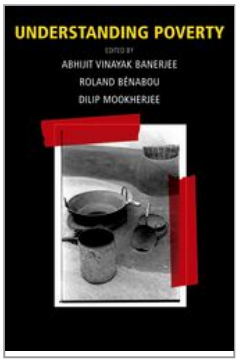

Understanding Poverty
Abhijit Vinayak Banerjee, Roland Bénabou, and Dilip Mookherjee

Print publication date: 2006
Print ISBN-13: 9780195305197
Published to Oxford Scholarship Online: September 2006
DOI: 10.1093/0195305191.001.0001

Corruption and Development

Jean-Jacques Laffont (Contributor Webpage)

DOI:10.1093/0195305191.003.0011

Abstract and Keywords

This essay explores why corruption is so widespread in developing countries. It is organized into three sections. The first section argues that a theory of corruption is needed in order to answer this question. The second section presents a theory linking corruption and development. The third section empirically documents the correlation between development and corruption.

Keywords: developing countries, correlation, GNP

Corruption is a particularly serious issue in developing economies. Susan Rose-Akerman (1999), an expert on the subject, observes: “High levels of corruption limit investment and growth and lead to ineffective government. Developing countries and those making a transition from socialism are particularly at risk, but corruption is a worldwide phenomenon.”

This essay asks why corruption is so widespread in developing countries. It is organized in three sections. First, I argue that a theory of corruption is needed in order to answer this question. Second, I sketch a theory linking corruption and development. Third, I empirically document the correlation between development and corruption.

THE NEED FOR A THEORY OF CORRUPTION

Corruption is an endogenous phenomenon of organizations and societies. In order to target the right level of corruption in a society, it is essential to design a proper cost/benefit analysis, and therefore to build a good understanding of the mechanics of corruption.

The Origin of Corruption

Corruption opportunities arise from the need for delegation in complex societies. Let me illustrate this through an example, that of a benevolent chief in a traditional village. The chief (the principal) can directly monitor the behavior of the members of the village (the "agents"), and has the authority to inflict the penalties required to eliminate rational misbehavior. He can also directly collect the taxes needed to fund the community's public goods. **(p.162)** As the village grows and becomes a city, though, the chief needs to delegate the monitoring of behavior to a police force, the levy of taxes to tax collectors, and so forth. Through delegation, the chief loses control and now suffers from asymmetric information with respect to these "intermediaries" who carry out the tasks he formerly carried out himself. The police, when observing misbehaviors, have discretion as to whether to report these misbehaviors. The tax collector similarly has discretion as to whether to report attempts at tax evasion.

The fundamental point is that delegation in general creates discretion, and thereby scope for side contracting between the intermediary and the agents, to the detriment of the "principal" (the chief in this illustration). The intermediary can offer not to report the misbehavior in return for a bribe. The stake of collusion is the size of the penalty for misbehavior.[1]

Clearly, the chief may not be benevolent, and may himself be corrupt, but this does not change the main idea. Indeed, the general point carries over once when considering that the "principal" in the relationship is not the chief or the government, but the people who delegate (through an incomplete contract defined by the constitution and the electoral process) the design of social and economic policies to politicians. Politicians, too, are intermediaries, and have discretion that they can use to their own benefit, very much like the lower-level intermediaries considered above.

Responses to Corruption

The scope for corruption is thus created by the asymmetry of information between principal and intermediary, and calls for a regulatory response. In order to avoid side contracting, the principal must give the intermediary some incentive to report misbehaviors that the latter will value more than the potential bribe. The required incentive depends on the nature of the intermediary's information (verifiable or not), on the morality and risk aversion of the intermediary, and also on the probability of being caught engaging in such a side contract.[2] When the design of the intermediary's contract is not constrained, and under conditions that have been extensively studied in the literature (in particular, perfect information about the intermediary's preferences), a "collusion proofness" principle holds: the optimal policy can be designed so as to completely deter the formation of collusion.[3] But satisfying this

constraint requires costly payments to the intermediary or other costly policies. An optimal policy must take this additional cost into account.

