



Legal and Judicial Reform Unit

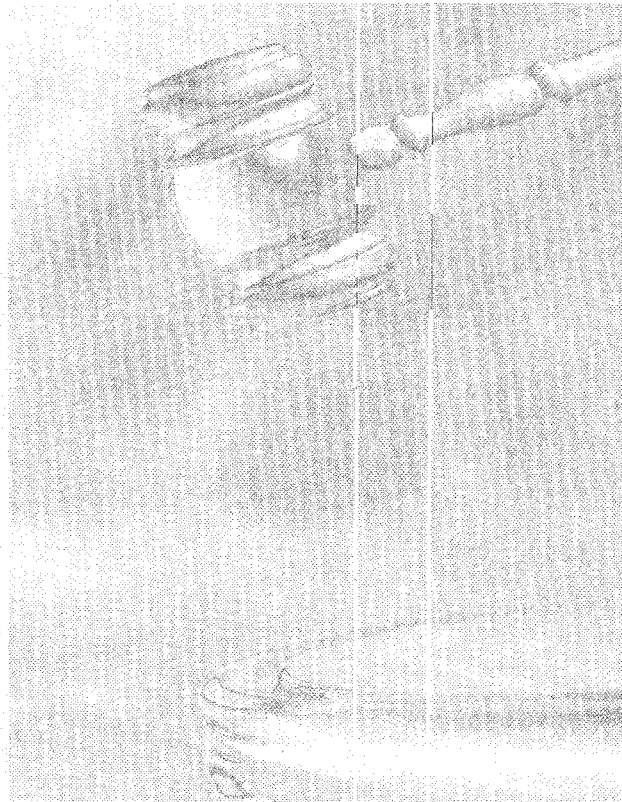
Legal Department

The World Bank

**20178**

August 1999

# An Analysis of the Causes of Corruption in the Judiciary



Edgardo Buscaglia and Maria Dakolias



---

---

# Contents

Introduction .....	1
An Economic and Jurimetric Analysis of Corruption within the Public Sector .....	2
An Empirical Model: Official Corruption and its Main Causes .....	4
Methodology .....	5
Scope of Study .....	6
Findings .....	8
Considering Institutional Inertia in Developing Anti-Corruption Policy .....	10
Conclusion: Judicial Reform .....	12
Role of the World Bank .....	13
References .....	15
Annex 1 .....	17
Endnotes .....	18



---

---

# An Analysis of the Causes of Corruption in the Judiciary

## Introduction

Inefficiency and systemic corruption have caused the deterioration of the service delivered by government agencies.<sup>1</sup> Corruption is an intrinsic part of the way the state operates in many countries, and it is impossible to remodel the state while it persists. Fighting corruption is therefore central to the process of reinvigorating the state—failure to confront it will obstruct reform initiatives and prolong the high social and economic costs it brings.

State corruption tends to discriminate against the poor and thereby increase the cost of economic and social development.<sup>2</sup> Many countries in Latin America have carried out privatization programs and policies of decentralization, and have downsized the civil services. These reforms have reduced the opportunities for extracting rent, they have fostered competition, and they have enhanced the degree of openness and accountability of the public sector. However, “where corruption is systemic, market and administrative reforms do not suffice, and . . . loosening Government controls can facilitate illicit along with legal economic activity.”<sup>3</sup> The transition stage to democracy and market reform can actually increase the opportunities for corrupt behavior. As a result, corruption continues to pose a serious problem for many countries in Latin America.

It can be said that corruption is the product of weak institutions and human nature. Corruption is likely to be costly in terms of economic efficiency, political legitimacy, and basic fairness.<sup>4</sup> Evidence shows that corruption lowers investor confidence and retards economic growth. Other effects include the misallocation of talent, reduced effectiveness of the flow of aid, loss of tax revenues, and the patronage and nepotism that lead to a lower quality of public services.

Corruption can be found across all regions and cultures.<sup>5</sup> It affects the social responsibility and integrity of individuals as well as institutions, both public-sector and private. Businessmen tolerate it as long as they gain predictability.<sup>6</sup> Corruption is used to circumvent legal systems and is prevalent in areas such as money laundering and organized crime, particularly drug trafficking.

One of the biggest challenges to strengthening a public institution lies in changing the prevailing culture and value system of the organization. Where roles and relationships prevail over rules and regulations, it is essential to change the culture. In many countries, informal relationships can be more important than formal rules and regulations. Where this is true, there is a need to strengthen institutions to shift the emphasis from corrupt informal practices to observance of the formal rules. The sources of informality must be addressed and the causes of corruption identified so that measures to prevent and control corrupt behavior may be taken.<sup>7</sup> Identifying the sources or causes of corruption allows countries to develop a prevention plan, which should include changing the organizational features that allow corruption to occur. A corruption prevention plan should address the issues of administrative accountability, efficiency, and effectiveness, which should in turn improve staff attitudes and raise the overall integrity and performance of an institution by minimizing the opportunities for fraud and corruption.

The judiciary, which is the public institution to be studied in this paper, is supposed to provide an essential check on other public institutions. A fair and efficient judiciary is key to any anticorruption plan, and corruption in the judiciary should therefore be dealt with from the start.

### *An Economic and Jurimetric Analysis of Corruption within the Public Sector*

Economists and lawyers have long focused their attention on the effects that well-functioning legal and judicial systems have on economic efficiency and development. Adam Smith states in his *Lectures on Jurisprudence* that a factor that “greatly retarded commerce was the imperfection of the law” and the uncertainty of its application.<sup>8</sup> Entrenched corrupt practices within the public sector, such as systemic official corruption, can be defined as the systematic use of public office for private benefit by those who supply or demand a service or good from the government, and which results in the reduction in the quality or availability of public goods.<sup>9</sup> In fact, the entrenched characteristic of corrupt official practices is rooted in the public and private abuse of market or organizational power through vertical and horizontal coordination of public resources.<sup>10</sup>

Many scholars have provided important contributions to the economic analysis of corruption. Studies that describe corrupt practices and that analyze the impact of corruption on economic development are abundant. In these studies, low compensation and weak monitoring systems are traditionally considered to be the main causes of corruption.<sup>11</sup> Official corruption, primarily bribery, reduces the likelihood of punishment and consequently the effectiveness of punishment as a deterrent—and when

---

---

# Contents

Introduction .....	1
An Economic and Jurimetric Analysis of Corruption within the Public Sector .....	2
An Empirical Model: Official Corruption and its Main Causes .....	4
Methodology .....	5
Scope of Study .....	6
Findings .....	8
Considering Institutional Inertia in Developing Anti-Corruption Policy .....	10
Conclusion: Judicial Reform .....	12
Role of the World Bank .....	13
References .....	15
Annex 1 .....	17
Endnotes .....	18



---

---

# An Analysis of the Causes of Corruption in the Judiciary

## Introduction

Inefficiency and systemic corruption have caused the deterioration of the service delivered by government agencies.<sup>1</sup> Corruption is an intrinsic part of the way the state operates in many countries, and it is impossible to remodel the state while it persists. Fighting corruption is therefore central to the process of reinvigorating the state—failure to confront it will obstruct reform initiatives and prolong the high social and economic costs it brings.

