opinion from Bulgarian legal counsel. In any event, the researchers had already obtained a prior draft informally, and soon after the refusal a final version of the regulation was released.

A second problem arose in the request for hospital audit documents. Essentially, they were deemed too voluminous to hand over but researchers were given access, after some delay, to the relevant archives. This result highlights one of the major concerns of our study – the low quality of official information. In the procurement case, the records were so scattered and voluminous as to be very difficult to assemble and summarize. In other cases, records were not complete – for example, not providing any sense of the policy deliberations or the rationale for decisions.

These problems are far from unusual. The Access to Information program in Bulgaria, in its 2004 report, cited mixed experience with APIA filings. Close to 50 percent of written requests for information were refused (including a significant number of silent refusals). Two of the cases documented by the program involved the health system – one involving a request to the NHIF for budgets and other financial information on the regional health insurance funds, and one seeking budgetary and administrative information from a regional healthcare center. Both requests were refused, and the refusals were overturned in the first instance and appeals courts (AIP 2004).

As for the proceedings of the selection commissions, the PDL process is the most transparent. Sessions are normally required to be open, and are announced to committee members and invitees (applicant firms) at least three days in advance. Applicants can make 10-minute presentations. However there are a number of major restrictions. First, only those invited (generally firms with pending applications) can attend – this excludes the general public, notably researchers, advocacy groups and journalists who may wish to understand or participate in the process from a public interest perspective. Second, the regulation allows the Commission chair to decide, on her/his own initiative, to keep a session closed. Third, the actual deliberations on drug selections are restricted to committee members only – but are to be documented in session minutes ('protocols'), which we reviewed and found to be mostly uninformative. The other two selection processes are still less open.

Overall, transparency in drug selection is partial at best. While some key information is either published or obtainable from government, especially in the case of the PDL, there are needless constraints to information flow and public access. Indeed, even in the case of the PDL, there are some important gaps in available information – for example, the basis for selection of commission members, and detailed criteria for drug selection. As for the other two listing processes, the information gaps are much larger. Thus, only a portion of the overall chain of decisions is subject to public oversight – a cause for concern. Public attendance at sessions and hearings is quite limited, and the written records of these sessions incomplete. Much important information is not published routinely, but made available only after formal requests and waiting periods. Consultation with stakeholders is quite limited.

A concern expressed mainly by the foreign drug companies operating in Bulgaria is that the selection process *as a whole*, starting from application for market authorization and ending with local procurements, creates a series of hurdles that subject companies – especially foreign producers – to discretion and delay. This allegedly enables officials to protect domestic (and favored) producers through selective enforcement. In any event, it appears that Bulgaria's approval and listing processes do not comply with the criteria for establishing drug lists set forth in the EU Transparency Directive (89/105/EEC). International best practice supports the uniform application of a transparent methodology to determine the necessity of a drug for the health needs of the population, and its cost effectiveness.

Accountability

In this context, accountability requires selection decisions to be based on well-accepted standards of scientific evidence and of cost effectiveness. Decisions need to be explained to stakeholders in these terms. Further, accountability clearly includes systems of internal and external monitoring and controls within the state apparatus, the duty of public institutions and public officials to account to the public and stakeholders, and the enforcement of applicable rules.

We broke down our research on accountability into several subquestions dealing with the basis and justification for choices, official and public oversight, and enforcement issues (see Appendix 19A1). The Bulgarian system rates poorly on the accountability factor. Tools of accountability are being put into place, but they are not adequate to the task of ensuring sound, evidence-based selection of drugs, free from improper influences. Bulgarians and outsiders are generally doubtful whether scientifically based criteria are used. Part of this has to do with the CPDL, which should narrow candidate drugs down to an 'essential' drugs list, but instead lists INNs with

large numbers of brand names under each, listed in order of cost effectiveness. In effect, the PDL defers much of the decision making to later stages, such as the NHIF's selections, or contracting at the level of the MOH or hospitals. Where there are exclusions from the list, these tend to be explained in one-line messages to the candidate firm.

There is a substantive concern that pharmaco-economics (PE) and related techniques of drug selection are not well developed or widely enough understood in Bulgaria (see Box 19.4). The lack of a strong, principled basis for these decisions makes them too vulnerable to subjectivity and manipulation. Interviewees in Bulgaria, both in and outside government, were in general agreement that PE techniques are not used with any precision in the Bulgarian selection process. It is difficult to conclude that these analyzes truly represent a disciplined, evidence-based selection tool. Worse still, there appear to be comparatively few credible PE analyzes that respond directly to Bulgarian conditions. This paucity of data and resources makes it more likely that the pharmaceutical companies will play a larger role in producing these analyzes than would be true in the West. Moreover, full explanations are not in fact provided, though they are in most cases legally required. If they were provided, Bulgaria would still face the problem that the relevant expertise is not dispersed enough to enable independent, and disinterested, experts to examine them and report to the public.

BOX 19.4 PHARMACO-ECONOMICS

PE essentially asks the question: which choice of pharmaceutical compound is the most cost effective in a given therapeutic situation? This means asking not only about a drug's effectiveness and cost, but whether, given all the alternatives, its selection represents the best use of the marginal healthcare dollar. Clearly, PE is a complex field of policy analysis combining expertise and analytical tools from the domains of healthcare, pharmacology and economics. There are several standard approaches – cost minimization, cost effectiveness, cost utility and cost-benefit analyses (Walley et al. 2004).

