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Corruption and economic development: A critical review of literature

*Mohamad Farida and
Fredoun Ahmadi-Esfahani*



Agricultural and Resource Economics
The University of Sydney

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1 Introduction

The body of theoretical and empirical research that objectively addresses the problem of corruption has grown considerably in recent years (Elliot 1997; Coolidge and Rose-Ackerman 1997; Gill 1998; Girling 1997; HDC 1999; Kaufmann and Sachs 1998; Mauro 1995; Paul and Guhan 1997; Shleifer and Vishnay 1998; Stapenhurst and Kpundeh 1998; Vittal 1999; World Bank 1997). A preliminary analysis of the literature shows that corruption is recognised as a complex phenomenon, as the consequence of more deep seated problems of policy distortion, institutional incentives and governance. It thus cannot be addressed by simple legal acts proscribing corruption. This paper aims at reviewing the different definitions for corruption in addition to its perceived costs and benefits. Furthermore, in an attempt to measure corruption, the paper will address several theories and models that might help in developing a comprehensive model of corruption.

2 Definitions

The Latin verb "corrumpere" means to break something. The question to be answered is what is "broken" by the act of corruption. The obvious answer is that the law is broken; or that a legal rule is broken; a duty is broken; a moral norm is broken. But it is important to add that communities and human personalities may also be broken by the practice of corruption. Communities are disintegrated by corruption because it undermines predictability and accountability; it reduces social transparency and erodes social trust. The integrity of the human personality is broken because corruption involves lying, dissimulation, and living according to two (contradictory) sets of standards. Social disintegration and the loss of personal integrity may be the greatest long-term damage done by corruption (Manchin 2000, P.4). Therefore, defining corruption appears essential when studying its costs and benefits.

Corruption or 'level of corruption' is widely used in public discourse and usually hold a twofold meaning. Its definitions range between two schools of thought. On one hand, it stands for those illegal practices, in which citizens or organisations bribe officials in charge for awarding permissions, contracts, or to escape punishment or fines for offenses they committed. Simpler: to obtain privileges against law or against the rules of some bureaucracy (Rose-Ackerman 1999). This is the narrow definition of corruption. Many scholars argue, however, that corruption is a broader phenomenon, or rather, a hardly definable set of phenomena, including achieving several advances through personal networking; paying gratitude money or giving gifts for usual services, what are already reimbursed from customers or state resources (Kaufman 1998). Viewed most broadly, corruption is the misuse of office for unofficial ends (Klitgaard 1998, P. 4).

Usually the first, narrow definition of corruption is primarily considered as 'dangerous', illegal, immoral, and furthermore: totally illegitimate in today's developed or transforming societies (and economies). However, research indicates that the narrowly- defined corruption closely correlates with the level of the broader phenomena of 'corruptive activities' or deeds which are morally corrupt (Johnston 1979, P. 387). On the other hand, there is another problem with the broad definition; it is largely dependent of culture, historic age, actual social climate, and social groups, which activities can be perceived as corruptive (Mauro 1998). Whereas the narrow definition can usually be read from the more or less uniform laws throughout the countries, the definition, and even more the structure - the patterns - of those that we call corruptive activities, are deviating in a wide and rather undiscovered range. Heidenheimer (1989) has outlined "shades" of corruption, ranging from white through gray to black, depending upon patterns of elite and mass opinion in several kinds of communities. The perception for corruption in a certain society is a key factor in clarifying the shades of corruption and correlating both definitions. People are more willing to fight against corruption in its broader definition, and less likely to encourage campaigns against corrupted activities that benefit them directly. Previous

research suggests measuring both types of corruption to get a reliable and useful resource in estimating actual level of corruption in a specific country, even across counties. Therefore, corruption can be described as the use of power or money to obtain desired outcomes against the rules and ethics of the community. Corruption, in all its forms, not only weakens economies, but also has some economic benefits.

