Measurement Issues in The Economics of Corruption

M. Phil. Dissertation

By

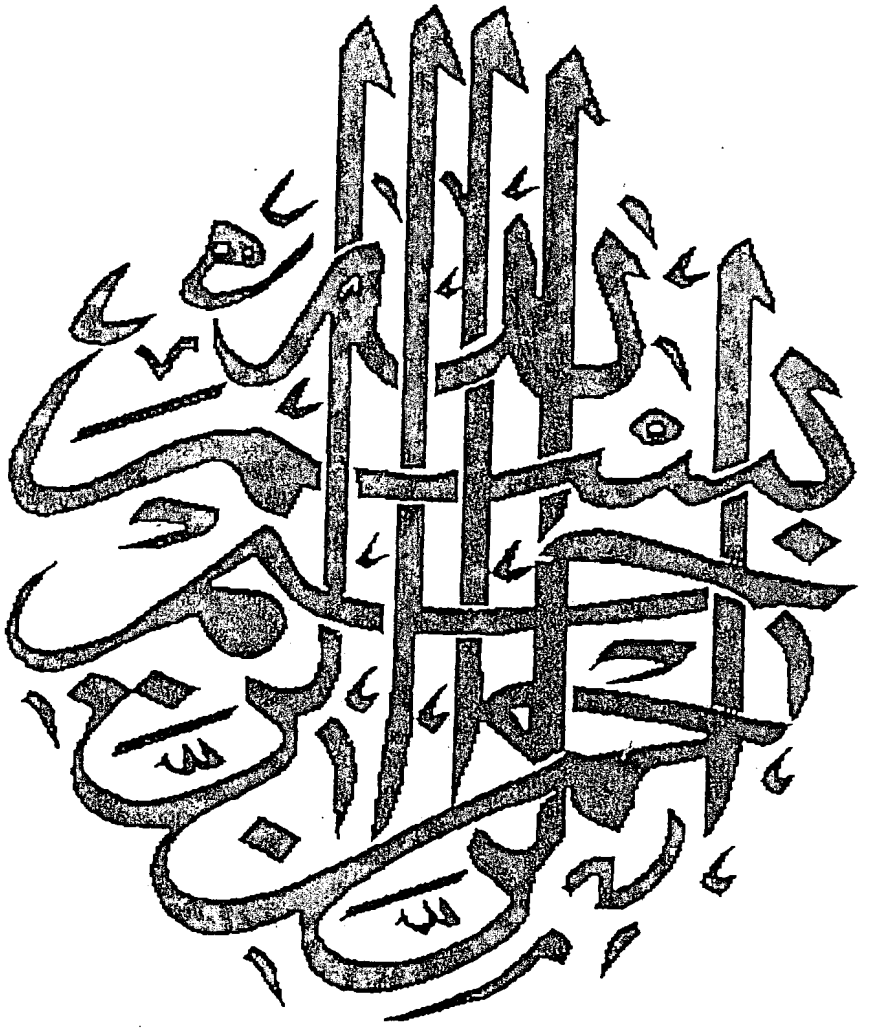
Faiz - ur - Rahim

Supervised

By

Dr. Asad Zaman

International Institute of Islamic Economics
International Islamic University
Islamabad



International Institute of Islamic Economics
International Islamic University, Islamabad

Certificate

It is certified that the M Phil dissertation submitted by ***Mr. Faiz-ur-Rahim*** is properly amended according to the instructions of the Viva Voce Examination Committee. The Committee has approved that the thesis fulfils the requirements of ***M Phil Degree***.

Viva Voce Examination Committee

1. **Supervisor**
   Professor Dr. Asad Zaman .....
   DG IIIE
   International Islamic University Islamabad

2. **External Examiner**
   Dr. Tariq Javed
   Associate Professor
   Quied-e Azam University, Islamabad

3. **Internal Examiner**
   Dr. Nasim Shah Sherazi
   Dean, School Of Economics, IIIE
   International Islamic University Islamabad

Abstract

This research study looks at the recent efforts to measure corruption by national and international organizations, and examine the uses of these measures for anti-corruption strategies and other socio-political motives.

It is impossible to obtain precise information about corruption due to its secrecy, illegality and varying nature. The corruption index (rankings) is based upon the aggregation of these imprecise information. A limited definition of corruption i.e. *'misuse of public office for private interests'* is used in the construction of these indices, ignoring the grand corruption i.e. political and corporate corruption. Therefore the probability of misclassifying countries is significant. The margins of error in the index-scores are considerable. The information from indexes are therefore indicative, not precise.

These cross-country rankings are not useful for within country reforms because they tell nothing about internal dynamic dimensions of corruption. Using the corruption measures for assessment of level of corruption would not be appropriate as the probability of the misclassification of the countries is significant. Using this subjective data for empirical research (as it is being used for cause and effect analysis of corruption in hundreds of papers) could lead toward ambiguous results, as the margins of error in the index-scores are considerable. These cross-country rankings are helpful in decision making for donor agencies and multinationals, but there are chances of politicisation of this data. Some statistical techniques and causality test are used for further clarity regarding flaws and usefulness of these subjective measures.

The micro level objective data is more helpful in elimination of corruption, however it is relatively hard to obtain due to secrecy problem. Public Expenditure Tracking Survey (PETS) are very useful for monitoring of the public funds. The most effective, feasible and practical diagnostic of this disease (corruption) is that the people of Pakistan should become promising Muslims and responsible citizens of Pakistan. In this connection, the role of government would be to provide an adequate atmosphere for character building and moral training along with trustworthy institutions.

Table of Contents

Chapters

Foreword

I Introduction 7

II Review of Literature 15

1. Understanding Corruption
   - 1.1 Public office-centred or Bureaucratic Corruption
   - 1.2 Market-centred Corruption
   - 1.3 Public Interest-centred or Political Corruption

2. Measuring Corruption 24

   - 2.1 Observational Data on Corruption
     - 2.1.1 Limitations and Biases of Observational Data
   - 2.2 Subjective Measures of Corruption or Macro Data 29
     - 2.2.1 Corruption Perception Index (CPI)
     - 2.2.2 Bribe Payer Index (BPI)
     - 2.2.3 World Bank Index (WBI)
     - 2.2.4 Price, Waterhouse Cooper Index (Opacity)
     - 2.2.5 Some Other Macro Measures
   - 2.3 Objective Measures of Corruption Or Micro Data 45
     - 2.3.1 Business Environment and Enterprise Performance survey (BEEPS)
     - 2.3.2 Public Expenditure tracking surveys (PETS)
     - 2.3.3 Quantitative Service Delivery Surveys (QSDS)
     - 2.3.4 Regional Measures of Corruption (Latiniberometro & Corruption Victomization Measure)
   - 2.4 A Comparative Statement of the Measures of Corruption 52

3. Uses of the Corruption Measures 55

   - 3.1 Using Measures to Fight Corruption
   - 3.2 Using Measures to Asses the level of Corruption
   - 3.3 Using Measures to find Causes and Effects of Corruption
   - 3.4 Using Measures to Guide Donor Agencies and Multinationals

III Sensitivity of the Measures of Corruption 61

1. Sensitivity of Corruption Measures to Index Methodology

   - 1.1 Index Theory and its application on governance Issues

2. Sensitivity of the Measures to the Assumptions of their respective Model 64

2.1 Confidence Interval of CPI
2.2 Confidence Interval of World Bank Index

3. Sensitivity of the Measures to the Basic Assumptions of Measurement. 70

3.1 Basic Assumptions of Measurement
(Validity, Reliability & Precision)

IV Causes of Corruption **86**

1. Regression, Causation and Confounding factors

1.1 Reality and Research: Causes of Corruption in Pakistan

2 Status of Current Research in the Field of Corruption 92

2.1 Corruption & Economic Growth Linkage: A Statistical Evidence

3 Corruption & FDI: A Causality Test on Panel Data
(Hurlin Veent Method) 100

3.1 Data
3.2 Methodology
3.3 Results and Discussion
3.4 Limitations of Granger Causality Test

V Socio-Political Motivations of Research in Corruption **108**

1 Politicisation of the issue of Corruption
1.1 Anti Corruption Campaign and Globalisation

2 Moving from Subjective to Objective Measures of Corruption 111

2.1 Improvement in Governance
2.2 Accounting the Cost of Corruption

3. Role of Individual, Society and System in Corruptibility 115

3.1 Faith-biased Initiatives

VI Conclusion **117**

VII Bibliography **119**

APPENDEX

Foreword

A general impression conveyed by the international watchdogs, media and popular discourse is that the people of Pakistan have adopted corruption as their ' way of life'. In world ranking on corruption, Pakistan is mostly ranked among the few bottom countries. In 1996 media flashed a world ranking by Transparency International that Pakistan is the second most corrupt country of the world [Corruption Perception Index (CPI) 1996 included only 54 countries out of 198 countries of the world]. This depressing statistic led me to my current research, which investigates whether we are really one of the most corrupt nation of the world?" Exploring the current literature over corruption, I found some fictions along with some realities. There was a huge literature over the controversies of researchers regarding the worldwide rankings of the countries based on the perception of corruption. However I found Pakistan among those developing countries where corruption is really a serious problem. Not only Pakistan, but also almost all Muslim countries of the world are facing the same situation. If we follow the teachings of the Holy Quran, and practice of the Holy Prophet (SAW), then corruption would be minimal in Muslim societies. But practically there is a large gap between theory and practice. Corruption is a problem like many other problem which Muslim societies are facing. Internal, moral and spiritual problems can not be solved by multinational watchdogs or institutions or rules or laws or resolutions. We can solve all of our problems including corruption by equipping ourselves with the real power of faith and knowledge. An Ideological Muslim (Moumin) who is equipped with a firm belief (eemaan) is ranked at a very apex position in his both lives (the life here and hereafter). As mentioned in Holy Quran:

وَلَا تَهِنُوا وَلَا تَحْزَنُوا وَأَنتُمُ الْأَعْلَوْنَ إِن كُنتُم مُّؤْمِنِينَ (٣:١٣٩)

(So lose not heart nor fall into despair: for ye must gain mastery if ye are true in faith.)

This highly ranked true Muslim(Moumin) is very honest and trustworthy. According to the Quran: وَالَّذِينَ هُمْ لِأَمَانَاتِهِمْ وَعَهْدِهِمْ رَاعُونَ (٢٣:٨)

(And who are shepherds of their pledge and their covenant)

Allah (SWT) warned the mankind against dishonesty in property matters.

وَلَا تَأْكُلُوٓا أَمْوَٰلَكُم بَيْنَكُم بِٱلْبَٰطِلِ وَتُدْلُوا بِهَآ
إِلَى ٱلْحُكَّامِ لِتَأْكُلُوا فَرِيقًا مِّنْ أَمْوَٰلِ ٱلنَّاسِ بِٱلْإِثْمِ وَ
أَنتُمْ تَعْلَمُونَ (٢:١٨٨)

(And eat not up your property among yourselves in vanity, nor seek by it to gain the hearing of the judges that ye may knowingly devour a portion of the property of others wrongfully.)

The whole life the Prophet Muhammad (piece be upon him) is exemplary in the special reference of this attitude. The title, which remained with the Holy Prophet throughout the whole life, (before and after prophet hood) was Sadiq and Amin (True & Honest). In addition to His practical Sunnah He forbade the people from bribery with very strong words. *" He who pays the bribe or accept the bribe , both will go to the hell"*. The life of the four caliphs was also exemplary in this reference. They were answerable to the people about all of their public affairs. " A lay man asked the Caliph Omar bin Khattab during the public meeting that how he managed to tailor a shirt from such a short piece of cloth, while no one among us was able to manage it. The Caliph replied that he has borrowed the piece of his son as well." The Ummah with such a high valued teaching about corruption is being ranked at the bottom of the global rankings. This is the main issue, which motivated me to work in this field. When I showed my interest in this field to my supervisor, he encouraged me and pointed out to me a right direction to start the research i.e. foundations of empirical research in corruption. Can we really measure something intangible and secretly done, like corruption? In practice weak subjective corruption data is correlated with many macroeconomic indicators for empirical research work in order to gain some presumed results. This subjective data on corruption which is based on worldwide rankings is critically examined. The intention behind this research study is to expose weakness of the subjective statistics and show that it plays a very limited role in the achievement of the policy objectives i.e. control of corruption.

I

"Corruption has appeared in the land and the sea on account of what the hands of men have wrought, that He may make them taste a part of that which they have done, so that they may return".

Al-Quran Surah Room Ayah41

Introduction

Corruption and fight against it waged by the Prophets, people of faith, have been with us from the beginning. Ever since the people began to engage in organized economic activities, this immoral practice is being documented in the books of religion, history, politics and Economics. P. Bardhan (1997) has quoted a reference of Kautiliya's Arthasastra about the presence of corruption in India from fourth century B.C. With the emergence of the newly independent countries across the continents in the post-World War II era, the role of corruption has become critical as an element in the politico-economic process and as a determinant of the development-dynamics in the world. Today, in an increasingly inter-dependent global economic system, the implications of corruption stretch across borders. Since nineties the World Bank and other multinational financial institutions began to discuss openly the issue of corruption and soon thereafter began to explicitly offer assistance to countries in combating corruption. The rise in the degree of attention now paid to the issue of corruption has raised many questions. Why is it now getting more attention? It might be due to the end of cold war era, emergence of transitional economies, globalisation, more role of nongovernmental organizations, free and active media or due to the role played by the United States, especially through its influence in some international institutions (Vito Tanzi 1998). The increasing interest in this topic has opened new research opportunities, which has led to a proliferation of new tools to measure corruption and governance.

The ongoing research on corruption can be divided in to two broad categories; theoretical and empirical research in corruption. The theoretical papers

almost without exception deal with the individual's incentives for corruption and possible government action to reduce such incentives at the individual level. The empirical papers deal with the data on corruption level across the countries.

1.1 Theoretical research on corruption

Theoretical research on corruption dates back at least to the 1960s with Myrdal's (1968) argument that corruption distorts incentives and provide a prize to introducing further regulations, so it is detrimental to growth and investment. Contrary to the views of Myrdal, Nathaniel H. Lef (1964) writes: "if the government has erred in its decisions, the course made possible by corruption may well be the better one". According to Gary Becker's(1968) analysis of crime prevention, "all things being equal corruption could be reduced by increasing the penalties on those who are caught". Krueger (1974) and Rose-Ackerman (1975), among others, making pioneering contributions to understanding the phenomenon of corruption and rent-seeking behaviour. According to them it becomes difficult to draw a distinction between some forms of rent seeking and corruption. The Term 'rent-seeking' is being used sometimes interchangeably with corruption. There is even a large area of overlap. Corruption involves the misuse of public power for private benefit, rent -seeking derives from the economic concept of "rents", i.e. earnings in excess of all relevant costs, and equals what most people think of as monopoly profits. Rent-seeking, the effort to acquire rents, is not necessarily banned by law or regarded as immoral in society, or necessarily uneconomical in terms of development if reinvested productively, but it is largely "directly unproductive", wasteful and very often economically inefficient (Coolidge and Rose-Ackerman 2000). For example, the president of the country who has an airport in his small hometown is also engaging in a act of corruption that does not involve the payment of bribe. Cadot (1987) has modelled corruption as a gamble for civil servants at every level and finds, among other things that the probability of punishment diminishes with the general level of corruption, Basu *et al* (1992) have demonstrated how an individual's choice of corruption level differs when he

considers the possibility of corruption in the rest of society as compared to that when the choice is made in isolation. Shleifer and Vishny (1993) have shown that the structure of government institutions and of the political process affect corruption levels and the illegality and secrecy associated with corruption exacerbate its distortionary effects. Besley and McLaren (1993) discuss how efficiency wages may be ineffective in combating corruption among tax collectors under certain circumstances. Barreto (2000) develops a neoclassical growth model of endogenous corruption as a result of competition between a public agent and a private agent. More recently, Azfar and Nelson Jr. (2003) used experimental methods to test some corruption theories. They found that directly elected law enforcement officers work more vigilantly at exposing corruption than those who are appointed. Moreover they stated that "as predicted by the economic theory of crime, increasing both government wages and ease of detecting corruption reduce corruption.

1.2 Empirical Research on Corruption

1.2.1 ***Empirical Research about the causes of corruption*** is based on new cross-country data. Researchers have begun to empirically explore the causes and consequences of corruption comparatively more in recent years. On the causes side, Treisman (2000), finds, among other things, that countries with Protestant traditions, history of British rule, higher level of development and higher level of imports have lower levels of corruption. Rijckeghem and Weder (1997) find negative correlation between civil service wage level and the level of corruption. Leite and Weidmann (1999) find support for their hypothesis that natural resource abundance promotes rent-seeking behaviour or corruption.

1.2.2 ***Empirical research about consequences of corruption*** is mostly based upon the corruption perception indices. Mauro (1995) and Campos et al (1999) find that corruption adversely affects growth by discouraging investment. Tanzi and Davoodi (1997) find that corruption reduces growth

by distorting public investment. Gupta *et al* (1998) find that corruption reduces economic growth, makes the tax system less progressive, reduces the level and effectiveness of social spending and human capital formation, perpetuates an unequal distribution of asset ownership and unequal access to education, and consequently raises income inequality and poverty. Al-Marhubi (2000) finds positive association between corruption and inflation. Elliott (1997) discusses the multifarious effects of corruption in the global economy.

1.2.3 Problems with Corruption Research

- The link between the micro and macro, in other words a macro model of corruption with micro-foundations, is missing. As Chakarbeti, Rajesh(2001) stated, "most theoretical studies of corruption develop micro models of individual acts while empirical papers study corruption at the country level". The missing link indicates a lacuna in this area, which is creating confusion and ambiguities while working in the field of corruption.
- Along with these confusions in current empirical research, the researchers also found weak relationship and even no relationship among the variables. The fundamental difficulty of detecting causation from observable data plagues nearly all studies in this area. The founder of the concept of CPI (corruption Perception Index) Lambsdorff (1999) pointed out the problem of causality in these studies. "While finding a correlation between corruption and some other phenomenon, the statistical regressions do not tell us whether corruption influences the other phenomenon, or if it is the other way around... The inconsistency in some results still illustrates the problem of drawing conclusions with regard to corruption on the basis of empirical research". (Tina Soreido 2003).
- Apart from the problem of causality there are many methodological and conceptual questions in the minds of researchers regarding its measurement and it's course of action. The questions like, "What is corruption and is it

measurable? Are the tools used to measure the level of corruption are precise, valid and reliable? Are these tools measuring the actual corruption level or perception of corruption in the economy? Is the level of actual corruption and perceptions of corruption in an economy are same? Is the corruption itself harmful or there are some other associated confounding factors? What are the main objectives to build these cross-country ranking tools of measurement? Are these tools helpful in curbing the curse of corruption or otherwise? The vague and ambiguous answers of these types of questions have pointed out many serious drawbacks in the measurement tools (Corruption indices).

1.3 Measurement of Corruption

Measurement means "The process of assigning numbers or labels to units of analysis to represent conceptual properties". The Corruption is such a multidimensional immoral and secret human behaviour, which cant be conceptualised into a measurable unit. ? As Vito Tanzi (1998) stated, "the exact volume of the corruption cannot be measured in any society, due to infinity of definitions and secrecy problems. Corruption is 'like an elephant' difficult to describe [but] not difficult to recognize".

1.3.1 Problem with Measurement of Corruption

- What is included in the various definitions, and what is excluded? What are the different types of corruption? What, if any, is the distinction between rent seeking and corruption? What are the forms of the state in developing countries? How is the state linked with the society around it? How far does the state's power and authority extend? Primarily in contemporary Africa, where political instability and state breakdowns are more frequent and widespread than virtually anywhere else, such questions have proved particularly troubling (Harsch 1997).

- "If corruption could be measured, it could probably be eliminated. In fact, conceptually it is not even clear what one would want to measure. Simply measuring bribe paid would ignore many corrupt acts that are not accompanied by the payments of bribe. (Vito Tanzi 1998)

- Most of the corruption indices use perception of corruption instead of real corruption experience. Perception of corruption is much different from real corrupt activities in a society.(William L Millar 2002, Vito Tanzi 1998, Lamsdorff Johann Graff 2001)
- The use of perception indices raises concern about *perception biases*. Due to the aggregate nature of the data, it tells us little about the relationship between corruption and individual agents. Most importantly, conceptually macro determinants cannot satisfactorily explain the within country variation of corruption. Specifically, firms and other agents facing similar institutions and policies may still end up paying different amounts in bribes (Goldsmith 1999).
- Corruption perception index (CPI) is a product of sources of information about corruption. This information is not true representative of the whole population and may create a serious *sampling biasness*. These perceptions may describe level of corruption inadequately (Fredrick Galtung 2005).
- Perceptions about corruption may substantially influence the level of corruption and it may increase the level of corruption in a economy. High corruption perceptions make people believe that they have to pay bribes, and the officials to think that there is nothing wrong with accepting them [Inna Cabelkova, Case Study of Ukraine]

The above hypotheses were investigated in some studies and have raised question marks about the quality of research in the field of corruption. Researchers have shown their concerns about both of the issues i.e. construction of cross-national corruption measurement indices and the empirical studies based on these indices. How can we quantify the impact of corruption on macroeconomic indicators when the measured corruption level i.e. *Corruption Indices* are vague?

1.4 Goals and Objectives of Present Research

From the above-mentioned research problems, one can infer very easily that the issue of corruption measurement still needs a lot of research. Mostly, the research on corruption is being conducted either in construction of cross-national corruption measurement indices or in the field of empirical studies based on these indices. Due to macro level data. these cross-national research studies are not relevant to the local issues of corruption and are also not helpful in combating it. An indigenous movement against corruption, based on local facts and figures would be more appropriate to handle the issue of corruption.

The objective of this research study is to highlight some very important issues, which may be helpful in diversion of efforts of researchers towards a better and objective oriented direction. In this study, following issues are taken for further discussion.

1. The crux of the literature reviewed during this research study is that the available corruption indices (cross-country rankings) are based upon the perception of the people and the original surveys have different types of biases. They have considerable error margins, as articulates of World Bank Index themselves mentioned in KKZ 1999a that the index is unable to rank the countries in 2nd and 3rd quartiles at 90 % confidence level. In order to ensure the quality of the corruption data, the issue of corruption measurement is further investigated through a hypothesis that " The prevailing measurement tools of corruption (corruption indices) are not valid, reliable and precise." Statistical tools like correlation and equality tests are used for the confirmation of this hypothesis. These indices could not qualify the basic measurement criterion of validity, reliability and precision.(3rd Chapter, Corruption Measurement Tools)

2. *Empirical research in corruption* is based upon corruption data. If the quality of corruption data is not reliable then up to what extent we can rely

upon the results of these empirical studies? In order to search an appropriate answer of this question, we have investigated the matter through further minor queries. Firstly, are the causes of corruption same across the globe? Secondly, are the regression results of these empirical studies consistent? Thirdly, does the causality confirm the course of action? The causes are not found same across the globe, so there is a mismatch between reality and research. The inconsistency in results of empirical studies further challenges the status of current research on corruption. Statistical evidence on growth corruption relationship and a Granger Causality Test on FDI and corruption both disproved the presumed regression results that corruption aggravates the socio-economic indicators and all good things go together. (4th Chapter Causes of Corruption).

3. A literature survey based analysis regarding *importance and applicability of corruption indices* is conducted in the last part of the study.. Multinational financial institutions like IMF and World Bank along with some international watchdogs like TI have started an anti-corruption global movement against corruption. Corruption is not such a homogeneous activity, which must be added in the list of global problems like poverty, pollution or AID. Due to infinity of definitions and dimension of corruption across the globe, a global movement would not be helpful in eradication of this curse, then why the movement against corruption has become a global issue, especially from 90's? It seems that the issue of corruption is being politicised in the context of globalisation. Secondly, do we have any better alternative, which can be more helpful to the reformer? The cross-country subjective rankings of corruption are not very helpful in reduction of corruption. The micro level strategies compatible with ground realities of that economy might be more helpful, not only in improving the governance but also in combating the corruption.

II

Literature review

Literature review is a base for further research work. The literature review of this study is organized into three main parts. In the first part, a brief conceptual sketch of corruption is formatted by reviewing the available literature. The issue of "Corruption Measurement" is reviewed in the second part of this chapter. The third part reviews the 'uses of corruption data'.