Even in the industrial countries, PE is considered to be a field in its infancy, and one that is not universally applied. For example, healthcare systems often have built-in preferences for certain well-established therapies, as well as political imperatives that require a certain level of preference or protection for domestic pharmaceutical producers. Further, the quality and source of PE studies varies. The most credible are those carried out by established

researchers and published in reputable peer-reviewed journals. However, studies of this kind are not always available. The pharmaceutical industry frequently steps into the gap and funds PE studies. This, without more, is cause for skepticism, but industry-sponsored studies not uncommonly meet the quality and credibility standards just mentioned. At the same time, the utility of PE analyses depends critically on their being adjusted to local conditions (*ibid.*).

Further, public scrutiny and official oversight are quite limited. Only the PDL process includes any kind of public comment period, and it is extremely short. More positively, there is provision for official oversight and administrative appeal. However, substantive review is essentially internal to government (that is, by the MOH and the Cabinet), and administrative appeals are subject to a deferential standard of procedural review, as in the appeal filed by the international producers concerning the PDL. Only the external audits appear to be hard hitting, but given the fact that there have been two adverse audit reports in a row (in 2002 and 2003), it is unclear what impact these have.

One hears even more complaints about the inconsistency or non-transparency of NHIF decisions in this area. This seems odd in light of the additional oversight mechanisms applicable to the NHIF selection process. The NHIF's control board submits the agency's policies, proposed decision criteria, procedures and selections to the NHIF Administrative Council and Assembly of Representatives, and finally (after review by the MOH) to a Transparency Commission established under the Council of Ministers. These special bodies comprise mainly policy makers in the health and drug field. In addition, the NHIF is subject to audit, for both financial and technical performance.

A further question here is whether incentives exist for compliance with the rules, as defined in the above discussions of accountability and prevention. The incentives can range from the characteristics of the rules themselves – are they simple and easy to apply? – to the existence of legal enforcement mechanisms, sanctions, and external inspection and oversight bodies. A host of weaknesses affect this area in Bulgaria. It is not clear that the necessary incentives and sanctions exist on the books, or that existing ones are used with any regularity. Interviews and media reports described improper behaviors that flout the rules with impunity. Courts and prosecutors continue to treat government decisions deferentially, while the more critical members of parliament (and government auditors) appear to exercise less than decisive influence here. Given the extent of political control

over selection processes, and the paucity of independent expertise available to civil society, the fundamental question is *who will enforce?*

Prevention

Prevention refers to those steps that can be taken to constrain discretion in official decision making in ways that serve policy goals and avoid corruption. This touches on a range of issues, including the manner of appointing officials, applicable standards and professional qualifications, and the arrangement of official incentives so as to serve policy objectives while minimizing opportunities for self-dealing. In this field particularly, similar attention must be paid to the incentives and opportunities of drug companies and health professionals – given the prevalence, in many countries, of self-dealing by officials and overreaching by the pharmaceutical industry. On both sides, prevention would also include ethics training and other means of reinforcing principles of integrity.

Prevention has seen some advances recently in Bulgaria, but with glaring omissions and a below-average rating overall. There is widespread concern that the selection commissions are controlled by the MOH. The selection commissions in some cases purport to be independent, professional bodies, but they in fact are subject to political decisions at the ministry and cabinet levels. As a result, the distinct possibility of undue political influence exists. There is little in the appointment and replacement procedures, even in the cases of the PDL and transparency commissions, to counteract this impression. Also of concern here is the lack of fixed terms or rotations – for example, CPDL members can be replaced at any time by a joint MOH–Council of Ministers decision.

Given that the CPDL and others are charged essentially with allocating shares in a lucrative market, there is a strong case to be made that they should be structured like independent regulatory commissions – that is, outside the executive chain of command, staffed by the full range of needed experts, and with full authority over their implementation of policy. In current practice, some combination of the MOH and the COM is given final authority over all decisions. The commissions do not appear to contain the full range of needed expertise (including quantitative skills), or a balance of stakeholder representation. Their meetings are infrequent and sometimes ad hoc. Voting rules are specified in most cases, but the meaning of these is doubtful in the light of MOH and COM approval power.

Members of the PDL, NHIF and MOH committees include government officials, hospital managers, university professors, researchers, consultants and medical practitioners. Many of the experts serving on these committees are medical practitioners or researchers, and are frequently involved in clinical drug trials – the latter poses a clear conflict of interest. In Bulgaria,

the community of specialized experts – especially those who are able to analyze particular classes of drugs – is small in number. In such a situation, strongly restrictive rules on permissible activities by commission members and experts may be impractical, but the system should at least ensure disclosure of potential conflicts of interest. Bulgaria's selection rules prohibit direct participation by commission members and experts (or close relatives) in drug manufacturing activity. However, it is questionable how effectively this is enforced.

Provisions on conflict-of-interest disclosure and recusal are not well developed. A comprehensive declaration of assets is rarely required – usually only a declaration of probable conflicts is required, subject to the official's interpretation. The PDL has developed its own 'Non-Conflict of Interest Declaration', which simply asks for a list of contacts with drug producers, wholesalers and other organizations working in the relevant field, and for the declarant's signature on a short statement that she/he will keep the proceedings confidential and is not 'participating in activities with producers or wholesalers of drugs'. The NHIF regulations require members of the NHIF's contracting commission to declare that they have no commercial relationships with drug producers or distributors. We found no evidence that conflict-of-interest declarations are required to be independently verified. Only civil servant members of these commissions appear to be legally required to sign declarations – the many outside experts that interact with the commissions do not. (Contrast this with the US approach, described in Box 19.5.)