State corruption tends to discriminate against the poor and thereby increase the cost of economic and social development.<sup>2</sup> Many countries in Latin America have carried out privatization programs and policies of decentralization, and have downsized the civil services. These reforms have reduced the opportunities for extracting rent, they have fostered competition, and they have enhanced the degree of openness and accountability of the public sector. However, “where corruption is systemic, market and administrative reforms do not suffice, and . . . loosening Government controls can facilitate illicit along with legal economic activity.”<sup>3</sup> The transition stage to democracy and market reform can actually increase the opportunities for corrupt behavior. As a result, corruption continues to pose a serious problem for many countries in Latin America.

It can be said that corruption is the product of weak institutions and human nature. Corruption is likely to be costly in terms of economic efficiency, political legitimacy, and basic fairness.<sup>4</sup> Evidence shows that corruption lowers investor confidence and retards economic growth. Other effects include the misallocation of talent, reduced effectiveness of the flow of aid, loss of tax revenues, and the patronage and nepotism that lead to a lower quality of public services.

Corruption can be found across all regions and cultures.<sup>5</sup> It affects the social responsibility and integrity of individuals as well as institutions, both public-sector and private. Businessmen tolerate it as long as they gain predictability.<sup>6</sup> Corruption is used to circumvent legal systems and is prevalent in areas such as money laundering and organized crime, particularly drug trafficking.

One of the biggest challenges to strengthening a public institution lies in changing the prevailing culture and value system of the organization. Where roles and relationships prevail over rules and regulations, it is essential to change the culture. In many countries, informal relationships can be more important than formal rules and regulations. Where this is true, there is a need to strengthen institutions to shift the emphasis from corrupt informal practices to observance of the formal rules. The sources of informality must be addressed and the causes of corruption identified so that measures to prevent and control corrupt behavior may be taken.<sup>7</sup> Identifying the sources or causes of corruption allows countries to develop a prevention plan, which should include changing the organizational features that allow corruption to occur. A corruption prevention plan should address the issues of administrative accountability, efficiency, and effectiveness, which should in turn improve staff attitudes and raise the overall integrity and performance of an institution by minimizing the opportunities for fraud and corruption.

The judiciary, which is the public institution to be studied in this paper, is supposed to provide an essential check on other public institutions. A fair and efficient judiciary is key to any anticorruption plan, and corruption in the judiciary should therefore be dealt with from the start.

### *An Economic and Jurimetric Analysis of Corruption within the Public Sector*

Economists and lawyers have long focused their attention on the effects that well-functioning legal and judicial systems have on economic efficiency and development. Adam Smith states in his *Lectures on Jurisprudence* that a factor that “greatly retarded commerce was the imperfection of the law” and the uncertainty of its application.<sup>8</sup> Entrenched corrupt practices within the public sector, such as systemic official corruption, can be defined as the systematic use of public office for private benefit by those who supply or demand a service or good from the government, and which results in the reduction in the quality or availability of public goods.<sup>9</sup> In fact, the entrenched characteristic of corrupt official practices is rooted in the public and private abuse of market or organizational power through vertical and horizontal coordination of public resources.<sup>10</sup>

Many scholars have provided important contributions to the economic analysis of corruption. Studies that describe corrupt practices and that analyze the impact of corruption on economic development are abundant. In these studies, low compensation and weak monitoring systems are traditionally considered to be the main causes of corruption.<sup>11</sup> Official corruption, primarily bribery, reduces the likelihood of punishment and consequently the effectiveness of punishment as a deterrent—and when

a Mexico City police officer, for example, makes US\$4,500 per year compared to the average blue-collar salary of approximately US\$7,900, the incentive for corruption is large.<sup>12</sup> Increasing the salaries of public enforcers or hiring private enforcement agencies and linking payment to performance should improve this situation.

Salaries are only the beginning of the problem, however. Several studies suggest corruption is a behavioral phenomenon occurring between the state and market domains.<sup>13</sup> These studies assume that people and firms respond to the offer of illegal incentives by taking into account the probability of apprehension and conviction and the severity of punishment.<sup>14</sup> Ethical attitudes are also important, and the “temptation threshold” is a variable dependent upon the morality of the individual. However, the economic models of corruption stress that all individuals, to a lesser or greater degree, are susceptible to the offer of illegal incentives. Corrupt activities occur when the marginal returns from crime exceed the marginal returns from legal occupation by more than the expected cost of the penalty.

Official corruption distorts the market and its implicit price mechanisms by introducing uncertainty to market and nonmarket social interactions.<sup>15</sup> Moreover, official corruption is an essential precondition for the growth of organized criminal groups with the capacity to pose a significant international security threat. These include groups engaged in the traffic of narcotics and nuclear, chemical, and biological materials, as well as groups involved in alien smuggling and international money laundering.<sup>16</sup> Where deterrence is weak, there is an opportunity for organized crime to develop. In extreme cases, as in Colombia, the response to this can be the emergence of vigilantism and paramilitarism.<sup>17</sup>

The literature mentioned above provides an overview of the microsocial and macrosocial situations associated with entrenched corruption. It is not sufficient to focus on the impact of corruption on economic growth and investment, however—there is also a recognized advantage to be gained by isolating the structural features that create an environment in which corruption can flourish.<sup>18</sup> Surveys have been used to determine the perception of the causes of corruption,<sup>19</sup> but it is necessary to go beyond the simply descriptive and symptomatic studies of official corruption and to focus on the search for empirically tested causes of official corruption.<sup>20</sup> The literature of corruption has not yet isolated and empirically tested the main legal, organizational, and market-related causes of corruption. The need to develop an empirically testable paradigm, within which specific types of corrupt behavior in well-defined public agencies can be explained, is a necessary condition to bring the study of corruption into the mainstream of social science. In order to make policy, the causes of corruption must be known.

This paper advances a public agency-specific framework of analysis within which an empirically tested examination of the causes of public-sector corruption can be further defined, in order to develop public-policy recommendations to advance the fight against official corruption. This framework is applied to the judiciary due to its strategic importance in the fight against corruption. The private sector and politicians can use judges to advance and even protect their corrupt behavior, and in the long-term, to develop a pattern of systematic illicit transactions with the public sector.

This paper proposes some improvements to the economic analysis of corrupt activities within the public sector, specifically within the judiciary. It provides a framework by which to analyze corruption by means of public perception, and an empirically verifiable approach to the study of corruption. These proposals are intended to aid the development of reliable public-policy prescriptions in the fight against official corruption. The paper also considers the private costs and benefits of state reforms as perceived by public officials.

### **An Empirical Model: Official Corruption and its Main Causes**

Certain organizational structures and behavioral patterns within public agencies in developing countries make them prone to the spread of systemic corrupt practices at every level of government. In short, public agencies providing internal organizational incentives compatible with the existence and growth of corrupt practices constitute a key source of systemic corruption. This can result in entropy, obstructing fulfilment of the institution's original mandate. An economic model of corruption should be able to detect the sources of corrupt incentives. The framework within which this paper tests hypotheses related to the sources of corruption is given by the organizational-/market-power theory of corrupt practices within a public-sector agency.