1. Understanding Corruption

One of the major difficulties in corruption research has consequently been the lack of a solid empirical foundations. Corruption being a behavioural variable is very difficult to describe. The exact volume of corruption cannot be measured in any society, due to infinity of definitions and secrecy problems. Corruption is 'like an elephant' difficult to describe [but] not difficult to recognize (Vito Tanzi 1998). On one hand it stands for those illegal practices, in which citizens or organizations bribe officials for personal interests. On the other hand 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.

In order to understand the concept of corruption in a better way, it would be most appropriate if we follow the typology used by Heidenheimer (1989) He isolated three ideal-types of corruption in his cited work These types are:

a. Public office-centred
b. Market-centred
c. Public interest-centred

In the followings we try to illustrate these three types of corruption with the help of classical authors of corruption-literature.

1.1 Public Office-centred corruption or Bureaucratic corruption:

"Corruption is behaviour which deviates from the formal duties of a public role because of private-regarding (close family, personal, private clique) pecuniary or status gains; or violates rules against the exercise of certain types of private-regarding influence." (Nye, 1967). Viewed most broadly, *corruption is the misuse of office for unofficial ends* (Klitgaard, 1988). Mushtaq Khan says corruption is "*behaviour that deviates from the formal rules of conduct governing the actions of someone in a position of public authority because of private-regarding motives such as wealth, power, or status*" (Khan 1996:12). Public office-centred corruption is also called *bureaucratic corruption.*

Public office-centered corruption is categorically condemned in Islam. Islam is a divine religion and like other divine religions, its philosophical foundations are based upon morality and social order. North and Gwin (2004) stated " Social scientists generally contend that, whatever other functions it may serve, religion serves to sustain a social order. Corruption being an immoral activity, it is strictly prohibited in Islam.

Alhabshi 1996 quoted a Hadith of Prophet Muhammad (peace be upon him) and called it a strict definition of corruption.

> "The Holy Prophet of Islam used to appoint a number of his companions as the collectors of Zakat, during the Medina period. They were to make proper assessments on the items where Zakat become payable, collect the proper amounts and distribute to the recipients in the same locality. One of these collectors of Zakat came back and told the Holy Prophet, "This amount is what I have collected less what I have distributed to the rightful recipients, but this is mine". The Holy Prophet was very upset and rebuked him saying, "What right have you to put aside something that does not belong to you. If you were to remain in your father's house, would you get what you are taking?"

The Holy Prophet had also been reported to have said, "If you get from the people because of your position is bribery. Would you get it if you are not holding that position, or if you stay in your father's house?"

Public office centered or Bureaucratic corruption is corruption in the public administration, at the implementation end of politics. This "low level" or "street level" corruption is what citizens will experience daily, in their encounter with public administration and services like hospitals, schools, local licensing authorities, police, customs, taxing authorities and so on. The sums involved are rather modest (adjusted to local conditions), and therefore bureaucratic corruption is frequently referred to as routine or "petty". According to World Bank Enterprise survey 2002, in Pakistan, the firms have to pay 1.61% out of their sale and the contractors (in region) have to pay about 2% out of their contractual amount for corruption. Following forms of corruption comes under this category of corruption.

(i) **Bribery** is the payment that is given or taken in a corrupt relationship. To pay or receive a bribe is corruption per se, and should be understood as the essence of corruption. A bribe is a fixed sum, a certain percentage of a contract, or any other favour in money of kind, usually paid to a state official who can make contracts on behalf of the state or otherwise distribute benefits to companies or individuals, businessmen and clients. There are many equivalent terms to bribery, like kickbacks, gratuities, "commercial arrangements", baksheesh, sweeteners, pay-offs, speed- and grease money, which are all notions of corruption in terms of the money or favours paid to employees in private enterprises, public officials, and politicians. These are payments or returns needed or demanded to make things pass swifter, smoother or more favourably through the state or government bureaucracies.

(ii) **Embezzlement** is theft of resources by people who are put to administer it; it is when disloyal employees steal from their employers. This is a serious offence when public officials are misappropriating public resources, when state official steals from the public institution in which he or she is employed and from resources

he is supposed to administer on behalf of the public. Embezzlement is not considered as corruption from a strict legal point of view, but is included in the broader definitions. In legal terms, corruption is a transaction between two individuals, one state agent and one "civilian", where the state agent goes beyond the limits of the law and regulations in order to secure himself a personal benefit in the form of a bribe. Embezzlement is regarded as theft because it does not involve the "civilian" side directly.

1.2 Market-centred corruption

Manipulation of market demand or supply by using public, private or political pressers in the personal interests is a market centred corruption. It happens when any one or group of market agents, like business executives, suppliers, stock holders or auditors deceives the other market agents with or without the help of public sector. ENRON scandal of USA is a very clear example of Market centred corruption. The ENRON Corporation was listed the seventh largest company of USA and had over $100 billion gross revenues and 20000 employees in 2001. It was was the biggest bankruptcy scandal of US history. It cost multibillions to the Us nation including unemployment of 4000 workers.

> "On December 2, 2001, Enron Corporation, then the seventh largest publicly traded corporation in the United States, declared bankruptcy. That bankruptcy sent shock waves throughout the country, both on Wall Street and Main Street where over half of American families now invest directly or indirectly in the stock market. Thousands of Enron employees lost not only their jobs but a significant part of their retirement savings; Enron shareholders saw the value of their investments plummet; and hundreds, if not thousands of businesses around the world, were turned into Enron creditors in bankruptcy court likely to receive only pennies on the dollars owed to them". (US Senate Report #107-70)

A citizen forum www.citizenwork.org pointed out that the Loans of amount $ 4 billion were hided in this scandal. However it was confirmed by US Senate

Committee, that misappropriation of audit and accounts was the main reason of this huge market-cantered corruption.

> "The Board was also informed that, in six short months, LJM had produced over $2 billion in funds flow for Enron, and Enron's gross revenues had jumped from $40 billion in 1999 to $100 billion in 2000." (US Senate Report #107-70)

Sugar scandal 2006 of Pakistan is a live example of market-centred corruption. The sugar mills owners who are parliamentarians, have created a sort a market collusion and have raised the price of price artificially. Ponzi Scheme and sale of 'Absent Gold mines' are some examples of market-centred corruption. Heidenheimer (1989) added the definition by Van Klaveren, 1957 in this category. "A corrupt civil servant [*or business administrator – added by Gallup*] regards his (public) office as a [*separate*] business, the income of which he will seek to maximize. The office then becomes a maximizing unit. The size of his income depends. Upon the market situation and his talents for finding the point maximal gain on the public's [*or clients'*] demand curve.." (Van Klaveren, 1957)

1.3 Public Interest-centred corruption or Political Corruption

The pattern of corruption can be said to exist whenever a power holder who is charged with doing certain things, i.e., who is responsible functionary or officeholder, is by monetary or other rewards not legally provided for, induced to take actions which favour whoever provides the rewards and thereby does damage to the public and its interests. (Friedrich, 1966)" [The Hungarian Gallup Institute 1999].

We can get clear guidance regarding political corruption in Islamic teachings as well. The life of the four caliphs was also exemplary in this reference. They were answerable to the people about all of their public affairs. " A lay man asked the Caliph Omar bin Khattab during the public meeting that how he managed to tailor a shirt from such a short piece of cloth, while no one among us was able to manage it. The Caliph replied that he has borrowed the piece of his son as well."

Political or grand corruption takes place at the highest levels of political authority. It is when the politicians and political decision-makers (heads of state, ministers and top officials), who are entitled to formulate, establish and implement the laws in the name of the people, are themselves corrupt. With grand corruption we are dealing with highly placed individuals who exploit their positions to extract large bribes from national and trans-national corporations, who appropriate significant pay- offs from contract scams, or who embezzle large sums of money from the public treasury into private (often overseas) bank accounts. Political corruption is furthermore when policy formulation and legislation are tailored to benefit politicians and legislators (Moody-Stuart 1997; Doig and Theobald 2000:3).

Steven P. Lanza 2004 of Connecticut Center For Economic Analysis (CCEA) described *'Political Corruption'* in his article "The Economics of Ethics: The Cost of Political Corruption" as under.

> "Public officials are supposed to be trustees of the commonweal, not political buccaneers seeking their own private gain. But sometimes, in what economists call a "principal-agent problem," those trustees forsake that obligation and misuse the power delegated to them in ways that advance their personal interests rather than those of the public.
>
> The problem isn't just limited to chief executives—mayors, governors and presidents— accepting gifts or kickbacks. Legislators, too, can sell their votes to special interests in exchange for campaign contributions or other special favors. All such practices are morally reprehensible, often illegal, and they erode the public's faith in political institutions. But what are the economic consequences?"

In the same article he (Steven P. Lanza 2004) showed a significant impact of political corruption (Compaign Contribution) over US employment level

> "One additional conviction (of corruption) per 100 elected officials reduces job growth by 1.1 percentage points."

Corporations involve politicians/legislators in corruption through contribution in election campaigns. A citizen forum of USA has produced a

'Corporate Scandal Sheet' of 44 US corporations, which were facing the charges of multibillion corruptions. According to the statistics provided on the net at the site www.citizenwork.org, 36 out of these 44 firms, contributed about $18 Million in Election Cycle 2002. They Contributed about $13 Million to Republican and about $5 Million to Democrats. It is worth noting that contribution in the election funds of sitting government is significantly higher than the opposition. Only two cases from the 'Corporate Scandal Sheet' are quoted here for ready reference.

Corporation/CEO	Scandal	Investigations	Auditor	Election Cycle 2002 Contributions (from corporation; from CEO)	CEO Compensations
Arthur Andersen LLP/ *Joseph Berardino* (quit); Company found guilty of obstruction of justice; David B Duncan, former partner, accused of ordering the destruction of Enron-related papers, plead guilty to obstruction of justice	Obstructed justice in the Enron investigation. Other scandals include: **1.** WorldCom (3.9 billion in hidden expenses), **2.** Boston Market Trustee Corp (Agreed to pay $10.3M to in suit claiming a façade of corporate solvency), **3.** Baptist Foundation of Arizona ($217M settlement), **4.** Department 66 ($11M settlement), **5.** Sunbeam ($110M settlement), **6.** Colonial Reality ($90M settlement), **7.** Waste Management ($75M settlement)	SEC investigation, DOJ investigation.	NA	to Democrats: $177,221; CEO information not available; to Republicans: $413,517; CEO information not available	More than $1 M in salary alone
Enron/ *Ken Lay* (left company)	Once the nation's largest energy trader, collapsed into the largest-ever U.S. bankruptcy on Dec. 2 amid an investigation surrounding off-the-book partnerships that were allegedly used to hide debt and inflate profits.	SEC and DOJ investigations; Senate Committee on Government Affairs	Arthur Anderson LLP	to Democrats: $158,390; $0 CEO; to Republicans: $411,860; $13,710 CEO	$67.4M salary and bonus, $70M in loan

Sometimes the politicians/ legislators outline interpersonal as well as international rules, laws and regulations very clearly on the standard moral grounds but unfortunately these are not followed practically. These rules are not trustworthy, but only established to cheat foreign observers. The leadership is willing to accept bribes or looting the others for personal interests. These kinds of behaviours

nevertheless have much in common with corruption as normally described. The Survey Report 'Research on Corruption, A Policy Oriented survey 2000', published by Norwegian Agency for Development Cooperation (NORAD) directed the attention towards this deep structured form of political corruption.

> " In wars where the ruling organisations are joint ventures of looting and fighting, their leaderships may not be interested in peace or any definite victory, and consequently they are not policing corruption. Inspired by recent wars in the Balkans, West Africa and Afghanistan, economists have developed a large number of models of competitive rent-seeking where fighting is an instrument." (NORAD 2000).

The current situation of conflict and wars in the world must be studied deeply under the light of observations mentioned above. The Iraq War is a clear example of 'Abuse of political power for personal (national) interests'.

The cost of Iraq war is increasing by $200 million per day. MSNBC correspondent provided the summary of war expenses as under:

> "The most current estimates of the war's cost generally start with figures from the non-partisan Congressional Budget Office, which as of January 2006 counted $323 billion in expenditures for the war on terrorism, including military action in Iraq and Afghanistan. Just this week the House approved another $68 billion for military operations in Iraq and Afghanistan, which would bring the total allocated to date to about $400 billion. The Pentagon is spending about $68 billion a month on the war in Iraq, or about $200 million a day, according to the CBO. That is about the same as the gross domestic product of Nigeria.
>
> Scott Wallsten, a resident scholar at the conservative American Enterprise Institute, put the direct cost to the United States at $212 billion as of last September and estimates a "global cost" of $500 billion to date with another $500 billion possible, with most of the total borne by the United States." (Martin Wolk Correspondent MSNBC)

Some acts of corruption are common in the both categories i.e. bureaucratic and political corruption. These are given as under:

(i) ***Fraud*** is an economic crime that involves some kind of trickery, swindle or deceit. Fraud involves a manipulation or distortion of information, facts and expertise, by public officials positioned between politicians and citizens, who seeks to draw a private profit. Fraud is also a broader legal and popular term that covers more than bribery and embezzlement. It is fraud for instance when state agencies and state representatives are engaged in illegal trade networks, counterfeit and racketing, and when forgery, smuggling and other organised economic crime is propped up by "official" sanction and/or involvement. It is fraud when politicians and state agents take a share for closing their eyes on economic crimes, and it is serious fraud when they have an active role in it.

(ii) ***Extortion*** is money and other resources extracted by the use of coercion, violence or the threats to use force. Blackmailing and extortion are corrupt transactions where money is violently extracted by those who have the power to do it, but where very little is returned to the "clients" (perhaps only some vague promises of exception from further harassment). "Protection" or "security" money can be extorted in the classical, well- known mafia style, where organised criminals use insecurity, harassment and intimidation to extort money from individual citizens, private businesses and public officials. Corruption in the form of extortion is usually understood as a form of extraction "from below", by mafias and criminals. Corrupt practices of this kind can, however, also be "from above", when the state itself is the biggest mafia of them all. This is for instance when the state, and in particular its security services and paramilitary groups, extorts money from individuals, groups and businesses. With more or less concealed threats, taxes, fees and other resources are extracted from travelers, market vendors, transporters and other private sector businesses.

(iii) ***Favouritism*** is a mechanism of power abuse implying "privatisation" and a highly biased distribution of state resources, no matter how these resources have been accumulated in the first place. Favouritism is the natural human proclivity to favour friends, family and anybody close and trusted. Favouritism is closely related

to corruption insofar as it implies a corrupted (undemocratic, "privatised") distribution of resources. In other words, this is the other side of the coin where corruption is the accumulation of resources. Favouritism is the penchant of state officials and politicians, who have access to state resources and the power to decide upon the distribution of these, to give preferential treatment to certain people. Clientelist favouritism is the rather everyday proclivity of most people to favour his own kin (family, clan, tribe, ethnic, religious or regional group). Favouritism or cronyism is for instance to grant an office to a friend or a relative, regardless of merit. Favouritism is a basic political mechanism in many authoritarian and semi-democratic countries.

Nepotism is a special form of favouritism, in which an office holder (ruler) prefers his proper kinfolk and family members (wife, brothers and sisters, children, nephews, cousins, in-laws etc.). Many unrestricted presidents have tried to secure their (precarious) power position by nominating family members to key political, economic and military/security positions in the state apparatus.

2. Measuring Corruption

The term measurement can be defined as "The process of assigning numbers or labels to units of analysis to represent conceptual properties" or "The assignment of different values to categories of units of analysis". The rationality behind the measurement of a social behaviour is that every problem or hypothesis consists of concepts or abstracts. There is need to move from an abstract or a raw concept to the tangible or to an observable data.

Some social scientists use the Maxim of Lord Kelvin as their strong argument in the favour of 'measurement'.

> "I often say that when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely in your thoughts advanced to the state of Science, whatever the matter may be." Lord Kelvin(1883)

Measurement is very helpful in understanding of a some concept but not for all. US ex-defence secretary McNamara's obsession of Vietnam war is a very practical example of failure of this concept. He tried to quantify everything even the war strategies. Same is the case of corruption, a valid, reliable and precise measurement of corruption is very difficult rather impossible. If suppose someone succeeded in measurement of corruption, then how much help a reformer can get from these measures of corruption in a fight against corruption?

There is a remarkable disagreement among the researchers over the measurability of corruption. Some of them have indicated their reservation regarding measurement of corruption.

Heidenheimer 1989 stated

> "There is still a problem with the broad definition; it's largely dependent of culture, historic age, actual social climate, and social groups, which activities can be perceived as corruptive. The corruptive activities are deviating in a wide and rather undiscovered range".

William L. Miller 2002 wrote

> "The measurement of corruption has been plagued by vague definitions, vague questions, vague answers and credulous interpretation. That may not matter too much for a first attempt, a broad overview or even a ranking of nations. But it might. And in any case, it is profoundly unsatisfying. The problem is not only to produce an index that ranks countries in the approximate order of corruption within them – any country-level correlate of corruption would do that – but to measure corruption itself. For that purpose, it would be better, if it were possible, to be more precise about the subject, the questions and the answers."

Vito Tanzi 1998 stated

> "If corruption could be measured, it could probably be eliminated. In fact, conceptually it is not even clear what one would want to measure. Simply measuring bribe paid would ignore many corrupt acts that are not accompanied by the payments of bribe."

Shaang-Jin Wei 2000 writes

> "By the very nature of corruption (secrecy, illegality, variations across different economic activities), it is impossible to obtain precise information on the extent of corruption in a country, unlike, for instance, measuring inflation. This difficulty also precludes a precise grading of countries according to their relative degree of corruption."

There is also a second thought over this issue. According to them corruption is measurable. They define corruption as "misuse of public office for private benefits". Johann Graf Lambsdorff1 2003 wrote regarding the validity of CPI (Corruption PerceptionIndex) produced by Tranparency International as under:

> "All sources generally apply a definition of corruption such as the misuse of public power for private benefit, for example bribing of public officials, kickbacks in public procurement, or embezzlement of public funds. Each of the sources also assesses the "extent" of corruption among public officials and politicians in the countries in question"

Chr. Michelsen Institute published a workshop report on Corruption (WP 2001:17), in which one of its speaker showed his reservation regarding the exclusion of political corruption from the concept used for corruption measurement by international watch dogs.

> "Rick Stapenhurst: Co-ordination between donors is important in fighting corruption. Transparency International's anti-corruption measures are useful to a certain extent, although political corruption is still a 'black box'. There is, however, a need for more research on how to measure corruption, and on the impacts of aid conditionality in fighting corruption."

Rick Stapenhurst very rightly used the term 'black box' for political corruption, because by opening this 'black box' the whole scenario will change. By Using a single definition of corruption i.e. 'use of public office for private benefits',

Transparency International, World Bank and other articulates of the corruption measurement tools have excluded the major sources of corruption i.e. Market-centred corruption (Corporate Corruption) and Public interest centred corruption (Political Corruption). Their definition includes only one source of corruption i.e. Public office centred corruption. The Corruption Ranking based on this limited definition of corruption ranks the countries like Pakistan and Nigeria among the bottom countries who are more involved in petty bribery and less involved in corporate and political corruption, and ranks the advanced countries like USA among the top who are less involved in petty bribery and more involved in corporate and political corruption (ENRON, Election Contribution, Iraq War).

The available literature over the measurement of corruption is mostly based upon the perception of the people regarding this limited definition of corruption. However there are also some other measures based on observational data and micro level country based surveys.

The data applied in research on corruption should be based on direct and firsthand observations of corrupt transactions made by unbiased observers who are familiar with the rules and routines in the sector under scrutiny. More aggregate numbers should then be constructed on the basis of such observations. This kind of empirical studies hardly exist, however, and for obvious reasons we cannot expect many more in the near future. Most of the time we are dealing with complex transactions taking place in large hierarchies to which independent researchers normally have no access, nor the appropriate social networks for picking up and checking data. The information is indirect and, until recently, rather unsystematic. Research on corruption has partly been about classifying the various forms of corruption in order to operationalise the concept for analytical and practical purposes.

After the collection of such diversified opinions on the definition of corruption, it would be really difficult for the researcher that what should be included as a corrupt behaviour and what should not be. On the sources of data in corruption, we can divide the available information in to two types.

Observation(direct information) based data on corruption and the perception(indirect information) based data on corruption.

2.1 Observation Based Data or Direct Measures

In the field of observational based research in corruption, the NORAD 2000 reported that Alan Doig, one of the leading researchers in the corruption field, started out from investigative journalism. He has established one of the few international research centres on corruption at Liverpool. Therefore, *media* are also important subjects of research on corruption, mainly for political scientists. Some forms of corruption may be considered as a kind of political scandals, and the political effects may often be quite similar to the publication of private misbehaviour of politicians or their families.

2.1.1 Limitations and Biases of Observational Data

Media are not only important in bringing forward facts about corruption, but also for forming public and scientific perceptions of corruption. Moreover, the media, to a large extent set the stage for determining the likely political consequences of revealed corruption scandals. Like *court decisions*, media sources have their evident biases when comparing corrupt transactions across countries and across time. Firstly, the media tend to give priority to the more spectacular stories, giving the less dramatic but more common practices of corruption less attention. Secondly, and more important, the number of stories on corruption that reac the public are not likely to be determined only by how many stories that exist out there, but also by how much the press is free, by the market for corruption stories, the journalistic professionalism and resources available, and various kinds of journalistic bandwagon effects. The bias created is likely to be serious also when it comes to empirical research because of the need to rely on second hand information. This makes it almost impossible to determine whether the perception of increasing corruption levels world wide is based on facts or not, because the main sources used are likely to be strongly influenced by shifts in media attention and public opinion.

If we rely on the data of conviction in the courts, it will create some other type of bias like the cases of Singapore and Hong Kong where the exceptionally high conviction rates confirms the suspicion that data from courts cases on

corruption, when aggregated, are telling more about judiciary efficiency than about corruption frequencies(NORAD report 2000). We find same type of feeling from another report 'The Political corruption in Latin America: A Research Note' (2002) that

> "Some analysts have employed objective measures of corruption based on press reports , judicial records or information from anticorruption agencies but most recognize that the validity of such measures hinge on the credibility and capabilities of the institutions providing the information (the press, the judiciary, or the anti-corruption agency). Hence the sheer nature of corruption paired with wide cross- national differences among these institutions weakens the usefulness of such objective data."

It is a fact that the actual occurrences of provable corrupt acts discovered through courts, media and the few instances of participatory research are too few in most countries to constitute a representative sample of the underlying corrupt transactions. To create patterns and analyses, researchers have to bring some sort of data like 'Perception based Data' which is collected at larger extent.

2.2 Subjective Measures of Corruption or Macro Data

An indirect way to measure the corrupt activities was 'Perception based Data'. The first and most influential use of this kind of data was Mauro (1995) who brought corruption into the renewed field of economic growth studies among economists. It was an econometric study of the effects of country corruption level on the growth rate. Mauro (1995) used mainly data from a commercial organization, *Business International* (BI), which in 1980 made an extensive survey of a large number of commercial and political risk factors, including corruption, for 52 countries, among these several developing countries. *Business International* had an international network of correspondents (journalists, country specialists, and international businesspeople) who were asked about whether and to what extent business transactions in the country in question involved corruption or questionable payments. The perceived degree of corruption involved in these transactions was

ranked on a scale from 0 to 10. BI also made efforts to make the rankings across correspondents consistent.

Weaknesses of the Subjective Measures

(i) ***Perception Vs Reality:*** There are some reservations of the researchers about the "Perception" itself.

> "Perceptions about corruption may substantially influence the level of corruption and it may increase the level of corruption in a economy. High corruption perceptions make people believe that they have to pay bribes, and the officials to think that there is nothing wrong with accepting them [Inna Cabelkova, Case Study of Ukraine].
>
> "Most of the corruption indices use perception of corruption instead of real corruption experience. Perception of corruption is much different from real corrupt activities in a society. There are very large differences between measure of corruption based on experience and those based on images or perceptions".(William L Millar 2002, Vito Tanzi 1998, Lamsdorff Johann Graff 2001.
>
> "People's perceptions about corruption may be important for what actually happens. The mere belief that government officials are crooked may, for instance, affect business confidence and, in turn, investment behaviour." (Goldsmith 1999:875)

(ii) ***Bias in Expert Evaluation:*** The polls/surveys used for quantification of perception of corruption are mostly based on expert evaluation.