BOX 19.5 CONFLICT OF INTEREST AND DRUG POLICY IN THE US

In the United States, federal employees in general operate under well-established ethics rules and policies, and typically have in-house ethics officers who work with the Office of Government Ethics to ensure sufficient training and compliance (although this area is far from trouble free). All federal officials in designated grades and sectors (essentially, those involved in policy making and adjudication) are required to provide a full financial disclosure (of personal and family interests) that is examined and verified. They are also required to observe a one-year 'cooling-off' period after leaving government service, before accepting any employment that would pose a conflict.

The FDA has specific rules, applicable to *all employees* that prohibit them from holding financial interests in regulated industries,

and from engaging in many outside employments and activities. (In some cases, these are permitted to lower-level employees or upon approval. US Code of Federal Regulations vol. 5, ch. XLV, sec. 5501.) Importantly, the FDA rules recognize the potential conflicts of interest on the part of the many experts engaged in agency consultations and studies. These experts are treated as 'special' employees, under a slightly more liberal set of rules. They are required to file conflict-of-interest declarations (not full asset disclosures), using forms that provide guidelines on the identification of potential financial, professional and personal conflicts of interest (involving the individual and relatives). Financial conflicts of interest result in the expert's exclusion from relevant meetings and assignments – except that waivers are available when the conflicts are deemed not to be substantial, or the need for the expert's services is considered compelling ('Guidance for FDA Advisory Committee Members and Other Special Government Employees on Conflict of Interest 2000', www.fda.gov/oc/advisory/conflictinterest/waiver.html, but see Krinsky (2003) on the weaknesses of these systems).

Finally, influence activities are restrained only by vague standards in civil service and voluntary industry codes. There is a widespread belief that pharmaceutical companies use lobbying, influence over drug studies and information, exchange of favors and bid-rigging to secure their shares of these quasi-public drug markets. Indeed, one of the international producer associations alleged that the design of the PDL itself resulted from lobbying by the domestic industry in Bulgaria and that it effectively prevents market competition from international producers. Given the prevalence of imports on all the lists, this charge seems implausible. Interviewees suggested two competing influences on the level of lobbying and corruption in this area – first, the need for domestic firms to win sales before quality standards change and the market opens up as a result of EU accession in 2007, and second, the introduction of international price guidelines into the NHIF process, which should help constrain price-setting discretion and reduce prices.⁴⁶

To mitigate undue influence, anti-bribery laws and political campaign finance norms are relevant. In principle and in practice, both of these sets of rules are weak in the Bulgarian context (OSI 2002). Interviews suggest that drug company representatives are able to meet informally and on an individual basis with selection commission members. Bulgaria's conflict-of-interest norms do not prohibit this. More pervasive are drug company

contacts with physicians (common globally), whether in the form of industry-sponsored seminars and conferences, studies, advertising or direct marketing. Since physicians make up a large proportion of commission members and experts, companies are likely able to exert 'back-door' influence on the commissions with little hindrance.

There are also industry-based ethical codes. In Bulgaria, standards come from several sources. According to the Association of Research-Based Pharmaceutical Manufacturers (ARPharM 2004), these include the European Code of Practice for the Promotion of Medicines, and the equivalent code adopted by the International Federation of Pharmaceutical Manufacturer Associations (IFPMA). These codes are less strongly prescriptive than the code of the Pharmaceutical Research and Manufacturers of America (PhRMA), probably because they are transnational. However, the IFPMA Code (unlike the US PhRMA Code) does outline a complaint procedure, to be handled by its headquarters in Geneva. ARPharM itself has an Ethics Committee that presumably sees to the member's adherence to ethical principles. There is no Bulgarian code as such on this subject.

Thus, partial measures are in place to prevent self-dealing and corruption. In some cases, these provisions may encourage disclosure and thereby prevent corruption. In other cases, the protections may do active harm, providing a 'fig leaf' for unseemly dealings.

There is also an educational factor at play. We can describe this as the identification, socialization and institutionalization of professional values and related standards of ethical conduct that decrease tolerance for corruption and promote integrity in public and private sector relationships. Education also concerns the capability, and the encouragement, of officials and outside stakeholders to exercise vigilance over the integrity of selection processes. This area has apparently seen less progress than others in Bulgaria.

The committees and individuals involved in the Bulgarian drug selection processes are subject to ethical norms from different sources, including the specific rules of the relevant commission (for example, the CPDL), the civil service code, and the members' respective codes of professional ethics. Many healthcare policy makers and pharmaceutical selection committee members are physicians. As such, they belong to a profession with a long tradition of ethics and self-governance. These traditions are embodied in professional bodies and codes that are often backed up by state agencies and regulations pertaining to medical practice. In the US and other Western countries, the professions operate with significant autonomy, although the extent to which they are tied to state-financed health systems (and the rules governing them) varies. Formerly communist countries have additional complications to deal with.

In Bulgaria, the relationship of the state to the medical profession has undergone dramatic change, with the high point of state governance – and the subordination of professional autonomy and ethics to state policy – occurring between 1945 and 1990. There are signs that at least some limited autonomy has re-emerged in Bulgaria's medical profession. Government plays a stronger role in the management of the medical profession in Bulgaria than in many Western countries.