Assume a given specific level of deterrence, external monitoring systems, and salary structures within a public agency. This organizational-/market-power model predicts that the capacity of public officials to extract additional illicit fees for services rendered will be enhanced by the following:<sup>21</sup>

- a higher concentration of internal organizational roles concentrated in the hands of fewer decision makers within a public agency—for example, judges concentrating a larger number of administrative and jurisdictional roles within their domain;

- an increase in the number and complexity of procedural steps, coupled with a lack of procedural transparency within a government agency supplying a service—for example, closed bids in government procurement;
- an increase in uncertainty related to the prevailing doctrines, laws, and regulations—for example, inconsistencies found in the application of jurisprudence by courts due to, among other factors, defective information systems within the courts and the lack of a jurisprudence database;
- a decrease in alternative sources of the product or service demanded from the government—for example, the lack of alternative dispute-resolution mechanisms causes low implicit price elasticity of demand;
- an increase in collusive behavior among the parties demanding a legal or illegal service from a public agent or agency—for example, bribes offered by isolated individuals as opposed to the collusive behavior found in organized crime.<sup>22</sup>

Within this framework, the capacity of a public official to extract illicit rents depends on the concentration of market and organizational functions under his control, and on the price elasticity of demand for the service under his jurisdiction. In this context, we need to focus on the corrupt incentives provided by the public organizational, procedural, substantive, and market mechanisms within which corrupt acts emerge.

## Methodology

This study included surveys of first-instance judges adjudicating commercial cases in Santiago, Chile and in Quito, Ecuador, during the period 1990–1996.<sup>23</sup> The survey covers the most common types of commercial cases: bankruptcy, debt collection, and breach of business contracts. Both the Chilean and the Ecuadorian courts were subject to similar backlogs and country-specific budgetary allocations during the period under consideration. Also, all these courts were in the hands of the same judge during the period under consideration, and showed no changes in the number and functional structure of their personnel during the period 1990–1992 in Ecuador and the period 1990–1993 in Chile.

This paper examines the commercial cases within these courts where reports of corruption arose during the period 1990–1996. Since many citizens lack trust in the judiciary as an institution, they complain to the news media about corruption instead of complaining directly to the judi-

ciary. For this reason, the media are used in this study to evaluate the level of corruption. The study covers all known reports of corruption presented before the public sector—i.e., the judiciary; the media, including radio, TV, and printed media; and nongovernmental organizations (NGOs).<sup>24</sup> The review of the sampled courts in Chile throughout 1990–1996 shows an average minimum of six reported cases and an average maximum of 87 reported cases in each court per year. The review of the sampled courts in Ecuador throughout the same period shows an average minimum of 11 reported cases and an average maximum of 105 reported cases in each court per year.<sup>25</sup>

### *Scope of Study*

A jurimetric study of corruption within the judiciary can provide good ground for testing the above-stated theory, and a good process to be followed in the study of corruption within other public-sector agencies. This provides a framework that can later be applied elsewhere and on a larger scale. The period under consideration has been divided into two subperiods, separated by the enactment of administrative changes in the Chilean courts in 1993 and in the Ecuadorian courts in 1992. The first subperiod runs between 1990 and 1993 in Chile, when the court administration operated under the old guidelines. During this period, the highly centralized administrative practices were in the hands of judges and sometimes the clerk of the court, who usually controlled all adjudicative and administrative roles, including the operational budget, strategic planning, personnel management, supply requests, simple and complex archival tasks, and the handling of court fees. This initial period was also characterized by a relative lack of alternative dispute-resolution mechanisms available and a lack of overlap in jurisdictions relating to commercial cases.

Structural changes were made to the courts during the period 1994–1996. These included the introduction of decentralized management of the sampled courts, where personnel- and budget-related administrative duties were placed in the hands of purely administrative personnel within the court. Moreover, there was an increase in shared administrative functions among the Chilean courts, including the management of archives, delivery of notices, and the handling of court fees. There was also a relative increase in the number of alternative dispute-resolution mechanisms available to court users. Hypothetically, an increase in the number and variety of dispute-resolution mechanisms could cause an increase in the price elasticity of demand for court services by the public. This in turn could hamper the courts' capacity to extract illicit fees from the public. The study tested this hypothesis.

The five explanatory variables chosen are designed to measure the effect of four of the five variables listed above (we excluded the organized

crime variable).<sup>26</sup> One of these variables measures the number of computer systems used by each court. The computer systems provided the following five functions: jurisprudence database; backlog- and case-tracking network; word processor for judgments; cash-flow accounting, as monitored by external auditors within the judiciary; and network of professional and financial information for each member of the court's personnel. The lack of computer systems is considered by many Latin American lawyers and judges to be the main cause of the inconsistencies found in the application of jurisprudence and of the lack of judicial monitoring of the courts. These inconsistencies support the perception that decisions are arbitrary: coupled with the lack of internal monitoring, they give the judge room to make substantive discretionary decisions, and create an environment that enables corrupt practices to emerge and become more feasible.<sup>27</sup> External review of jurisprudence and written judicial opinions would encourage greater consistency and rationality of decision-making. It is also expected that a greater number of computer systems would reduce the degree of corruption within each court.

Within the study, the second variable measures the number of steps followed in a typical procedure within the commercial jurisdiction.<sup>28</sup> Each step is often required to be completed in a certain time period; however, this requirement is not often enforced. The lack of standards applied to the time to dispose of each type of case contributes to the existence of corruption.<sup>29</sup> Lack of time standards, coupled with court delays, allow court personnel to "charge a price" for expediting the procedure.<sup>30</sup>

The third variable measures the median time to dispose of commercial cases in each of the Chilean and Ecuadorian courts sampled.<sup>31</sup> An increase in median times and procedural steps would be expected to also increase the degree of corruption found within the courts.

The fourth variable measures the proportion of administrative and jurisdictional organizational roles concentrated in the hands of each agent within the court.<sup>32</sup> From an organizational perspective, the concentration of excessive decision-making and discretionary authority inherent in the multiple roles assumed by a typical judge create incentives for corrupt behavior. This is especially true because the judicial system often lacks effective external and internal organizational supervisory mechanisms.

In most Latin American, and specifically in most Chilean and Ecuadorian courts, the judge has traditionally been responsible for strategic planning, managing personnel, administering resources, budgetary control and planning, and, of course, for adjudicating cases. In this context, the high concentration of administrative and jurisdictional roles in the hands of few court officials allows judges and their judicial clerks to impose a system in which monitoring and organizational competition is diminished. As a result, corruption spreads more rapidly due to the exis-

tence of positive network externalities within the court, where the judge and judicial clerk control everything from promotions to budgetary issues and strategic planning. In this environment, whistle-blowers are unlikely to emerge. It also becomes more difficult to detect corruption over time, as specific patterns of behavior become entrenched. A long tenure in a particular position results in entropy and the accretion of vested interests, which together limit the incentives to expose corrupt behavior.

In Chile and Ecuador, this high concentration of administrative roles has changed since 1994 and 1993, respectively.<sup>33</sup> It is important to explore whether the high concentration of administrative and adjudicative power is linked with the greater capability of public officials to extract rents and impose an organizational taste for corrupt practices within an organization.

Finally, the existence of alternative and competing legal jurisdictions provides citizens with a range of alternative providers from which they can demand services. This clearly increases the elasticity of demand for court services and therefore reduces the organizational power of the government to extract illicit rents.<sup>34</sup> The fifth variable in fact measures the number of alternative public and private dispute-resolution mechanisms found within the geographic and legal jurisdictions in which each of the sample courts is located.<sup>35</sup> It is clear that where there are limited alternatives, litigants have little choice but to use a corrupt court system, whether they like it or not.