3 Perceived Costs and Benefits of Corruption

Corruption works like a social trap or the mechanism of the "tragedy of the commons". People enter the game of breaking the rules of their community in order to privately profit from it. But as more and more people "desert" the community, less and less will be the profit of each of them. After a certain point, everybody will get in a worse position than he or she was originally, but the costs of jumping out of the game and returning to the rules of the community are so high that the process can hardly be stopped. In the same way, corruption is tempting, because it promises each candidate a special advantage over the other members of the community. But the more people enter the game, everybody's profit will diminish and finally everybody will pay more for the same goods or services than they originally paid. Let alone the fact that the corruption of the social institutions will cause further, perhaps even more serious, damage (Girling 1997, P. 94).

3.1 Forms and Causes of Corruption

Economic corruption is an important form of corruption; however, it is not the only form of corruption. There are non-economic forms of corruption, including many types of police corruption, judicial corruption, political corruption, and academic corruption. Indeed, there are at least as many forms of corruption as there are human institutions that might become corrupted. Further, economic gain is not the only motivation for corruption. There are a variety of attractions that motivate corruption. These include status, power, addiction to drugs or

gambling, and sexual gratification, as well as economic gain (Miller 2005). Corruption is usually caused by several procedures and practices.

The biggest cause of corruption is undoubtedly the political leadership at the helm of affairs in the country (Shleifer 1998, P. 34). From this fountainhead of corruption flow various streams of corrupt practices which plague the political, economic and social activities in a country. Amoral politics, self-aggrandizement, disregard of the constitutional norms in the pursuit of power, and political survival at any cost are their rules of the game. They interfere with the administration of justice and have bent bureaucracy to do their bidding. This leads to a highly corrupted environment and makes it hard to be contained.

In addition, cumbersome and dilatory administrative procedures and practices are another major cause of corruption in most developing countries (HDC 1999). The legal and administrative system was designed in the middle of the 19th century to serve the interests of colonial administration. Another contributory factor to the growth of corruption is that the cases relating to corruption are often handled in a casual and clumsy manner. Those in hierarchy vested with disciplinary powers shirk duty and show unwillingness to use their powers against corrupt practices (Stapenurst 1998, P. 26). This may be due to different reasons such as political or trade union pressure, vested interests, or sheer ineptitude in handling criminal investigation. The result is that the corrupt individuals are rarely caught, and even if caught they are let off with minor or no penalties.

Furthermore, the government officials, entrusted with the responsibility of dealing with corruption, do it in a most inefficient and lethargic manner that suits the political leadership which patronizes corruption. The judicial system is usually expensive, dilatory, and inefficient that it takes years and years for corruption cases to be decided (Vittal 1999). The result of such inordinate delay is that the accused often escape punishment because a long time span has an adverse effect on the evidence in a case. Justice delayed is justice denied in most cases of corruption.

3.2 *Consequences of Corruption*

There is a growing empirical literature based on comparative country studies, emphasizing that corruption lowers investment, capital productivity, capital inflows and many other macroeconomic data (Lambsdorff 1999). Corruption not only slows economic growth, but it also increases the volatility of business cycle and affects the human development through enhancing poverty and reducing social services.

3.2.1 Corruption and Economic Growth

There is an increasing volume of literature on the relationship between corruption and economic growth, and the general conclusion is that corruption slows down the long-term growth of an economy through a wide range of channels. Mauro (1995) presents some strong empirical evidence to help establish the negative relationship between corruption and long-term growth. Wei (1997) argues that corruption is much more costly than ordinary taxes, because it generates uncertainty in addition to the tax burden. In the presence of corruption, businessmen are often made aware that a bribe is required before an enterprise can be started and, in addition, corrupt officials may also lay claims to one part of the proceeds from the investment. Therefore, businessmen interpret corruption as a species of tax. In addition, they also face secrecy and the uncertainty that the bribe-taker may not fulfill his part of the bargain. Both the tax and the uncertainty will diminish incentives to invest.

