

Why Worry About Corruption?



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Preface

The Economic Issues series was inaugurated in September 1996. Its aim is to make available to a broad readership of nonspecialists some of the economic research being produced in the International Monetary Fund on topical issues. The raw material of the series is drawn mainly from IMF Working Papers, technical papers produced by Fund staff members and visiting scholars, as well as from policy-related research papers. This material is refined for the general readership by editing and partial redrafting.

The following paper draws on material originally contained in IMF Working Paper 96/98, “The Effects of Corruption on Growth, Investment, and Government Expenditure,” by Paolo Mauro, then an economist in the IMF’s Policy Development and Review Department. David D. Driscoll of the Fund’s External Relations Department prepared the present version. Readers interested in the original Working Paper may purchase a copy from IMF Publication Services (price \$7.00).

Why Worry About Corruption?

Corruption has been around for a very long time and will be around in the future unless governments can figure out effective ways to combat it. This is not going to be easy. Although the study of the causes and consequences of corruption has a long history in economics, going back 30 years to seminal contributions on what economists call rent seeking (see box), related empirical work on quantifying the extent of corruption and putting a dollar sign on its economic effects has been limited. This is hardly surprising since most corruption is clandestine. Also, determining just how efficient government institutions are is not what would be called an exact science. As a consequence, corruption is notoriously hard to measure and empirical economic research on the question is fairly meager. This paper focuses exclusively on corrupt *public* practices—illegal activities that reduce the economic efficiency of governments. It does not address *private* corruption, such as that practiced on individuals and private enterprises by organized crime.

Wide publicity surrounding the statements at the multinational financial institutions' 1996 Annual Meetings by the Managing Director of the International Monetary Fund that governments must demonstrate their intolerance for corruption in all its forms and by the President of the World Bank that the "cancer of corruption" must

Rent and Rent Seeking

For most of us, rent is what we pay the landlord each month or what a rental agency at an airport charges for letting us use a car for a week. For the economist, however, rent is short for “economic rent” and means something quite different. It is the extra amount paid (over what would be paid for the best alternative use) to somebody or for something useful whose supply is limited either by nature or through human ingenuity. For example, Mike Tyson, the boxing champion, has a natural and rare talent for flooring his opponents during the first round and he was paid some \$70 million for exercising this talent during 1996. If he were not a talented boxer, Mr. Tyson’s alternative employment would likely be somewhat more modest, earning, say, about \$30,000 a year. The \$69,970,000 difference is an economic rent accruing to Mr. Tyson because nature has seen to it that boxers of his skill are in very short supply. Similarly, for several years during the 1980s the U.S. government restricted the import of Japanese automobiles to a certain quota, creating an artificial shortage of foreign cars. The result? General Motors and other U.S. car manufacturers not only sold more cars but raised their prices, thereby enjoying an economic rent (the difference between the price of domestic cars and the cheaper but unavailable Japanese alternative). Japanese auto manufacturers also enjoyed an economic rent because the demand for their cars in the United States outstripped the artificially low supply.

Not much can be done about natural limitations on supply, for which Mr. Tyson is no doubt grateful, but seeking economic rents by creating artificial limitations is a booming business. Two centuries ago Adam Smith noted that “People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public.” Every day private firms spend vast amounts of money attempting to convince legislators to grant monopolies or otherwise restrict competition so that some industry or individual can realize a rent. Throughout the world bureaucrats and people in authority are indefatigably maneuvering to position themselves in a tiny monopoly where they can be bribed for issuing a license, approving an expenditure, or allowing a shipment across a border. Studies have shown that these rent-seeking activities exact a heavy economic and social toll. Some rent-seeking activities are perfectly legal. Other rent-seeking activities listed in this paper are distinctly illegal, and it goes without saying that society would be better off without their corrupting influence.

be dealt with have stimulated renewed interest in the topic. Researchers have begun to look at so-called corruption indices, which are produced by private rating agencies and are typically based on replies by consultants living in the countries to standardized questionnaires. Obviously the replies are subjective, but the correlation between indices produced by different rating agencies is very high, suggesting that most observers agree more or less on ranking countries according to how corrupt they seem to be. The high prices paid to the rating agencies by their customers (usually multinational companies and international banks) constitute indirect evidence that the information is useful and can have tangible economic effects. On the other hand, the judgment of the consultants who produce these indices may be skewed by the economic performance of the countries they monitor. Substandard economic performance by itself does not argue to pervasive corruption, nor is economic success an infallible sign of innocence of corruption. It is therefore important in analyzing the relationship between perceived corruption and economic variables to be cautious about interpreting correlations as cause-effect relationships. An additional drawback of these indices is their failure to distinguish among various types of corruption: high-level versus low-level corruption or well-organized versus poorly organized corruption. Despite these limitations, the indices provide a wealth of useful information.