### *Findings*

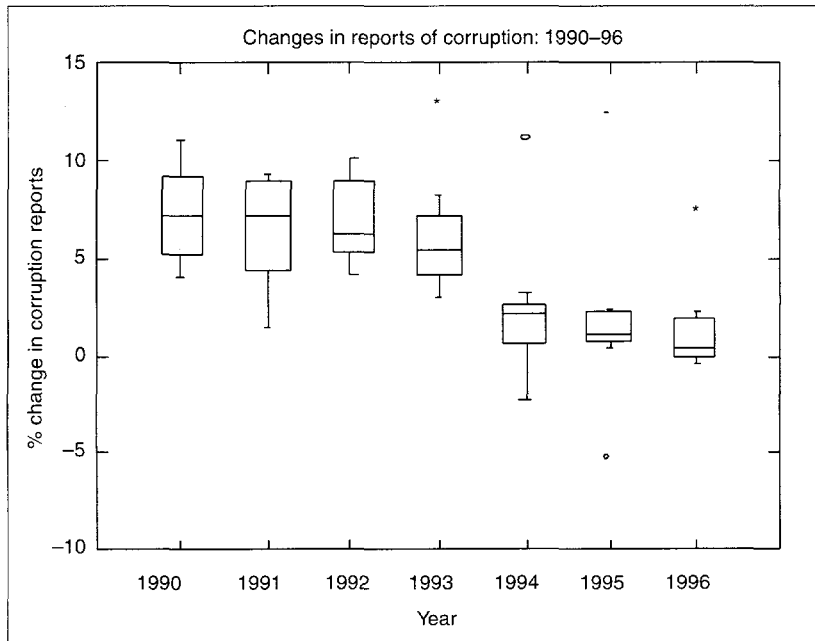
The two graphs on the following page show the percentage change in the number of reports of corruption in the sampled courts during the period 1990–1996.<sup>36</sup> The corruption reports represent those filed with the Chilean and Ecuadorian judiciaries, Chilean and Ecuadorian NGOs, and the media in each of the two countries.

The change in the amount of corruption experienced by the courts is indicated as a range by the vertical line (courts that deviate significantly from the trend are marked with asterisks, and their results excluded from the overall range). The range experienced by the median 50 percent of courts is indicated by the boxed area. Within the box, the horizontal line indicates the average percentage change experienced by the courts in the sample.

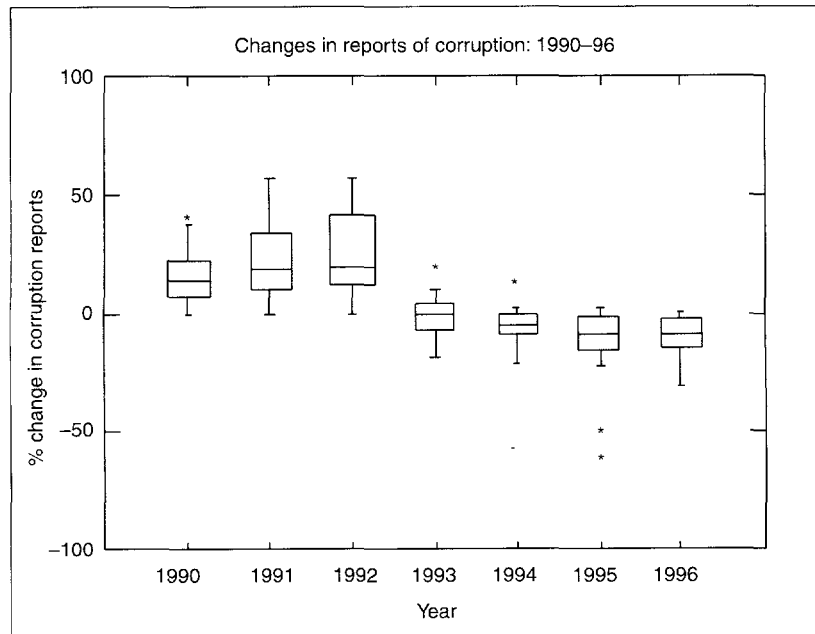
In both charts, the average percentage change in the number of reports of corruption shows a general decrease during the period considered.

The reports of corruption within the sampled courts in Santiago, Chile and in Quito, Ecuador were collated with a view to providing a partial account of corrupt activities within these courts.<sup>37</sup> They do not provide a complete picture of the level of corrupt activities, but identify significant

**Figure 1. Impact of Reforms on Reports of Corruption in Chile**



**Figure 2. Impact of Reforms on Reports of Corruption in Ecuador**



changes in behavioral patterns following the 1993–1994 legal, procedural, organizational, and market-related reforms introduced in the Chilean and Ecuadorian judicial systems.

The two graphs above also show that the Chilean and Ecuadorian courts experienced a drop in the number of filed reports of corruption<sup>38</sup> per sampled court beginning in 1993–1994.<sup>39</sup> This suggests that the 1993–1994 reforms reduced the capacity of the Chilean and Ecuadorian court officials to extract illicit rents from users.

An analysis was done to determine whether the legal, organizational, and market-related reforms described above were actually successful in reducing corruption.<sup>40</sup> It was found that an increase in the concentration of organizational roles increased the yearly reports of corruption per court in both Chile and Ecuador.<sup>41</sup> An increase in procedural times-to-disposition also caused an increase in corruption reports in the two countries,<sup>42</sup> as did an increase in the number of procedural steps.<sup>43</sup>

In contrast, it was found that an increase in the use of computer monitoring systems caused a decrease in the reports of corrupt practices.<sup>44</sup> The introduction of alternative dispute-resolution mechanisms within the legal framework, including private sector-provided mediation and arbitration services, also reduced the ability of the courts to extract rents in Chile and Ecuador.<sup>45</sup>

These variables require that a complete list of managerial and administrative functions of the courts be mapped out. It may be determined from this list whether any functions performed by the judges and court personnel overlap. There is a need to establish what proportion of those functions is performed by each member of the court in order to evaluate whether there is duplication of roles. In sum, these empirical results show that these reforms can have a positive impact on controlling corruption.

### **Considering Institutional Inertia in Developing Anti-Corruption Policy**

The present and future societal costs and benefits need to be taken into account when considering how to address the problem of eradicating corruption. The associated changes in individual benefits, specifically as perceived by public officials whose illicit rents would inevitably diminish, must also be considered.

Previous studies of judicial reforms in Latin America have argued that institutional inertia during the enactment of reform stems from fact that its benefits, including greater job stability, judicial independence, and professional prestige, are by nature long-term and therefore somewhat intangible. This is in contrast to the short-term nature of the main costs of reform, notably the perceived decrease in rents to the courts caused by a

loss of explicit payoffs and other informal inducements provided to court officers. This disparity between short-term costs and long-term benefits explains why court reforms, which eventually would benefit most segments of society, are often resisted and delayed.<sup>46</sup>

Court reforms promoting uniformity, transparency, and accountability necessarily limit the ability of court personnel to seek extra-contractual rents from the private sector, and can encourage those personnel to instead seek opportunities for corruption in the reforms that are designed to remove red tape. Reform sequencing must therefore ensure that short-term benefits are available to compensate the court officers responsible for implementing the changes for their loss of illicit rents. By the same reasoning, court reform proposals generating longer-term benefits should be implemented in the later stages of the reform process.