Medical doctors in Bulgaria are subject to a Code of Professional Ethics issued by the MOH, in accordance with the Act on Professional Associations of Medical Doctors and Dentists. The Bulgarian Medical Association (BMA) has a Committee on Professional Ethics, which is primarily concerned with malpractice. Neither this committee nor the associations have shown much zeal in bringing complaints and enforcing ethical standards against physicians who engage in corrupt practices. Ethics training is not a requirement, and is not regularly available to physicians.

Further, evidence from other countries suggests that relying too heavily on ethics standards – even in the medical profession, where they are long established – creates risks of abuse and corruption. There is little to deter gift giving, or to keep it from sliding into bribery (see Box 19.6).

BOX 19.6 THE NORMATIVE DIMENSION OF HEALTHCARE CORRUPTION

Research on informal payments to doctors in Bulgaria suggests that some of this behavior falls within the definition of what is professionally acceptable – that is, *ex post* payments intended as a sign of gratitude (but not up-front payments) (Balabanova and McKee 2002). This appears to be the case in many other societies as well (see, for example, Kornai 2000; Di Tella and Savedoff 2001). However, the distinction between a gift and a bribe can be difficult to maintain, especially where physicians function in state systems or institutions, and where they are underpaid and therefore motivated to increase their earnings. This is but one example of normative dissonance in the healthcare field – the tradition of gratitude and the legacy of bribery from the late socialist and early transition periods conflict with the rules of the healthcare system.

A different example, from the US, helps to illustrate the principle. Physicians are required by tradition and by professional standards to act in the best interest of the patient. At the same time, insurance systems place budget-driven limits on the kinds of care and the types of drugs that can be prescribed. Physicians frequently

bend the rules in order to secure, affordably, the best treatment for their patients. This involves the physicians in a range of practices, from innocently cutting corners to outright fraud. Further, the increasing prevalence of insurance and Medicaid/Medicare fraud in the US (Hyman 2001) cannot be explained by this kind of behavior alone. As more doctors cross the line into fraudulent practice, schemes of fraud and corruption that serve the narrow self-interest of physicians and others seem to become more frequent. The conflict of norms may not have created corrupt behavior, but it has likely made it easier.

What evidence is there that ethics codes governing the medical profession have an impact on physicians' behavior? Studies of drug marketing in the US show that the prevailing ethical norms in the profession have not prevented the accommodation, however uncomfortable, of commercial conflicts of interest in the selection and use of pharmaceuticals by doctors and healthcare systems (Krimsky 2003; Angell 2004). This pattern also appears in Central and Eastern Europe. In a four-country study including Bulgaria, Miller et al. (2000), reached an even more striking conclusion: physicians working in hospitals admit to *engaging in corrupt behavior with greater frequency than most other officials* (and on a par with traffic police and customs officials). In many societies, this would be considered shocking, given the prestige and the longstanding ethical traditions of the medical profession. The analysis in the study suggests that this pattern of behavior arises from the combination of opportunity and bargaining power (as in the phrase 'If you pay, we'll operate immediately'), with various forms of moral self-justification (low pay, social acceptability of gifts, and the prevalent expectation that higher governmental officials would tolerate the behavior). Thus, traditions of professional ethics vary in strength across societies – in many cases they recede in the face of countervailing pressures created by needs, opportunities and expectations.

5. Conclusion

We stated our main conclusion at the outset: Bulgaria's drug selection arrangements (like those of many countries, it appears) virtually *prescribe* corruption and related abuses. The nexus of competitive and political pressures on the national system of pharmaceutical policy, with a highly technical process of decision making, drives this result. Emerging states such as

Bulgaria would have difficulty, even in the best of circumstances, refining procedures and strengthening oversight mechanisms so that they are adequate to the task of ensuring integrity. Our research on the outcomes of the selection processes suggests that these mechanisms have not to date been adequate.

Our findings show significant danger of corruption in the selection and procurement systems, and indicate the existence of moderate corruption in parts of these systems. These findings are consistent with cross-country corruption datasets that include Bulgaria, from the World Bank and other sources (summarized in Meagher et al. 2005). We can speculate about the mechanisms of this corruption, but cannot be definitive. In the selection process, the corruption reports suggest a kind of capture involving pharmaceutical companies, political parties, and officials associated with the Ministry of Health. In this scenario, officials or politicians may have undisclosed interests in drug firms bidding for placement on the central lists – or some other quid pro quo has been offered such as a bribe or favor. The officials or politicians act to ensure that drugs from the favored company appear on the central lists and so can be sold to state-financed hospitals and pharmacies. Inflated prices (or cheap illicit sources of drugs) would presumably yield a sufficient margin to cover the costs of bribes or favors. There may be more complex variants of this basic scenario.

This chapter is also about a particular approach to research on corruption. The prevailing approach in policy circles would assert an inverse causal relationship between institutional integrity and corruption. We attempted to address this in the Bulgarian research. However, in the context of the drug selection process, a statistical test of causation was not possible.⁴⁷ The selection processes involve three groups of decision makers, and overall a relatively small number of people. This necessitated a qualitative approach, which we designed so that the findings would bear as directly as possible on the posited causal relationship. We find that integrity measures alone do not describe sufficient conditions for corruption. Also, administrative or ‘petty’ corruption often does not stand on its own. One must take account of political-economic factors that encourage corruption, that is, the interests of state officials, competing firms and other pressure groups.

