

The Causes and Consequences of Corruption:

A Review of Recent Empirical Contributions

**Alberto Ades and
Rafael Di Tella**

IDS Bulletin Vol 27 No 2 1996

1 Introduction¹

Corruption is a major social and economic phenomenon. Yet, to a large extent, economists have remained reluctant to enter the debate about policy responses, an arena dominated by businessmen, lawyers and judges. The main reason for this coyness is a lack of empirical discipline that has allowed the study of the economics of corruption to survive in a state of methodological liberty, where the sole constraint on the production of conflicting theories is the fertile minds of the researchers involved. Now, however, systematic data on corruption has become available and empirical tests are beginning to emerge. The purpose of this paper is to present an overview of the progress achieved at this stage and point out some of the possible directions for future research.

Applied economists expect to use hard data in their empirical work. Thus, in the case of corruption, attempts have been made to use data on the number of convictions on corruption charges or the number of fraud cases recorded. But this type of legal data is of extremely low comparability across countries, and does not capture undiscovered corruption cases. This means, effectively, that data of this kind are more a measure of the effectiveness of enforcement policy than of the level of corruption. Recent empirical developments have therefore tended to focus on subjective data created for business-related purposes, usually for the consumption of banks, institutional investors, or multinational firms.² These subjective data are usually available in aggregated form, and can be obtained commercially at quite high prices. There are both advantages and disadvantages of focusing on this type of data, but a defence on grounds of revealed preference is sometimes used: they are the market's choice for a corruption indicator.

¹ This article contains abridged material presented in Ades and Di Tella (1995c). We wish to acknowledge financial support from the Fundacion Mediterranea.

² This data concentrates on what is usually considered corruption in the Western democracies. One of the problems with 'general' theories of corruption is that what is considered corruption in one country constitutes perfectly acceptable behaviour in another country. For more of this and some peculiarities in the British privatization experience, see Appendix 1 in Ades and Di Tella (1995c).

The recent empirical studies of corruption have used data from three different sources. The first data set comes from **Business International (BI)**, a subsidiary of **The Economist Intelligence Unit**. The data are produced using the reports of BI's correspondents based in each of the countries covered. Data is available for the period 1980-83 and covers close to 70 countries. The corruption measure in this data set is quite general and is provided by BI's network of correspondents who must grade on a scale to 10 'the degree to which business transactions involve corrupt payments' in each of the countries covered. All correspondents use the same methodology and their reports are further checked for comparability at the regional level and at BI's headquarters. A second data set comes from the **World Competitiveness Report (WCR)**, a business publication produced by the World Economic Forum in Switzerland, and consists of a survey of top and middle managers in the most dynamic firms in each of the countries covered. The surveys include a question on corruption since 1989 (published in 1990), include a minimum of 32 countries and usually cover well over 1,000 executives. The question asked is 'the degree to which improper practices (like corruption) prevail in the public sphere'. An advantage of the WCR over the BI data is that it covers people with an intimate knowledge of business practices in each of the countries covered. But the apparent lack of a centralized office to consolidate the answers of those surveyed by the WCR could be a drawback of the WCR data over that of BI in a cross-sectional study, as it calls into question the comparability of the answers between countries. The fact that the companies to which the survey respondents belong are successful and internationally oriented is only a partial answer to that concern. The third data set was gathered by Peter Neuman and his collaborators at **Impulse**, a German business publication. It also consists of a survey, this time of German businessmen who normally conduct business with each of the countries covered (typically as exporters). On average, 10 people were interviewed for each country, and an effort to have a minimum of three respondents per country was made. An important advantage of this data set is that there is less subjectivity involved as respondents must simply provide an estimate of the kickback per deal (as a percentage of the deal's value) that would have to be paid in order to conduct business in each country. The data was pub-

lished in 1994 and covers 103 countries. Another advantage is that it originates from a homogeneous group of people (German exporters), with practical business experience in each country covered and who answer a quantitative question.

The structure of the article is as follows. In Section 2, we review the empirical efforts to identify the causes of corruption using subjective indices, and the implications of these findings for general policy-making in corrupt environments. Section 3 analyses the effects of corruption while Section 4 draws together our conclusions.