Other factors also support the reform of corrupt practices. For example, periods of institutional crisis within the public sector often bring consensus among public officials for the need to reform the sector. Within the judiciary, that crisis might begin at the point where backlogs, delays, and payoffs increase the cost, either implicit or explicit, for the public to access the system. When costs become too high, demand for court services can fall to the point where the ability of judges and court personnel to justify their positions before the public—and to extract illicit payments from the public—diminishes. At that point court officials increasingly embrace reforms in order to recover their professional prestige and rent-seeking capacity.<sup>47</sup>

The public agency will generally be more willing to conduct deeper reforms during a crisis if those reforms offer short-term benefits such as higher salaries, institutional independence, or increased budgets. Important judicial reforms are being implemented in many Latin American countries, all of which have experienced a deep crisis in their court system and a reduction in civil filings as described above. In Ecuador, Mexico, and Venezuela, the enticement of short-term benefits won the political support of key magistrates who had previously resisted all proposals for reform.<sup>48</sup> Examples of these benefits include generous early-retirement packages, promotions for judges and support staff, new buildings, and expanded budgets.

To ensure lasting anticorruption reforms, short-term benefits must be channeled through institutional mechanisms capable of sustaining the reform. The best institutional scenario is one in which public-sector reforms are supported by a consensus within the legislature as well as within other institutions. It is important to keep in mind, however, that legislatures are sometimes opposed to the restructuring of public agencies, in part because many members of the legislature may extract illicit rents from these agencies. Members of other institutions and civil society

are also essential in building consensus and applying pressure for reform, and it could be argued that the best working group for the reform process is one with a broad cross-section of members, ideally from outside the inner circles of the institutions. Whatever the composition of the working group, it is important to neutralize institutional inertia by identifying the costs and benefits that suit the interests of the public officials responsible for implementing the anticorruption reforms.

### **Conclusion: Judicial Reform**

As the reduction of corruption becomes an integral part of public-sector reform programs, it is necessary to identify the causes of corrupt behavior in order to prevent that behavior in future. There is a strong perception that corruption exists in various institutions, including the judiciary—for example, in Argentina a public-perception poll identified corruption as the second most important cause of the country's current problems. As this paper has shown, the use of complaints of corruption in the media can assist in the identification of the causes of corruption, since the formal procedure for registering complaints is not always trusted nor easily understood.

Theories of corruption containing objective, well-defined indicators of corrupt activities and containing variables able to measure the public sector's capacity to extract illicit rents are an important part of the dialogue conducted by any institution contemplating reform. An empirical analysis of the micro-causes of corruption within a public agency is essential to the development of an anticorruption policy. For example, the joint effects of organizational, procedural, legal, and market-related variables significantly explain the yearly changes in the reports of corruption within Chile's and Ecuador's first-instance commercial courts. Analysis of these variables provides the basis for reforms directed in whole or in part against corrupt behavior.

Reforms of the judiciary necessarily include legal, administrative, and organizational changes, yet the issue of corruption has not always been considered during the design stage of reform projects. For the system and processes to be more efficient, they must also be made more transparent and accountable. A corruption prevention plan can be developed by identifying the major functional areas of the organization, assessing and ranking the nature and extent of the risk in each area, and then assessing the probability of corruption. The procedures, systems, and controls can then be adapted to counter the identified risks, and will in turn help to engender the necessary trust in the system. This trust is a product of efficiency and fairness, two essential ingredients of a well-functioning judiciary. How individuals within the system perceive fairness can have an impact

on long-term efficiency, and therefore must also be taken into account. Future studies by social psychologists may shed more light on the impact of corruption and perceptions of fairness on efficiency.

The results of this study suggest that the methodology used here could also be used to evaluate corruption in other public-sector institutions, and that it may even be adapted to measure other aspects of corruption, such as resistance to change and other reform efforts. We feel that the analysis we applied here could be extended to many other elements of corruption.

It is common practice to use surveys in the analysis of corruption—given the limited amount of available data—as they provide the best possible information. Correlated with empirical data, surveys provide more reliable results and therefore a firmer basis for reasoned policy recommendations. Some institutions conduct their own surveys to guide their anticorruption strategies; other sources include one-country surveys of corruption issues, consumer surveys, and business surveys such as those done by the World Development Report.

### *Role of the World Bank*

The World Bank is a relatively new participant in the fight against corruption. Its efforts to assist the control of corruption include helping countries “diagnose corruption problems, build consensus for reforms, and introduce anticorruption measures.”<sup>49</sup> The Bank’s first experiences of anticorruption issues were through surveys, workshops, and initial discussions. Through these experiences it became clear that there is a need to develop a methodology of causes that can be applied to any given country or institution. It is important for the Bank to develop a coherent approach to the development of anticorruption programs, to include specific anticorruption activities, because governments around the world are increasingly asking for assistance in this area.

There have been several Bank initiatives in Africa, Eastern Europe, and Latin America that have included workshops, surveys, and efforts to build consensus for anticorruption programs. For example, surveys have been conducted and training given to investigative journalists in Uganda. In addition, there have been national integrity workshops that have been sponsored by the World Bank Institute (WDI) and Transparency International.<sup>50</sup>

When an anticorruption program has been developed, it is important to identify the causes and go to the heart of the problem. Review of the causes as described in this report could be done for each institution, whether it be the judiciary or a tax administration office involved in a government-endorsed general anticorruption program. This would enable the Bank to build some expertise in this area and to help it dis-

seminate knowledge gained from anticorruption efforts being undertaken in different countries and regions. These reviews would also assist in the preparation of other Bank-financed projects, including civil service reform, tax reform, and judicial reform projects.

The review of the causes of corruption would also assist in building consensus for anticorruption programs, and in educating the public and governments about these causes. Access to this information for the public and the media should be improved. The political limitations and the priority objectives of the anticorruption program must also be taken into account before consensus can be gained.<sup>51</sup> The vested interests of the different institutions affected by the program can impede consensus and reform, and it is therefore important to build coalitions to overcome these vested interests. Private organizations, professional organizations, religious leaders, and civil groups all have a stake in the outcome of anticorruption initiatives and an interest in the process.<sup>52</sup> It is essential that coalitions be formed between the government, civil society, and the private sector. The willingness of the government to enter into such a coalition is a true test of its commitment to the reduction of corruption.

Although some say that the collision of market reforms and embedded patrimonialism has generated more corruption, democratization in the region has also thrown up a growing opposition to corrupt practices in the individual countries of Latin America.<sup>53</sup> Within an environment of liberalization, the more checks and balances that exist and the more institutions that are in place to protect these checks and balances, the fewer opportunities there will be for corruption.

There may be a need for international pressure, however, because not every country will welcome anticorruption reforms. But if it is true that globalization has increased the need for business confidence, then controlling corruption becomes a function of self-interest for developing countries.<sup>54</sup> Coordinated international pressure may then be seen as the next level of an anticorruption effort.<sup>55</sup> Many countries may find it necessary to take corruption into account during public-sector reforms because of their commitments to the international community. Regional international organizations, such as the Organization of American States and the Council of Europe, are drafting international conventions to establish minimum standards in defining corruption as a criminal offense. In addition, the Organization of Economic Cooperation and Development has drafted an international convention whose signatories would criminalize international bribery of foreign public officials. This will mean changing laws or adopting new ones, as well as strengthening the mechanisms to enforce them.