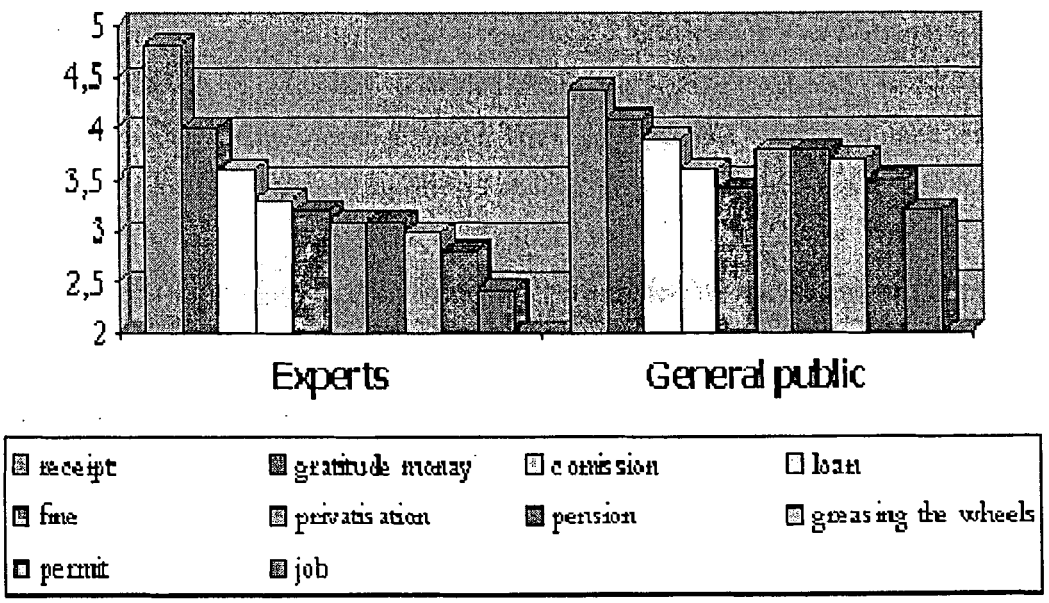
The Hungarian Gallup Institute published a valuable critique on sampling biasness of CPI in their report 'Basic Methodological Aspects Of Corruption Measurement: Lessons Learned From The Literature and The Pilot Study (1999 December)' as

> " In the most cited and probably respected cross-country comparison of
>
> Transparency International was primarily based on *expert evaluation.* Now they are trying to transform the computation of CPIs, as a common index derived from different general polls and expert interviews. As Endre Sik pointed out (Sik, 1999), 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 is (a) 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),(b) the group 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), and (c) they are businessman. In this last respect, we just want to remind the Reader to the famous dictum of Harvard Business School Professor Theodore Levitt, saying business is war, to be fought gallantly, daringly and above all, not morally. (Andre Sick 1999)

The following chart illustrates the difference in a case, where expert target group (high-level administrative officials) and general population was interviewed on the same topics in terms of corruption perception.

The frequency of corruption situations by high-level civil servants and the Hungarian general public (average scores from 5 (very frequently) to 1 (never))



Source: Hungarian Pilot Project by Gallup

As apparent on this chart, there is a methodological difference between the measurement of petty corruption and white-collar corruption in the higher spheres of state or business administration.

(iii) Cultural Bias: The perception data has frequently been criticized for being culturally biased. The countries that are the victim of a poor score heavily criticise

this issue. Here I quote a cutting of Arab news, which Galtung 2005 has quoted According to Saudi Arabia's *Arab News*,

> "[Corruption] is a hopelessly subjective concept. What might be considered corruption in Denmark and Sweden or indeed Berlin, might be standard practice in some other countries... [The Western press] talk about bribes and backhanders, when often all that is happening is that commission is being paid for having helped oil a deal [...] What is wrong about this particular report is that is [sic] it adopts its own, culturally subjective definition of corruption and then effectively condemns those who do not conform to it. It is an ugly and patronizing attempt to impose moral viewpoints that are the West's alone".[Survey Mania, Arab News Saudi Arabia, 2 August, 1997]

(iv) Shame Bias And Routine Bias: 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. Although, we have a good reason being suspicious, whether the likelihood of reporting the offer of a gift is the same in Denmark and in Russia; furthermore, we can't even decide where is this likelihood higher. By routine-bias we mean that in this example the Russian official may not even recognize and remember that she was approached and even so: how many times by someone with the intent of bribery but the Danish official will.

CPI wrongly assumed that the different questioners used by 17 different pools have no significant impact over the construct (a same concept/variable is being measured during the conduct of all survey pools). Aggregation of these surveys is just like addition of cows with sheep. William L. Miller 2002 has quoted the results of a survey conducted with a minor change in questioner.

> "We used that technique several times, once with quite striking results. In our interviews with officials we asked three questions, in quick succession, about officials' actual experience of gift-taking:

> 'In the last few years, say the last five years, did you ever accept a present from someone whose problem you dealt with as part of your official duties?'
>
> 'If you did accept something, was that only after you had solved the client's problem, or sometimes before ?'
>
> 'If you did accept something, was that only a small present – flowers, chocolates, or a bottle for example – or was it something more than that?'

Despite the conditional phrasing of the second and third questions, we put each question to all officials, including those who had originally denied accepting anything. Of course, there was a 'silent' code on the questionnaire for those who insisted that they 'had not taken' gifts before or after, large or small, but this answer was not read out by the interviewer. On the first question only 30 percent confessed to accepting a present. But on the second 43 percent confessed that they had accepted something either 'before' (8 percent) or 'after' (35 percent) solving their client's problem. And on the third, 58 percent confessed that they had accepted either 'a small present' (53 percent) or 'something more' (5 percent)."

(v) Elite Bias: Giving greater weight to the responses of more powerful or articulate informants is referred to as elite bias. Researchers must be careful not to rely too greatly on information from a subset of respondents, because these respondents may not be representative of the rest of the sample (LeCompte & Goetz, 1982). CPI is also representing a subset of the sample as in most of the polls included in the CPI aggregation only high executives and business managers are selected for the sample. Only 2 out of 17 includes the general public in the opinion poll. Elite bias is more likely to occur when researchers are only spending a limited amount of time at the research site, because different types of subjects can vary in their accessibility. Wax (1971) also warns that researchers should resist the attempt to tune out certain individuals, because they do not conform to their prejudged notion of what the genuine or typical "native" looks like. Extending site visits, talking

to a variety of people, and continuing contact with the site through monitoring can reduce the chance of this type of bias.

Surveys often fail to achieve their full potential simply because they ask the wrong questions. In particular, survey questions about corruption often suffer from vagueness. This comes in two varieties: (i) they often fail to specify the corrupt activity sufficiently; (ii) they often fail to specify the respondent's role – or even proximate involvement.

Following are some prominent examples of the subjective measures of corruption.

2.2.1 *Corruption Perception Index (CPI)*

Corruption Perception Index (CPI) is a one major example of perception based subjective measure of corruption. Since 1995, Transparency International, a Germany based watch dog, has introduced a perception based new measure of corruption CPI (Corruption Perception Index) The CPI is a "poll of polls" quantitative indicator across the countries, where each single country is recognisable. It is compiled by a team of researchers at Göttingen University, headed by Johann Lambsdorff. The CPI assesses the degree to which public officials and politicians are believed to accept bribes, take illicit payment in public procurement, embezzle public funds, and commit similar offences. The index ranks countries on a scale from 10 to zero, according to the perceived level of corruption. A score of 10 represents a reputedly totally honest country, while a zero indicates that the country is perceived as completely corrupt. The 1999 corruption perception index includes 99 countries. It is based on 17 different polls and surveys conducted by 10 independent organisations, not by TI itself. None of these surveys are dealing with corruption only, but they cover a number of issues of relevance for development and business confidence. TI, however, is using only the data on corruption. Hence, the Transparency International index is not based upon information from the organization's own experts but is constructed as a weighted average of (for 1999) 17 different indexes from 10 different organisations. Some indexes other then TI's CPI are (A) International Country Risk Guide (ICRG)

Index. Produced every year since 1982 by Political Risk Services, a private international investment risk service. The ICRG corruption index is apparently based on the opinion of experts and supposed to capture the extent to which "high government officials are likely to demand special payments" and to which "illegal payments are generally expected throughout lower levels of government" in the form of "bribes connected with import and export licenses, exchange controls, tax assessments, police protection, or loans." (B) Global Competitiveness Report (GCR) Index Unlike the ICRG indices, the GCR Index is based on a 1996 survey of firm managers, rather than experts or consultants. Sponsored by the World Economic Forum (WEF), a Europe-based consortium with a large membership of firms, and designed by the Harvard Institute for International Development (HIID), this survey asked the responding firms about various aspects of "competitiveness" in the host countries where they invest. 2381 firms in 58 countries answered the question on corruption which asked the respondent to rate the level of corruption on a one-to-seven scale according to the extent of "irregular, additional payments connected with import and export permits, business licenses, exchange controls, tax assessments, police protection or loan applications." The GCR corruption index for a particular country is the average of all respondents' ratings for that country. (B) World Development Report (WDR) Index Similar to the GCR Index, the WDR index is based on a 1996 survey of firms conducted by the World Bank for its 1997 World Development Report. Every respondent was asked a long list of questions, one which is on perceived level of corruption. The question is essentially identical to the one in the GCR survey. The WDR survey covers over 70 or so countries (many of which are not in the WDR sample, and the reverse is also true). The WDR survey tend to cover more medium and small firms whereas the GCR survey had more large firms.

Methodology of CPI formation is very complex, before being added together, the indexes have to be standardised so that they all run from 10 (the least corrupt) to 0 (the most corrupt) whatever the original scale. Measurements from at least three sub indexes, are included. Transparency International appears to be convinced that they have succeeded in constructing a successful index that is able to

rank countries in a reliable way to the degree corruption is perceived to a problem. The basis for this claim is the high degree of inter-correlation between the 17 sub indexes from which the CPI index is constructed (a correlation coefficient around 0.8 is common). CPI is widely criticised by the researchers. Some of its deficiencies and problems are discussed as under:

Deficiencies and Problems with CPI

(i) Non-representative Sample: Corruption perception index (CPI) is a product of sources of information about corruption. These information are not representative of the whole population and may create a serious sampling bias. "The skewed sample of the CPI is both its strength and its most significant bias. Of the 17 different institutions providing data for the CPI since 1998 only two did not have a private sector bias: Freedom House and Columbia University's State Capacity Survey (CU). Freedom House uses the assessments of in-house experts as well as academics and their findings are not primarily aimed at a business audience. The CU index draws on US-resident policy analysts, academics and journalists. The remaining fifteen institutions either use a sampling frame consisting of business people and/or explicitly target their findings to benefit corporations and institutional investors."

Since some of the indexes with high inter-correlation are based on the information given by locals and others by expatriates or foreign experts, the bias coming from shared rumours or special experience of the expatriates is not likely to be serious, according to TI. Neither do, TI claims, any differences in the understanding of what is high or low corruption levels between locals because their understandings are highly correlated with the perception of indexes based upon the expatriates and foreign experts. Furthermore, these high inter-correlations are achieved despite the different ways the questions are phrased in the different surveys and polls. (Research on Corruption by NORAD 2000).

The sample is biased as the 90% of the world is missing. The sample is private sector oriented, and overwhelmingly male and well-off.

(ii) Not Comparable Across time: Can we compare the ranking of a country on the CPI from one year to the next? A simple answer is that while the numbers ascribed to the countries cannot be compared, one can to some extent compare the rankings. For instance, if country X is ranked below country Y in one year and above this country the next year this tells something about the relative development of perceived corruption in these countries, if we disregard the measurement errors. The actual numbers ascribed are, however, influenced by their relative rankings in the two years. Thus, a lower number for one country does not necessarily imply that its perceived degree of corruption has gone for the worse. The index does not inform us where the change has happened. Neither does it tell us when the change has happened, since the perceptions of the survey-respondents are based on impressions that are not necessarily limited to the calendar year. (NORAD 2000)

> One should also note that, as the TI indexes in different years are derived from potentially different set of surveys, they should not be used to measure changes in corruption level over time for a particular country (Shang Jin Wei 2000).
>
> It is difficult to see that the [CPI] index has, except for the mutual ranking, any clear dynamic dimension except for a potential shift in the ranking list (Paldam 1999a).

(iii)Aggregation Problem: The way the sampling is carried out varies between the surveys. This may lead to inconsistencies between them. For example, the responses may depend on the respondents' cultural backgrounds, and if they are residents or non-residents in the country in question. Furthermore, the responses may vary between income groups, among experts and the general public. Lambsdorff (1999b), however, argues that the impacts of such factors on the CPI are insignificant for two reasons. Firstly, the correlation between the sources is high, which implies that the perceived "degree of corruption" is consistent among the different categories of respondents. According to Lambsdorff, this may be because the respondents have the same idea of how to define "degree of corruption". Secondly, even if the perceptions vary among the respondents, it still makes sense to aggregate the data

and "obtain an assessment of the level of corruption seen by a broad and possibly heterogeneous sample of respondents".

(iv) Assumption of 'Independent and Identical Distribution' (iid) May not Hold: If the measurement errors in different surveys are independent and identically distributed (iid), the averaging process used to produce the TI index may reduce the measurement error. But iid assumption may not hold. Moreover, since different surveys cover different subsets of countries, the averaging process may introduce new measurement errors when cross-country rankings are produced. (Shang Jin Wei 2000).

(v) CPI assumes Corruption as One-dimensional phenomenon: The TI index (CPI) assumes that corruption is a one-dimensional phenomenon varying along a single continuum. Yet, corruption is not one-dimensional. Corruption has many facets, including embezzlement, bribery and extortion. The CPI does not distinguish between these types of behaviour (William L Miller 2002) . Fredrik Galtung (2005) writes "CPI uses too narrow definition of corruption which does not cover all kinds and dimensions of corruption".

(vi) Neither Does the CPI Discern Between Grand and Petty corruption: There are wide variations in the way corruption is organised, how the incomes from corruption are spent, and so on. These variations are likely to produce different economic outcomes. Neither does the CPI discern between grand and petty corruption, though the first is presumably more threatening to the economy for several reasons. What the index does show is how systemic corruption is perceived by the chosen informants. Because it is based on perceptions, the CPI does not necessarily reveal the true extent of corruption in a country. (Goldsmith 1999)

(vii) Fame and Familiarity Impacts of CPI: The ranking of countries from one year to the next in the CPI - as well as in other indexes - has proved to be highly correlated. The obvious explanation is that the actual corruption level of individual countries changes slowly over time. However, it may also (partly) be due to methodological weaknesses: The "fame" and familiarity of the CPI may have impacts on peoples' perceptions of the corruption level in a specific country. Thus, the most recent ranking may be highly dependent on previous rankings.

Furthermore, a high correlation is observed between the rankings of countries in various corruption indexes. This is not surprising because the indexes measure, in principle, the same phenomenon. However, methodological flaws may also play a role if the various indexes are based on the same sources of information: Index A may be applied to estimating index B, at the same time as B is one of the sources for estimating index A. This implies a circularity of information, and A and B should therefore not be regarded as two independent indexes. Is High Correlation of CPI Across Years a Weakness or Strength? The articulates of CPI are using high correlation of CPI across the years as a strength of their index while the above mentioned counter argument is also very strong and prove it a weakness of this index.

(viii) CPI Fails to Explain within Country Variation of Corruption: Due to the aggregate nature of the data, it tells us little about the relationship between corruption and individual agents. Most importantly, conceptually macro determinants cannot satisfactorily explain the within country variation of corruption. Specifically, firms and other agents facing similar institutions and policies may still end up paying different amounts in bribes (Goldsmith 1999).

"It does not measure trends, therefore the reformers cant get guidance from it". (Fredrik Galtung 2005)

(ix) Irregular and uncontrolled country Coverage: The country coverage in CPI is irregular and uncontrolled as the list of countries changes from year to year. (Fredrik Galtung 2005) (NORAD2000) (Johnston 2000)

(x) CPI only Punishing the Takers, not the Givers or Abetters: The CPI ignores the origins of bribes. Western companies of the 'clean' economies are involved in harbouring of large scale corrupt payments. (Fredrik Galtung 2005)

(xi) Misuse of CPI for Politicisation: The index is misused by development agencies in making decisions as to which countries to 'reward' with aid and for imposing conditional ties. (Fredrik Galtung 2005)

2.2.2 Bribe Payer Index (BPI)

After introducing 'Corruption Perception Index (CPI)' in 1995, the Transparency International have to face criticism that " *CPI only Punishing the Takers, not the Givers or Abetters*". In order to counter the criticism, Transparency International introduced separately a Bribe Payer Index (BPI) in 1999.The Bribe Payers Index (BPI) is based on the surveys conducted in emerging developing economies. It was published only twice i.e. in 1999 and 2002. In 2002, 21 leading exporting countries were ranked through this index. According to Transparency International's press release,

> "BPI is based on surveys conducted in 15 emerging market countries by Gallup International Association. The BPI 2002 was conducted in: Argentina, Brazil, Colombia, Hungary, India, Indonesia, Mexico, Morocco, Nigeria, the Philippines, Poland, Russia, South Africa, South Korea and Thailand, which are among the very largest such countries involved in trade and investment with multinational firms. The questions relate to the propensity of companies from 21 leading exporting countries to pay bribes to senior public officials in the surveyed emerging market countries.
>
> A total of 835 interviews were carried out between December 2001 and March 2002, principally with senior executives of domestic and foreign companies, but also with executives at chartered accountancies, binational chambers of commerce, national and foreign commercial banks, and commercial law firms. The survey questions related to perceptions about multinational firms from 21 countries."

In 1999 Transparency International ranked 20 countries using 779 survey from emerging developing economies.

> "Transparency International commissioned Gallup International Association (GIA) to conduct in-depth interviews with private sector leaders in 14 emerging market economies, which combine to account for over 60% of imports of all emerging market economies, namely India, Indonesia, Philippines, South Korea, Thailand, Argentina, Brazil, Colombia, Hungary, Poland, Russia, Morocco, Nigeria, South Africa."
>
> "The respondents were interviewed by professional, trained interviewers on the basis of strict confidentiality and anonymity. A total of 779 interviews were

conducted which included approximately 55 interviews in each country. About one third (230) of the respondents were senior executives, resident in emerging market countries, who are employed by major foreign companies and about one third (236) represent major national companies."

Transparency International argues in the favour of it new ranking as, "TI's Bribe Payers Index is a pioneering effort to measure the supply side of bribery: the relative propensity to pay bribes by companies from leading exporting states in emerging economies". It is also strength of the BPI that it focuses shapely on one dimension.

On ethical grounds payment of bribe is as bad as the acceptance of bribe, as both are immoral behaviors. Islam being a divine religion based on the moral grounds, strictly prohibits the both actions. Prophet Muhammad (Peace be upon Him) said, *" He who pays the bribe or accept the bribe , both will go to the hell".* The ranking of bribe payers separately from the bribe accepters creates a bias against the poorer countries, as CPI excluded *grand corruption* of multinationals (included in BPI separately). The conceptual base and sources of information of BPI is same which are being used for CPI therefore it is not free of weaknesses mentioned in Corruption Perception Index (CPI). BPI is limited in scope and coverage as well.

2.2.3 World Bank Index

World Bank researchers (Kaufmann et al 1999a) have thrown considerable doubt on the significance of TI's ranking list of countries by building up their own index on a list of larger sample of sub indexes. These sub indexes are also based on the work of reliable commercial country risk assessment organisations and non-governmental organisations. In addition to bringing in more organisations, their list of indexes was expanded by bringing in other aspects of public governance that proved to be highly correlated with corruption. While basically using the same sub indexes, noting their strong inter-correlation, and standardising them in a similar manner, Kaufmann et al. (1999 and 1999a) apply a somewhat different weighting

procedure where indexes with a lower degree of Interc relation and higher variance receive lower weights.

The most recent paper regarding development of World Bank Indicators was published by D. Kaufmann A. Kraay, and M. Mastruzzi (2005) "Governance Matters IV: Governance Indicators for 1996–2004. According to them,

> "This paper presents the latest update of our estimates of six dimensions of governance covering 209 countries and territories for five time periods: 1996, 1998, 2000, 2002 and 2004. These based on several hundred individual variables measuring perceptions of governance, drawn from 37 separate data sources constructed by 31 different organizations. We assign these individual measures of governance to categories capturing key dimensions of governance, and use an unobserved component model to construct six aggregate governance indicators in each of the four periods. We present the point estimates of the dimensions of governance as well as the margins of error for each country for the four periods. These margins of error are not unique to perceptions-based measures of governance, but are an important feature of all efforts to measure governance, including objective indicators."

The main difference of WBI with other subjective measures of corruption is, however, that they (WBI) develop ***an explicit statistical model*** that emphasises the underlying measurement error in the corruption variable and reach a completely different result. If a 90 % confidence interval is placed around the conditional mean level of corruption for a typical country (which will fix its ranking number), that confidence interval will be so wide that the conditional mean of a large number of other countries will fall under it. This means that for most countries (those with intermediate levels of corruption) any ranking based on the conditional means is statistically insignificant. Only for the most and the least corrupt would the ranking of the countries (and then only as "high" or "low" corrupt) be statistically significant. More importantly, the World Bank economists' work indicates that a much more detailed and explicit measurement of corruption variables are needed before one can judge the outcome of anti-corruption policies.

WBI is a an explicit statistical model as compared to CPI. As far as we can see, TI has not presented a valid defence against the World Bank criticism. Lambsdorff (1999a) is defending the TI procedure by pointing out that some of the indicators of corruption applied by the World Bank may contain more noise by bringing in other governance indicators. This defence appears not to be wholly convincing. The only valid defence is to develop a statistical model for TI's own index to explore whether, and for which cases, its ranking of countries is statistically significant.

The world Bank's Index is not free of criticism in many research studies as in a 'The political Corruption in Latin America' it is stated that the World Bank index represents a compilation of responses to surveys of country experts, business elite and the public conducted by 18 separate business and risk analysts firms, international organizations and think tanks. Like the CPI, the sources used by the World Bank differ in terms of sample size, country coverage and the number and types of questions used.

2.2.4 Price, Waterhouse Cooper Index (Opacity)

Joel Kurtzman, Chairman of the Kurtzman Group and Senior Advisor to Pricewaterhouse Coopers, Glenn Yago, Capital Studies Director at the Milken Institute, and Triphon Phumiwasana, Senior Research Analyst at the Milken Institute are the authors of the concept "Opacity". MIT Sloan Management Review, October 2004 published the Opacity Index 2004. The authors described the legitimacy of this concept in the said publication with the words:

> " Although large-scale risks garner media attention, it is the everyday, small-scale risks associated with the lack of transparency in countries' legal, economic, regulatory and governance structures that can confound global investment and commerce. The Opacity Index, first introduced in January 2001, identifies the causes and measures the costs and effects of this phenomenon".

They further stated regarding the motivation and description of their concept "Opacity" as under.

"Since 2000, we have been annually studying a variety of countries, seeking to identify their degree of *opacity*—that is, the degree to which they lack clear, accurate, easily discernible and widely accepted practices governing the relationships among businesses, investors, and governments, which form the basis of most small scale, high frequency risks. Greater awareness of the risk factors that put the brakes on commerce can enable companies to make better portfolio and direct investment decisions regarding where to develop markets, locate productive resources or find the best outsource partner, and can also help governments understand how to make their countries more attractive locations for investment and to measure their progress."

The concept of opacity used is based upon the acronym CLEAR (corruption, legal, economic, accounting and regulatory) - with a high degree of opacity in any of these areas resulting in a higher cost of doing business.

The Opacity Index (2001) assesses the extent and impact of opacity in 35 nations. *The Opacity Index 2004* includes 48 countries and it draws upon 65 objective variables from 41 sources including the World Bank, International Monetary Funds, International Securities Services Association, International Country Risk Guide and individual country's regulators. Earlier attempts to do survey-based research proved less than optimal because many business leaders did not know enough about business practices in other countries to make meaningful comparisons with their own. An array of data is compiled and ranked for each of the CLEAR factors.