While corruption should be reduced through appropriate policies, including incentives for intermediaries as discussed above, it should not in general be eradicated at any cost: the zero-corruption level is observed nowhere, and therefore is probably not the optimal level under a wide range of institutional arrangements prevailing for a wide range of societies. One reason for this is that the principal may not be well-informed about the intermediary's propensity for corruption—namely, about the conditions (nature of information, morality and risk aversion, and probability of being caught) that de **(p.163)** termine his willingness to misreport information to the principal. Put differently, some intermediaries can be corrupted by small bribes; others, only by very substantial ones. Making sure that corruption never occurs requires making very high payments to the intermediary. It is in general cheaper to make smaller payments and accept occasional corruption.

The Limits to Regulatory Solutions

When the intermediary is a regulatory agency, a new set of issues arises. Consider the case of a regulatory agency whose task is to partially bridge the information gap between the government and the regulated firm. The stake of collusion is then the decrease in the firm's information rent brought about by the report of the agency's information. A high-powered incentive scheme (such as a fixed-price or price-cap contract) creates scope for much larger informational rents for the regulated firm than the old cost-of-service/cost-plus contracts. Reducing the stake of collusion then requires adopting less powerful incentives. In sum, incentives are likely to be less powerful than would be advisable in the absence of concern about collusion between the regulator and the firm.[4]

A SKETCH OF A THEORY LINKING CORRUPTION AND DEVELOPMENT

I have argued that very primitive societies exhibit fewer opportunities for corruption and that as societies become more complex, more delegation is needed and more opportunities for corruption develop. At an early stage of development, though, it is rather difficult to fight corruption because

- The auditing resources (human and technical) are scarce.
- Financial resources to reward the intermediary are scarce.
- Economic agents being poor, financial penalties for corrupt activities are limited.

In such a society the costs of avoiding corruption are high, and consequently the optimal level of corruption per transaction open to corruption is also high. As development occurs, the number of transactions potentially affected by corruption increases, and therefore the amount of corruption should increase

even if per transaction corruption is stable, or even decrease due to an increase in the resources that can be mobilized to fight corruption.

Institutional innovation is another source of corruption. New institutions undergo *tatonnement* processes, in which the various new features, including the incentives put in place to deter the emergence of corruption, are refined over time. Thus, as new institutions are added, new opportunities for corruption arise that can be fought only once they are well understood. This idea is consistent with the increase of corruption when large institutional changes occur, such as the transition from socialism to capitalism.

As development continues to progress, though, the government has more **(p. 164)** and more resources to fight corruption, and since agents are richer, it is easier to threaten them with high penalties (rarely used at equilibrium), so it becomes less costly to fight corruption. The corruption per transaction decreases rapidly, and the volume of corruption may also decrease.

The caveat to this last point is that the benefits from a decrease in the opportunity cost of fighting collusion are reaped only if the government is reasonably keen on curbing corruption. This in general requires a well-functioning democracy that enables the people to control the politicians.

Summing up, this reasoning suggests that corruption per transaction decreases with development, and that there is an inverted U-shaped relationship between development (say per capita GDP) and the amount of corruption, possibly with a role for the quality of democracy to strengthen the decrease of corruption. Next, we explore this correlation with cross-country data.

CORRELATIONS

A large number of measures of corruption are available. What do these data really measure? They are in general obtained from surveys of businessmen who are active in sample countries. Thus these evaluations are likely to measure the gravity of corruption per transaction. Let COR be such a measure. We should expect this measure to decrease with the level of development. The amount of corruption in a country can then be approximated by the level of activity open to corruption multiplied by the level of corruption. The variable “per capita GDP” is a rough measure of the activity open to corruption if we assume that the share of transactions open to corruption is a constant share of per capita GDP. Multiplying this variable by the level of corruption COR, we obtain a measure of the per capita amount of corruption; the prediction is that this measure should first increase, and then decrease with development.

To test these conjectures, we first need measures of these variables for some sample countries.[5] For the level of corruption, the measure chosen is given by an index obtained by Kaufmann et al. (1999), called COR(K). For the level of development, following standard procedures, per capita GNP is used as a proxy

variable. After gathering such information and plotting on a graph the total corruption (COR multiplied by per capita GNP) against per capita GNP for each country in the sample, we can empirically establish more about the relationship between amount of corruption and development.