---

---

## References

- Andvig, Jens Christopher. 1989. "Korrupsjon i Utviklingsland [Corruption in Developing Countries]." *23 Nordisk Tidsskrift for Politisk Ekonomi*, pp. 51–70.
- Becker, Gary, and Stigler, George. 1974. "Law Enforcement, Malfeasance, and Compensation of Employees." *Journal of Legal Studies* 3, pp. 1–18.
- Becker, Gary. 1993. "Nobel Lecture: The Economic Way of Thinking About Behavior." *Journal of Political Economy*, 108, pp. 234–267
- Buscaglia, Edgardo. 1997. "Corruption and Judicial Reform in Latin America." *Policy Studies Journal*, Vol 17, No 4.
- Buscaglia, Edgardo. 1998. "Comments on Corruption." Proceedings, Annual Bank Conference on Development Economics, World Bank. Washington, D.C.
- Buscaglia, Edgardo. 1997. "An Economic Analysis of Corrupt Practices within the Judiciary in Latin America." In *Essays in Law and Economics V*, Kluwer Press.
- Buscaglia, Edgardo. 1995. "Stark Picture of Justice in Latin America." *Financial Times*, March 21, p.A 13.
- Buscaglia, Edgardo, and Maria Dakolias. 1996. "A Quantitative Analysis of the Judicial Sector: The Cases of Argentina and Ecuador." World Bank Technical Paper 353. Washington, D.C.
- Buscaglia, Edgardo, and Maria Dakolias. 1995. "Judicial Reform in Latin America: A Framework for National Development." In *Essays in Public Policy*. Hoover Institution, Stanford University.
- Buscaglia, Edgardo, and Thomas Ulen. 1997. "A Quantitative Assessment of the Efficiency of the Judicial Sector in Latin America." *International Review of Law and Economics*, Vol. 17, No. 2. New York, NY: Elsevier Science.

- Bussani, Mauro, and Ugo Mattei. 1997. "Making the Other Path Efficient: Economic Analysis and Tort Law in Less Developed Countries." In *Law and Economics of Development*. Buscaglia, Edgardo, William Ratliff, and Robert Cooter (eds.). Greenwich, CT: JAI Press.
- Cooter, Robert. 1996. "The Rule of State Law and the Rule-of-Law State: Economic Analysis of the Legal Foundations of Development." In *Law and Economics of Development*. Buscaglia, Edgardo, William Ratliff, and Robert Cooter (eds.). Greenwich, CT: JAI Press.
- de Soto, Hernando. 1989. *The Other Path*. New York: Harper and Row.
- Gambetta, Diego. 1993. *The Sicilian Mafia*. Cambridge, MA: Harvard University Press.
- Leiken, Robert S. 1996. "Controlling the Global Corruption Epidemic." *Foreign Policy* 5, pp. 55–73.
- Klitgaard, Robert. 1991. *Adjusting to Reality: Beyond State versus Market in Economic Development*. San Francisco: ICS Press.
- Homans, George C. 1974. *Social Behavior: Its Elementary Forms*. New York, NY: Harcourt Brace Jovanovich Inc.
- Macrae, J. 1982; "Underdevelopment and the Economics of Corruption: A Game Theory Approach." *World Development* 10 (8), pp. 677–687.
- Mauro, Paolo. 1995. "Corruption and Growth." *Quarterly Journal of Economics*, 110: pp. 681–711.
- Ratliff, William, and Edgardo Buscaglia. 1997. "Judicial Reform: The Neglected Priority in Latin America." *Annals of the National Academy of Social and Political Science*, 1996.
- Rose-Ackerman, Susan. 1978. "Corruption: A Study in Political Economy." New York, NY: Academic Press.
- Rose-Ackerman, Susan. 1997. "Corruption and Development." Manuscript (Draft # 3, ABCDE CONF.).
- Shleifer, A., and Vishny, R.W. 1993, "Corruption." *Quarterly Journal of Economics*, 108: pp. 599–617.
- Smith, Adam. 1978. *Lectures on Jurisprudence*. Oxford: Oxford University Press.

---

---

# Annex 1

Dependent Variable: DIFFLOGCORRUPTION  
R-Square= 0.556R-Square= 0.601  
Durbin-Watson= 1.942

<i>Variable</i>	<i>Chile</i> <i>LAG1OLS</i>	<i>Chile</i> <i>P</i>	<i>Ecuador</i> <i>LAG1OLS</i>	<i>Ecuador</i> <i>P</i>
LOGORGROLE	0.416	0.00	1.578	0.01
LOGPROCTIME	0.597	0.00	2.290	0.02
LOGNUMPROC	0.891	0.01	1.903	0.00
LOGCOMPUTER	-0.576	0.02	-0.172	0.03
LOGMARKET	-2.077	0.00	-3.910	0.00

The Durbin-Watson coefficient shows that the time series does not face auto correlation. Additionally, 55.6 percent of the changes in the reports of corrupt practices are explained by changes in the explanatory variables. The analysis of variance indicates that the time series regression is significant at a 1 percent level and that, therefore, variations in our explanatory variables explain variations in corrupt practices as partially reflected in the reports of corruption.

---

---

## Endnotes

1. Susan Rose-Ackerman, "Corruption and Development," 5 (1997) (unpublished manuscript, on file with author).
2. Ibrahim Shihata, Address at the International Symposium on Economic Crime, 2 (September 9, 1996) [hereinafter International Symposium].
3. Robert S. Leiken, *Controlling the Global Corruption Epidemic*, 1996-97, *Foreign Policy* 55, 68.
4. World Bank, *Poverty Reduction and Econ. Management: Helping Countries Combat Corruption: The Role of the World Bank*, 5 (1997) [hereinafter "Combat Corruption"].
5. Gunner Myrdal, "Corruption as a Hindrance to Modernization in South Asia," in *Political Corruption: A Handbook*, (Arnold J. Heidenheimer ed., 1970); see also Kimberly Lynn Thachuck, "Plomo ó Plata: Politics, Corruption and Drug Policy in Colombia," 76 (1977) (unpublished Ph.D. dissertation, Simon Fraser University) (on file with *Law and Policy in International Business*) [hereinafter "Plomo"].
6. Ibrahim F. I. Shihata, "Corruption: A General Review with an Emphasis on the Role of the World Bank," 15 *Dick. J. Int'l L.* 451, 484.
7. Ibrahim F.I. Shihata, "Role of the Judiciary in the Prevention and Control of Corruption," 9 (April 1, 1998) (unpublished manuscript, on file with author) [hereinafter "Role of the Judiciary"].
8. Adam Smith, *Lectures on Jurisprudence*, 528, R.L. Meek et al., eds., Oxford: Clarendon Press (1978).
9. Edgardo Buscaglia, "Corruption and Judicial Reform in Latin America," 17 *Pol'y Stud.* 273, 276 (1997) [hereinafter "Judicial Reform"].

10. Edgardo Buscaglia, "An Economic Analysis of Corrupt Practices within the Judiciary in Latin America", in *Five Essays in Law and Economics* 277 (1997) [hereinafter Economic Analysis].

11. Robert Klitgaard, *Adjusting to Reality: Beyond State versus Market in Economic Development* (1991); Gary Becker and George Stigler, "Law Enforcement, Malfeasance and Compensation of Employees," 3 *J. Legal Stud.* 1, 1-18 (1974).

12. Charles Moskos, "How to Clean up Foreign Militaries: Subsidize and Control their Pay and Pension," *U.S. News & World Report*, Dec.-Jan. 1997-98, at 51, 52.