2 The Causes of Corruption

It is useful to summarize the debate about corruption control as one where there are three main proposals. The first can be named the economist's approach and consists of diluting the value of the control rights of bureaucrats by increasing the level of competition in the economy. It is based on the observation often made by economists that it is hard to imagine corrupt activities taking place in situations of perfect competition. The second approach is based on raising the deterrence provided by the legal system by increasing the probability of detection, apprehension and conviction and the penalties for malleasant behaviour. This is the lawyer's approach as some of its variants have been proposed by members of the legal profession, such as Italy's judge Antonio Di Pietro. Business men have sometimes argued that there is a third and easier approach to corruption control: raise the wages of bureaucrats who have the discretion to engage in corrupt activities. The idea is to treat decisions in the public sphere as if they belonged to a private company. Specifically they argue that bureaucrats should be given similar incentives and remunerations as their private sector equivalents. Remunerations must be interpreted somewhat loosely in the case of elected officials to include votes, reputation-prestige and power-perks.

Our emphasis on recent empirical analyses using cross-country data leads us to concentrate on the economist's and the lawyer's approach. First, note that competition can be introduced at the level of the corrupt official or at the level of the firm offering bribes. The first to emphasize the effect of bureaucratic market structure on corruption was

Rose-Ackerman (1978) when she introduced what is sometimes called the 'principle of overlapping jurisdictions'. Rose-Ackerman analysed the effects of competitive pressures on a corrupt bureaucracy dispensing a scarce benefit. In this case, competition can be introduced by allowing benefit applicants to reapply in other departments if they are asked for bribes. If the cost of reapplication is low enough, the existence of some honest officials could drive bribes to zero.³

Bureaucrats' actions are valuable to firms. For example, the decision by a bureaucrat to apply a regulation aimed at providing pollution control can be very costly for the firms affected. These actions will affect the firm's marginal or average costs, and therefore have a negative impact on its profits. In general, the value of the bureaucrat's action will depend on the market structure of the industry to be regulated. The lack of product market competition can not only benefit the firms in the industry, but also potentially benefit tax inspectors, regulators, suppliers and other agents with some control rights over those firms. As competition decreases, the value of their control rights increase, so they are more likely to exchange them for bribes.⁴

In Ades and Di Tella (1995a), we examine the role of product market competition in determining corruption. Using corruption indexes from **Business International** and the **World Competitiveness Report**, we find that, controlling for the level of development and the degree of political competition, corruption is higher in countries with economies dominated by a small number of firms or where domestic firms are sheltered from foreign competition by high tariffs.⁵ The effect holds after controlling for year and country fixed effects. We also correct for the possible endogeneity of market structure, as it might be that bureaucrats influence market structures or erect barriers to trade in order to later extract bribes, as in the rent-seeking literature. Using a series of instruments, we identify

strong effects on corruption of exogenous changes in product market competition.

The evidence of the effect of market structure on corruption is suggestive, though ideally we would like to know how it interacts with more traditional activities to control corruption. Indeed, most non-economists may claim that more traditional methods of crime prevention should be emphasized, such as increasing the autonomy and resources of judges undertaking corruption investigations. In Ades and Di Tella (1995c) we use BI data to explore the role of legal institutions by analysing the interaction of openness, measured by the share of imports in GDP, and a variable capturing the independence of the judiciary system. We regress corruption on these two variables and their interaction, and on a standard set of controls for the level of development of the country and political competition. The pure effect of openness on corruption is negative and large. Corruption is higher in countries where judicial institutions are not well developed, or are not independent of political influences. The pure effect of the independence of the judiciary on corruption is negative, though mild. Finally, we find that opening up an economy to foreign trade is particularly important in countries where judicial institutions are not yet fully developed. In a country where the judicial system is relatively independent (half a standard deviation above the mean) a one standard deviation increase in openness reduces corruption by 0.30 of a standard deviation. In countries where judicial institutions are not well developed (half a standard deviation below the mean), a one standard deviation increase in openness reduces corruption by 0.65 standard deviations in the corruption index. Therefore, our data show that at the margin, competition is more effective in controlling corruption in countries where the judicial system is not well developed.

Policy conclusions follow directly from the finding that protectionist or other policies directed at

³ Admittedly, this sort of competition involves some duplication of costs and some implausible assumptions about bureaucratic territoriality. See also Shleifer and Vishny (1993).