Many researchers including Hall and Yago (2000) get at corruption by way of its correlates and consequences by using the 'Opacity' data. It focuses upon the concept of "opacity" -- the opposite of transparency. As this concept is also based upon same sources of information mentioned in the previous Indices, it is not free of weaknesses mentioned in those indices i.e. Corruption Perception Index (CPI) and World Bank Index (WBI).

2.3 Objective Measures of Corruption or Micro Data

Another source of data for empirical research in corruption is micro data based on detailed questionnaires. It is a firm level data which includes regional, cultural and definitional issues of corruption. World Bank has developed such questionnaires, and the *European Bank for Reconstruction and Development* (EBRD) has also become involved. In these, enterprises are asked about how large share of their expenditures are paid out in bribes, whether they try to bribe lawmakers to give advantageous laws, and whether they pay out bribes to win single contracts. Furthermore, detailed questions about whether the bribed officials fulfil their promises, whether the outcome is predictable, etc. are included One such questionnaire was made for the 1997 *World Development Report*, and a considerably improved version is recently out. So far, only results for the transition countries are reported (Hellman et al. 2000a). The results, however, appear promising in the sense that new opportunities for gaining empirical insight into corruption are opening up. For example, it appears likely that the firm-level effects on bribes paid for gaining public procurement contracts become quite different when lawmakers are for sale compared to situations when they are not.

This approach is also called '*The Action research Approach*'. Partly inspired by an older Scandinavian-based action research approach, new attempts have been made to combine questionnaires addressed to local leaders and to the general public with sets of public meetings where issues of corruption are brought up. From a research point of view, the advantage is that publicity may make respondents more interested in answering and less afraid of exposing local corruption. In addition, public attention and concern may create changes in public policies as well as ignite a process of anti-corruption efforts, which may in itself bring forward new data about the "where, how and why" of corruption in the country in question. A clear exposition of the action research approach is found in Langseth et al. (1997). Furthermore, an interesting collection of data created by this approach is found in *Uganda National Integrity Survey 1998.* While initiated by the World Bank, *Transparency International*, and several multilateral and national aid organisations have embraced the method. The method has some obvious weaknesses, however.

The statistical validity may be questioned when the answers cannot be considered statistically independent as they become part of a public campaign where emotions are stirred. Valuable data about high level (political) corruption can only rarely be brought forward by this action research approach, since the answers generated are based on or biased towards rumours rather than direct observation. (Hellman et al. 2000a). The method has so far, however, been able to generate data about forms of corruption that has high public visibility such as the police and judiciary, the school and health systems, and in some cases also local road construction. The method also has some potential in exposing more complex forms of corruption if it is brought into its original intra-organisational setting and thereby exposing intra-organisational problems for public discussion. The major attraction of the method for researchers and sponsors is the possibility it offers to kill two birds with one stone: to do research on corruption and fight it at the same time.

Naci Mocan 2004, wrote a classic paper on the issue to whether to use subjective or objective measures. In his paper "What Determines Corruption? International Evidence From Micro Data" he used information obtained from over 90,000 individuals from 49 countries. His first query was "What determines the perception of the extent of corruption in the country?" . The results show that both personal and country characteristics determine the likelihood of being asked for a bribe. His second hypothesis was, "Does corruption have a direct impact on growth when the quality of the institutions are controlled for?" The answer is "it is important to reinvestigate the link between corruption and growth in a model that accounts for quality of the institutions of the country.....however controlling for quality of the institutions, corruption does not have a direct impact on growth". It is entirely different from the findings of famous Mauro(1995), which was based upon subjective (country level) data. Naci Mocan (2004) further explained that the strength of institutions in the country (as measured by low risk of expropriation) improves the rate of economic growth in the country. It cannot be ruled out that the results in Mauro(1995) are specific to the time period analysed (1975-1995) or to the countries in the data set. Some of the survey based micro data sets are quoted here for reference.

2.3.1 Business Environment and Enterprise Performance Survey (BEEPS)

A variety of organizations, including the US Agency for International Development, have sponsored such surveys. The most elaborate is the World Bank Institute's 1999 Business Environment and Enterprise Performance Survey (BEEPS) carried out in twenty transitional states in the former USSR and Eastern and Central Europe (Hellman, Jones, Kaufmann, and Schankerman, 2000). The data, based on a seventy-item survey of business firms, and on some supplementary questions, were gathered in 1999.

The survey approach allows considerable control of data gathering, and in particular it allows researchers to consider different varieties of corruption. Cross-national surveys involve obvious linguistic problems; other difficulties of comparison, such as a tendency for respondents in various countries systematically to under- or overestimate the corruption with which they deal, must be taken into account too. On the latter point, however, the BEEPS survey asks respondents' views on verifiable aspects of the business environment, such as exchange-rate fluctuations, as well as about corruption. For the former, perceptions can be checked against valid indicators, allowing an intelligent guess as to whether respondents systematically over- or understate the latter. BEEPS-style projects are formidably expensive, and while including a wider variety of corrupt practices and situations than most other indices, still approach the problem from the standpoint of businesses and lenders. Nonetheless, they are an extremely promising addition to the growing number of corruption measures, and the 1999 data have already begun to produce intriguing comparative studies of some of the countries where corruption problems are of most concern. (Hellman, Jones, Kaufmann, and Schankerman, 2000).

2.3.2 Expenditure Tracking Surveys (PETS)

Government resources allocated for particular uses flow within a legally defined institutional framework. Funds often pass through several layers of

government bureaucracy on the way to service facilities, which are charged with the responsibility of exercising the spending. Policymakers in developing countries seldom have information on *actual* public spending at the provider or facility level or by activity. A public expenditure tracking survey (PETS) tracks the flow of resources through these strata, on a sample survey basis, in order to determine how much of the originally allocated resources reach each level. It is therefore useful as a method for locating and quantifying political and bureaucratic capture, leakage of funds, and problems in the deployment of human and in- kind resources, such as staff, textbooks, and drugs. A typical PETS of frontline providers (schools and clinics and their staff) and local governments (politicians and public officials) is complemented by central government financial data. The PETS explicitly recognizes that an agent may have a strong incentive to misreport. These incentives derive from the fact that information provided, for example, by a school or a health facility partly determines its entitlement to public support. In cases where resources, including staff time, are used for corruption or shirking, the agent involved in the activity will most likely not report it truthfully. Likewise official charges may only partly capture what the survey intends to measure.

Uganda was the first country to do a PETS in 1996. The study was motivated by the observation that despite a substantial increase in public spending on education, the official reports showed no increase in primary enrolment. The hypothesis was that actual service delivery, proxied by primary enrolment, was worse than budgetary allocations implied because public funds were subject to capture (by local politicians and public officials) and did not reach the intended facilities (schools). To test this hypothesis, a PETS was conducted to compare budget allocations to actual spending through various tiers of government, including frontline service delivery points, which in this involved primary schools. (Ablo and Reinikka 1998; Reinikka 2001).

PETS on Ugandan schools provided an alarming picture of the utilization of public funding on the non-wage expenditures in education system. Non-wage funds defined as the share of resources intended for but not received by the frontline service facility. On average, only 13 percent of the annual capitation grant (per

student) from the central government reached the school in 1991–95. Eighty-seven percent either disappeared for private gain or was captured by district officials for purposes unrelated to education, although there was no evidence of increased spending in other sectors (Jeppson 2001). Most schools received very little or nothing. Based on yearly data, 73 percent of the schools received less than 5 percent, while only 10 percent received more than 50 percent of the intended funds. The picture looks slightly better when constraining the sample to the last year of the survey period. Still, only 22 percent of the total capitation grant from the central government reached the schools in 1995 (Reinikka and Svensson 2002a).

Leakage of Non-wage Funds in Primary Education in Uganda, 1991–95, 2001 (*percent*)

Year	*Mean*	*Median*
1991	97	100
1992	96	100
1993	85	100
1994	84	100
1995	78	100
2001	18	18

Source: Reinikka and Svensson (2003).

Several other countries including Ghana, Peru, Tanzania, and Zambia implemented public expenditure tracking surveys in education and health care. In primary education, leakage of non-wage funds is found to be a major issue in all cases. A few studies also quantify the share of ghosts on the payroll, that is, teachers or health workers who continue to receive a salary but who no longer are in government service, or who have been included in the payroll without ever being in service. In Honduras, for example, 5 percent of teachers on the payroll were found to be ghosts, while in health care the percentage was 8.3 for general practitioners in 2000.

Findings of PETS were published first time in Uganda in 1996. The response of the Ugandan central government was very prompt to remedy the situation. It began deliver the monthly reports on transfers of public funds in the main sources of

media. The information revealed by PETS causes a great improvement in the utilization of funds. (Ritva Reinikka, Jakob Svensson 2003)

Public Expenditure Tracking Survey (PETS) is very useful and easy to do in Pakistan because government already have audit and account systems at all levels. Secondly, the above mentioned paper trial also shows that PETS leads to improve utilization of funds. Pakistan is facing the problem of wastage and leakages of public funds very seriously, therefore PETS are strongly recommended for tracking of public funds in Pakistan.

2.3.3 Quantitative Service Delivery Survey (QSDS)

Service provider surveys are increasingly used to examine the efficiency of public spending, incentives and various dimensions of service delivery in provider organizations, especially on the frontline. The quantitative service delivery survey (QSDS) is a variant of these provider surveys, with a heavy emphasis on systematic quantitative data. It can be applied to government, private for-profit, and not-for-profit providers. It collects data on inputs, outputs, quality, pricing, oversight, and so forth. The facility or frontline service provider is typically the main unit of observation in a QSDS in much the same way as the firm is in enterprise surveys and the household is in household surveys. A QSDS requires considerable effort, cost, and time compared to some of its alternatives, especially surveying perceptions. A QSDS-type survey conducted in Bangladesh made unannounced visits to health clinics with the intention of discovering what fraction of medical professionals were present at their assigned post (Chaudhury and Hammer 2003). The survey quantified the extent of this problem on a nationally representative scale and collected other information as well. Absentee rates for medical providers in general are quite high (35 percent), and higher for doctors (40 percent; and 74 percent at lower-level health facilities). (Ritva Reinikka, Jakob Svensson 2003)

2.3.4 Regional Measures of Corruption

If we consider some regional measures, ***Latinobarometro*** is a very good example of that *Latinobarometro* and Seligson (1997, 1999, 2001, 2002) provide cross-national data on corruption for Latin America. These two regional data sets differ from the global databases in three fundamental ways: first, they both offer more than one simple, aggregate measure or index of corruption, providing instead a variety of indicators relating to distinct aspects of political corruption; second, they include measures of corruption based on a respondent's participation in corrupt exchanges as opposed to mere perceptions regarding the level of corruption in society; and finally, they draw on surveys of opinion from the general public rather than business executives, more specialized staff or country-experts. The much-cited annual regional survey (and much criticized for not being available publicly) *Latinobarometro* covers almost all the countries of the region.(Corruption in Latin America: A Research Note).

Corruption Victimization Measure is another measurement tool developed recently in Latin American countries. It is a more direct method to measure actual corruption in Latin American Countries. In this approach the respondents are asked series of questions regarding their real experience about corruption. However it has also some limitations. (i) Are all survey respondents who report having paid a bribe are really victims? Perhaps some bribe payers are not victims at all but in fact are willing participant in transaction deliberately seeking to advance their own objectives. Such individual then may not be victims but willing clients in patron client relationship with the bribe taker. (ii) The survey technique is flawed because it measure only low level corruption.(Seligson Mitchell A. 2002).

2.3 A Comparative Statement of Corruption Measurement Tools

Available data on corruption can be categorised in four main parts.

(i) Corruption measures based on poll of polls.

The best known indices in this categories are Corruption Perception Index (CPI) of Transparency International, Kaufmann, Karry and Zadio-Lobaton 1999 (WBI) and Opacity by Price, Waterhouse Cooper.

(ii) Corruption measures based on Expert opinions

The prominent example is the international country risk guide (ICRG), which have been produced every year since 1982 by political Risk service.

(iii) Corruption measures based on Surveys of firms or citizens

There are number of institution which are conducting different surveys and polls on corruption and governance at firm and citizen level. Global Competitive Report (GCR), World development report, Gallop International

(iv) Corruption measures based on objective data

Objective data is also called "harder data", comparatively difficult to measure. It is a measurement of fraction of corruption within the country. Public expenditure tracking surveys (PETS) is its main example.

Sr. No.	Name	Type/ Nature of the Measure	Organization/Coverage of Issues	Coverage of Countries	Time Period
1	Corruption Perception Index (CPI)	Subjective, Macro Measure, poll of polls	Transparency International/ Corruption	159 in 2005	1995-2005/ Yearly from 1995
2	Bribe Payer Index (BPI)	Subjective, Macro Measure, Survey	Transparency International/ Corruption	20 in 1999 & 21 in 2002	1999 & 2002
3	World Bank Indicators	Subjective, Macro Measure, poll of polls	World Bank/Governance including Corruption	209	1996, 1998, 2000, 2004
4	Opacity	Subjective, Macro Measure	Price, Waterhouse Cooper/Governance including Corruption		From 2000 to 2004
5	International Country Risk Guide (ICRG)	Subjective, Cross Country	Political Risk Services (PRS)/ Investment Risk Corruption	Most of the developed and developing Countries	From 1980 on yearly basis
6	Business environment Risk intelligence (BERI)	Cross Country poll	Governance Risk assessment including Corruption	50 mostly developed countries	1997-2003
7	Central European Economic Review	Cross Country poll	Rule of Law and Corruption	26 Transition Economies	In different Time Periods
8	Standard and poor's DRI	Cross Country poll	Governance and Corruption	106 Developed and Developing Countries	In different Time Periods
9	Economic Intelligence Unit (EIU)	Cross Country poll	Institutional efficiency and Corruption	115 Developed and Developing Countries	On Yearly Basis
10	Freedom House (FHNT)	Cross Country poll	Human rights, Governance and Corruption	Transition Economies	On Yearly Basis
11	Gallup International	Cross Country survey	Socio-political & Economic Issues, Corruption	44 mostly developed Countries	In different Time Periods
12	Global Competitiveness Survey (GCS)	Cross Country survey	Governance and Corruption	50 developed and Developing countries	On Yearly Basis

13	Heritage foundation (HF)	Cross Country poll	Law and Order	160 Developed and Developing Countries	On Yearly Basis
14	Political and Economic Risk Consultancy (PERC)	Cross Country survey	Corruption	12 Asian Economies	On Yearly Basis
15	Political Risk Services	Cross Country poll	Governance including Corruption	131 developed and Developing Countries	In different Time Periods
16	World Competitiveness Yearbook	Cross Country poll	Governance including Corruption	61 primarily developed countries	On Yearly Basis
17	World Development Report (WDR)	Cross Country poll	Governance including Corruption	74 developed and developing countries	On Yearly Basis
18	United Nation's Crime Victim Survey	Cross Country survey	Governance including Corruption	developed and developing countries	1999
19	BEEPS	Macro data, Survey	Governance including Corruption	20 countries from central and eastern Europe	1999
20	Public Expenditure Tracking Survey (PETS)	Objective, Micro data, Survey	Ugandan School Survey 1996/ Corruption & Wastage	African Countries / local survey	1996 -2000
21	Quantitative Service Delivery Survey (QSDS)	Objective, Micro data, Survey	Corruption and Efficiency	Bangladesh /African Countries	2000-2003
22	Neumann Index	Objective, Micro data, Survey	Corruption	Central Europe and Transitional Economies	1994

3 Uses of Corruption Measures

Literature on the description of corruption and the sources of the variable (corruption) have been reviewed so far and we are very close to our presumption that the macro data on corruption is vague and not up to the standard that it can be used as a statistics in empirical research on corruption. Now we come to our second part of literature review i.e. the status of current empirical research work based on cross country ranking. The current research on corruption has two common characteristics. First, it mostly relies on *subjective* measures of corruption. Specifically, it employs various indexes of *corruption perception*; based on the surveys of international business people, expatriates, risk analysts, and local residents. Second, because corruption data are available only at the aggregate (country) level, existing research has focused on explaining the cross-country variation in corruption. Some researcher like Swamy et al. (2001) and Svensson (2003) were the exceptions who used micro data where respondents answered questions on *hypothetical* situations regarding corruption. Corruption measures may be used for the following:

1. Using measures to fight corruption.
2 Using measures for assessment of level of corruption
3 Using Measures to find causes and effects of corruption
4 Using Measures to help Multinational and Donor Agencies

3.1 Using Measures to Fight Corruption

As for as above mentioned first use of the available data on corruption is concerned, the subjective data is not helpful in achievement of this objective i.e. the fight against corruption. Seligson Mitchell A. (2002) wrote, "Unfortunately, however, the measures (WBI & CPI) are of limited use for much of what USAID is trying to accomplish in its transparency and anti-corruption programmes because they provide only a national aggregate measure, with no breakdown by type or locus of corruption". Goldsmith (1999) wrote, "Most importantly, conceptually macro determinants cannot satisfactorily explain the within country variation of corruption. Fredrik Galtung (2005) "It does not measure trends, therefore the reformers cant get guidance from it".

According to Johnston 2000, "How much guidance do corruption indices give reformers? Can those fighting corruption in a society look to CPI scores for evidence of progress, and for guidance in shaping their strategies? In all likelihood they can not..... Perceptions may outrun, or lag behind, actual trends. Any comprehensive anti-corruption strategy will likely work better with some varieties of the problem than with others, and yet a single-number index will not be able to tell us much about those contrasts -- and thus, much about which aspects of the strategy are working and which are not. What is likely to happen to perception scores for a country that has begun to make meaningful progress against corruption? .....There are several possibilities: at the very least, progress will be uneven, and thus recognized more quickly by some observers than by others. In that event, the uncertainty (variance, or standard deviation in some versions) of CPI scores might widen considerably while the scores themselves change in ways that would be difficult to interpret. More likely, a successful anticorruption campaign would produce revelations of wrongdoing, convictions, and new allegations. This is all the more likely in a democratising country with citizens, journalists, and opposition figures feeling more free to speak out, and contending factions using corruption allegations to settle old scores. In that setting, effective anticorruption efforts would likely cause perceptions to *worsen* markedly, at least in the short run. Finally, a campaign that begins to break up corrupt networks may well lead to a short-term surge of overt, smash-and-grab corruption as elites, uncertain about their hold on power, take as much as they can, as fast as they can take it (Scott, 1972; Knack and Keefer, 1995).

The objective measures of corruption based on the micro data are useful in fighting corruption. The major attraction of the method for researchers and sponsors is the possibility it offers to kill two birds with one stone: to do research on corruption and fight it at the same time.

3.2 Using Measures to Asses the level of corruption

Secondly, the subjective data is being used for assessment of level of corruption for cross country and across time comparison. Shang Jin Wei (2000)

wrote, " they (CPI) should not be used to measure changes in corruption level over time for a particular country. It is difficult to see that the [CPI] index has, except for the mutual ranking, any clear dynamic dimension except for a potential shift in the ranking list (Paldam 1999a). The country coverage in CPI is irregular and uncontrolled as the list of countries changes from year to year. (Fredrik Galtung 2005) (NORAD2000) (Johnston 2000). Therefore the improvement in the performance of the economies across the nations and across the time is difficult to judge.

Tina Soreide, 2003 wrote, "When facing an index, composed as a list of countries, it can still be difficult to understand the meaning of the specific ranking of a country. What does it mean that Egypt is number 70 with a score of 3.3, while Germany is number 16 with a score of 7.7?.....Comparison of ranking *across time* is also difficult. When the TI index has been released, the media has given much attention to the relative position of countries: *"Is our country performing better this year?"* However, the dynamic dimension of an index ranking is ambiguous in this respect".

The objective data is helpful in over the time comparison. For example the use of Public Expenditure Tracking Survey (PETS) in Uganda made it possible for researcher to check over the time improvement in the use of public funds.

3.3 Using Measures in Finding Causes and Effects of Corruption

The available data is being used for finding the cause and effect relationships of corruption. Reliability of the results depends upon the quality of corruption data and control of other confounding factors. Tina Soreide, 2003 wrote, "Another problem in the empirical research on corruption is the problem of answering the question of *causality*. When finding a correlation between corruption and some other phenomenon, the statistical regressions do not tell us whether corruption influences the other phenomenon, or if it is the other way around".

Shang Jin Wei 2000 concluded about the empirical research in corruption that "the evidence surveyed here suggests that the overall effect of corruption on economic development is negative. This is just as true in Asia as elsewhere.

Systematic research conducted recently find that corruption is negatively related with a number of good stuff (such as income level). There are several channels through which corruption hinders economic development. They include reduced domestic investment, reduced foreign direct investment, overblown government expenditure, distorted composition of government expenditure away from education, health, and the maintenance of infrastructure in public projects. Again, much of the evidence is based on cross-national regressions. As such, reverse causality or correlation with a common third factor is a real possibility. Instrumental variable regressions would help, but only when one finds the valid instruments". Shang Jin Wei showed his reservations on the evidence of negative relationship of corruption with macroeconomic indicators and he didn't factor out the possibility of reverse causality or correlation with a common third factor (confounding factor). One of the most hypothesis of this study is also to run Granger Causality Test on the panel data of FDI and Corruption to check the nature of causality between these two variables.

As mentioned in the above stated paragraph of Shang Jin Wei, the involvement of third factor is found in the study of Nice Mocan 2000. In his working paper (What Determines Corruption? International Evidence From Micro Data) he stated that "Analysis in the final section of the paper shows that the strength of institutions in the country (as measured by low risk of expropriation) improves the rate of economic growth in the country. However, controlling for the quality of the institutions, corruption does not have a direct impact on growth. It cannot be ruled out that this result is specific to the time period analyzed (1975-1995) or to the countries in the data set. But it suggests that the documented association between corruption and growth is likely due to the omitted influence of institutions on corruption. Keeping constant the geographical location of the country, its legal origin, religious composition, the presence of a war, federal status, initial education and income as well as the extent of corruption in the country, a one-half standard deviation increase in the quality of institutions (e.g. from the level of Indonesia to the level of India), generates an additional 0.7 percentage point increase in the average annual per capita GDP growth. For a developing country

with $2,500 per capita income in 1975 this translates into an additional $500 per capita income by 1995." As mentioned in the same paragraph of Shang Jin Wei that the second possible cause of relationship between corruption and other macroeconomic indicators might be due to the reverse causality The ambiguity in the casual relationship in the current empirical research in corruption is raised by many other studies such as Paolo Mauro IMF1997 stated, "The direction of causality is not entirely evident in all cases. For example, it is not always clear whether the existence of government building regulations causes bureaucrats to ask for bribes in return for helping construction firms circumvent them, or whether these regulations were created by corrupt bureaucrats seeking a means of realizing economic rents. Although some attempt has been made to establish the correct direction of causal links, the issue of causality remains unresolved, and it is possible that variables may occasionally act simultaneously as both cause and effect. To check the direction of the causality in Corruption and FDI flows, a Granger Causality Test is applied in fifth chapter of this research paper.

3.4 Using Corruption Measures to Guide Donor Agencies & Multinationals

The subjective corruption data may be helpful for aid donors and multinational interested in investment in a certain country, but there are chances of misuse of this data against any country are region for political motives. Fredrik Galtung (2005) has pointed out the same concern as, "The index is misused by development agencies in making decisions as to which countries to 'reward' with aid and for imposing conditional ties".

If we try to search the answer of the question that why corruption has become more important in 90's, we can easily find the reasons of misuse of corruption data by donor agencies and multinationals. Johnston 2000 answered it as "For many years, this problem was of concern mostly to academic analysts. But recently a variety of forces have put corruption back on the international policy agenda. These include, *inter alia,* the globalisation and growing competitiveness of the world economy, and a resulting awareness within international aid and lending agencies, and on the part of private business, of the costs of corruption. Other

influences include movements to ban international bribery by domestic legislation (the US Foreign Corrupt Practices Act) or by international agreements (the OECD Anti-Bribery Treaty, and the OAS Anti-Corruption Convention); concern about the cost and efficacy of international development programs, and over the role corruption might play in perpetuating poverty; and the end of the Cold War, which reduced tolerance for corruption among ideological allies."