Our research indicates a struggle by international and local drug producers to exert influence at several levels of the system, from policy makers at the MOH and NHIF to parliamentarians, associations and parties, hospitals and physicians. It is possible the integrity features that matter most are those in the central selection processes – this is the real ‘choke point’ where the main corruption occurs, and hospital procurements simply divide the spoils. We can state this as probable but not certain. Thus, the results of the research on selection processes offer guidance on what to look

out for at the level of procurement. The pharmaceutical selection and procurement systems in Bulgaria offer a case where high-level deals seem to open the door to many lower-level opportunities for extracting rents (some, if not most, involving corruption).

The findings reported here suggest a number of strategies for both research and institutional reform. First, if international standards can be embedded in pharmaceutical systems, this will be beneficial from a governance perspective. As domestic expertise develops in both the technical and managerial aspects of drug selection, it remains critical to ease the rent seeking pressure on the system. A radical approach would be to adopt the WHO Essential Drugs List as the foundation or 'default' for the domestic PDL. This can save time and money while reducing the number of decision points subject to lobbying and illicit influence. The basic point here is to design a system that is driven by mandatory formulas, like a currency board, but that allows deviations for explicit policy reasons.

Second, robust transparency requirements should be applied across the whole system of selection, listing and procurement. Tough information disclosure laws – and enforcement mechanisms – are needed, with narrowly defined exceptions, requirements of routine publication (without request), and simple, accessible procedures. Comprehensive disclosure would also help, backed by government-wide 'sunshine' laws that require all official decisions fitting stated criteria to be announced in advance, made on the public record, and/or taken in a public hearing.

Related to this is the availability of reliable information and independent expertise. Corruption thrives especially where information asymmetries furnish opportunities for self-dealing and abuse. Pharmaceutical selection processes offer a dramatic illustration of this. In Bulgaria, dynamic pressures appear to move in opposite directions: literacy and scientific knowledge are relatively high and rising, while competitive pressures in the pharmaceutical market increase as the economy grows and the country moves towards EU accession. One way to reduce corruption risk is to improve public information and education, and to make non-governmental watchdogs more numerous and more effective. Governance of technically complex processes requires a greater dispersion of knowledge and independent monitoring.

Another necessity is the development of ethical standards – their definition, enforcement and dissemination. Weak, or non-existent, reinforcement of ethical norms creates multiple risks (especially clear in procurement surveys), including relaxed views of gift giving, the perception of bribery as a victimless infraction, and the failure of interested parties to recuse themselves. These problems should be addressed from several angles. One focus should be on civil servant, professional and corporate codes of

ethics. This is the 'values' aspect of anti-corruption that is often ignored in technocratic approaches. On the procedural side, asset declarations and conflict-of-interest disclosures need to be applied as comprehensively (including to outside experts) and stringently as possible, with independent verification.

Two further problems need sustained attention – the difficulty of monitoring the highly technical analysis that goes into drug selections, and the lack of independence on the part of the selection commissions. Even though administrative appeals are available, these can take into account only legal and procedural regularity, but often cannot capture hidden dealings that result in technically unsound decisions. Good substantive results require expertise and non-partisanship to be built into the selection process itself, and protected from intrusion by line officials of government. This is the essence of the independent regulatory agency (or commission) model used in many of the industrial countries. Experts on such independent commissions often have fixed terms, are confirmed by parliament, are either non-partisan or represent the full political spectrum, and are subject to rigorous review of their technical qualifications and potential conflicts of interest. They are separate from the executive chain of command.

Completing the restructuring of healthcare units is also important. As is often the case in post-socialist transition, the transfer of ownership in Bulgaria's hospitals appears to have left unresolved some key corporate governance issues. In particular, the many hospitals with full or partial ownership by the municipalities do not operate within a hard budget constraint – rather, they have frequently obtained subsidies from the central government to cover operating deficits. The resulting moral hazard creates incentives for the municipalities to keep in operation hospitals that are inefficient (and in some cases corrupt), unaffordable, and superfluous from a healthcare planning perspective (that is, excess hospital beds). At the same time, this arrangement has clear benefits in terms of local politics. Continuing reform in the healthcare sector will eventually need to deal with this issue, but in the meantime, the lack of financial discipline and strong oversight encourages undesirable outcomes such as overspending, mis-targeted spending, and corruption in medicine procurement.

Finally, analysts and policy makers should pay greater attention to understanding the dynamics of corruption in the medium to long term. Drug policy is commonly an arena of abuse, regardless of national levels of income and development. However, there is a sense in which corruption in a country such as the US is 'domesticated'. The trade-off between open economic and political markets on the one hand, and clean administration on the other, is openly arrived at. Instances of abusive but licit practices are often reported and criticized, while illegalities are punished with enough

frequency to bolster legitimacy – until the next political uproar. Corruption (in any case an elastic notion) seems to migrate to areas of political dealing and corporate management where it can be legitimized and to some degree understood. A similar dynamic, driven in part by foreign investment and regional integration, might benefit Bulgaria by helping ‘modernize’ its corrupt practices, and in the process contain the harm.