Since rent seeking is often more lucrative than productive work, talents will be misallocated. Financial incentives may lure the more talented and better educated to engage in rent seeking rather than productive work, which in turn results in adverse consequences for the country's economic growth. Ehrlich (1999) presents a balance growth model to show that in some equilibrium officials spend a substantial amount of time and effort in seeking and accumulating political capital, which is not socially productive. Corruption may entice government officials to allocate public resources less on the basis of social welfare than according to opportunities for extorting bribes. Large projects,

whose performance is difficult to monitor, may provide lucrative opportunities for rent seeking and bribes. We can expect that it is easier to collect large bribes on large infrastructure projects or high-tech defense systems than on textbooks or teachers' salaries. Mauro (1998) concludes that corruption affects the composition of government expenditure. When corruption is serious, there is much less government expenditure on education than on large infrastructure and defense projects. In addition, Mauro finds that corruption also lowers the quality of infrastructure projects and public services. This will result in not only lowering economic growth, but also affects the human development in these communities.

3.2.2 Corruption and Volatility

Ramey (1995) has presented some empirical evidence to show that there is a negative relationship between macroeconomic volatility and long-term economic growth. He found that countries with higher volatilities have lower long-term growth rates. Corruption is one of the important reasons why there is a negative correlation between volatility and long-term growth. As can be concluded from Ramey's article, corruption slows down long-term economic growth through many channels. As such, one can observe a negative relationship between volatility and long-term growth.

Standard macroeconomic theories use various economic shocks, such as aggregate supply or demand shocks, to explain the volatility of business cycles. Some economists also use other factors, particularly the structure of a country's financial system, to explain macroeconomic volatility. Krugman (1998) used a simple static model to show that financial intermediaries whose liabilities are guaranteed by the government pose a serious problem of moral hazard. Corsetti (1999) explained a dynamic model to show the same result. Stiglitz (2000) argued that financial structure played an important role in producing macroeconomic volatility. Denizer (2000) argued that besides financial structure, corruption might also play a role in creating volatility. Therefore, according to many scholars, corruption is one of the reasons that increases the volatility of business cycles.

3.2.3 Corruption and Social Welfare

The damaging effects of corruption on investment and economic growth are widely recognised. But corruption also has adverse effects on human development. First, corruption reduces the availability and increases the cost of basic social services. Access to core social services can be easily restricted with the intention to make corrupt gains (Kaufman 1998, P. 36). Since obtaining access to basic public services normally requires an illegal cash payment, corruption also raises the price of these services.

Second, in addition to a decrease in total government expenditure (due to tax evasion), corruption also shifts government expenditure from priority social sector spending to areas, where the opportunities for rent-seeking are greater and the possibilities for detection are lower. Allocating government funds to a few large defense contracts or mega-projects may seem more attractive to corrupt bureaucrats and politicians than spending the same money to build numerous rural health clinics (Bardhan 1997). Similarly, there may be a temptation to choose more complex technology (where detecting improper valuation or over invoicing is more difficult) than simpler, and more appropriate technology. Politically, corruption increases injustice and disregard for rule of law. Basic human rights and freedoms come under threat, as key judicial decisions are based on the extent of corrupt bribes given to court officials rather than on the innocence or guilt of the parties concerned. Police investigations and arrests may be based on political victimization or personal vendettas rather than on solid legal grounds.

3.2.4 Corruption and Poverty

The equation $C \text{ (corruption)} = M \text{ (monopoly)} + D \text{ (discretion)} - A \text{ (accountability)}$ often used to explain corruption, omits $V \text{ (values)}$, and seems to suggest that ethics are an irrelevance (Mauro 1997, P. 92). In studying the apparent intractability of corruption in many countries $V \text{ (values)}$ has risen to the fore along with other vital linkages that help present a more comprehensive picture of the nature of corruption in any given country. The link between poverty

and corruption is one of these vital relationships. Corruption is an important cause of poverty because it promotes unfair distribution of income and inefficient use of resources.

3.3 Economic Benefits

Some economists consider corruption as means of aiding the economy, particularly in the case of cumbersome regulation, excessive bureaucracy or market restrictions. For example, Bayley (1966); Nye (1967); Huntington (1968); Leff (1964); Morgan (1964) argued that corruption could, in extreme cases, be not only desirable but essential to keep the economy going. Moreover, it emerges as a helpful inducement for reestablishing market efficiency and has gained recognition in economic textbooks (Mankiw 2000, P. 123) where scholars highly recognize and use in their studies especially in developing economies.