The available literature on the issue of 'Corruption Measures' and their uses is almost reviewed. It can be summed up by using the words of NORAD Report (2000), "Empirical research on corruption has for long been hampered by the lack of good data. This has been partly rectified by *Transparency International* bringing into the public domain the results of mainly commercial risk analysis institutes. This has until now mainly consisted in a quantification and indexation of rather vague and loosely structured conceptions of corruption. Thus, it ought to be underlined that the results from the growing number of econometric work based on these indexes must be considered to be preliminary, although technically well done. Recently, however, data-collection based on processes closer to observable has been initiated by the World Bank. Findings from this research are likely soon to be published. We do not believe in scientific purism, in the sense that when social scientists may rely on vague, uncertain and highly subjective observations, they should shy away and leave the field wholly to the common sense of "experts" (in this case the common sense of the police, journalists and businessmen). If, however, the basic observations are of this kind, the vagueness and subjectivity of the data should not be forgotten. For these reasons, "use of numbers" should be very cautious, whether the application is in research on economic growth or on foreign aid. Policy applications require even more cautiousness".

Sensitivity of the (rankings) corruption measures, the causes of corruption (use of measures for causality), socio-political motivation of research in corruption are topics which need more attention in the issue of corruption measurement. More literature will be reviewed in the concerned chapters to resolve the remaining issues of corruption measurement more precisely.

III

Sensitivity of Measures of Corruption

1. Sensitivity of Corruption Measures to Index Methodology

The role of governance and corruption indices become very critical when they are used for approximation of regulations, social and governance issues. Furthermore , the international comparison of these indices is very influential in world politics when they become a base for financial and investment decision. The construction of such indices need an extra care because any flaw in the construction of such complex indices may lead you towards a wrong decision. As Nicola Jentzsch 2004 pointed out that more we increase the level of sophistication in index formulation, lesser is the magnitude of transparency in the index. However, in the formulation of a meaningful index, one must be careful regarding the following.

(a) Scaling

To construct a meaningful index, one must be very careful in scaling the variables. As Lippe 2002a pointed out that "for indices to be meaningful, variables must be positive and metrically scaled". Simple arithmetic operations are not applicable in the case of non-metric data, such as nominal scales, only statistical frequencies may be calculated. Other indices may aggregate ordinal variables. Transformation or rescaling them does not suddenly transform them into metrically scaled variables. Sums of variables aggregated across sources may be not meaningful due to varying scales, varying units of measurement and tacitly applied arithmetic. To aggregate different variables that do not have a common measurement unit, relatives could be calculated. This has been described as a necessary condition for deriving a sum, but not a sufficient one to derive a meaningful result (see Lippe 2002). Therefore a common unit of measurement has

to be found and that tacitly transformed data does not suddenly allow higher mathematical operations.

(b) Homogeneity

There is a multitude of influence factors that affect the index if different fields are aggregated. As Linder Santiso 2002 pointed out "While it is certainly valuable to allow for comparability between countries, it is doubtful whether all components and subcomponents of the risk categories are as relevant and of equal importance in all countries at all times". Depending on the construction of the index, the aggregation of different fields might change its predictive character from country to country. Structural shifts may occur that bias the result of the calculation, if they are not accounted for. Correlations among the indicators might lead to a higher probability of being in the top or bottom quintal.

(c) Transparency and Replicability

The indices must be transparent and creditable. As Knack 2002 observes, most of the broad indicators are produced by for-profit firms and NGOs in developed nations through non-transparent processes, therefore, they can easily be dismissed by governments in poor countries as biased indices. This already hints at the importance of transparency and interpersonally independent replicability. International indices have to be transparent to be credible. Limited replicability (so-called replication defect) and unclear relations between the indicators should be avoided.

We find that the most important in construction of an index is that the scales of the aggregated indicators must be homogeneous and discrete.

1.1 Index Theory and its Application on Governance Issues

Index theory is a sub-field of statistics and is usually only taught to students in relation to price measurement. Complex features and generalizations of the index theory are rarely discussed. Nicola Jentzsch 2004 defined broadly indices as

encompassing the output of either an index formula or the simple aggregation of indicators. We use the terms "rating" and "score" as synonym for index. Indices serve the purpose of reducing complexity, however, there are many problems associated with the simple aggregation of indicators. Aggregation of the indicators often hides important movements in their individual components. Some have a predictable bias in one direction; others may have some structural effects. Therefore weighting scheme must be derived very carefully. In general, there is no "ideal index," one has to choose an index according to its preferred characteristics.

We quote here an example from Nicola Jentzsch 2004, to assess the power of index construction methodology. "The indices are supposed to measure *how strict commercial reporting agencies are regulated*. Hence, we try to find proxies for the regulation of business reporting. Note that the economic effects of this regulation are not of central interest here. We also do not debate the regulations in detail. Of interest is only how the indices compare and if they are robust. The results of the calculation for the indices Carli, Dutot, Jevons, Cobb-Douglas (CD), Laspeyres and Fisher.....the sum, which is the simple aggregation of all variables is also displayed in the table...".

Ranking of Top Ten Countries (Source Nicola Jentzsch 2004)

Sum	Dutot	Dutat	Jevons	Cobb-Douglas	Laspeyres	Fisher
United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	Argentina	Argentina
Argentina	Argentina	Argentina	Italy	Italy	United Kingdom	United Kingdom
Ecuador	Ecuador	Ecuador	Ecuador	Ecuador	Ecuador	Ecuador
Italy	Italy	Italy	Singapore	Argentina	Italy	South Africa
Dom. Republic	Singapore	Singapore	Chile	Singapore	South Africa	Belgium
Peru	Chile	Dom. Republic	Argentina	Dom. Republic	Belgium	Italy
Singapore	Dom. Republic	South Africa	Dom. Republic	Peru	Peru	Peru
South Africa	Peru	Peru	Romania	Romania	Canada	Ireland
Belgium	South Africa	Belgium	Peru	Chile	Ireland	Canada

The author very comprehensively stated his reservations about ranking phobia of international watch dogs and also pointed out the influential power of these indices in decision making process.

> "Table displays the Top-Ten rankings according to the method of calculation. There is enormous movement in the ranking, with some countries even dropping out of the Top-Ten panels (such as is the case for the Dominican Republic's index calculated according to the Laspeyres index. Countries move up and down several places, although the majority remains in the Top-Ten ranks. If we would assume the fictitious case of distributing money according to the indicators, the ranking would matter which puts a spotlight on the indices and their calculation method."

2. Sensitivity of the Corruption Measures to the Assumptions of Model

In the above mentioned example, we have seen that the cross country ranking on regulatory issues is arbitrary and much sensitive to the index construction formulas. Now we check the sensitivity of the cross country corruption rankings. As we know the corruption indices are poll of polls, therefore there is a big question mark over the independence and homogeneity of the collected indicators. The construction of corruption indices is sophisticated and complex, therefore they are less transparent as well, Nicola Jentzsch (2004). Corruption Rankings based on these polls may have a wide error margin and ultimately may effect the world political, social and economic considerations. Let us check the error margin in the confidence interval range of these rankings.

2.1 Confidence Interval Of CPI

Since some years Transparency International is providing an additional information of Confidence Interval with its CPI scores. This interval is constructed on very strong *assumptions* of:

(1) No Imprecision associated with source values

(2) These source values are independent of each other.

(3) The error are normally distributed.

According to the own word of the main defender of the concept of CPI, Lambsdorff, 2003, "This approach required the assumption that there is no imprecision associated with the source's values and that these values are independent of each other. Another strong assumption required is that errors are normally distributed. While it is statistically difficult to relax the first two assumptions, one can relax the assumption of a normal distribution and apply tests that are valid throughout any type of distribution...".

2.2 Confidence Interval of World Bank's Index (KKZI 1999)

Kaufmann, Kraay and Zoido-Lobaton (KKZI 1999), applied an unobserved component framework to derive an aggregate indicator of governance (or corruption) that pools together the diverse array of individual perception indexes. The major intention of the authors is to receive the coverage by a governance index for a large country sample. Hence, they aggregate different scores from different sources. In KKZ (1999a), the authors collect information on more than 160 countries from 13 sources. The indices are assumed to be imperfect proxies for a small number of basic aspects that denote governance, which is indicated by positive pair-wise correlations among the individual indicators. The inputs for the aggregate indices calculated by the authors in three fields (KKZ 1999a): (1) government effectiveness; (2) rule of law and (3) graft.

We quote the assumptions of the unobserved component model from the source paper as:

1. That the measurement errors in individual indicators of governance are uncorrelated across indicators.

2. That the relationship between unobserved governance and observed indicators is linear.
3. That the distribution of unobserved governance across countries is normal.

The observed data on graft (g) consists of a cluster of k=1,...,K indicators, each one providing a numerical rating of some aspect of graft in each of the j=1,..,J(k) countries covered by that indicator. This observed data is combined via an unobserved components model to quantify the precision of the overall governance scores. The model used by the authors expresses the indicators as a linear function of "unobserved governance" plus a disturbance term.

$$y(j,k) = \alpha(k) + \beta(k) \cdot [g(j) + \varepsilon(j,k)]$$

where $\alpha(k)$ and $\beta(k)$ are unknown parameters which map unobserved governance g(j) into the observed data y(j,k). It is assumed that g(j) is a random variable with mean zero and variance one. The objective of the model is to summarize the knowledge about g(j) for each country j using the distribution of g(j) conditional on the observed data y(j,k), k=1,...,K(j) for country j.

2.2.1 Rankings Are Still Not Precise

1. The authors show that the indicators measure governance with varying precision. Confidence intervals are very large compared to the units of measurement and the authors show that aggregating indicators produces a more reliable estimate, but that one is not very precise either. (KKZ 1999a).

2. In the second paper of this series (KKZ 1999b), in which authors introduced six governance concepts used the same technique for 173 countries. The findings of the authors regarding precision of the rankings remained same. They find that even though governance is not precisely measured, the aggregate index is a more precise signal than its individual components, but remains a rather imprecise measurement concept (KKZ 1999b). The same analysis was updated in another paper of the same series in 2002. (KKZ2002).

3. The authors note that it is only possible to identify a statistically significant difference on the opposite ends of the distribution. It is much more difficult to rank in the middle of the distribution where the majority falls.

Assigning Countries to Quartiles (Source KKZ 1999a)
Proportion of Countries for Which an X% Confidence Interval Lies Entirely in the Indicated Quartile

		X=90%	X=75%	X=50%
Government Effectiveness				
	First Quartile	0.31	0.54	0.72
	Second Quartile	0.00	0.00	0.26
	Third Quartile	0.00	0.13	0.31
	Fourth Quartile	0.59	0.69	0.79
Rule of Law				
	First Quartile	0.31	0.43	0.65
	Second Quartile	0.00	0.05	0.39
	Third Quartile	0.12	0.24	0.55
	Fourth Quartile	0.55	0.63	0.84
Graft				
	First Quartile	0.13	0.23	0.49
	Second Quartile	0.00	0.03	0.26
	Third Quartile	0.08	0.21	0.36
	Fourth Quartile	0.65	0.72	0.80

This table reports the fraction of all countries whose point estimate of governance falls in the indicated quartile for which the corresponding x% confidence interval also falls entirely within that quartile, for each of the three governance aggregates and for a range of values of x. (Source KKZ 1999a)

At 90% confidence level, we are not able to rank the countries in the middle. However with a lower confidence interval we can rank them across the whole four quartiles.

2.2.2 What Happens to Rankings if Assumption are Relaxed?

The first assumption that the measurement errors in individual indicators of governance are uncorrelated across indicators, is unrealistic. No doubt , it is the most important assumption in the model. The author rightly pointed out the importance of this assumption.

> "Relaxing the first assumption is difficult to do in practice, simply because without this assumption we cannot determine whether the correlation of observed scores across indicators is merely due to correlated perception errors or whether it reflects the common concept of governance being measured. However, under the likely alternative that perception errors are correlated across sources, the measures of precision we report will be biased downwards."

These biases in the source values mean that measurement error in individual indicator is correlated across the indicators at least in the developed countries. Finally it creates doubts about the iid properties of the data. Imprecision associated with the source values will become clear when we see that concepts captured from the different vague sources. Following table is copied from the source paper for a ready reference.

Margins of error in corruption rankings are very clearly accepted by the authors of the KKZ Index in their all papers of this series. In their recent paper KKZ 2005, their views about error margins in the index are as, " ...Further, given the increasing number of separate data sources now at our disposal to construct these aggregate indicators, we find that the margins of error of the latest period under measure are smaller than in earlier periods. However, these margins of error, even in our most recent aggregate indicators, still remain substantial, and thus all our previous cautionary suggestions regarding interpretation continue to apply."

If we accept that there is still a substantial error margin in corruption rankings and if we also do accept the 'halo effect' i.e. the respondents are ranking the rich countries as less corrupt simply because they are richer, then the quality of the governance data will be a big question mark for the researchers. It simply means that the source data is following a systematic pattern.

Table 1: Governance Indicators

Code	Name	Survey (S) or Poll (P)	Coverage	Coverage Index	Concepts Measured		
					Government Effectiveness	Rule of Law	Graft
BERI	Business Environment Risk Intelligence	P	50 mostly developed countries	0.44	Bureaucratic delays	Enforceability of contracts	"Mentality" regarding corruption
CEER	Central European Economic Review	P	26 transition economies	0.84		Rule of law	Effect of corruption on "attractiveness of country as a place to do business"
DRI	Standard and Poor's DRI	P	106 developed and developing countries	0.23	Government ineffectiveness, institutional failure	Enforceability of contracts, costs of crime	Corruption among public officials, effectiveness of anticorruption initiatives
EIU	Economist Intelligence Unit	P	115 developed and developing countries	0.19	Insitutional efficacy, red tape	Crime, corruption in banking sector	Corruption among public officials
FHNT	Freedom House	P	28 transition economies	0.82	Quality of government and public administration	Rule of law	Perceptions of corruption in civil service, business interests of policymakers
GALLUP	Gallup International	S	44 mostly developed countries	0.50			Frequency of "cases of corruption" among public officials
GCS	Global Competitiveness Survey	S	59 developed and developing countries	0.42	Competence of public sector, political pressures on civil servants, time spent with bureaucrats	Citizens can file lawsuits against government, citizens accept legal adjudication, independence of judiciary, costs of crime	Frequency of "irregular payments" to officials and judiciary
GCSA	Global Competitiveness Survey, Africa	S	23 African countries	0.73	Competence of public servants, commitment to policies of previous governments	Citizens can file lawsuits against government, citizens accept legal adjudication, independence of judiciary, costs of crime	Frequency of "irregular payments" to officials and judiciary
HF	Heritage Foundation	P	160 developed and developing countries	0.06		Law and order tradition, prevalence of black market activities	
PERC	Political and Economic Risk Consultancy	S	12 Asian economies	0.83			Effect of corruption on business environment for foreign companies
PRS	Political Risk Services	P	131 developed and developing countries	0.10	Bureaucratic quality, policy stability	Rule of law	Corruption in the political system as a "threat to foreign investment"
WCY	World Competitiveness Yearbook	S	46 primarily developed countries	0.59	Efficient implementation of government decisions, political pressures on civil servants	Tax evasion, confidence in ability of authorities to protect property, confidence in administration of justice	"Improper practices" in the public sphere
WDR	World Development Report	S	74 developed and developing countries	0.25	Efficiency of government in delivering services, predictability of rules, time spent with bureaucrats	Unpredictability of the judiciary, theft and crime, ability of state to protect private property	Corruption as "obstacle to business", frequency of "additional payments" to "get things done"

Notes: Details on these sources of governance data, and definitions of the concepts measured, may be found in Appendix A of Kaufmann, Kraay and Zoido-Lobatón (1999).

3 Sensitivity of the Measures to the Basic Assumptions of Measurement (Validity, Reliability and Precision)

Data and Methodology

In this part of the study we assess the quality of the corruption data. The data set includes CPI (Corruption Perception Index) of different years constructed by Transparency International, World Bank's Corruption Index, Crime Victim survey of United Nations from Naci Mocan (2004) and Neumann Index from Shang Jin Wei (2001).

Three econometric methodologies are used for the analysis purpose. The first is the concept of correlation, second is equality test (F-Test) and the last is Granger Causality Test for panel data. The first two methods are used in this chapter to assess the quality of the data on corruption while the last technique is used in the next chapter in which we assess the quality of empirical research in corruption.

3.1 Basic Assumptions of Measurement

The quality of the corruption data can be assessed on the basis of some popular data quality assessment tools which are widely used for this purpose. These assessment tools are Validity, Reliability, Precision, Integrity and Timeliness.

Validity is a term that has acquired numerous meanings, some of which are more relevant than others to the assessment of constructs. Validity is usually defined by the question "Are we measuring what we intend to measure?" Or " How clearly and directly we are measuring what we intend to measure?".

Reliability refers to the *consistency or reproducibility of a measure.* Greater reliability is evident when there is greater consistency, greater precision and greater absence of random error

Precision refers to the fineness of the units in which our measure is expressed. It is related with the issue of level of measurement. Some measures are *nominal*, grouping cases into categories among which there is no particular relationship (individuals' ethnicity, or the continent where a country is located, are

examples). Others are *ordinal*, grouping cases into categories that can be ranked higher or lower in terms of some shared attribute.

Integrity refers to that quality of the data which reduces the possibility of manipulation of data for political or personal gain.

Timeliness refers to the availability of data at suitable time. It may be defined by a question like " Are data available timely enough to inform management decisions.

In the light of above measurement qualities of validity, reliability and precision, let us assume that our perception data on corruption is:

1. Reliable and consistent across the years and not biased against any group of countries.
2. Stable and consistent and not changing over rapidly.
3. Valid i.e. it is measuring what it intend to measure, so the correlation of the index based on *'real experience of experience'* is strong with the index based on perception of corruption.
4. Valid measurement tool and it describes *'what it intend to describe'*. As score of the index describes "Extent of corruption", therefore it is assumed that '*Index*' is measuring what its constructors intend to measure.
5. Precise and its units are refined. It measures the change in the level of corruption whenever and wherever it happens.

No. 1. Reliability and Consistency of the Subjective Corruption Data Across the Groups of Countries

The reliability and consistency of a cross country data means that the level of correlation should remain almost same for all countries and it should not be biased against any group of countries'.

I. If we bifurcate the countries in to two groups i.e. Least Corrupt and Most Corrupt , we find a significant difference in the correlation of World Bank Index (WBI 2004) with Corruption perception Index (CPI2004). It strengthen the idea that the rankings is not reliable across the nations.

Correlation Analysis of WBI 2004 & CPI 2004
For 20 Least Corrupt Countries of the World

Country	CPI 2004 (0-10)	WB2004 %
Australia	8.8	94.1
Austria	8.4	95.6
Canada	8.5	93.6
Chile	7.4	88.7
Denmark	9.5	98.0
Finland	9.7	100.0
France	7.1	88.7
Germany	8.2	93.1
Hong Kong	8.0	90.6
Iceland	9.5	99.0
Ireland	7.5	91.1
Israel	6.4	78.8
Luxemburg	8.4	96.6
Netherlands	8.7	95.1
New Zealand	9.6	98.0
Norway	8.9	96.1
Portugal	6.3	86.7
Singapore	9.3	99.5
Sweden	9.2	98.0
Switzerland	9.1	97.0
UK	8.6	94.6
US	7.5	92.6

Correlation among Least Corrupt Countries

	CPI 2004	WB2004
CPI 2004	1	
WB2004	0.9285536	1

Correlation Analysis of WBI 2004 & CPI 2004 n
For 20 Most Corrupt Countries of the World

Country	CPI 2004	WB 2004 %
Angola	2.0	8.4
Azerbaijan	1.9	10.8
Bangladesh	1.5	10.3
Cameroon	2.1	25.1
Chad	1.7	7.4
Congo	2.0	4.4
Cote	2.0	11.8
Georgia	2.0	16.3
Haiti	1.5	1.0
Indonesia	2.0	17.7
Iraq	2.1	2.5
Kazakhstan	2.2	9.9
Kenya	2.1	18.7
Kirghistan	2.2	9.9
Myanmar	1.7	1.0
Nigeria	1.6	8.9
Pakistan	2.1	20.2
Paraguay	1.9	12.8
Sudan	2.2	4.9
Tajikistan	2.0	8.9
Turkmenistan	2.0	3.4

Correlation among Most Corrupt Countries

	CPI 2004	WB 2004
CPI 2004	1	
WB 2004	0.342986	1

We see that a correlation between least corrupt countries is relatively stronger than correlation among most corrupt countries, which proves that the subjective measures don't provide us reliable rankings.

No. 2. Stability of the Subjective Corruption Data (Dynamic Dimensions and Guidance to the Reformer)

We assume that a stable and consistent cross country data have the quality of least error margin. Let us check the world wide corruption ranking based upon the CPI scores whether it is consistent and stable and not changing over rapidly.

Let us construct a 'Hypothetical CPI Ranking based Model' based upon the following basic true information.

1. Starting from CPI scores of 1998.
2. First 20 least corrupt countries are ranked according to their CPI scores.
3. No Inclusion and exclusion is made in these 20 countries for next 6 years.

Theories of social behaviour says that the behaviours of the nations do not change rapidly in normal situations (Revolutions etc are exceptions) in such a shorter period like six years. "There is now fairly strong empirical evidence that the process of successful economic development reduces corruption considerably in the long run, but little in the short run". (Treisman, 2000).

According to the Assumption of Reliability, the rankings are stable (not jumping in normal circumstances). Therefore countries having same CPI scores in 1998 should remain at close positions of each other in a shorter period of six years.