Notes

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- 1. Georgi Andreev, ‘Importers accused the state of redistributing the medicine market’, *Capital Weekly*, no. 2, 17–23 January 2004, www.capital.bg/weekly/04-02/16-2.htm.
- 2. See Koulaksazov et al. 2003 for an analysis of the transition in Bulgarian healthcare.
- 3. See Hellman et al. (2000a and 2000b) on the characteristics of state capture and its relationship to administrative corruption in transition countries.
- 4. The latter situation commonly occurs in industrial countries but not the developing world.
- 5. Efforts have, however, been made in recent years by reputable journals to ensure that full disclosure of pharmaceutical funding is provided when warranted.
- 6. In a more recent example, the FDA approval of painkillers later shown to increase cardiac risks was supported by a panel of 32 experts, ten of whom had consulted for or received research support from the companies whose products were under review. ‘Experts and the drug industry’, *New York Times*, 4 March 2005, p. A 18, col. 1.
- 7. However, in Bulgaria, BDA statistics for 2001–02 showed declining consumption of domestic medicines (IHHI research).
- 8. On the other hand, when our surveyors tried to interview these suppliers, the latter were by far the group *least willing* to divulge any information on their activities and experiences – many refused outright to be interviewed. We should also point out that producers use agents, although to a lesser extent, in the central selection processes.
- 9. The market in question involves sales on the order of US\$400 million or so. This is a sizeable market, though not large in comparison with, say, Poland or Western Europe – but it can be expected to grow significantly as Bulgaria gains accession to the EU. Thus, many drug firms are surely focused on securing a foothold for future sales growth.
- 10. By comparison, health expenditure on average for OECD countries amounts to 8.3 percent of GDP, with the public share of total health expenditure at 72.2 percent (OECD figures for 2001, Source OECD Health Data 2003, <http://www.oecd.org/dataoecd/10/20/2789777.pdf>).
- 11. According to a leading MP, 14 out of 40 parliamentary sessions in 2003 focused on the NHIF, which is taking on the lead role in financing healthcare.
- 12. Compensation for physicians, both GPs and specialists, reflects the number of patients seen and procedures performed – a modified capitation system with payments based on ‘clinical paths’. Bulgaria has begun the process of moving this payment system towards a Diagnosis-Related Group model, which has come to be regarded as best practice in the health field.

13. *Essential Drugs in Brief* (WHO, 11/02).
14. Prices of OTC drugs have been partially liberalized; they follow a simplified regulatory process.
15. Decree 81 of 2003, setting up the Commission, says that it should have a chair and 12 members, and that a quorum of three-quarters of members and a vote of three-quarters of members present is required for a decision. The CPDL in 2004 operated with a full complement, but in 2003 had only 3 members – all from the MOH.
16. According to statistics from the MOH, 87 percent of proposals for the first PDL (December 2003) were accepted. In the 2005 PDL there are a total of 2,816 products; 336 of them are new products (148 innovative and 188 generics; of the latter, 10 are Bulgarian and 178 imported). For the current list, 201 applications were submitted for 462 INNs. Of these, the commission approved 146 INNs (63 original products and 83 generics).
17. This selection process runs in parallel with the negotiation of the NFC between the NHIF and the Associations of Physicians and Dentists, and the list becomes an annex to the NFC. The prior ad hoc system generated multiple amendments, then a purge based on a consistency check with the PDL – along with a host of complaints and accusations of corruption.
18. Regulation of Conditions and Order for Negotiation of Drugs to be Fully or Partly Reimbursed by the NHIF, of 20 August 2004.
19. Regulation no. 23 of 2000, which was updated by Regulation 36 of October 2004.
20. Selections of actual drugs to be procured and provided to the hospitals are made on the basis of recommendations by specialists in the relevant fields, as well as the financial limitations imposed by the ministry's expensive drugs budget. Procurements are made at the central level, and are governed by national procurement laws.
21. Estimate from IHHII. The expensive drugs budget is not reported as a separate component of the MOH budget, but the specific drugs and quantities procured are known.
22. For example, one firm cited the case of a group of pharmacies under common ownership, where only one was licensed and had an NHIF contract, while the others sold on the grey market with no receipts – gaining a competitive advantage for the overall operation. The firm citing this example complained to the Bulgarian Fiscal Police, but with no result (the firm suspected 'influence' on the police by the owner of the stores in question).
23. Although we obtained a small amount of English-language material from the Bulgarian media ourselves, by far the bulk of the information we have used comes from a comprehensive media analysis produced by IHHII, and spanning the 12 months beginning June 2003, with a later update (Sacheva 2004).
24. The major wholesale distributors in Bulgaria also own (or control) pharmacy chains. This practice carries over from the communist era. Privatization and new starts increased the number of wholesalers to an estimated 300 in 2000, and the number of pharmacies to nearly 3,000 by 2003 (Koulaksazov et al. 2003).
25. For example, to institute good manufacturing practices, the BDA had to close facilities where there was little hope of meeting these standards. This meant shutting down about 30 percent of Bulgarian drug manufacturing capacity.
26. On the other hand, NHIF officials have tended to assess fraud and corruption in health-care administration as not being very important – causing perhaps 1 to 2 percent losses.
27. These payments may be used to cover legitimate hospital expenses, or they may be used for private gain.
28. Information provided by Denitsa Sacheva of IHHII.
29. These comparisons were done by Judith Fisher of the University of Toronto School of Pharmacy. This section is based on her analysis.
30. The NHIF Reimbursement List reflects some of these same choices.
31. Angiotensin converting enzyme inhibitors, for treatment of hypertension and post-myocardial infarction.
32. A crude numerical comparison of the PDL with the WHO list seems to support the over-inclusion thesis: the WHO lists just over 300 compounds, while the PDL contains 667 of