⁴ Rose-Ackerman herself stressed the need for further research on this aspect of corruption when she stated that 'the role of competitive pressures in preventing corruption may be an important aspect of a strategy to

deter bribery of low-level officials, but requires a broad-based exploration of the impact of both organisation and market structure on the incentives for corruption facing both bureaucrats and their clients' (Rose-Ackerman 1988).

⁵ This negative effect of openness on corruption is remarkably robust as it has been reproduced in the three data sets.

restricting the competitive pressures faced by domestic firms have the effect of fostering corruption. Using the example of active industrial policies that provide tax breaks and subsidies to promote the expansion of 'high value added' sectors or to increase the 'competitiveness' of local industry, Ades and Di Tella (1995b) argue that the effectiveness of such policies will be qualified in the presence of corruption. The theoretical argument is that active industrial policy transfers rents to favoured firms. Bureaucrats with control rights over those firms can create mechanisms to extract some of those rents through bribes. Since corruption is known to have a negative effect on investment and growth, the total effect of industrial policy on investment can be decomposed into two effects: a positive direct effect and a negative indirect effect through corruption. Using data constructed in the context of studies advocating the use of active industrial policies, we find that the magnitude of the qualification is quite high. About half of the direct efforts of industrial policy on investment and the number of people doing R&D is lost through corruption-induced distortions.

3 The Costs of Corruption

One of the reasons often cited for the relative neglect of corruption as a research topic in economics is that a bribe is simply a transfer and therefore entails no serious welfare losses. Myrdal (1968) seriously questioned this view arguing that if corruption is allowed, government officials will have an interest in generating bureaucratic hurdles to demand bribes.⁶ Thus, rather than supporting production, the bureaucracy becomes a burden obstructing efficiency.⁷

If delays are the product of pre-existing rules, however, then corruption may serve a useful purpose. This is the approach taken by Leff (1964) and others who argue that corruption improves social welfare, both because it is a way to avoid cumbersome regulations and because it is a system of building in rewards for badly paid bureaucrats. These two approaches, corruption as 'sand' and corruption as 'oil' in the machine, coexisted with

ingenious rationales for each approach being constantly added to the list. But the lack of data prevented these competing hypotheses from being directly tested against one another.

Mauro (1995) presents the first systematic empirical analysis of the effects of corruption by focusing on the relationship between investment and corruption. Mauro uses the BI index of corruption to estimate the effects of corruption on the average ratio of total and private investment to GDP for the period between 1960 and 1985 for a cross-section of 67 countries. He finds that corruption lowers investment, thereby reducing growth. The negative association between corruption and investment, as well as growth, is significant, both in a statistical and in an economic sense. For example, he finds that if Bangladesh were to improve the integrity and efficiency of its bureaucracy to the level of that of Uruguay (this corresponds to a one standard deviation improvement in the index), its investment rate should rise by almost 5 percentage points and its yearly GDP growth rate would rise by over half a percentage point. The magnitude of the estimated effects is somewhat larger when instrumental variables are used. Mauro also constructs a 'bureaucratic efficiency index' as the arithmetic average of three BI indexes: those of 'efficiency of the legal system and the judiciary', an index for the amount of 'bureaucracy and red tape', and the BI 'Corruption' index. The composite index is again negatively and significantly associated with investment. Furthermore, the effects are quite strong. A one standard deviation improvement in bureaucratic efficiency is associated with an increase in the investment rate by 4.75 per cent of GDP.

The results of Mauro's work are supportive, therefore, of the claim that corruption has a negative impact on investment, and through that channel it negatively affects growth. It is still worth considering whether the effects of corruption are different depending on the level of red tape in the economy, as argued by Leff and his followers. Mauro provides some evidence against Leff by dividing his sample into high red tape and low red tape sub-samples, and finds a negative and significant association

⁶ See also Chapter 5 in Rose-Ackerman (1978).

⁷ The Santhanam Committee report on corruption in India (cited by Myrdal) notes that '(w)e have no doubt that quite often delay is deliberately contrived so as to obtain some kind of illicit gratification'.

between investment and corruption regardless of the level of red tape. However, he finds that the negative impact is smaller in the high red tape sample, though he makes no attempt to test whether this difference is significant. When we reproduced these results under a marginally different specification, the cross-effect between corruption and bureaucracy is statistically weak, though the coefficient has the sign predicted by Leff and his followers, suggesting that in countries with high levels of red tape, corruption has less damaging effects on investment.