CPI Scores of Least corrupt countries

Country	1998	1999	2000	2001	2002	2003	2004
Denmark	10	10	9.8	9.5	9.5	9.5	9.5
Finland	9.6	9.8	10	9.9	9.7	9.7	9.7
Sweden	9.5	9.4	9.4	9	9.3	9.3	9.2
New Zealand	9.4	9.4	9.4	9.4	9.5	9.5	9.6
Iceland	9.3	9.2	9.1	9.2	9.4	9.6	9.5
Canada	9.2	9.2	9.2	8.9	9	8.7	8.5
Singapore	9.1	9.1	9.1	9.2	9.3	9.4	9.3
Netherlands	9	9	8.9	8.8	9	8.9	8.7
Norway	9	8.9	9.1	8.6	8.5	8.8	8.9
Switzerland	8.9	8.9	8.6	8.4	8.5	8.8	9.1
Australia	8.7	8.7	8.3	8.5	8.6	8.8	8.8
Luxemburg	8.7	8.8	8.6	8.7	9	8.7	8.4
UK	8.7	8.6	8.7	8.3	8.7	8.7	8.6
Ireland	8.2	7.7	7.2	7.5	6.9	7.5	7.5
Germany	7.9	8	7.6	7.4	7.3	7.7	8.2
Hong Kong	7.8	7.7	7.7	7.9	8.2	8	8
Austria	7.5	7.6	7.7	7.8	7.8	8	8.4
US	7.5	7.5	7.8	7.6	7.7	7.5	7.5
Israel	7.1	6.8	6.6	7.6	7.3	7	6.4
Chile	6.8	6.9	7.4	7.5	7.5	7.4	7.4

World Ranking Of Least Corrupt Countries Based On CPI Scores

Variation in Position of Top 20 countries Included in all CPI Indices

Country	1998	1999	2000	2001	2002	2003	2004
Denmark	***1***	1	2	2	2	3	3
Finland	***2***	2	1	1	1	1	1
Sweden	***3***	4	4	6	6	6	6
New Zealand	***4***	3	3	3	3	4	2
Iceland	***5***	6	6	4	4	2	4
Canada	***6***	5	5	7	7	11	12
Singapore	***7***	7	8	5	5	5	5
Netherlands	***8***	8	9	8	9	7	10
Norway	***9***	9	7	10	12	9	8
Switzerland	***10***	10	12	12	13	10	7
Australia	***11***	12	13	11	11	8	9
Luxemburg	***12***	11	11	9	8	12	14
UK	***13***	13	10	13	10	13	11
Ireland	***14***	16	19	19	23	18	18
Germany	***15***	14	17	20	18	16	15
Hong Kong	***16***	15	16	14	14	15	16
Austria	***17***	17	15	15	15	14	13
US	***18***	18	14	17	16	19	19

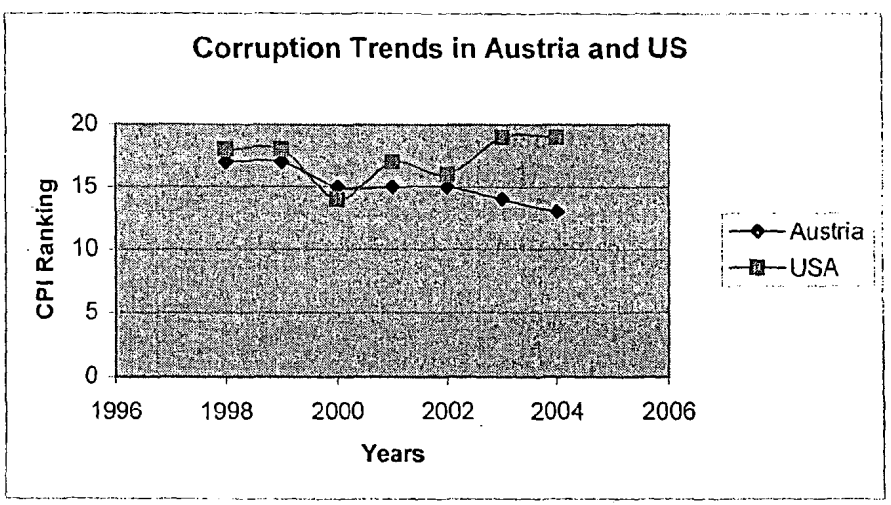
Israel	***19***	20	22	16	19	21	25
Chile	***20***	19	18	18	17	20	20

CASE # 1

In 1998, Two Countries (Austria &US) with same Levels of Corruption i.e. 7.5 and Ranked at 17 &18 Position

In 2004, Both Countries are at Significantly different positions

Years	*Austria*	*US*
1998	17	18
1999	17	18
2000	15	14
2001	15	17
2002	15	16
2003	14	19
2004	13	19

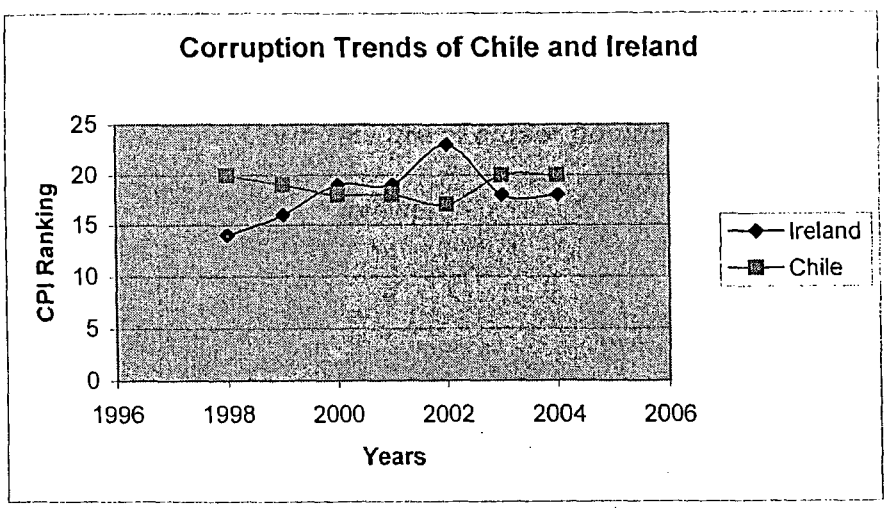


CASE # 2

In 1998, Two Countries (Ireland &Chile) with different Levels of Corruption, Ranked at 14 & 20 Position

In 2004, Both Countries are at closer positions (18 & 20)

Years	*Ireland*	*Chile*
1998	14	20
1999	16	19
2000	19	18
2001	19	18
2002	23	17
2003	18	20
2004	18	20



The subjective data is providing unstable rankings. If the change of ranking of these countries is due to any revolutionary step of any government, or due to the sudden involvement of the society in any corrupt practice, *the subjective data is unable to guide the reformer/researcher.*

No. 3. Validity of the Subjective Measures of Corruption (Reality Vs Perception)

A valid measurement tool is assumed that it is measuring what it intend to measure, therefore the correlation among all measurement tools which are designed to measure the same object should be very strong. Let us check it in the following example. (As CPI and Neumann both are measuring corruption).

(I) Correlation of Data from World Development Report 1997, CPI 1999 and Real Experience Corruption Data Compiled by Neumann.

Neumann is a poll which is based on the real corruption experience. The data set of Neumann Index is taken from Shang-Jin Wei 2001 (only data)

. Country	WDR1997	CPI 1999	Neumann
Azerbaijan	4.6	9.3	6
Belarus	4.2	7.6	4
Bulgaria	4.6	77	4
Czech Rp.	2.8	6.4	4
Estonia	2.2	5.3	2
Georgia	4.2	8.7	4
Hungary	2.6	5.8	6
Kazakhstan	4.3	8.7	4
Latvia	3.9	7.6	4
Lithuania	3.3	7.2	0
Poland	3.1	6.8	4
Russia	3.8	8.6	8
Slovak Rp.	4.1	7.3	4
Ukraine	3.4	8.4	4
Uzbekistan	4.4	9.2	4
Slovenia		5	2
Romania		7.7	6
Moldova	4.2	8.4	
Macedonia	3.1		8
Croatia		8.3	4

Correlation	*WDR97*	*CPI99*	*Neumann*
WDR97	1		
CPI99	0.383943	1	
Neumann	0.24501	0.001531	1

Its correlation with other perception based indices especially with CPI is very weak, therefore it disprove the assumption that the perception data has the quality of validity. It also proves that there is a significant difference in reality and perception.

(II). Reality Vs Perception (Another Case)

Correlation of Actual Corruption levels Compiled by Crime Victim Survey (United Nations) with CPI (Corruption Perception)

The data set of crime victim survey was compiled United Nation (1999) it is available at (http:// www.unicri.it/icvs). This data is available in fraction of a percent while CPI data is rescaled as '11-CPI'

Country	Act. Corrp. 99	CPI 99
UK	0.0007	8.6
Netherlands	0.004	9
Finland	0.0016	9.8
Sweden	0.0009	9.4
France	0.0125	6.6
USA	0.0021	7.5
Canada	0.0039	9.2
Belgium	0.0035	5.3
Denmark	0.0028	10
Australia	0.0033	8.7
Spain	0.0025	6.6
Portagal	0.0135	6.7
Japan	0.0004	6

Correlation of Actual Corruption and CPI 1999

	Actual 99	*Perception 99*
Actual 99	1	
Perception 99	0.333874832	1

The correlation of actual corruption with CPI is weak. The hypothesis that CPI is measuring what it actually intend to measure is disproved.

If we try to calculate the true predictive validity of CPI from these information by using the method of (Ghiselli, Campbell, & Zedeck's Measurement Theory for the Behavioral Sciences, 1981).

$r_{ox,oy}$ is the observed correlation between x and y.

$r_{tx,ty}$ is the true correlation between x and y--the *"true predictive validity"* of y.

r_{xx} is the reliability of the x scores (e.g., Cronbach's coefficient alpha)

r_{yy} is the reliability of the y scores (e.g., Cronbach's coefficient alpha)

Here's the maximum observable predictive validity as a function of true predictive validity and reliability:

$$r_{ox,oy} = r_{tx,ty}\sqrt{r_{xx}.r_{yy}}$$

$r_{ox,oy} = 0.333$

$r_{xx} = 1.0$ (assumed as it is a real data)

$r_{yy} = 0.96$ (CPI's correlation with previous year)

Then $r_{tx,ty}$ is the true correlation between x and y--the *"true predictive validity"* of y.

$r_{tx,ty} = 0.326$ the true predictive validity of y is even lesser than its observed validity.

No. 4 **Is Subjective Data Measuring "Extent of Corruption"? *(Volume Vs Frequency of Corruption)***

As all developers of subjective indices of corruption claim that their indices are measuring level/extent of corruption, therefore we try to explore the meanings of the term "Extent of Corruption". Does it mean '*frequency of corrupt transactions*', or '*volume of corrupt transactions*' or both? We know that a valid measurement tool describes what it intend to describe.

What does this term 'extent of corruption' means? Does it mean that country at ranking 6 is twice corrupt than country at ranking 3?

Example, to give any clear meaning of the mathematical *ratio* between two levels of corruption the method of measuring corruption has to be clearly established. Let

For Country A

Total Transaction in country A	=	T
Bribes represents 10% of total T	=	T/10

For Country B

Total Transactions in B are half of the A	=	T/2
Bribes represents 2% of total Trans in B	=	(2/100)*(T/2)= T/100

If "Extent of Corruption" means "*Volume of Corruption*"
Then
Country A 10 times as corrupt as country B
If "Extent of Corruption" means "*number of corrupt transaction*"
Then
Country A 2.5 times as corrupt as country B

With reference to the discussion in chapter 2 section 1.3 regarding petty vs grand corruption, we can conclude here that if '*extent of corruption*' means frequency of corruption, then the countries with more *'petty corruption'* (public office centred) are more corrupt and if '*extent of corruption*' means volume of corrupt transactions then the countries with more *'grand corruption'* (Market Centred and Political) are more corrupt.

No. 5 Precision of the Subjective Measures of Corruption

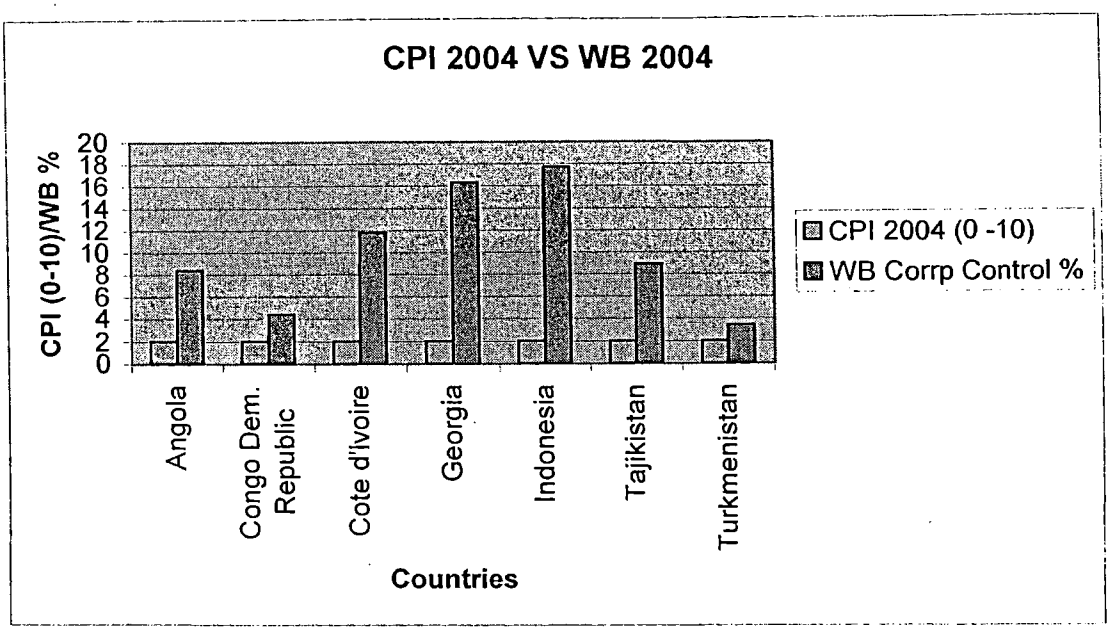
It is generally assumed that a measurement tool is precise and its units are refined. It measures the change in the data whenever and wherever it happens. Let us check it with the data from World Bank Index, Corruption Perception Index and Business International.

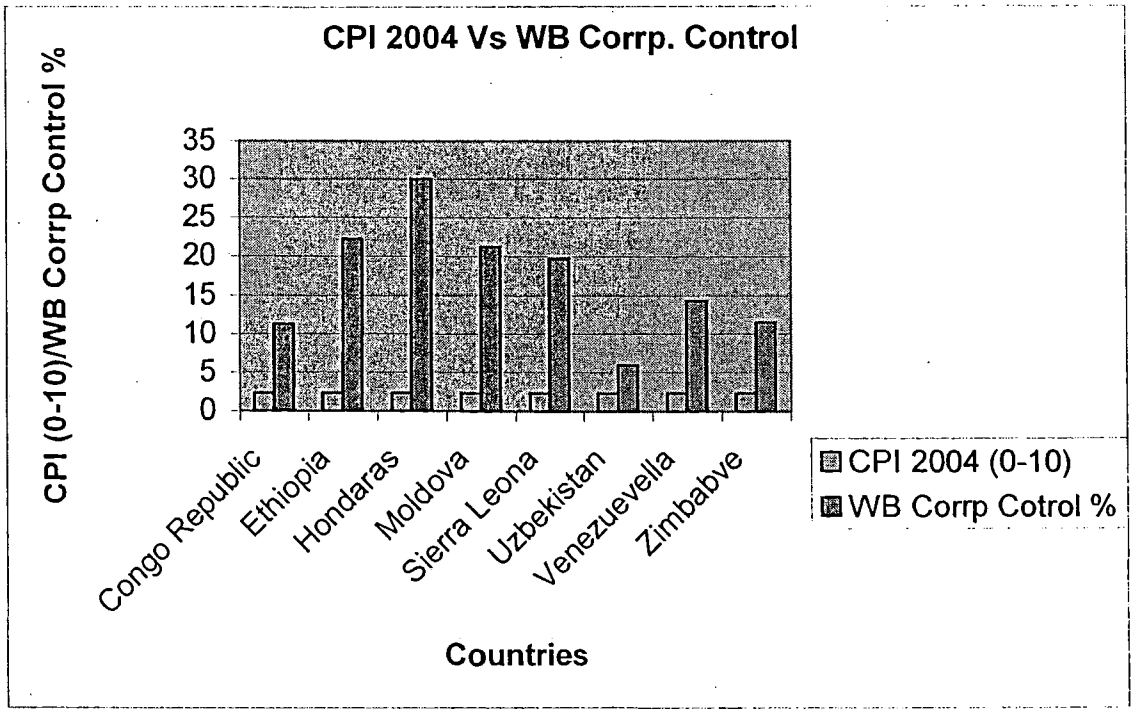
Precision Proof 1

Comparison of World Bank 2004 (%) & CPI 2004 (0-10)

Country	CPI 2004	WB 2004
Angola	2	8.4
Congo Dem. Republic	2	4.4
Cote d'Ivoire	2	11.8
Georgia	2	16.3
Indonesia	2	17.7
Tajikistan	2	8.9
Turkmenistan	2	3.4
Congo Republic	2.3	11.3
Ethiopia	2.3	22.2
Honduras	2.3	30
Moldova	2.3	21.2
Sierra Leona	2.3	19.7
Uzbekistan	2.3	5.9
Venezuela	2.3	14.3
Zimbabwe	2.3	11.5

World Bank Corruption Control Index 2004 is ranking this set of 15 countries while CPI is unable to rank these countries, It has just divided these in to two groups.

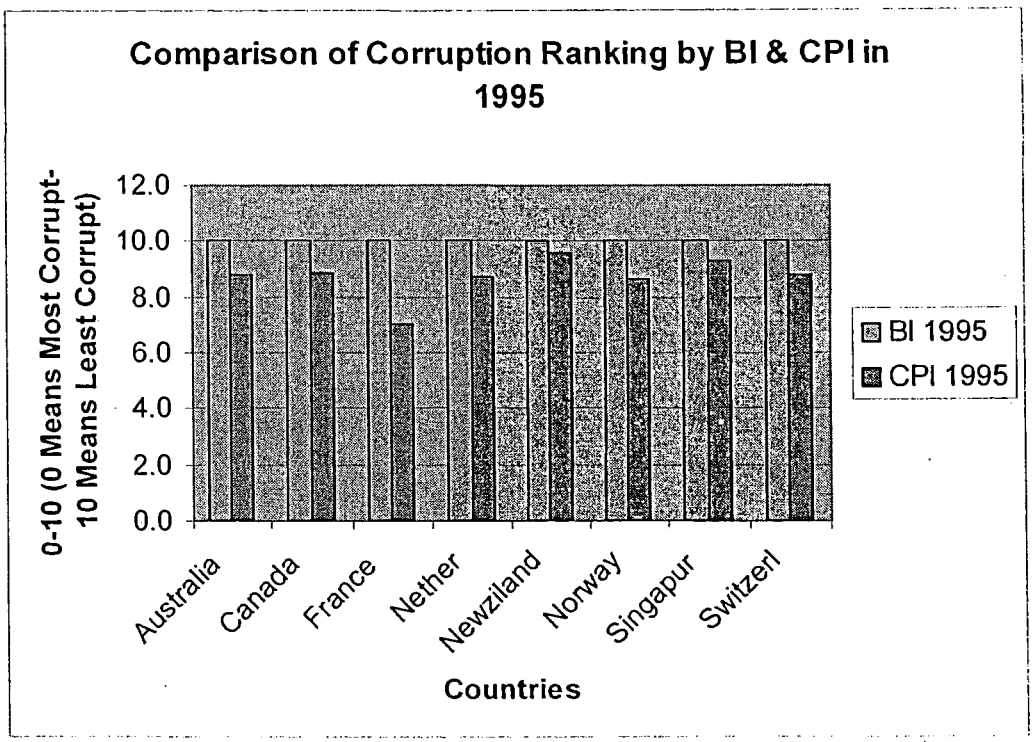

CPI 2004 VS WB 2004
CPI (0-10)/WB %
20
18
16
14
12
10
8
6
4
2
0
Angola
Congo Dem. Republic
Cote d'Ivoire
Georgia
Indonesia
Tajikistan
Turkmenistan
Countries
CPI 2004 (0 -10)
WB Corrp Control %


CPI 2004 Vs WB Corrp. Control
CPI (0-10)/WB Corrp Control %
35
30
25
20
15
10
5
0
Congo Republic
Ethiopia
Hondaras
Moldova
Sierra Leona
Uzbekistan
Venezuevella
Zimbabve
Countries
CPI 2004 (0-10)
WB Corrp Cotrol %

Precision Proof 2

Now we compared the perceptions based subjective data of another organization Business International (1995) with CPI (1995). We find that this organization is also fail to rank those countries which were ranked by CPI.

Country	BI 1995	CPI 1995
Australia	10.0	8.8
Canada	10.0	8.9
France	10.0	7.0
Nether	10.0	8.7
New Zealand	10.0	9.6
Norway	10.0	8.6
Singapore	10.0	9.3
Switzerland	10.0	8.8



Precision Proof 3

CPI has no zero point to start with. Although it is defined as a ranking from 0 to 10. In 1996 the most corrupt country Nigeria was ranked at 0.69. Next year the same country was ranked as a most corrupt country with a score of 1.76 and in 2004 there is overall improvement in the position of Nigeria , now it is third most corrupt country, but its score has declined to 1.6.

We can not say if the difference in corruption levels between two countries with indexes 3 and 4, is identical with the difference in corruption levels between two countries with indexes 5 and 6.

Suppose there're for countries A with index3, B with index 4, C with index 5 and D with index 6.

[4 of B] – [3 of A] $\neq$ [6 of D] – [5 of C]

The difference on the both sides does not represents an identical level of corruption. Therefore it is proved that scaling by CPI is not precise.

IV

Causes of Corruption

1 Regression, Causation and Confounding Factors

Empirical research in the field of corruption is mostly based upon the regression analysis of cross country corruption data and socio-economic indicators, which are mostly not confirmed by casual directions. Tina Soreide 2003 pointed out this problem as, "Another problem in the empirical research on corruption is the problem of answering the question of *causality*. When finding a correlation between corruption and some other phenomenon, the statistical regressions do not tell us whether corruption influences the other phenomenon, or if it is the other way around". Adeel Malik 2002 viewed this problem as, " It is difficult to infer causation from cross-sectional regressions. In most cases, at best only some degree of correlation could be identified. While the panel regressions could be more informative here, governance indicators are found to be relatively less significant in panel". The hidden factor which can't be explained in statistical regression might be any confounding factor. These confounding factors are ground realities, which might not be skipped while generalisation of an idea. It is a ground reality that the causes of corruption in Pakistan are different from the US. Now we try to search some practical causes of corruption in Pakistan. It is only to assess the difference between the practical ground realities and generalised empirical results based on cross country regressions.

1.2 Reality and Research: Causes of Corruption in Pakistan

In the different cultural systems of the world, people behave differently in interpersonal relations. An activity considered corrupt at one society may be acceptable in another society. John Hooker 2003 viewed it as,

"The reality, however, is that different cultures use radically different systems to get things done. Whereas Western cultures are primarily rule-based, most of the world's cultures are relationship-based. Western business people trust the system, while people elsewhere trust their friends and family."

The causes of corruption in rule-based societies will be definitely different from the causes of corruption in relationship-based societies. Political corruption in the election campaigns and corporate corruption/commission in national/ international bids might be relatively easier in US society as compared to the bureaucratic bribery, which is a main form of corruption in the societies like Pakistan. One cant be sure that the corruption in US is lesser than Pakistan unless he knows the exact 'extent of corruption' in any of these societies. If the 'extent of corruption' is volume of corruption then the corporate corruption and national/international commission in the US cant be lesser in amount from petty street bribery in the countries like Pakistan. And if the 'extent of corruption' is frequency of corrupt activities then bribery in the societies like Pakistan is more as compared to the US. We try to explore the reasons of corruption in our own society. These causes of corruption are different from the causes of corruption in the western societies. I have searched these causes from the local literature of the sub continent (Bureaucracy and Corruption by S.M.A. Ashraf, Corruption in India by N Vittal, The Causes of Corruption by Treisman and from some other Urdu books)

Corruption in any society depends mainly upon the two broad factors:

1. Individual and Social Roots of Corruption.
2. System of Governance and Administration

Individual and Social Roots of Corruption

(a) Family and Caste System: Family is basis of our society. Caste system or the joint family system are the extended forms of the family system. Nobody can even think to refuse to favour his or her family member. Family and Caste system are the main causes of *nepotism and favouritism.*

(b) **Relationship Based Society:** People give more importance to relationship than the rules and regulations. They favour their family and friends .They try to give them gifts on every occasion in order to strengthen their relations. Mostly the extra money and gifts from the lower level public servants are collected through the unfair means. A minister replied when he was asked why he was favouring his relatives " If I don't favour my relatives, whose relatives am I suppose to favour?"

(c) **Misunderstanding the Religion:** Islam is the major religion in Pakistan, but it has a very limited role in day to day activities of the people. Lack of real religious awareness is the main reason of corruption in the society. It is general perception in the corrupt people that a donation to the poor from illegal money can legalize the whole corruption. Majority of the corrupt people go the religious tombs and distribute meals and meats among the poor to legalize their corruption. They don't understand the beauty of clarity which the religion of Islam have. There is a clear-cut boundary between Hallal (permissible) and Haram (impermissible) in Islam. Haram can never become Hallal at any cost especially when the right/property/Maal (valuable good) is a personal property/right of someone else. The second misunderstanding about the teaching of Islam is the concept of Tauba (Excuse after confession of Sin). The corrupt public officials remain involved in corrupt activities through out the period of public service but after the retirement they do Tauba and start a religious life. It is my personal survey that majority of the retired officials from land revenue, police, construction and public utilities departments become members of the mosque committees , Zakat Committees and other religious forums especially in the rural areas of Pakistan. Doing Tauba is not objectionable, Allah loves it. But Tauba after violation of human rights is not acceptable to Allah. According to Islamic teachings Allah don't forgive to the violator of the human rights, unless that person, whose rights have been violated, himself forgive to the violator (sin committer). Therefore nepotism, bribery for injustice,

extortion etc are the violation of the interpersonal right in the society. It can't be fixed by Tauba.

(d) **Demonstration:** Demonstration is a most popular hobby in the culture of sub-cotenant. People love to show power of their seats and resources. People even work for 20 hours a day in Middle East but when they comeback to their homes, they waste their money in show off, in bribing the public official after violating the rules just for show off. Power is never demonstrated unless it is misused. Demonstration attracts the people and they start to search opportunities of corruption.