13. Paolo Mauro, "Corruption and Growth," 110 *Q. J. Econ.* 681 (1995); A. Shleifer and R.W. Vishny, "Corruption," 108 *Q. J. Econ.* 599-617 (1993); John Macrae, "Underdevelopment and the Economics of Corruption: A Game Theory Approach," 10 *World Dev.* 677 (1982); Susan Rose-Ackerman, "Corruption: A Study in Political Economy" (1978).

14. Gary S. Becker, Nobel Lecture: "The Economic Way of Thinking about Behavior," 101 *J. Pol. Econ.* 385, 402 (1993).

15. Jens Christopher Andvig, "Korrupsjon i Utviklingsland [Corruption in Developing Countries]," 23 *Nordisk Tidsskrift for Politisk Ekonomi* 51, 51-70 (1989).

16. Leiken, *supra* note 3, at 55.

17. Plomo, *supra* note 5, at 80.

18. Rose-Ackerman, *supra* note 1, at 3.

19. Transparency International conducted a survey in Bangladesh which found that the public's perception about the causes of corruption included the desire to get rich quick, moral degradation, lack of accountability, and inadequate salaries. See Muzaffer Ahmad, "Corruption as People See It" (visited Mar. 4, 1999) <<http://www.ti-bangladesh.org/docs/people.html>>.

20. "Role of the Judiciary," *supra* note 7, at 9.

21. The following five variables explain illicit activities within the courts through the use of the Sims test, and have been tested and confirmed to be explanatory variables. The Sims test conducts a regression of

explanatory variables as dependent variables, while corruption is tested as an independent variable. This test confirmed that corruptive activities do not explain any of the independent variables in the model, therefore proving one way of causation where corruption is explained by the explanatory variables.

22. Diego Gambetta, *The Sicilian Mafia: The Business of Private Protection* (1993).

23. This included four first-instance courts adjudicating commercial cases in Chile's main city, Santiago, and five first-instance civil courts dealing with commercial cases in Quito, Ecuador. Like any empirical study, this is based on a sample of the population of courts within each jurisdiction. In this study, the size of the sample represents at least 10 percent of the population of the courts in each jurisdiction. This is considered to be a representative group. The results are subject to a margin of error considered to be statistically tolerable.

24. Although reports of corruption are not a measure of confirmed corruption, they are certainly an objective indicator of people's attitude toward corruption and are an improvement on the simple subjective perception of corruption used in most studies. It is true that many acts of corruption in the courts go unreported, and through the period of this study the number of channels through which reports can be filed has increased in accordance with the strengthening of democracy in the region. The study accounts for the second effect, but not for the first, where acts go unreported. Discounting the effects of the increase in the number of media channels on the number of corrupt activities reported is a way to calculate the real changes in corruption—as is done with real income after discounting for inflation. Discounting in media channels also takes into account the improvement in civil liberties experienced in these two countries. By definition, the legal changes are taken into account by including the legal impact analysis.

25. This provides our analysis with a time series that can be studied through a lagged regression.

26. All the measurements have been transformed into their natural logarithms in order to express our regression coefficients in percentage terms as elasticities related to corruption. This is also a way to meet the assumptions required by the regression model. Specifically, the logarithms of the dependent variable were used to address the lack of normality in the behavior of the sample errors. The choice of the indepen-

dent variables included in the framework is based on the results of judge, attorney, and court-user surveys that identified those factors analyzed here as being relevant to the occurrence of corrupt activities in the courts.

27. "Judicial Reform," *supra* note 9, p. 281. This seems to confirm Klitgaard's general assertions relating discretionary power and accountability to corrupt activities.

28. The second variable measures the natural logarithm of the number of steps followed in a typical procedure within the commercial jurisdiction.

29. Edgardo Buscaglia and Maria Dakolias, "Judicial Reform in Latin America: The Experience in Argentina and Ecuador," World Bank Tech. Paper 350, at 13 (1996).

30. *Id.* at 25.

31. The third variable included in the jurimetric assessment measures the natural log of the median times to disposition for commercial cases in each of the nine Chilean and Ecuadorian courts sampled.

32. The fourth variable measures the natural logarithm of the proportion of administrative and jurisdictional organizational roles concentrated in the hands of each agent within the court—i.e., the judge and clerk of the court and support personnel. For the purposes of this study, an index measuring the organizational concentration of roles has been developed in which the sum of the squares of the proportion of each agent's administrative roles were calculated for each court.

33. Edgardo Buscaglia, Comment on "Corruption and Development" by Susan Rose Ackerman, Annual World Bank Conference on Development Economics 1997, at 62, 62–67 (Boris & Joseph Stiglitz eds., 1998; and Edgardo Buscaglia and Thomas Ulen, "A Quantitative Assessment of the Efficiency on the Judicial Sector in Latin America," 17 *Int'l Rev.L. Econ.* 275, 275–291 (1997).

34. For a discussion of the relationship between the judiciary and the private sector in Latin America, see Edgardo Buscaglia, "Stark Picture of Justice," *Financial Times*, March 21, 1995, at A15.

35. The fifth variable (LOGMARKET) measures the natural logarithm of the number of alternative public and private dispute-resolution

mechanisms found within the same geographic and legal jurisdictions in which each of the sample courts is located.

36. The dependent variable measures the percentage change in the reports of corruption through the annual difference between the logs of the number of reports specifically related to each of the sampled courts (i.e. DIFFLOGCORRUPTION) during the period 1990–1996. This variable is measured on the vertical axes. These percentage changes are computed through the difference in the logarithms of yearly corruption reports per court. The dependent variable has been statistically adjusted for economic growth and for the growth of NGOs plus media sources.

37. The time series impact assessment model is not used to explain the absolute level of corruption. Rather, our dependent variable aims at capturing a partial account of corrupt activities within those courts. In contrast, the time series of the dependent variable is designed to identify significant changes in the behavioral patterns of the reports of corruption after the 1993–94 legal, procedural, organizational, and market-related reforms introduced in Chile's and Ecuador's judicial systems.

38. This shows the behavior of our dependent variable annual percentage change in reports of corruption per sampled court.

39. The length of each box shows a reduction in reports that reduces the spread or standard deviation of the dependent variable.

40. By concentrating on testing the aforementioned variables affecting the dependent variable (i.e., DIFFLOGCORRUPTION), it can be determined whether the legal, organizational, and market-related reforms described above have been successful in reducing corruption. A logregression model fits and meets the assumptions of a lag of one year equation. The legal impact assessment empirical results confirms that the signs of the coefficients for the significant variables are the expected ones (see Annex 1).

41. The logregression model shows that a 1 percent increase in the index measuring concentration of organizational roles increases the yearly reports of corruption per court by 0.416 percent in Chile and 1.578 percent in Ecuador.

42. A 1 percent increase in procedural times to disposition also causes a 0.597 percent increase in corruption reports in Chile and 2.290 percent in Ecuador.

10. Edgardo Buscaglia, "An Economic Analysis of Corrupt Practices within the Judiciary in Latin America", in *Five Essays in Law and Economics* 277 (1997) [hereinafter Economic Analysis].

11. Robert Klitgaard, *Adjusting to Reality: Beyond State versus Market in Economic Development* (1991); Gary Becker and George Stigler, "Law Enforcement, Malfeasance and Compensation of Employees," 3 *J. Legal Stud.* 1, 1-18 (1974).

12. Charles Moskos, "How to Clean up Foreign Militaries: Subsidize and Control their Pay and Pension," *U.S. News & World Report*, Dec.-Jan. 1997-98, at 51, 52.