It is important to note that although our primary interest is how development affects corruption, there are some additional characteristics in each country that are also relevant in explaining corruption. For example, it can be shown that the openness of the country reduces the level of corruption, while a high level of exports of natural resources or a high level of ethnic diversity increases it. Another important variable that explains the level of corruption is the legal system a country has. The way in which rights are **(p.165)** established and enforced is closely related to the amount of corruption in a society. Different legal arrangements result in different incentives, and ultimately agents will respond to them. Countries' legal systems can be grouped according to their legal tradition. In commercial law, for instance, we can find two major families of legal traditions: common law and civil law, with origins in England and Rome, respectively. Civil law countries can be further subdivided into French, Scandinavian, and German traditions. Scandinavian law countries have the best record of enforcing the rights established by law, and the French law ones have the worst quality in terms of enforcement.[6] Hence, it is expected that when comparing two countries with the same level of development, the country that has a Scandinavian law tradition will have a lower amount of corruption than a country with any other type of legal tradition. Henceforward, whenever looking to the observed relation between corruption and development, we have to take into account the legal system of the country.

Figure 11.1 portrays the result obtained after fitting a third-degree polynomial of total corruption in GNP per capita for all the countries in our sample. The upper line represents the relationship between the amount of total corruption and development in the sample of countries that have an English, French, or German law tradition. The figure reveals the expected inverted U-shaped relationship described earlier. For low levels of development, as the per capita GNP increases, total corruption also increases. However, after the country attains a certain level of development (a sufficiently high GNP per capita), the level of corruption decreases. The lower line in Figure 11.1 represents the best-fitting curve for Scandinavian law tradition countries. As can be seen, these countries also exhibit an inverted-U relationship between corruption and the level of development. However, as expected, for every level of development the measure of total corruption is lower in Scandinavian law tradition countries than in the other law tradition countries.

(p.166) acknowledgments

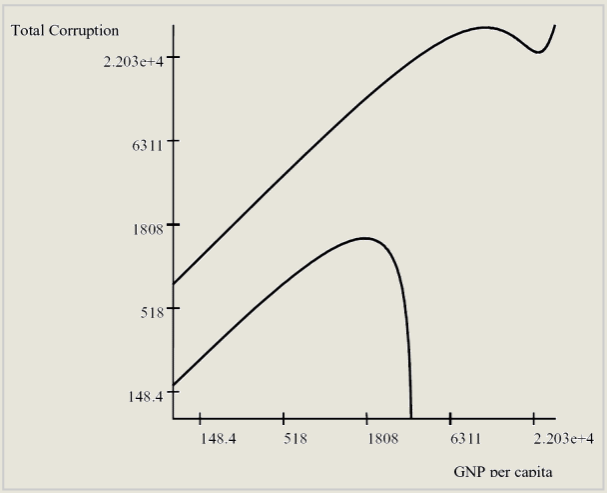

Figure 11.1 Total Corruption and GNP per Capita

The ideas developed in this chapter were later developed and refined by the author in chapter 4 (“Enforcement, Regulation, and Development”) of his 2004 book. There Jean-Jacques Laffont considers a broader set of responses to the threat of collusion, analyzing how the enforcement system and the rule of law are determined by the level of development. He develops a theory of how the strength of institutions affects the possibility of renegotiation by a regulated firm facing financial hardship, and ultimately incentives of the firm with regard to productivity improvement. In related empirical work on the renegotiation of concessions in Latin America, he shows that, as predicted by his theory, renegotiation is more likely when the concession is run by a price-cap contract, when corruption is high, and when the concession holder has a local partner.

Jean-Jacques Laffont passed away on May 1, 2004. He wrote the draft for this essay in June 2002. This revised version was prepared by Antonio Estache, Patrick Rey, Patricia Meirelles, Catherine Rodriguez, and Jean Tirole, to all of whom we are deeply grateful. The revisions include some stylistic changes, and complete the presentation of the empirical results.

The reader is referred to Jean-Jacques Laffont's book for a broader treatment of the themes developed in the chapter.

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Notes:

(1.) When the intermediary is a judge, whose task is to look for evidence needed to implement a contractual obligation by a supplier, say, the stake of collusion may be the difference between the expected costs for the supplier of abiding by this obligation and that incurred when the obligation is not enforced.

(2.) See Tirole (1986); Laffont (2000).

(3.) See, e.g., Laffont and Rochet (1997).

(4.) An exception arises when the regulator's task consists in measuring/auditing the firm's cost for cost-reimbursement purposes. A low-powered incentive scheme, by raising the fraction of the firm's cost that is reimbursed, raises the stake of collusion.

(5.) For further details on the sample used in this empirical exercise, refer to Laffont (2003).

(6.) For further information about legal traditions, refer to La Porta et al. (1998).