A similar conclusion can be drawn for a minor case of corrupt misdeed: the payment of speed money as mentioned by (Douie 1917, P. 545) with respect to reduced levels of corruption in courts. This implies a tradeoff between administrative delays and corruption. Given excess demand for public goods and services, applicants have to line up according to the time of their arrival; files will be piled and not processed according to the needs of the applicants. The resulting waiting costs would be reduced if the payment of speed money could induce bureaucrats to increase their efforts and to process cases according to urgency, a need which might be measured by the applicants' willingness to pay. This argument was opposed (Myrdal (1968), who argued that corrupt officials might, instead of speeding up, actually cause administrative delays in order to attract more bribes. A similar proposition is put forward by (Rose-Ackerman 1978, P. 90) arguing that bureaucrats behave like monopolists who profit from increasing prices by creating scarcity.

Although some benefits from corruption are recognised, there is still a growing empirical literature based on comparative country studies, emphasizing that corruption lowers investment, capital productivity, capital inflows and many other macroeconomic data. The World Bank believes that corruption is a major

factor impeding economic development. Corruption hampers economic growth, disproportionately burdens the poor and undermines the effectiveness of investment and aid. In addition, the World Bank (1997) is helping countries develop anti-corruption strategies (World-Bank 1997).

4 Theoretical Considerations

The first theory of corruption that will be discussed is the typology Heidenheimer (1989), who divided the corruption theories into those which concentrate on the public official and concern the breaking of the rules of the law and those according to which corruption is a particular kind of market phenomenon. Some non-economical formulations of the problem of corruption will be presented, and thus be placed within the two first categories of Heidenheimer's typology. In accordance with the perspective adopted in the research it is an attempt to present non-economic, institutional conditions of corruption. In successive parts of the chapter corruption will be defined as a contract referring to the works of Rose-Ackerman (1999) and Banfield (1958), where they mostly agree that the essential influence on the scale and structure of corruption is exerted on the one hand by agency structures of the administration and, on the other hand, cultural conditions.

4.1 The Typology of Heidenheimer

Heidenheimer (1989) isolated three ideal-types of corruption in his cited work. First, public office-centered corruption which is the behavior that deviates from the formal duties of a public role due to private-regarding pecuniary or status gains; or violates rules against the exercise of certain types of private-regarding influence (Nye 1967, P. 421). Secondly, market-centered corruption where a corrupt civil servant regards his public office as a separate business and seeks to maximise his income. The size of his income depends upon the market situation and his talents for finding the point of maximal gain on the public's demand curve (Klaveren 1957, P. 38). Thirdly, public interest-centered corruption, where its patterns can be said to exist whenever a power holder who is charged with

doing certain things is by monetary or other rewards not legally provided for, induced to take actions which favor whoever provides the rewards and thereby does damage to the public and its interests (Friedrich 1966, P. 37). Added to these merely theoretic and loose definitions, researchers need little input information to make their studies more effective. In each country there are areas, where traditional corruption is more widespread, where it is virtually unpresent. Though, the measurement of the narrowly defined corruption has relatively long tradition and international researches provide sufficient basis to prepare comparative measurement of the level of these activities. The issue gets even more complicated, as we try to capture various corruptive activities.

4.2 Institutional Conditions of Corruption

Corruption may be the single most significant obstacle to both democratization and economic development (Banfield 1958, P. 34). Economists marshal convincing evidence of the toll that corruption – the misuse of public office for private gain – exacts on economic growth. Corruption also corrodes democracy (Rose-Ackerman 1999), undermining the most fundamental principles of democratic governance. Corrupt practices remove government decisions from the public realm to the private, diminishing openness and accountability. Corruption provides privileged access to government for actors able to offer bribes and other payoffs, violating norms of equality (Sandholtz 2000, P. 36). When citizens perceive politicians and officials as devoted not to the public interest but to their own enrichment, trust in government declines. In states still trying to consolidate democratic norms and institutions, distrust of office-holders all too easily transforms into disillusionment with democracy itself.