This paper has two goals. First, it lists a number of possible causes and consequences of corruption, derived from a review of recent empirical studies that use cross-country regressions to determine the strength of the links between corruption and its causes and consequences. (A regression is a statistical technique for estimating the equation that best fits sets of observations. In this case, regressions point to the most probable causes and the most probable consequences of corruption.) Although data limitations subject empirical work to many uncertainties, these studies provide tentative evidence that corruption may seriously inhibit economic performance. Second, the paper presents recent evidence on the extent to which corruption affects investment and economic growth and on how it influences governments in choosing what to spend their money on. It finds that corruption discourages investment, limits economic

growth, and alters the composition of government spending, often to the detriment of future economic growth.



Causes of Corruption

Since much public corruption can be traced to government intervention in the economy, policies aimed at liberalization, stabilization, deregulation, and privatization can sharply reduce the opportunities for rent-seeking behavior and corruption. Where government regulations are pervasive, however, and government officials have discretion in applying them, individuals are often willing to offer bribes to officials to circumvent the rules and, sad to relate, officials are occasionally tempted to accept these bribes. Identifying such policy-related sources of corruption is obviously helpful in bringing it under control. The following sources have for some time been well known.

- **Trade restrictions** are the prime example of a government-induced source of rents. If importing a certain good is subject to quantitative restriction (for example, only so many foreign automobiles can be imported each year), the necessary import licenses become very valuable and importers will consider bribing the officials who control their issue. More generally, protecting a home industry (such as plywood manufacturing) from foreign competition through tariffs creates a semi-monopoly for the local industry. Local manufacturers will lobby for the establishment and maintenance of these tariffs and some may be willing to corrupt influential politicians to keep the monopoly going. Studies have shown that a very open economy is significantly associated with lower corruption. In other words, countries tend to be less corrupt when their trade is relatively free of government restrictions that corrupt officials can abuse.

- **Government subsidies** can constitute a source of rents. Studies show corruption can thrive under industrial policies that allow poorly targeted subsidies to be appropriated by firms for which they are not intended. The more such subsidies are available to industries, the higher the corruption index.

- **Price controls**, whose purpose is to lower the price of some good below its market value (usually for social or political reasons), are also a source of rents and of ensuing rent-seeking behavior. Price controls create incentives for individuals or groups to bribe officials to maintain the flow of such goods or to acquire an unfair share at the below-market price.

- **Multiple exchange rate practices and foreign exchange allocation schemes** lead to rents. Some countries have several exchange rates—one for importers, one for tourists, one for investors, for example. Differentials among these rates can lead to attempts to obtain the most advantageous rate, although this rate might not apply to the intended use of the exchange. Multiple exchange rate systems are often associated with anti-competitive banking systems in which a key bank with government ties can make huge profits by arbitraging between markets. Some countries have little foreign currency and distribute what they have through various schemes, with varying degrees of transparency. If, for example, state-owned commercial banks ration scarce foreign exchange by allocating it according to priorities established by government officials, interested parties may be willing to bribe these officials to obtain more than their fair share.

- **Low wages in the civil service** relative to wages in the private sector are a source of low-level corruption. When civil service pay is too low, civil servants may be obliged to use their positions to collect bribes as a way of making ends meet, particularly when the expected cost of being caught is low.

In addition to government regulations as an occasion for corruption, other reasons for corruption have been identified.

- **Natural resource endowments** (oil, gold, exotic lumber) constitute a textbook example of a source of rents, since they can typically be sold at a price that far exceeds their cost of extraction and their sale is usually subject to stringent government regulation,

to which corrupt officials can turn a blind eye. Resource-rich economies may be more likely to be subject to extreme rent-seeking behavior than are resource-poor countries.

- **Sociological factors** may contribute to rent-seeking behavior. An index of ethnolinguistic fractionalization (societal divisions along ethnic and linguistic lines) has been found to be correlated with corruption. Also, public officials are more likely to do favors for their relatives in societies where family ties are strong.



Consequences of Corruption

Among the many disagreeable aspects of corruption is evidence that it slows economic growth through a wide range of channels.