- them, with a total of nearly 2,500 brand names listed. This represents 87 percent of those drugs for which applications were submitted (some of these were admitted after applicants appealed an initial rejection). Georgi Andreev, 'Bulgaria confirms list of medicines to be paid by public funds', *Capital Weekly*, no. 49, 6–12 December 2003, www.capital.bg/weekly/03-49/3-49.htm.
33. Georgi Andreev, 'NHIF unblocks reserve funds', *Capital Weekly*, no. 35, 30 August–5 September 2003, www.capital.bg/weekly/. This was a replay of 2002, when the NHIF overran its budget for free or partially free medications by nearly 100 percent (Sacheva 2004).
 34. Dessislava Nikolova, 'Supplementary exam for healthcare reform in Bulgaria', *Capital Weekly*, no. 35, 2004, www.capital.bg/weekly/.
 35. These comparisons were done by Ms Mina Popova, consultant to IHHII.
 36. The five countries are: the Czech Republic, Poland, Romania, Slovakia and Slovenia (the others being Greece, Latvia and Hungary). They were selected among the eight because of the similarity of their healthcare systems to that of Bulgaria.
 37. This perception is no doubt compounded by the relatively high VAT applied (20 percent), and margins chargeable by wholesalers (7–12 percent) and pharmacies (20–33 percent), before the product reaches the consumer.
 38. In principle, a 3-member veto is possible only with a quorum made up of less than the full membership. See note 15 above.
 39. While this may be taken as evidence that there is indeed reason to suspect corruption, it is also clear that the bar to politically motivated corruption charges by parliamentarians is quite low in Bulgaria. MPs have, for example, made statements in the press that increased expenditures on drugs by the NHIF and the MOH indicated corruption (Sacheva 2004).
 40. Dessislava Nikolova, 'Additional health service payments to stop bribe practice in Bulgaria', *Capital Weekly*, no. 35, 2004, www.capital.bg/weekly/. (Such a strategy is very unlikely to mitigate potential corruption hazards.)
 41. The next audit also turned up problems, including weaknesses in the financial and managerial control of NHIF activities, raising the concern that the documentation used by the NHIF allowed physicians to report activities that they did not actually perform and permitted hospitals to take double payment for services (that is, from patients and from the NHIF).
 42. Compared to suppliers, doctors and nurses are less likely to be aware of improprieties in procurement, but perhaps more likely to talk candidly about improprieties. This trade-off is a fundamental one in corruption studies: those most likely to know are often also the most likely to be reticent, hence the analyst has to strike a compromise between a respondent's knowledge and candor.
 43. We also include a few findings on the MOH Expensive Drugs List.
 44. See, for example, Klitgaard (1988). The three integrity factors used here are a boiled-down version of a five-factor scheme adopted by the USAID Europe and Asia Bureau and used in the research. Those factors are: transparency, accountability, prevention, education and enforcement. See Meagher et al. (2005).
 45. In this chapter, we draw our 'best practices' standards from Cohen et al. (2002) and MSH & WHO (1997). Note that these standards are uniform, and do not differentiate between industrial and transition countries.
 46. Still, there are charges that, for example, unfair competition in vaccine tenders resulted in Hepatitis B vaccine prices that were ten times those in the Czech Republic.
 47. We did undertake such a statistical analysis of hospital survey results, which proved inconclusive (Meagher et al. 2005).

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Appendix 19A1*Table 19A1.1 Integrity factors in selection processes: questions, benchmarks, ratings*

Question	'Best practice' benchmark ¹	Bulgaria rating ²
<i>Transparency</i>		
1. Are selection guidelines and inclusion/exclusion criteria published and available? Are they clear?	Explicit criteria must be defined and published. Final selection criteria should be based on discussions and acceptance by key prescribers. (See WHO criteria for the selection of essential drugs)	Poor
2. Is the following information about committees and officials making selection decisions published and available: their names, basis of appointment, responsibilities?	Names of selection committee members, their qualifications, and their terms of reference should be public information and listed in the formulary manual and on a government website. The method of appointment should also be clearly stated and publicly available. An organigram which is also publicly available should document each member's background and responsibilities	Poor
3. How do stakeholders learn about decisions?	Announcement of decisions at public meetings, and an information system that disseminates drug selection criteria and rationales helps to ensure integrity and that, if improprieties take place, they are detectable	Average
4. Are the drug selection meetings open to the public? Announced in advance? In fact attended and covered by the media?	Public scrutiny of drug selection meetings contributes to transparency and limits unethical practices. Media coverage helps ensure transparency and public knowledge of the processes and decisions	Poor
5. Are selection processes documented, and are the records publicly available?	Minutes of selection committee meetings should be archived and available to the public	Poor
<i>Accountability</i>		
1. Are drug selection criteria evidence based? Are the criteria respected in practice?	The government should have clear guidelines that specify what criteria are being applied for drugs on any public formulary. A transparent methodology	Poor

Table 19A1.1 (continued)