Assuming that society considers corruption to be illegitimate and undesirable, one may tend to argue that the negative externalities of corruption outweigh the gains (Lambsdorff 1999). But where poor institutional preconditions and extensive distorting regulation exist, some economists would rather downplay the size of these externalities and favor corruption as a means to open up new contractual possibilities (Ades 1999). Poor institutional conditions can provide

fertile ground for corruption to flourish; however they are often not the basis but themselves a consequence of corruption.

4.3 Effects of Culture

Corruption is such a pervasive and enduring fact of life in some societies that it became an aspect of culture, that is, of social norms and practices (Sandholtz 2000, P. 34). It has long been recognised that the incidence of corrupt practices depends on both structural and cultural factors (Rose-Ackerman 1999). However, structural factors have received the bulk of the attention in empirical work. Scholars in the political economy tradition have emphasised the structure of opportunities and constraints as basic determinants of corruption (Rose-Ackerman 1978; Klitgaard 1987). Culture consists of “orientations to action,” or “general dispositions to act in certain ways in sets of situations.” People acquire orientations to action through processes of socialisation; they learn about social norms and expectations regarding acceptable behavior (Eckstein 1988, P. 790). The tendency of cultural patterns to reproduce themselves through socialization leads to a general expectation of continuity. Cultures do change, of course, but they tend to change slowly, even when parts of their environment alter substantially. Thus, we would expect that if various forms of corruption became widespread cultural practices, these orientations would persist even after the dramatic changes in political and economic institutions.

In most developing countries today, corruption is widespread and part of everyday life (Guhan 1997, P. 52). Society has learned to live with it, even considering it, fatalistically, as an integral part of their culture. Not only are public or official decisions – for instance, on the award of government contracts or the amount of tax due – bought and sold, but very often access to a public service or the exercise of a right, such as obtaining civil documents, also has to be paid for. Several mechanisms help to spread corruption and make it normal practice in these countries. Civil servants who refuse to toe the line are removed from office; similarly, businessmen who oppose it are penalised vis-à-vis their competitors. Furthermore, an image of the state has grown up over the years according to

which the civil service, far from being a body that exists to implement the rights of citizens – rights that mirror their duties – is first and foremost perceived as the least risky way of getting rich quickly. All of which helps to make corruption seem normal (Stasavage 1998). It is the environment in which public servants and private actors operate that causes corruption. Public administration in developing countries is often bureaucratic and inefficient. A large number of complex, restrictive regulations coupled with inadequate controls are characteristic of developing countries that corruption helps to get around. But to understand corruption, institutional analysis is not enough. A political and economic analysis is important too. Whether it is in Benin, Bolivia, Morocco, Pakistan or the Philippines – five countries examined in a study by the OECD Development Centre and the UN Development Programme – corruption is closely linked to the type of government involved (Hors 2000, P. 5).

The link between political and economic power can be direct. There is patrimonialism, as in Lebanon, where access to political power ensures access to economic privileges. The link can be indirect too, as in Turkey, where political power, such as a privileged position in a patronage-based system, can be bought and sold. In short, the process of allocating political and administrative posts – particularly those with powers of decision over the export of natural resources or import licenses – is influenced by the gains that can be made from them. The political foundations are cemented as these exchanges of privileges are reciprocated by political support or loyalty (Kaufman 1998, P. 19). Another feature common to the countries studied is their underdevelopment, which is conducive to corruption. In fact, underdevelopment encourages corruption. First of all, low wages in the civil service encourage petty corruption, and the imbalance between the supply of, and demand for, public services likewise creates opportunities for corruption. Also, individuals tend to invest in a career in the public service, given the shortage of opportunities in the private sector, thus increasing the likelihood of their involvement in corrupt practices (Gill 1998, P. 85). Another reason is that the low level of education found in underdeveloped

countries maintains citizens in a state of ignorance of their rights, barring them from participating in political life.