Corruption may, however, affect growth through channels other than investment. Mauro (1994) estimates the effects of corruption on the composition of government expenditure. This approach consists of examining in more detail some of the possible channels through which corruption affects economic performance, the allocation of government spending being one of them. For a cross-section of countries, Mauro finds that corruption and political instability are negatively and significantly correlated with the share of government expenditure on education in total spending and in GDP. As a possible explanation, he conjectures that it may be more difficult to collect bribes on education projects than on other components of government expenditure. These are preliminary efforts, however, as one would want to make sure that this is not merely capturing the effect of the level of development in the composition of government expenditure.

However, there is already suggestive evidence to indicate that corruption is mostly 'sand in the machine', and any positive effect in countries with high red tape does not receive strong support from the data.

4 Conclusion

The availability of subjective data on corruption has finally provided the field of the economics of corruption with the empirical discipline that is essential to turn its fertile theorizing into policy recommendations. In this survey, we review the recent empirical contributions organized into two broad themes: theories of the causes and theories of the effects of corruption. The new empirical approach has helped to shed light on a controversy

regarding the effects of corruption on investment and growth that has been running since the 1960s. Though the results obtained so far should be treated with caution, the data suggests that there is a negative effect of corruption on investment, and that this effect is less severe in countries with particularly obtrusive bureaucracies, though this difference with low red-tape countries is only mildly significant. The evidence also suggests that corruption is associated with the lack of competition in the product market and with weaker/less independent judicial systems. The evidence suggests that both tighter enforcement of laws and increases in product market competition have negative and significant effects on a country's level of corruption. But, more significantly, the interaction term is positive, indicating that opening up the economy to foreign trade is particularly important in countries where legal and economic institutions are not yet fully developed.

Though the recent empirical contributions represent a major step forward in establishing the field of corruption for progressive research, much work remains to be done. Progress will be constrained by data availability, and our guess is that data improvements will come on two fronts. First, cross-country data from risk analysts is now available for a reasonably long time series (almost 16 years), though at quite high commercial rates. Second, cross-industry studies of corruption based on the work of large accounting firms would finally allow research to begin on the micro-foundations of corruption. With this data at hand, future research could tackle questions such as what are the effects of corruption? What are the causes of corruption? What is its relationship with variables such as growth, inequality, political competition, inflation or product market competition? What are the mechanisms involved? Which industries and which professions are more prone to corruption? Does corruption distort specialization in trade? Is corruption pro-cyclical? If corrupt payments are tax deductible, who ends up paying for corruption? What are the true effects of anti-corruption laws, such as the US Foreign Corrupt Practices Act of 1977?

See following page for references.

References

- Ades, Alberto and Di Tella, Rafael , 1995a, 'Competition and corruption', **Applied Economics Discussion Paper Series** No 169, Oxford: Oxford University
- _____, 1995b, 'National champions and corruption: some unpleasant interventionist arithmetic', mimeo, Oxford: Oxford University
- _____, 1995c, 'The new economics of corruption: a survey and some new results', mimeo, Oxford: Oxford University
- Gastil, R., 1987, **Freedom in the World**, Westport: Greenwood Press
- Leff, Nathaniel, 1964, 'Economic development through bureaucratic corruption', **American Behavioral Scientist**: 8-14
- Mauro, Paolo, 1995, 'Corruption, country risk and growth', **Quarterly Journal of Economics** Vol; 3 No 442: 681-712
- _____, 1994, 'The composition of government expenditure: the good guys and the bad guys', mimeo, Harvard: Harvard University
- Myrdal, Gunnar, 1968, **Asian Drama: An Inquiry into the Poverty of Nations**, Vol II, New York: Pantheon
- Rose-Ackerman, Susan, 1975, 'The economics of corruption', **Journal of Public Economics**, Vol 4 No 2: 187-203
- _____, 1978, **Corruption: A Study in Political Economy**, New York: Academic Press
- _____, 1988, 'Bribery', in J. Eatwell, M. Milgate and P. Newman, (eds) *The New Palgrave: A Dictionary of Economics*, London: Macmillan
- Shleifer, Andrei and Robert Vishny, 1993, 'Corruption', **Quarterly Journal of Economics**, Vol CIX: 599-617