- In the presence of corruption, businessmen are often made aware that an up-front bribe is required before an enterprise can be started and that afterwards corrupt officials may lay claim to part of the proceeds from the investment. Businessmen therefore interpret corruption as a species of tax—though of a particularly pernicious nature, given the need for secrecy and the uncertainty that the bribe-taker will fulfill his part of the bargain—that diminishes their incentive to invest. Empirical evidence suggests that corruption **lowers investment and retards economic growth** to a significant extent.

- Where rent seeking proves more lucrative than productive work, **talent will be misallocated**. Financial incentives may lure the more talented and better educated to engage in rent seeking rather than in productive work, with adverse consequences for the country's growth rate.

- Of particular relevance to developing countries is the possibility that corruption might reduce the effectiveness of **aid flows** through the diversion of funds. Aid, being fungible, may ultimately

help support unproductive and wasteful government expenditures. Perhaps as a result, many donor countries have focused on issues of good governance, and in cases where governance is judged to be especially poor, some donors have scaled back their assistance.

- When it takes the form of tax evasion or claiming improper tax exemptions, corruption may bring about **loss of tax revenue**.

- By reducing tax collection or raising the level of public expenditure, corruption may lead to **adverse budgetary consequences**. It may also cause monetary problems if it takes the form of improper lending by public financial institutions at below-market interest rates.

- The allocation of public procurement contracts through a corrupt system may lead to lower **quality of infrastructure and public services**.

- Corruption may distort the **composition of government expenditure**. Corruption may tempt government officials to choose government expenditures less on the basis of public welfare than on the opportunity they provide for extorting bribes. Large projects whose exact value is difficult to monitor may present lucrative opportunities for corruption. A priori, one might expect that it is easier to collect substantial bribes on large infrastructure projects or high-technology defense systems than on textbooks or teachers' salaries.



Description of the Data

This paper uses indices of corruption drawn from two private firms:
1. Political Risk Services, Inc., which publishes the *International Country Risk Guide*. This paper uses an index, compiled by the IRIS

Center of the University of Maryland, which is based on averages for 1982–95 and is available for over 100 countries.

2. Business International (now incorporated into The Economist Intelligence Unit). The index used here is based on averages for 1980–83 and is available for 67 countries.

Both indices are on a scale from 0 (most corrupt) to 10 (least corrupt). The corruption index used in this paper is the simple average of both indices, which report remarkably similar judgments on individual countries.

The paper also uses three standard sources of data on the composition of government expenditure:

1. The Barro (1991) data set containing the 1970–85 averages of government spending on defense, education, social security and welfare, public investment, and total government expenditure for over 100 countries. This data set provides the basis for much recent empirical work on the determinants of economic growth. (See Robert J. Barro, 1991, “Economic Growth in a Cross Section of Countries,” *Quarterly Journal of Economics*, Vol. CVI (May), pp. 407–43).

2. The Devarajan (1993) data set of developing countries, to which the industrial countries were added, so as to obtain a sample of around 95 countries. The data refer to 1985 observations. The components of expenditures on education (school, university, and other education) and health (hospitals, clinics, and other institutions) are available for about 60 countries. (See Shantayanan Devarajan, Vinaya Swaroop, and Heng-fu Zou, 1996, “The Composition of Public Expenditure and Economic Growth,” *Journal of Monetary Economics*, Vol. 37 (April), pp. 313–414.)

3. The Easterly and Rebelo (1993) data set, which consolidates the public investment expenditure of the general government with public investment expenditures undertaken by public enterprises for 96 countries. It provides data on the composition of public investment by sector for about 40 countries. (See William Easterly and Sergio Rebelo, 1993, “Fiscal Policy and Economic Growth: An Empirical Investigation,” *Journal of Monetary Economics*, Vol. 32 (December), pp. 417–58).



Empirical Results

This section analyzes further how corruption affects investment and economic growth and reports new evidence on the relationship between corruption and the components of government expenditure.

Effects of Corruption on Investment and Economic Growth

Regression analysis indicates that the amount of corruption is negatively linked to the level of investment and economic growth, that is to say, the more corruption, the less investment and the less economic growth. Analysis further shows that if the corruption index improves by one standard deviation (equal to 2.38 in this case—a standard deviation measures variation from the “normal” index), the investment rate increases by more than 4 percentage points and the annual growth rate of per capita GDP increases by over a half percentage point. In effect, a country that improves its standing on the corruption index from, say, 6 to 8 (recall that 0 is most corrupt, 10 least), will enjoy the benefits of an increase of 4 percentage points of investment, with consequent improvement in employment and economic growth.