(e) **Consumerism:** Pakistani society is a consumption oriented society. People love to consume. Economist have to make extra efforts to raise the saving levels in the country. It is a very common practice that people get agricultural and production loans from the banks and use them for the consumption purpose. Electronic media is also responsible for increasing the desires of the people. Phobia of having every thing temps the people to make money by hook and crook. It increases the chances of corruption.

(f) **Class Consciousness and VIP Culture:** Class Consciousness and VIP Culture is also a reason of increase in corrupt activities in the society. While comparing their social status, people don't look horizontally or downward but they always look vertically and upward. Race of class culture have snatched the peace from the lives of the people and they are ready to snatch the right of others through corruption.

(g) **Lack of Patience and Tolerance:** People need their job done within no time and cant wait much. They are ready to pay extra money to avoid a delay which is required for necessary procedural matters. In some cases people are ready to bribe the official against a very small favour i.e. they are not ready to follow the queue. Sometimes very interesting situation arises when a bribe payer have to follow another queue i.e. the queue of bribe payers.

(h) **Poverty and Low Wages:** Its Hazrat Ali's (R. A.) narration that Poverty may compel you to *Kuffr*. Low wages and poverty are also compelling the people toward immoral corrupt activities, however it is not an excuse to get involved in corruption.

(i) **Illiteracy:** Illiteracy is an implicit major cause of corruption. Due to illiteracy , it becomes difficult to distinguish between good and bad, moral and immoral activities. Systems and institution can't develop in illiterate societies. People have to depend more on their relations as compared to the weak systems.

System of Governance and Administration

The second factor responsible of Corruption in our society is system of governance. Following are the major flaws in the system of governance.

(a) **Lack of Accountability:** Lack of accountability is a major cause of corruption in Pakistan. Effectiveness of legal system is very low. According to World Governance Survey 2001, when people were asked that "how much a civil servant is accountable for their action?" The majority of the respondents respond it as "low" or "very low". When the respondents were asked that "To what extent are there clear decision-making processes in the judicial system"? The majority of the respondents again respond it as "low" or "very low".

(b) **Discretionary Powers:** Discretionary power of Bureaucracy is another major cause of corruption in Pakistan. In taxation, custom, land revenues, public utility provision departments, police and judiciary, there is a lot of flexibility in the rules. Corrupt officials use these flexibilities in the favour of bribe payers and collect bribes.

© **Non Transparency:** The system is non transparent. From admission in schools to recruitment/appointment at top civil, military and judiciary, there is much ambiguity in the process. Even the decision making process has no clarity as it is mentioned above (World

Governance survey 2001). Lack of clarity provides room to corruption.

(d) **Political Instability:** With the instability of the political system, all institutions, department and posts become instable. Instability creates inefficiency and lack of coordination. Corruption flourish during these situations.

(e) **Divergence between Written Laws and Practice:** Written procedural laws/rules are generally not followed. Many chances of corruption stems from this evil. It provides opportunities to the person at the decision making seat to use discretion about the undergoing matter. Where there is discretion there is more chance of corruption.

(f) **Submission of Documents or Filing a Complaint in Public offices:** It is another common gateway of corruption in Pakistan. According to law, writing of F.I.R. (First Information Report) at police station as soon as possible is the right of the complainant . Submission of tax/other documents or filing a suit in the court of law is also a right of every citizen, but practically these are the most difficult job in the offices of Pakistan especially when you are not ready to pay the bribe.

(g) **Fall in Standard of Recruitment and Training:** Lack of merit in recruitment is also another face of corruption. It hampers the system by recruiting more corrupt officials. A person recruited through corrupt procedure will work as an agent of the corrupt system. This story is often listened about the new recruits of police, custom and land revenues etc that " first of all we will try to collect 10 lac, which we have paid for the recruitment of this job".

These social and bureaucratic roots of corruption are entirely linked with the socio-economic culture of Pakistan. These are entirely different from the socio-economic circumstances of the west. Now we examine the variation in the results of

empirical research on corruption. We find these variations in the outcomes of regression results. Consideration or non consideration of confounding factors in the formation of regression models might be the main reason of variation in the results.

1.3 Recommendations

.. There are several reasons of these causes of corruption in Pakistan and obviously there is a long list of cures of this disease as well. A very feasible and practical cure of this disease (corruption) for the people of Pakistan is that they should become promising Muslims and responsible citizens of Pakistan. In this connection, the role of government would be to provide an adequate atmosphere of character building and moral Training along with trustworthy institutions. Other than these measures, Public Expenditure Tracking Surveys (PETS) can be used for proper monitoring of the funds.

2. Status of Current Research in the Field of Corruption

The past decade has witnessed a boom in the empirical literature (in economics) on corruption. With few exception, the existing literature has three common features;

1. It is based on cross-country analyses.
2. It uses data on corruption derived from perception indices.
3. It explains corruption as a function of countries' policy.

These features are interlinked. The cross-country data is used mostly to study of macro-determinants and the effects of corruption (and vice versa). Although the literature has provided important insights on the aggregate determinants of corruption, but it also has drawbacks. In particular, the use of perception indices raises concern about perception biases. Second, due to the aggregate nature of the data, it tells us little about the relationship between corruption and individual agents. Most importantly, conceptually macro

determinants cannot satisfactorily explain the within country variation of corruption. Specifically, firms and other agents facing similar institutions and policies may still end up paying different amounts in bribes.

Finding correlations between corruption and other factors is important as the results may help us explain and understand serious problems in a society. Statistical studies on corruption are often referred to in literature on development and aid. Also the media informs us that corruption hampers investments and economic growth. However, when the underlying numbers are weak, the validity of final conclusions will be affected, independently of high quality in calculations of results. This problem can be illustrated with some of the research on corruption and economic growth. One of the first and more famous statistical studies on corruption is an analysis by Mauro (1995), who works for the World Bank. The purpose of the study was to "identify the channels through which corruption and other institutional factors affect economic growth, and to quantify the magnitude of these effects". He finds that corruption has a negative impact on private investment, and thereby reduces economic development. The information applied in the analysis was provided by Business International (BI), a private consultancy company. For his analysis Mauro aggregated data on the judiciary system, bureaucratic red tape and corruption in business transactions, calling the final index "bureaucratic efficiency". When controlling for several economic and socio-political variables, the connection between this index and economic growth proved to be negative. Two years later a statistical study on the same topic arrived at a result opposite to the Mauro findings. Applying corruption data from TI and BI, Wedeman (1997) finds that high levels of corruption more often go along with *rapid* growth, and *not* with slow growth. His main conclusion, which is later shared by Campos et al. (1999), is that the degree to which corruption is harmful to investments and economic growth depends on the *structure* of corruption, as well as the extent. If corruption is predictable, and bribes function as prices, it might be less harmful to society compared to more arbitrary forms of corruption, when people pay a bribe without confidence in getting anything back. In his article Wedeman describes that pervasive corruption may coexist with high rates of economic growth, like in South Korea and China. Several studies on

the topic have followed, while the results continue to vary. Wei (1997), for instance, supports Mauro's conclusions in an econometrical study of corruption and FDI. Figures were provided by TI, BI and OECD. He concludes that there is no reason to state that the East Asian form of corruption, which is supposed to be more predictable, is less harmful to investments than other forms of corruption. Alesina and Weder (1999), however, carried out a similar statistical study, and found no significant impact of corruption on FDI at all. During the last 5-10 years there has been carried out much research on corruption. The inconsistency in the results mentioned still illustrates the problem of drawing conclusions with regard to corruption on the basis of empirical research.

Sr. No.	Cause or Effect of Corruption (Factors)	Positive	Negative	No Relation
1	Corruption & Growth	Weddeman 1997	Paolo Mauro 1994,	
2	Corruption & FDI		Wei 1997	Alisena & Weder 1999
3	Govt. Intervention & Corruption	Tanzi 2000, Harriss-White 1996	William R. DiPietro 2003	La Porta 1999, Jonathan Hopkins 2004
4	Country Size/Pop & Corruption	Root (1999), Fisman & Gatti (2000), Wei (2000), Treisman (1999)		Azfar &Knak 2002
5	Democratisation & Corruption	Diamond & Plattner1993, Quah 1999	Frriedrich 1989, Doig and Theobald 2000	Amundsen 1999, Triesman 2000
6	Public Sector Wages & Corruption		Rijckeghem & Weder 1997	Rauch &Evans 2000
7	Trade/Openness & Corruption		Wei 2000a	Broadman, Recanatini 2000

The association of corruption with other macro variables is not being tabulated here to prove that corruption is not harmful for the economy or society.

My hypothesis is the same as it was in the previous sections that the available macro data on corruption is not reliable and produces inconsistent results. Most of the regression results are not confirmed by the causality tests.

2.1 Corruption Growth Linkage: A Statistical Evidence

The most popular paper on growth corruption relationship is Mauro (1994) which was also lacking the tests of causality. Mushtaq Khan (2002) criticised these subjective measures very precisely by introducing a simple method which proves weakness of the popular growth corruption association. He stated:

> "Time series data is usually lacking for tests of causality. To see how governance may affect growth, we need both high and low-growth countries to test hypotheses. Most of the high growth Asian economies began growing sometime in the sixties, seventies or early eighties. But governance indicators are only available from the mid-eighties onwards and the fuller data sets are only available for the nineties or later. Since high growth is expected to improve governance indicators, to test the causal significance of governance variables, we need to have governance indices for high-growth countries *before* they began their takeoff. Because such indicators are lacking, we are often explaining growth in the high-growth countries using their ex-post governance indicators or instrumental variables correlated with them."

Mushtaq khan (2002) established a statistical proof that median GDP growth by the advance countries (least corrupt as well), is not much better than the developing countries(most corrupt). High growth developers are more weakening the traditional growth corruption hypothesis. They are growing very rapidly although they have bad position in corruption rankings. The same statistical exercise on the lines of Mushtaq Khan (2002), have been replicated here in this study, with a different data sample. The results are more weakening the traditional regression analysis of growth and corruption i.e. corruption have negative impacts on growth.

A number of econometric exercises (empirical research) have been carried out to link up governance indicators with macroeconomic indicators like growth,

investment, capital formation etc by many researchers. Most significant support comes from, Mauro 1995, Hall and Jones 1999, Clague 1997, Knake and Kafeer 1997, Johnson, Kaufman and Zoido-Lobaton 1998, Kaufman, Kraay and Zoido-Lobaton 1997. The crux of this research is that mis-governance or corruption is a main cause of bad performance of the economy. However, in majority of the cases causality didn't confirm the course of action.

Advance Countries (GDP Growth @ Constant Price)

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	MEDIAN
Australia	4.3	3.9	5.3	4.3	3.2	2.5	4	3.3	3.2	2.2	3.6
Austria	2.6	1.8	3.6	3.3	3.4	0.8	1	1.4	2.4	1.9	2.15
Belgium	0.8	3.8	2.1	3.2	3.7	0.9	0.9	1.3	2.7	1.2	1.7
Canada	1.6	4.2	4.1	5.5	5.2	1.8	3.1	2	2.9	2.9	3
Denmark	2.5	3	2.5	2.6	2.8	1.3	0.5	0.7	2.4	2.2	2.45
Finland	3.8	6.2	5	3.4	5	1	2.2	2.4	3.6	1.8	3.5
France	1.1	2.3	3.4	3.2	4.1	2.1	1.3	0.9	2	1.5	2.05
Germany	1	1.7	2	1.9	3.1	1.2	0.1	-0.2	1.6	0.8	1.4
Israel	5.4	3.6	3.7	2.3	7.7	-0.3	-1.2	1.7	4.4	4.2	3.65
Japan	3.4	1.8	-1	-0.1	2.4	0.2	-0.3	1.4	2.7	2	1.6
Luxembourg	3.3	8.3	6.8	7.3	9.2	2.2	2.3	2.4	4.4	3.1	3.85
Netherlands	1.7	0.8	0.9	-2.2	-3.9	2.2	1.2	1.7	-0.1	0.7	0.85
New Zealand	4	1.9	-0.1	4.4	3.5	2.6	4.7	3.4	4.8	2.5	3.45
Norway	5.3	5.2	2.6	2.1	2.8	2.7	1.1	0.4	2.9	3.1	2.75
Portugal	3.5	4	4.6	3.8	3.4	1.7	0.4	-1.1	1	0.5	2.55
Spain	2.4	4	4.3	4.2	5.8	3.5	2.7	2.9	3.1	3.2	3.35
Sweden	1.3	2.4	3.6	4.6	4.3	1	2	1.5	3.6	2.6	2.5
Switzerland	0.5	1.9	2.8	1.3	3.6	1	0.3	-0.4	1.7	0.8	1.15
United Kingdom	2.7	3.2	3.2	3	4	2.2	2	2.5	3.2	1.9	2.85
United States	3.7	4.5	4.2	4.4	3.7	0.8	1.6	2.7	4.2	3.5	3.7

MEDIAN =2.55

RANGE 0.85 to 3.85

Developing Countries (GDP Growth @ Constant Price)

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	MEDIAN
Bangladesh	5	5.3	5	5.4	5.6	4.8	4.9	5.4	5.8	6.3	5.35
Bolivia	4.4	5	5	0.4	2.5	1.7	2.4	2.8	3.6	3.9	3.2
Brazil	2.7	3.3	0.1	0.8	4.4	1.3	1.9	0.5	4.9	3.3	2.3
Cameroon	5	5.1	5	4.4	4.2	4.5	4	4.1	3.5	2.8	4.3
China	9.6	8.8	7.8	7.1	8	7.5	8.3	9.5	9.5	9	8.55
Ecuador	2.4	4.1	2.1	-6.3	2.8	5.1	3.4	2.7	6.9	2.7	2.75
Egypt	4.9	5.9	7.5	6.1	5.4	3.5	3.2	3.1	4.1	4.8	4.85
Honduras	3.6	5	2.9	-1.9	5.7	2.6	2.7	3.5	4.6	4.2	3.55
India	7.5	5	5.8	6.7	5.4	3.9	4.7	7.4	7.3	7.1	6.25
Kenya	4	0.2	3.3	2.4	0.6	4.7	0.3	2.8	4.3	4.7	3.05
Latvia	3.8	8.3	4.7	3.3	6.9	8	6.4	7.5	8.5	7.8	7.2
Mexico	5.2	6.7	4.9	3.9	6.6	-0.2	0.8	1.4	4.4	3	4.15
Nigeria	6.6	3.2	0.3	1.5	5.4	3.1	1.5	10.7	6	3.9	3.55
Pakistan	2.9	1.8	3.1	4	3	2.5	4.1	5.7	7.1	7.4	3.55
Russia	-3.6	1.4	-5.3	6.3	10	5.1	4.7	7.3	7.2	5.5	5.3
Tanzania	4.5	3.5	3.7	3.5	5.1	6.2	7.2	7.1	6.7	6.9	5.65
Thailand	5.9	-1.4	-10.5	4.4	4.8	2.2	5.3	6.9	6.1	3.5	4.6
Uganda	9.1	5.5	3.6	8.3	5.3	4.8	6.9	4.5	5.8	5.9	5.65
Ukraine	-10	-3	-1.9	-0.2	5.9	9.2	5.2	9.6	12.1	5.5	5.35
Vietnam	9.3	8.2	5.8	4.8	6.8	6.9	7.1	7.3	7.7	7.5	7.2

MEDIAN = 4.73 **4.73**

RANGE = 2.3 to 8.55

High Growth Developing Countries(GDP Growth @ Constant Price)

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	MEDIAN
Bangladesh	5	5.3	5	5.4	5.6	4.8	4.8	5.8	5.8	5.7	5.35
China	9.6	8.8	7.8	7.1	8	7.5	8.3	9.5	9.5	9	8.55
India	7.5	5	5.8	6.7	5.4	3.9	4.7	7.4	7.3	7.1	6.25
Tanzania	4.5	3.5	3.7	3.5	5.1	6.2	7.2	7.1	6.7	6.9	5.65
Uganda	9.1	5.5	3.6	8.3	5.3	4.8	6.9	4.5	5.8	5.9	5.65
Vietnam	9.3	8.2	5.8	4.8	6.8	6.9	7.1	7.3	7.7	7.5	7.2

MEDIAN = 5.95 **5.95**

RANGE 5.35 to 8.55

Source:http://www.imf.org

Advance Countries (Corruption Perception Index)

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	MEDIAN
Australia	8.6	8.86	8.7	8.7	8.3	8.5	8.6	8.8	8.8	8.8	8.70
Austria	7.59	7.61	7.5	7.6	7.7	7.8	7.8	8	8.4	8.7	7.75
Belgium	6.84	5.25	5.4	5.3	6.1	6.6	7.1	7.6	7.5	7.4	6.72
Canada	8.96	9.1	9.2	9.2	9.2	8.9	9	8.7	8.5	8.4	8.98
Denmark	9.33	9.94	10	10	9.8	9.5	9.5	9.5	9.5	9.5	9.50
Finland	9.05	9.48	9.6	9.8	10	9.9	9.7	9.7	9.7	9.6	9.70
France	6.96	6.66	6.7	6.6	6.7	6.7	6.3	6.9	7.1	7.5	6.70
Germany	8.72	8.23	7.9	8	7.6	7.4	7.3	7.7	8.2	8.2	7.95
Israel	7.71	7.97	7.1	6.8	6.6	7.6	7.3	7	6.4	6.3	7.05
Japan	7.05	6.57	5.8	6	6.4	7.1	7.1	7	6.9	7.3	6.95
Luxemburg	n/a	8.61	8.7	8.8	8.6	8.7	9	8.7	8.4	8.5	8.70
Netherlands	8.71	9.03	9	9	8.9	8.8	9	8.9	8.7	8.6	8.90
New Zealand	9.43	9.23	9.4	9.4	9.4	9.4	9.5	9.5	9.6	9.6	9.42
Norway	8.87	8.92	9	8.9	9.1	8.6	8.5	8.8	8.9	8.9	8.90
Portugal	6.53	6.97	6.5	6.7	6.4	6.3	6.3	6.6	6.3	6.5	6.50
Spain	4.31	5.9	6.1	6.6	7	7	7.1	6.9	7.1	7	6.95
Sweden	9.08	9.35	9.5	9.4	9.4	9	9.3	9.3	9.2	9.2	9.30
Switzerland	8.76	8.61	8.9	8.9	8.6	8.4	8.5	8.8	9.1	9.1	8.78
UK	8.44	8.22	8.7	8.6	8.7	8.3	8.7	8.7	8.6	8.6	8.60
US	7.66	7.61	7.5	7.5	7.8	7.6	7.7	7.5	7.5	7.6	7.60
MEDIAN = 8.65											**8.65**
RANGE = 6.50 to 9.7											

Developing Countries (Corruption Perception Index)

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	MEDIAN
Bangladesh	2.29	n/a	n/a	n/a	n/a	0.4	1.2	1.3	1.5	1.7	1.40
Bolivia	3.4	2.05	2.8	2.5	2.7	2	2.2	2.3	2.2	2.5	2.40
Brazil	2.96	3.56	4	4.1	3.9	4	4	3.9	3.9	3.7	3.90
Cameron	n/a	n/a	1.4	1.5	2	2	2.2	1.8	2.1	2.2	2.00
China	2.43	2.88	3.5	3.4	3.1	3.5	3.5	3.4	3.4	3.2	3.40
Ecuador	n/a	n/a	2.3	2.4	2.6	2.3	2.2	2.2	2.4	2.5	2.35
Egypt	2.84	n/a	2.9	3.3	3.1	3.6	3.4	3.3	3.2	3.4	3.30
Honduras	n/a	n/a	1.7	1.8	1.7	2.7	2.7	2.3	2.3	2.6	2.30
India	2.63	2.75	2.9	2.9	2.8	2.7	2.7	2.8	2.8	2.9	2.80
Kenya	n/a	n/a	2.5	2	2.1	2	1.9	1.9	2.1	2.1	2.05
Latvia	n/a	n/a	2.7	3.4	3.4	3.4	3.7	3.8	4	4.2	3.55
Mexico	3.3	2.66	3.3	3.4	3.3	3.7	3.6	3.6	3.6	3.5	3.45
Nigeria	0.69	1.76	1.9	1.6	1.2	1	1.6	1.4	1.6	1.9	1.60
Pakistan	1	2.53	2.7	2.2	n/a	2.3	2.6	2.5	2.1	2.1	2.30
Russia	2.58	2.27	2.4	2.4	2.1	2.3	2.7	2.7	2.8	2.4	2.40
Tanzania	n/a	n/a	1.9	1.9	2.5	2.2	2.7	2.5	2.8	2.9	2.50
Thailand	3.33	3.06	3	3.2	3.2	3.2	3.2	3.3	3.6	3.8	3.20
Uganda	2.71	n/a	2.6	2.2	2.3	1.9	2.1	2.2	2.6	2.5	2.30
Ukraine	n/a	n/a	2.8	2.6	1.5	2.1	2.4	2.3	2.2	2.6	2.35
Vietnam	n/a	n/a	2.5	2.6	2.5	2.6	2.4	2.4	2.6	2.6	2.55
MEDIAN = 2.40											**2.40**
Range = 1.40 to 3.90											

High Growth Developing Countries(CPI)

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	MEDIAN
Bangladesh	2.29	n/a	n/a	n/a	n/a	0.4	1.2	1.3	1.5	1.7	1.4
China	2.43	2.88	3.5	3.4	3.1	3.5	3.5	3.4	3.4	3.2	3.4
India	2.63	2.75	2.9	2.9	2.8	2.7	2.7	2.8	2.8	2.9	2.8
Tanzania	n/a	n/a	1.9	1.9	2.5	2.2	2.7	2.5	2.8	2.9	2.5
Uganda	2.71	n/a	2.6	2.2	2.3	1.9	2.1	2.2	2.6	2.5	2.3
Vietnam	n/a	n/a	2.5	2.6	2.5	2.6	2.4	2.4	2.6	2.6	2.55
MEDIAN = 2.53											**2.53**
Range = 1.4 to 3.4											

SOURCE: Tranparency International

Table: Growth and Corruption in 40 countries

	Developing Countries (20 observations)	High growth Developing Countries (6 observations)	Advance Countries (20 observations)
Median GDP Growth Rate (1996-2005) (Range)	**4.73** (2.3 – 8.55)	**5.95** (5.35 – 8.55)	**2.55** (0.85- 3.85)
Median Corruption Index (1996-2005) (Range)	**2.40** (1.40 – 3.90)	**2.53** (1.40 – 3.40)	**8.65** (6.50 – 9.7)

Economic growth is linked up with corruption rankings. The statistical evidence provided in the above table is showing that the developing countries which have very bad scores in corruption ranking are growing more than the advance countries which have also very good position in corruption rankings. This evidence is again contrary to the regression results carried out by many researchers on the same subject. High growth developers (6 countries out of developing countries) are further strengthening the argument.

The above evidence is not provided to support corruption but it is only to trace out the way by which it influences the economic indicators. The history of growth and development is also not supportive to the regression analysis. We could not find any evidence from history that a country eradicated the corruption first then progressed. Both progression and reforms were carried out in the same time and even in some cases the institutions are being reformed after progression (China and other far eastern economies)

3. Corruption & FDI: Granger Causality Test on Panel data
(Hurlin & Veent Methodology)

In this section, the casual relationship of corruption and foreign direct investment are investigated using the Granger-Causality test. The Granger (1969) procedure is extended in a panel data context. The research is still ongoing, and there is still no widely adopted methodology that is used to deal with this type of problem, though some procedures do appear in the literature. Nair-Reicheit & Weinhold (2001) attempted to show the causality relation between growth and investment using an approach used by Holtz-Eakin et al (1988), that consists of estimating the relations by way of instrumental variables:

3.1 Data

We test for Granger causality between two variables: FDI, measured by the net inflow of foreign direct investment into a host country and corruption, measured through corruption Perception Index (CPI) by Transparency International. CPI data is available at the web site of Transparency International while the data of FDI is collected from the World Investment Report 2004. We have two samples of countries. First sample includes 20 Developed countries for which we have CPI data for continuous nine years. Second sample includes 20 developing countries. Transparency International did not included all developing countries in all of its indices. However I included 20 countries from the bottom of this Ranking which has at least six observations. We have also a second line data set based on level of corruption i.e. most clean and most corrupt countries. Some political scientists have also a viewpoint over the corruption that this attitude of each nation is different in different regions of the world. Therefore a data set of Scandinavian countries among the developed countries and a set of Latin American countries among the developing countries is also formulated. All data sets of countries along with data on corruption and FDI are appended at the end.