4.3.1 Lipset's Module

Few studies explicitly address cultural factors that might affect levels of corruption. Treisman (2000) found out that former British colonies tended to be less corrupt. One of the more ambitious attempts to assess quantitatively the links between culture and corruption is a study by Lipset (1999). He began with Banfield's insight that, in southern Italy and Sicily, the high value placed on family loyalty led people to provide favors and preferential treatment to relatives (Banfield 1958). Lipset created a scale to measure "familism" and then tested the relationship between familism and corruption. He also build on Merton's proposition that people who faced restricted access to the goods highly valued by a society – for example, economic achievement – will seek to obtain those rewards through means that violate social norms. He derived from this argument the hypothesis that "those cultures that stress economic success as an important goal, but nevertheless strongly restrict access to opportunities, will have higher levels of corruption" (Lipset 1999, P. 6). Attitudes measured in the World Values Survey are the basis for a measure of "achievement orientation." The data analysis shows that, controlling for income; high scores on both familism and achievement orientation are positively related to corruption levels and statistically significant (Lipset 1999, P. 10).

Therefore, underdevelopment encourages corruption, and makes it part of the culture, then it persists and it becomes hard to be perceived as dangerous. Institutional conditions provide fertile ground for corruption and decreases trust in government. In studying corruption, it is essential to understand political, economic, institutional structure and the culture of a society in order to formulate a suitable module to asses its level and propose a plan to decrease or eliminate it.

5 Measuring Corruption

There is a consensus that real volume of corruption cannot be measured or calculated. However, there are different approaches that indicate the spread of corruption in societies.

5.1 *Methods Used To Estimate Corruption*

There are three widely used 'scientific' methods in the field of corruption evaluation. All three methods hold value in achieving the goal; that is, to estimate the spread and map the structure of corruption.

First, general perception can be, and is regularly used as a sensitive core indicator of the feeling the 'lack of justice' in public transactions. This type of measure is less stable over time; it is sensitively reflecting the level how corruption is displayed in media. Corruption perception in this sense is an indirect measure related to actual level of corruption, highly depending on how much space corruption actually has in media agenda. In normal cases, the relative weight of corruption issues appearing on media must be closely related to what happens in real life; if there are more corruption cases in the country, there are more scandals appearing on TV screens as well (Markovits 1988, P. 28).

On the other hand, the incidence-based approach is more independent from media agenda, general sense of the society, or even questionnaire editing. By asking the ones who potentially bribe and those whom bribes are offered, researcher might get a good feedback on how frequent is corruption in different types of transactions. Using direct and indirect incidence, or proxy measures (one regarding the respondent, and one regarding 'others'), the measures will provide a sufficient basis to decide in which areas corruption is more frequent than in others (Manchin 2000). The usage of indirect measures shows extraordinary importance in case of the business pilot study, where the - usually senior official - respondents were very reluctant to answer the direct questions asking about bribery and other forms of corruption the organization was involved. By incidence measurement one can also get a more reliable and stable cross-

country comparison in certain widely measured areas, and finally we provide the basis for the longitudinal analysis, which we see more important than cross-country comparisons. The cross-country analyses in terms of general corruption practices have serious validity problems. Using perception methods, actual events surrounding the data collection can significantly influence the results we get. In proxy measures we cannot control the 'shame-bias' and the 'routine-bias', that is, we will never know the exact ratio between actual corruption attempts and the reported number.

Finally, in the most cited and probably respected cross-country comparison of the "Transparency International" was primarily based on expert evaluation. Now scholars are trying to transform the computation of CPIs, as a common index derived from different general polls and expert interviews. As Sik (1999) pointed out, expert evaluations are 'severely biased' for many reasons, accounted primarily to the nature of the group of international business experts involved in TI evaluations. According to Sik, this group of businessmen is fairly closed (the cross-validity of separate experts' evaluations are not the consequence of their similar reflection of the same truth, much more the common stereotypes, developed on social events they jointly attend, or other sources of personal networking), and is not accustomed to the local customs and language (they tend to oversee the ways, how issues are settled locally and tend to use bribery to solve problems fast). In this respect, businessmen are more prone to corruption than 'normal' citizens, just by the very difference of their professional ethics and the 'ethics in their veins'.