Corruption and Government Expenditure

When they have the option, do corrupt politicians choose government projects on which it is easier to levy bribes rather than those that promise the greatest public good? Does the greed of corrupt politicians affect to any significant degree the composition of government expenditure? If corruption acted simply as an equal tax

on all government expenditure (if, say, 10 percent of the cost of all government expenditures is raked off in bribes), the composition of this expenditure would be independent of corruption. Whether a dam is built or an equally costly squadron of jet fighters purchased would make no difference to politicians, who would derive the same rent from each option. They could afford to act in the public interest. In the real world, however, it seems reasonable to interpret any empirical relationship between corruption indices and particular components of government spending as tentative evidence that bribes can be more readily collected on some types of government expenditure than on others.

The question whether corruption affects the composition of government expenditure is an interesting one to consider because, even though the empirical literature has so far yielded mixed results on the effects of government expenditure and its composition on economic growth, most economists think that the level and type of spending undertaken by governments do matter for economic performance. Fairly robust evidence suggests, for example, that high rates of enrollment in schools are related to superior economic growth. Is there evidence that corrupt governments may display predatory behavior in choosing the composition of government expenditure? Specifically, is government spending on education negatively affected by corruption?

Statistical analysis of the data sources identified in this paper in fact shows that government spending on education as a ratio to GDP is negatively and significantly correlated with corruption (the more corruption, the less spent on education). Analysis also shows that if a country moves up the corruption index from, say, 6 to 8 (it improves its respectability by one standard deviation), government spending on education increases by around a half a percent of GDP.

Although similar analysis indicates that other components of government expenditure, most notably transfer payments (social insurance and welfare payments), are also negatively and significantly associated with the corruption index, education turns out to be the only component of public spending that remains significantly associated with corruption when the level of per capita income in 1980 is used as an additional explanatory variable. (This

control takes into account the well-known empirical observation that government expenditure as a percentage of GDP tends to rise as a country becomes richer—a relationship known as Wagner’s law.) Surprisingly, government spending on defense or transportation displays no significant relationship with corruption. This does not mean that spending on these items is entirely free of corruption, but only that simple statistical analysis does not find any significant evidence that it is.

It is possible to speculate that, while bribes are difficult to levy on teachers’ salaries, they are easier to levy on the construction of school buildings and other capital expenditures. Most people suspect that corruption leads to high capital expenditure on “white elephant” projects (grandiose presidential palaces, unnecessarily large airports, or vast university campuses). The data used in this paper do not provide significant evidence to support this suspicion, although an improvement in the corruption index seems to be associated with an increase in current expenditure as a ratio to GDP and with a decrease in capital expenditure, where white elephants are born. While evidence is fairly robust that corruption lowers total (public and private) investment, no clear relationship has been found between corruption and public investment. A possible explanation of this finding is that predatory behavior by corrupt governments may help sustain the level (though perhaps not the quality) of public investment as a ratio to GDP, even as private investment declines.



Direction of Causality

While, for the sake of clarity of exposition, the above review boldly calls variables suspected of being related to corruption either a cause or an effect of that corruption, the direction of causality is not entirely evident in all cases. For example, it is not always clear

whether the existence of government building regulations causes bureaucrats to ask for bribes in return for helping construction firms circumvent them, or whether these regulations were created by corrupt bureaucrats seeking a means of realizing economic rents. Although some attempt has been made to establish the correct direction of causal links, the issue of causality remains unresolved, and it is possible that variables may occasionally act simultaneously as both cause and effect. Fortunately, however, policy conclusions do not entirely depend on definitively establishing the direction of causality. An observed correlation between corruption and the composition of government spending may be sufficient grounds to consider encouraging governments to allocate a larger proportion of their spending to those items that are less susceptible to corruption.



Concluding Remarks

This paper has analyzed a number of causes and consequences of public corruption. It has provided a synthetic review of recent studies that estimate empirically some of these links. In addition, though data limitations imply that the results must be interpreted with caution, it has presented evidence that corruption may have considerable adverse effects on economic growth, largely by reducing private investment, and perhaps by worsening the composition of public expenditure. The paper has presented evidence of a negative and significant relationship between corruption and government expenditure on education, which is a reason for concern since previous literature has shown that educational attainment is an important determinant of economic growth. A possible interpretation of the observed correlation between corruption and the composition of government expenditure is that corrupt governments find it easier to collect bribes on some expenditure items than on others.

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