13. Paolo Mauro, "Corruption and Growth," 110 *Q. J. Econ.* 681 (1995); A. Shleifer and R.W. Vishny, "Corruption," 108 *Q. J. Econ.* 599-617 (1993); John Macrae, "Underdevelopment and the Economics of Corruption: A Game Theory Approach," 10 *World Dev.* 677 (1982); Susan Rose-Ackerman, "Corruption: A Study in Political Economy" (1978).

14. Gary S. Becker, Nobel Lecture: "The Economic Way of Thinking about Behavior," 101 *J. Pol. Econ.* 385, 402 (1993).

15. Jens Christopher Andvig, "Korrupsjon i Utviklingsland [Corruption in Developing Countries]," 23 *Nordisk Tidsskrift for Politisk Ekonomi* 51, 51-70 (1989).

16. Leiken, *supra* note 3, at 55.

17. Plomo, *supra* note 5, at 80.

18. Rose-Ackerman, *supra* note 1, at 3.

19. Transparency International conducted a survey in Bangladesh which found that the public's perception about the causes of corruption included the desire to get rich quick, moral degradation, lack of accountability, and inadequate salaries. See Muzaffer Ahmad, "Corruption as People See It" (visited Mar. 4, 1999) <<http://www.ti-bangladesh.org/docs/people.html>>.

20. "Role of the Judiciary," *supra* note 7, at 9.

21. The following five variables explain illicit activities within the courts through the use of the Sims test, and have been tested and confirmed to be explanatory variables. The Sims test conducts a regression of

explanatory variables as dependent variables, while corruption is tested as an independent variable. This test confirmed that corruptive activities do not explain any of the independent variables in the model, therefore proving one way of causation where corruption is explained by the explanatory variables.

22. Diego Gambetta, *The Sicilian Mafia: The Business of Private Protection* (1993).

23. This included four first-instance courts adjudicating commercial cases in Chile's main city, Santiago, and five first-instance civil courts dealing with commercial cases in Quito, Ecuador. Like any empirical study, this is based on a sample of the population of courts within each jurisdiction. In this study, the size of the sample represents at least 10 percent of the population of the courts in each jurisdiction. This is considered to be a representative group. The results are subject to a margin of error considered to be statistically tolerable.

24. Although reports of corruption are not a measure of confirmed corruption, they are certainly an objective indicator of people's attitude toward corruption and are an improvement on the simple subjective perception of corruption used in most studies. It is true that many acts of corruption in the courts go unreported, and through the period of this study the number of channels through which reports can be filed has increased in accordance with the strengthening of democracy in the region. The study accounts for the second effect, but not for the first, where acts go unreported. Discounting the effects of the increase in the number of media channels on the number of corrupt activities reported is a way to calculate the real changes in corruption—as is done with real income after discounting for inflation. Discounting in media channels also takes into account the improvement in civil liberties experienced in these two countries. By definition, the legal changes are taken into account by including the legal impact analysis.

25. This provides our analysis with a time series that can be studied through a lagged regression.

26. All the measurements have been transformed into their natural logarithms in order to express our regression coefficients in percentage terms as elasticities related to corruption. This is also a way to meet the assumptions required by the regression model. Specifically, the logarithms of the dependent variable were used to address the lack of normality in the behavior of the sample errors. The choice of the indepen-

dent variables included in the framework is based on the results of judge, attorney, and court-user surveys that identified those factors analyzed here as being relevant to the occurrence of corrupt activities in the courts.

27. "Judicial Reform," *supra* note 9, p. 281. This seems to confirm Klitgaard's general assertions relating discretionary power and accountability to corrupt activities.

28. The second variable measures the natural logarithm of the number of steps followed in a typical procedure within the commercial jurisdiction.

29. Edgardo Buscaglia and Maria Dakolias, "Judicial Reform in Latin America: The Experience in Argentina and Ecuador," World Bank Tech. Paper 350, at 13 (1996).

30. *Id.* at 25.

31. The third variable included in the jurimetric assessment measures the natural log of the median times to disposition for commercial cases in each of the nine Chilean and Ecuadorian courts sampled.

32. The fourth variable measures the natural logarithm of the proportion of administrative and jurisdictional organizational roles concentrated in the hands of each agent within the court—i.e., the judge and clerk of the court and support personnel. For the purposes of this study, an index measuring the organizational concentration of roles has been developed in which the sum of the squares of the proportion of each agent's administrative roles were calculated for each court.

33. Edgardo Buscaglia, Comment on "Corruption and Development" by Susan Rose Ackerman, Annual World Bank Conference on Development Economics 1997, at 62, 62–67 (Boris & Joseph Stiglitz eds., 1998; and Edgardo Buscaglia and Thomas Ulen, "A Quantitative Assessment of the Efficiency on the Judicial Sector in Latin America," 17 *Int'l Rev.L. Econ.* 275, 275–291 (1997).

34. For a discussion of the relationship between the judiciary and the private sector in Latin America, see Edgardo Buscaglia, "Stark Picture of Justice," *Financial Times*, March 21, 1995, at A15.

35. The fifth variable (LOGMARKET) measures the natural logarithm of the number of alternative public and private dispute-resolution

mechanisms found within the same geographic and legal jurisdictions in which each of the sample courts is located.

36. The dependent variable measures the percentage change in the reports of corruption through the annual difference between the logs of the number of reports specifically related to each of the sampled courts (i.e. DIFFLOGCORRUPTION) during the period 1990–1996. This variable is measured on the vertical axes. These percentage changes are computed through the difference in the logarithms of yearly corruption reports per court. The dependent variable has been statistically adjusted for economic growth and for the growth of NGOs plus media sources.

37. The time series impact assessment model is not used to explain the absolute level of corruption. Rather, our dependent variable aims at capturing a partial account of corrupt activities within those courts. In contrast, the time series of the dependent variable is designed to identify significant changes in the behavioral patterns of the reports of corruption after the 1993–94 legal, procedural, organizational, and market-related reforms introduced in Chile's and Ecuador's judicial systems.

38. This shows the behavior of our dependent variable annual percentage change in reports of corruption per sampled court.

39. The length of each box shows a reduction in reports that reduces the spread or standard deviation of the dependent variable.

40. By concentrating on testing the aforementioned variables affecting the dependent variable (i.e., DIFFLOGCORRUPTION), it can be determined whether the legal, organizational, and market-related reforms described above have been successful in reducing corruption. A logregression model fits and meets the assumptions of a lag of one year equation. The legal impact assessment empirical results confirms that the signs of the coefficients for the significant variables are the expected ones (see Annex 1).

41. The logregression model shows that a 1 percent increase in the index measuring concentration of organizational roles increases the yearly reports of corruption per court by 0.416 percent in Chile and 1.578 percent in Ecuador.

42. A 1 percent increase in procedural times to disposition also causes a 0.597 percent increase in corruption reports in Chile and 2.290 percent in Ecuador.





THE WORLD BANK

1818 H Street, N.W.  
Washington, D.C. 20433, U.S.A.

TELEPHONE: (202) 477-1234  
FACSIMILE: (202) 477-6391  
TELEX: MCI 64145 WORLDBANK  
MCI 248423 WORLDBANK  
WORLD WIDE WEB: <http://www.worldbank.org/>  
E-MAIL: [books@worldbank.org](mailto:books@worldbank.org)