5.2 The World Bank's Framework

In recent years significant improvements have been made in the measurement of corruption, in the construction of composite corruption indices, and in the design and implementation of surveys. Beyond applying improved empirics through a multi-pronged approach to surveys, it is now possible to construct a framework linking the analytical and empirical research with

operationally relevant utilization. One can effectively utilize empirical analysis in the design and implementation of action programs.

The Economic Development Institute at the (World-Bank 1997), in collaboration with the Transparency International and local NGOs, has developed a methodological approach integrating within one empirical framework the various components identified so far for understanding and combating corruption. This overall empirical approach links worldwide database and analysis with determinants of corruption, in-depth country analysis, and country action program (Kaufman 1998).

Anti-corruption Analysis and Action

Database and Analysis	Determinants of Corruption	Country Analysis	Action Programme
<ul style="list-style-type: none"> *Worldwide and Regional data and analysis *Prevalence of corruption *Consequences of corruption *Country governance factors 	<ul style="list-style-type: none"> *Political patronage *Administrative labyrinth *Lack of punishment *Social environment 	<ul style="list-style-type: none"> *Political Will *Civil society understanding *Focus groups *Task forces 	<ul style="list-style-type: none"> *Institutional Priorities *Political will and government role *Civil society *Role of international community

Adopted from: Kaufman, Pradhan, and Ryterman (1998).

5.3 The X-inefficiency model

The X-inefficiency approach was modeled for different purposes. This approach has also been considered useful for describing the adverse impact of corruption and government operations on public welfare (Kaufman 1999). In

contrast to allocative inefficiency, this type of inefficiency is defined as one that originates from a lack of effort and motivation among the workforce, resulting in productive units not operating on the production possibility frontier (Button 1994, P. 91). The original approach to X-inefficiency as developed by (Leibenstein 1973) aimed at explaining the efficiency losses resulting from a lack of competition in private goods markets. In addition to the allocative losses depicted by the classical Harberger triangle, Leibenstein argues that monopolistic firms do not minimise costs for a given production level (Leibenstein 1966, P. 401). In a competitive environment, inefficient producers are put under pressure from competing firms, but monopolies can maintain their market position without effort. The market selects those firms that are able to efficiently use their factor inputs. But such a selection process does not exist in the case of a monopoly. This absence of pressure results in a lack of motivation and effort among the workforce and an inefficient organization of production.

This parallels the situation faced by public institutions, where it may be questioned whether evolution selects benevolent principals who motivate agents to serve the public. The resulting type of inefficiency appears to apply particularly to an uncontested principal, a leadership position which is not repeatedly occupied by new and innovative persons. Societies miss the opportunity to test new applicants and types of leadership. Organisational innovation no longer takes place and the constituency does not become aware that alternatives may prove superior. Collective nonperformance among them does not cause their organizational unit to go bankrupt. Fears of losing one's job are mitigated. Engendering a sense of responsibility for welfare- enhancing policies, being motivated toward a common goal along with supervising the effort exerted by colleagues is, therefore, harder to implement and may find few protagonists within an uncontested government. In such a situation governments may be little motivated to secure that agents serve the public. Shirking and laziness may be condoned. An equal conclusion can be drawn with regard to corruption, because the uncontested principal will avoid the effort required to control agents (Lambsdorff 1999).

Finally, all the three approaches explored scientific methods in the field of corruption evaluation, and hold value in achieving the goal: that is to estimate the spread and map the structure of corruption. But, the methods used to measure corruption based on the World Bank's frame work may be considered as the primary tool to use in formulating a comprehensive model to assess and combat corruption in a specific country. The X-inefficiency model that was used by some scholars to measure corruption did not proof to be of good use, while doing this as it was originally formulated for other purposes.

6 Implications for modelling

Measuring corruption needs special attention regarding the kind and level of corruption that determine the appropriate method to be used. A good model requires a comprehensive understanding for the causes of corruption, business environment, public administration, institutional structures and the effect of culture. Moreover, accurate data are a key factor in formulating a sophisticated model in assessing the level of corruption. Based on literature that has been reviewed, the model is more likely to use the political patronage, administrative labyrinth and lack of punishment as the determinants of corruption. As for the country analysis, the political will, focus group and task forces are the useful tools.

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