Question	'Best practice' benchmark ¹	Bulgaria rating ²
	that determines the drugs' necessity for the health needs of the population and cost effectiveness should be uniformly applied. Drug selection must be matched with the pattern of prevalent diseases in country. Government should maintain an information system that monitors drugs once they are in the market	
2. Are choices in the selection process explained (for example inclusion, exclusion, deletion)? Are these explanations publicly available?	Formulary drugs should be listed by generic name. Where possible, generic drugs should be used. The inclusion of a new drug should be based on studies that confirm that the drug is necessary for the health needs of the population and on cost effectiveness. This is particularly relevant for drugs that are not essential drugs. Deletion of drugs from the national drug formulary should be based on sound evidence that they are inappropriate or not cost effective for the health needs of the population	Poor
3. What forms of official oversight of this process exist, in principle and in practice? How stringent are they?	Selections are best made by an independent commission of professionals that is subject to oversight by some combination of the public, the health professions, the courts (administrative law review), by supreme audit agency and parliament	Poor
4. In what ways can the public provide input to these processes, for example applications, appeals, review and comment on proposed rules?	Open and formal consultations with the public should be institutionalized to ensure that all stakeholder views are taken into account in the drug selection process and that no one group has undue influence. There should be a formalized and regular appeal process for applicants who have their drug submissions rejected, to ensure that standards of drug selection are transparent and fair	Average

Table 19A1.1 (continued)

Question	'Best practice' benchmark ¹	Bulgaria rating ²
5. Are the rules on official appointments and terms of reference respected in practice?	Clear, public, and well-enforced appointment rules and terms of reference for each drug selection committee should be in place	Poor
6. What sanctions are there for breach of the rules on conflict of interest? Bribery and other forms of corruption?	Well-defined sanctions should be applied if a committee member engages in inappropriate (unethical) conduct. By enforcing sanctions appropriately and effectively, this will also serve as a deterrent to any future misguided actions. In most countries, bribery legislation is included in the penal code or in special corruption legislation	Average
7. Are there mechanisms in place to detect improper relationships – for example selection officials with undisclosed economic interests in the pharmaceutical sector? Are these effective in practice, or are such relationships accepted?	Any member on a drug selection committee should have no connections (formal or informal) to a pharmaceutical company. Committee members and external experts working with them should disclose all other involvement that may potentially create a conflict of interest. If overlapping responsibilities suggest conflict of interest, the committee member/expert should be compelled to either give up a particular role or resign. Public officials should have the duty, and the information necessary, to identify whether companies bidding for the same tender have any corporate relationships	Poor
<i>Prevention</i>		
1. How and by whom are drug selection officials appointed? How long is their tenure?	The drug formulary committee could be the national drug committee or a smaller subcommittee of it. The appointment process should be public and subject to inputs from a number of persons. The committee membership should be rotating or limited in time to reduce likelihood for systematic bias in the decision making process and to limit individuals power and influence in decision making	Average

Table 19A1.1 (continued)

Question	'Best practice' benchmark ¹	Bulgaria rating ²
2. Do the committees and officials who make selections have the appropriate mix of skills? Are they neutral, or do they represent a balance of stakeholder interests?	The committee should be formally established and composed of professionals with the requisite technical skills, and meet on a regular basis. It should ideally include a clinical pharmacist or pharmacologist, a physician, economist and medical specialists who can prepare and/or review drugs	Poor
3. What other occupations and activities are selection officials involved in – including active medical practice? Do the rules require the declaration, or at least the avoidance, of possible conflicts of interest? Are there limits to officials' contacts with drug companies?	Committee members should disclose all other involvement that may be perceived as conflict of interest. If overlapping responsibilities suggest conflict of interest, the committee member should be compelled to either give up a particular role or resign. Committee members should not have active medical practices, to avoid conflict of interest. Committee members should declare any personal conflicts of interest in writing. These statements should be publicly available	Poor
4. Are drug-selection procedures conducted regularly, or are there delays between sessions?	Drug selection committee meetings should take place on a set schedule. This will help promote reasonable timelines for decision making and more transparency. There should be minimal delays for market authorization and selection decisions if sufficient information is presented to the government institution	Average
5. What methods are used to make selections, for example unanimous decision, majority vote, choice by individual official? Are decisions vulnerable to political influence – and how is this addressed?	Decision making should be democratic, transparent and subject to formalized voting procedures that rely on majority for outcomes. There are four major methods for quantifying drug needs: consumption (based on historical data), morbidity based, adjusted consumption, and service-level projection. Ideally, a combination of these will be applied to obtain the most accurate drugs for the health needs of the population	Poor

Table 19A1.1 (continued)

Question	'Best practice' benchmark ¹	Bulgaria rating ²
6. Can interested firms influence the selection process? What methods do they use – for example policy arguments, education and promotion, meetings with relevant officials, favors?	There should be clear laws, code of conduct, and regulations governing industry marketing practices. Officials who are involved in drug selection decisions should be barred from meeting with drug company representatives to avoid any potential conflict of interest of influence on decision making. The government should have a law that explicitly prevents public officials who are members of the drug selection committee from accepting gifts in cash or kind from pharmaceutical companies	Poor
7. Do selection committees or officials inform, educate, or solicit input from stakeholders?	Drug selection committee members should regularly organize public education campaigns and consultations to ensure fair input on decision making and procedures	Poor
8. How are these and other relevant officials trained in ethics and integrity rules? How stringent are these rules, in principle and in practice?	All drug selection officials should be trained regularly on ethical guidelines, standards of practice and consequences for any breaches	Poor

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2. Based on rankings developed by Jillian Clare Cohen.

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