3.2 Methodology

The Methodology to test causality in panel data introduced by Hurlin and Venet (2003) is originally based upon the definitions of Granger (1969). It is a simple procedure of causality tests in panel data models with fixed coefficients. According to the standard Granger causality definition, we say that the variable x is causing y if we are better able to predict y using all available information than if the information apart from x had been used. In framework of this model we can say that this procedure helps us to explain how much of the current FDI status can be explained by past FDI flows and whether adding lagged values of corruption can improve the explanation. The FDI is Granger-caused by corruption if corruption helps in the prediction of the FDI i.e. if the coefficients on lagged corruption are statistically significant. The HV method is an extension of the standard causality tests which implies to test cross sectional linear restrictions on the fixed coefficients of the model. However, the use of the cross sectional information implies to take into account the heterogeneity across individuals in the definition of the causality relationships. . The baseline idea is to assume that there exists a minimal statistical representation, which is common to x and y at least for a subgroup of individuals. In this paper we use such a model in which sub groups of data are formulated which have homogeneity. Then the causality tests could be implemented and considered as a natural extension of the standard time series tests in the cross sectional dimension.

The first step of the procedure consists in testing the homogeneity of the parameters (except the individual effects) of the VAR representation. Here, we only consider the homogeneity of the interest parameters $\beta i^{(k)}$ and not the autoregressive parameters $\gamma i^{(k)}$. Under the null and the alternative hypothesis, we allow $\gamma i^{(k)}$ to vary across cross sections. If the homogeneity hypothesis is accepted, we can test the Granger non causality hypothesis as in Holtz-Eakin, Newey and Rosen (1988). The null hypothesis of the Homogenous Non Causality (HNC) test is then defined by the nullity of all the common parameters $\beta(k)$, for all the considered lags k = 1, ..,K. If the null is accepted, the variable x does not Granger cause the variable y for all the individuals of the panel (HNC hypothesis). If the null is rejected, the variable x

Granger causes the variable y, and the improvement of the forecasts on y is similar for the individual of the panel (HC hypothesis).Under the homogeneity hypothesis, the Homogenous Non Causality (HNC) test is then very similar to the unit root test proposed by Levin and Lin (1992),

Before applying the Homogeneity Non Causality test , we have formulated the groups of the countries which are assumed as homogeneous across the cross sections. Now consider a time-stationary VAR representation, adapted to a panel data context. For each individual i we have $\forall t \in [1, T]$:

$$y_{it} = \sum_{k=1}^{p} \gamma^{(k)} y_{i,t-k} + \sum_{k=1}^{p} \beta_i^{(k)} x_{i,t-k} + v_{i,t} \quad \text{---------- (1)}$$

with $v_{i,t} = \alpha_{i,t} + \varepsilon_{i,t}$ Where $\varepsilon_{i,t}$ are i.i d. $(0, \sigma_\varepsilon^2)$.

In our case FDI and corruption are in turn fitted into equation 1 as left-hand side variables. HV assume that $\gamma^{(k)}$ and $\beta_i^{(k)}$ $\forall k \in [1, p]$. It is also assumed that $\gamma^{(k}$ are identical for all individuals, whereas $\beta_i^{(k)}$could have an individual dimension. This setting forms the basic framework for Granger causality testing in a panel data context. The HV-procedure consists of three parts. As the focus of this study is to identify Granger causality between two variables, we employ only the first of these three. This first step tests the homogenous non-causality hypothesis, given by:

$$H0 : \beta_i^{(k)} = 0 \ \forall i \in [1,N], \ \forall k \in [1, p]$$

$$H1 : \beta_i^{(k)} \neq 0$$

The null hypothesis states non-existence of causal relationships across N. If this null is rejected, there is evidence of Granger causality. In the general case, the test statistic can be computed by the following Wald test proposed by HV:

$$F_{hnc} = \frac{(RSS2 - RSS1) / K}{RSS1[NT - N(K+1) - k]} \quad \text{---(2)}$$

Where SN denotes the total number of observations, RSS2 denotes the restricted sum of squared residuals obtained under the null hypothesis, and RSS1 is the unrestricted sum of squared residuals computed from equation 1.

This new procedure also follows a standard Granger causality where the variables entered into the system need to be time-stationary. Thus, the two variables are subjected to unit root testing. Usually in time series regressions, the residuals are correlated with their own lagged values. This serial correlation violates the standard assumption of regression theory that disturbances are not correlated with other disturbances. We may face following problem while running a regression with serial correlation.

- OLS does not remain efficient among linear estimators.
- Standard errors are computed wrongly. They are generally understated.
- If there are lagged dependent variables on the right-hand side, OLS estimates are biased and inconsistent.

Correlogram-Q-statistics is an easy choice for the quick look to detect serial correlation. The autocorrelation and partial autocorrelation functions of the residuals, together with the Ljung-Box Q -statistics for high-order serial correlation can be displayed in Eviewes. If there is no serial correlation in the residuals, the autocorrelations and partial autocorrelations at all lags should be nearly zero, and all Q-statistics should be insignificant with large p-values. When we run this procedure on our variables. We find that the AC's (auto correlation) are significantly positive and the AC(k) dies off geometrically with increasing lag k, it is a sign that the series obeys a low-order autoregressive (AR) process. In addition, since the partial autocorrelation (PAC) is significantly positive at lag 1 and close to zero thereafter, the pattern of autocorrelation can be captured by an auto regression of order one (i.e., AR(1)).The findings indicates that the *f* series is non-stationary and with the help of AR(1), we can overcome the problem . The stationarity condition of the second series *(p)* is worst. (Correlogram-Q-statistics sheets appended). Therefore another test for non-stationarity i.e. the Dickey-Fuller (DF) test is also applied so that we may be able to decide that with how much lags we can get rid of the white

noise of the data. The unit root test/ Dickey-Fuller (DF) for non-stationarity of time series also called the random walk process i.e.

$x_t = \alpha + \beta x_{t-1} + u_t$

if $\beta = 1$ than the problem is called unit root/random walk. We detect it by setting a hypothesis like

Test Ho $\beta = 1$ against H1 $\beta < 1$

The ADF test is based upon this procedure. We found following ADF test statistics for our sunrises.

ADF Test with lag (1) For FDI in Developed Countries

ADF Test Statistic	-6.341796	1% Critical Value*	-4.0122
		5% Critical Value	-3.4359
		10% Critical Value	-3.1417

MacKinnon critical values for rejection of hypothesis of a unit root.

ADF Test at *First Difference* with lag (1) For CPI in Developed Countries

ADF Test Statistic	-12.28380	1% Critical Value*	-3.4684
		5% Critical Value	-2.8778
		10% Critical Value	-2.5754

*MacKinnon critical values for rejection of hypothesis of a unit root.

ADF Test with lag (1) For FDI in Developing Countries

ADF Test Statistic	-5.078083	1% Critical Value*	-3.4727
		5% Critical Value	-2.8798
		10% Critical Value	-2.5764

*MacKinnon critical values for rejection of hypothesis of a unit root.

ADF Test with lag (1) For CPI in Developing Countries

ADF Test Statistic	-4.506649	1% Critical Value*	-3.4727
		5% Critical Value	-2.8798
		10% Critical Value	-2.5764

*MacKinnon critical values for rejection of hypothesis of a unit root.

On the basis of these stationary tests, we have reached at the conclusion that the series under the causality process do possess random walk and it would be to increase the numbers of lags in the Granger Causality regression process.

3.3 Results and Discussion

Causality-Test of FDI & CPI Using Hurlin and Venet Method (Developed Countries)		
20 Developed Countries	**CPI => FDI**	**FDI=> CPI**
F-Test	2.198	0.213
p	0.114	0.808
10 Most Clean Countries		
F-Test	3.085	0.551
P=	0.051	0.578
4 Scandinavian		
F-Test	1.308	1.571
P=	0.286	0.225

Causality-Test of FDI & CPI Using Hurlin and Venet Method (Developing Countries)		
20 Developing Countries	**CPI => FDI**	**FDI=> CPI**
F-Test	0.303	0.784
p	0.739	0.458
6 Latin American Countries		
F-Test	0.327	0.170
P=	0.723	0.844
8 Most Corrupt Countries		
F-Test	2.701	0.583
P=	0.078	0.562

RSSF/RSSP means Restricted Residual Sum of Squares for FDI/CPI
URSSF/URSSP means Un-Restricted Residual Sum of Squares for FDI/CPI
N= 1 and K=3 therefore k-1=2 d.f

Discussion

We detected the existence of a correlation between these FDI and corruption. Simple correlation between in 20 developed Countries was 0.2315 while in 20 under developed countries it is only 0.14.However, in further subgroups the results were strange. In the 10 developed countries it improved to 0.25 while in the developing 08 countries the case was reverse. A negative correlation of 0.20 was the outcome. We cannot categorically affirm that an change in the level of corruption causes foreign investment or vice versa. It is therefore important to determine the meaning of this causality. In developed countries , Corruption neither Granger cause inward FDI nor inward FDI Granger cause Corruption and same findings are found for Developing countries. However two subgroups were significant. For 10 most clean countries Corruption Granger causes FDI at 5 % level of significance. A higher rank in CPI index (less Corruption) is causing more FDI inflow. Reverse is the case for developing countries, a lower rank in CPI index (more corruption) is more FDI inflow.

4. Limitations of Granger Causality Test

The issue of Causality is not new in economics. Philosophical differences over the this concept are also as old as the issue itself. Apart from these philosophical differences of the scholars over the issue of causality, we find some serious problems while conducting the causality tests. Nauro F. Campos & Jeffrey B. Nugent 1999 pointed out "there are two critical issues to be addressed when conducting Granger causality tests. The first concerns the length and frequency of the time lags. On their length, Granger admonishes, "using data measured over intervals much wider than actual causal lags can destroy causal interpretation" (Granger, 1987, p.49). The second issue to be dealt with lies in the information set. The test depends on the assumption that the cause contains unique information about the effect, in the sense that it is exhaustive and unavailable elsewhere. If the information set underlying the test is composed by two series, both of which may be affected by a third variable, the test can be rendered useless. A number of theoretical

studies have established that temporal aggregation leads to misleading inference on Granger-causality (see Wei, 1990 and Marcellino, 1999 and references therein). Gulasekaran and Abeysinghe (2002) and Gulasekaran (2003) have derived quantitative results analytically to assess the nature of the distortions created.

The limitations and problems with Granger Causality found in the literature can be summarised as under:

1. Number of lags in the unrestricted relationship effects the level of significance of F-Test.
2. No good way to determine the lag length.
3. Granger test can yield conflicting results.
4. Granger causality is not a proof of causality.

In order to check the sensitivity of Granger Causality test to the lag length. We change the lag length from 3 to 2 in the causality test of FDI & CPI . We find that it changes the significance level of the prior results.

Granger Causality Test of FDI and CPI with 3 lags (CPI => FDI)

	08 Most Corrupt Countries	10 Least Corrupt Countries
F-Test	2.701	3.085
p Value	0.078*	0.051**

* Significant at 10% level

** Significant at 5% level

Granger Causality Test of FDI and CPI with 2 lags (CPI => FDI)

	08 Most Corrupt Countries	10 Least Corrupt Countries
F-Test	0.6048	3.324
p Value	0.44*	0.072**

* Insignificant

** Significant at 10 % level

V

Socio-Political Motivations of Research in Corruption

1. Politicisation of the Issue of Corruption

For many years, the problem of corruption was mostly concerned with academic analysts. But recently a variety of forces have put corruption back on the international policy agenda. These include, globalisation and growing competitiveness of the world economy.

A question arises in the mind that "Can knowledge about the ranking on a corruption index affect the actual level of corruption within a country?" If effects, whether this effect is positive or negative. It may result in two outcomes – for the better or the worse. Information about the severity of corruption in their own society may make people realize that their country is highly infested, the attitudes towards corruption may change at the *individual* level. A poor ranking may make individuals more aware of their disadvantage if acting in respect of the law, *or* the ranking may appeal to their individual morality. *Companies* may introduce codes of conduct in order to improve their reputation, *or* they can continue to demand and pay bribes because they realize that everyone else does. Accordingly, information about grave levels of corruption may have an impact on actual behaviour. It may lead to improvements, but this is not obvious. Secondly the effectiveness of this kind of ranking strategy also depends upon the quality and integrity of the data as well. We have discussed a lot over the duality of the data and now we come towards the integrity of the data and we start it with a very useful research of Knake and Azfar " Are larger country are really more corrupt?" This paper proved a hidden intention of the articulates of the ranking based corruption data. According to the abstract of the paper "Several authors claim to provide evidence that governmental corruption is less severe in small than in large countries. We demonstrate that this relationship is an artefact of sample selection. Most available corruption indicators provide ratings

only for those countries in which multinational investors have the greatest interest: these tend to include almost all large nations, but among small nations only those that are well-governed. We find that the relationship between corruption and country size disappears, using either a new corruption indicator with substantially increased country coverage, or an alternative corruption indicator that covers all World Bank borrowers without regard to country size. We also show that the relationship between corruption and trade intensity – a variable strongly related to population – disappears using samples less subject to selection bias."

Despite a little practical use of country level data for curbing corruption, a huge amount of resources and time is being spent on collection of this data and its usage in empirical research work. Why? *Why corruption has become more important in 90,s and why not before?*

During the late 1990s the United Nations, the International Monetary Fund (IMF), the World Bank, the Organization for Economic Cooperation and Development (OECD), and a number of regional institutions, business organisations, and non-governmental organisations (NGOs) brought the corruption issue to the forefront of their agendas and began to lobby for measures intended to curb corruption. The NGO Transparency International (TI) has been particularly active in putting the corruption issue on the international agenda.

1.2 Anti Corruption Campaign and Globalisation

I would like to start this discussion from a very comprehenssive and thoughtful approach on the issue by Mlada Bukovansky 2002,

> "The emergence and consolidation of international anti-corruption norms highlights an important but neglected aspect of the evolution of transactional governance in the international political economy. I argue that the emergence of an international anti-corruption regime represents an extension of efforts to expand and solidify the preconditions for a global, liberal market economy, but that it also constitutes something of a departure from previous regimes geared toward this same end. The essential point on which the anti-corruption regime diverges from existing trade and monetary

regimes is that its evocation of the *moral requirements of a market economy* meshes very uneasily with the purely technical and instrumental justifications for open markets dominant in IPE discourse. Evocation of such moral requirements also extends the institutionalist focus on transparency, separation of powers, and government accountability beyond the realm of institutional solutions and into the realm of ethical mores."

The prevailing anti corruption movement started in its full swing in 90,s. It is part of the globalisation movement. Corruption is not such a homogeneous activity which must be added in the list of global problems like pollution or AID. However, a reasonable number of well reputed researchers have still very contradictory opinions on the effectiveness of the anti corruption campaign. A book titled "The Pursuit of Absolute Integrity. How Corruption Control Makes Government Ineffective" by Anechiarico, Frank & Jacobs, James, B (1996) was published from Chicago University, Press. This is a comprehensive and controversial case study of American anti-corruption efforts. It offers a sceptical assessment of the effectiveness of these efforts. The authors argue that the proliferating regulations and oversight mechanisms designed to prevent or root out corruption seriously undermine our ability to govern. By constraining decision-makers discretion, shaping priorities, and causing delays, corruption control - no less than corruption itself - undermines efficiency and thereby contributes to the contemporary crisis in public administration.

Multinational financial institutions like IMF and World Bank are main campaigners of the anti corruption movement. It may come in the mind of a researcher that the countries across the globe are ranked to calculate the risk of investment/aid. But a study on this issue proved a very strange and opposite hypothesis. In an article "Do Corrupt Governments Receive Less Foreign Aid?" by Alesina, Alberto & Weder, Beatrice (NBER 1999) criticized the foreign aid programs arguing that these funds often support corrupt governments and inefficient bureaucracies. Supporters argue that foreign aid can be used to reward good governments. This paper documents that there is no evidence that less corrupt

governments receive more foreign aid. On the contrary, according to some measures of corruption, more corrupt governments receive more aid. Also, we could not find any evidence that an increase in foreign aid reduces corruption. In summary, the answer to the question posed in the title is 'no'. Critics of foreign aid programs argue that these funds often support corrupt governments and inefficient bureaucracies. Supporters argue that foreign aid can be used to reward good governments. Heather Marquette criticised the policy of World Bank to intervene in the internal politics of a country using the issue of corruption. The author quoted article 10 section 10 of the bank regarding non-political mandate of the Bank. She further viewed it as' ""However, the Bank needs to step back from its more controversial work on corruption and the increasing politicisation that has resulted. Even one of its biggest partners in anti-corruption work expressed concern regarding the potential for increased political conditionality and intervention in a sovereign country's political affairs. In 1996, Transparency International said: 'We would not like to see the Bank dictating to governments and understand that it has no intention of doing so. Still less would we want to see elements of conditionality creeping in' (Transparency International, 1996)."

I quoted the above mentioned references only to establish an argument that corruption is not such a harmful global issue that it can only be tackled through a global movement. In the previous sections, we have discussed that the definition and dimension of corruption varies across the nations but only one dimension of the issue is deliberately highlighted in order to add this issue in the list of global problems. In 1990's corruption had been added in the list of global issues to intervene across the borders.

2. Moving from Subjective to Objective Measures of Corruption

The search for a better alternative is a basic spirit of evolution theory. To proceed towards a good policy requires good statistics at different stages of the policy-making process. The current research on corruption has two common characteristics. First, it exclusively relies on *subjective* measures of corruption. It

employs various indexes of *corruption perception*, mostly based on the surveys of international business people. The use of a corruption perception index is justified by its articulates with a logic that the actual level of corruption in a country is difficult to observe. Certain potential measures of corruption, such as the number of prosecuted corruption-related cases in a country, may be rather biased measure. Secondly, because corruption data are available only at the aggregate (country) level. Availability of only country level data is a lame excuse. A first hand primary data on corruption according to the need of reformer can be gathered in each country. It would be a great contribution in the national database if we set the criterion to choose a subjective or objective measure of corruption that how much guidance do corruption indices give to the reformers? Obviously the subjective measures of corruption like CPI and WBI are least helpful to the reformer. They just give an imprecise indication of the problem. The objective measures of corruption which are compatible with the local socio-cultural issues would be more appropriate to handle the issue of corruption. Improvement of governance through individual, social and institutional reforms is the best way to control the corruption. It would be a silent revolution which will reform the system with least disturbance.

Experimental methodology is an important alternative method to measure corruption. It is not only helpful in assessment of corrupt behaviour in any society but also guides the researcher in policy formation. Azfar and Nelson Jr 2003 conducted an experiment on causes of corruption and they found that, " Voters rarely re-elect chief executive found to be corrupt and tend to choose president who had good luck. Directly elected law enforcement officers work more vigilantly at exposing corruption than those who are appointed. Increasing government wages and increasing the difficulty of hiding corrupt gains both reduce corruption". It means that elected officials are more vigilant in exposing corruption and higher wages and transparent interactions reduce corruption. Klaus Abbink et all 1999 conducted an experiment on corruption, " The results show that reciprocity can establish bribery relationships, where negative externalities have no apparent effect. For example a public official will try to reciprocate to the person who have given him a gift. The penalty threat significantly reduces corruption i.e. there is a

significant role of punishment in reduction of corruption, although discovery probabilities are typically underestimated". G.G. Schulze and Frank conducted an experiment on corruption monitoring and they suggest that depending on the degree of prevailing corruption it is optimal to either monitor with a high frequency or not to monitor at all. Luis, Warner and Maria suggested in their experiment on corruption that greasing bureaucrats is moderately efficient in speeding up them.

2.1 Improvement in Governance

There are two views about the failure of governance. The first view is the neoclassical view which is also supported by world bank. It starts from the concept of free market economy. According to them the failure of governance is due to the intervention in the system with rent seeking intension, which fails the service delivery system. To correct the system a democratic government is required to introduce more tight rules of the game (which is again an intervention). The second view is that the traditional societies could not absorb the capitalistic system. These economies are at the stage of transformation. Mushtaq Khan 2002 analysed it as:

> "The analysis of state failure and the policy debate have been driven by two very different underlying views of what the state does. The first, which we call the "service delivery" view, says the role of the state is to provide law and order, stable property rights, key public goods and welfarist redistributions. In failing to provide these, state failure contributes to economic under-performance and poverty. State failure of this type is in turn related to an inter - dependent constellation of governance failures including corruption and rent-seeking, distortions in markets and the absence of democracy. All of these need to be addressed to focus the state on its core service-delivery tasks. The second locates the developing country state in the context of "social transformation": the dramatic transition these countries are going through as traditional production systems collapse and a capitalist economy begins to emerge. Dynamic transformation states have heavily intervened in property rights and devised rent-management systems to accelerate the capitalist transition and the acquisition of new technologies.

State failure according to this view has been driven by the lack of institutional capacities in these respects, and more importantly, the incompatibility of institutional capacities with pre -existing distributions of power. An examination of the econometric data and historical evidence raises serious doubts as to whether the governance reforms suggested by the first view can improve growth, while the need for reforms identified by the second view are much better supported. This suggests the need for a significant shift in the focus of institutional reform, as well as identifying the importance of political reorganization in poorly performing economies."

2.2 Accounting the Cost of Corruption

Public expenditure tracking survey (PETS) or Perpetual Inventory Method (PIM) are basically methodologies used for accounting the cost of corruption. PETS have been discussed in detail in Ch. 2, where we have seen the successful results of these surveys in African countries.

Improvement in governance can also be measured through a hypothetical cost accounting survey. The hypothesis, " Is the quality of governance improving or deteriorating? Can be a good alternative to the direct measures of corruption. It can be judged through an hypothetical true hypothesis with respect to governance and then an alternative hypothesis to test the variation. For Example a truly counted cost of time process and resources can be checked with actual costs. It is a double edge sword, from the one side it can improve the governance and at the same time it will measure the level of corruption in the economy.

A very close to the above mentioned method is used on Italian data which produced very significant results. Miriam A. Golden and Lucio Picci 2004, in their paper 'Proposal for a New Measure of Corruption, Illustrated with Italian Data' explained their procedure as, "Our procedure is to create two sets of measures of public capital stock using two different types of data. The proxy of "corruption" that we propose is based on the ratio between the two. The first data we draw on is a measure of physical infrastructure, whereas the second is a historically cumulative measure of the price government paid for public investments, or infrastructure

expenditures, computed using what is called the perpetual inventory method (PIM), a standard method for calculating capital assets."

This method to measure corruption is basically a good example of an objective method, in which we not detect the corruption but also mark out flaws in the system.

3. Role of Individual, Society and System In Corruptibility

It is general perception in our society that everybody has a price, some have less and some have more (exception are always there). It is an issue of great concern that everybody has a price and there are no values. Corruption scandals of top most politician and civil/military bureaucrats are not hidden from anybody. The fate of the country depends upon his people. The countries abundant with natural resources and located at ideal geographical positions are far behind the countries which are simply islands and also covered with ice. It is the quality of the people and their skill that help the country to make progress. System also plays a vital role in building the character of the society. It was the character of Holy Prophet and His Companions that a small state of Medina Munawarah progressed very rapidly in very short period of forty years. System and its institution also play a vital role in abolishing the evils and immoral practices from the society. I must quote here the words of N. Vittal that, " generally the moral or ethical temperature of any organization or any country depends upon three things. The first is the individual sense of values. The second are the social values and third are the systems which encourages people to observe the right values. If for example we take the population of any country, we will find that 10 percent will be honest whatever the circumstances, 10 percent will be crooked whatever we do and 80 percent will be honest or not, depends upon the system. If the system encourages corruption, the country will be a corrupt country." Therefore , we need individual and social character building which will eventually reform the system. A strong belief over the religion can also play a positive role in curbing the corruption. Role of religion remained very positive in curbing the immoral activities from the societies.

3.1 Faith-based Initiatives

Corruption is an immoral human behaviour, therefore it is condemned in all religions. North and Gwin (2004) stated " Social scientists generally contend that, whatever other functions it may serve, religion serves to sustain a social order. Much religious teaching revolves around moral behaviour, and one would expect a religious society to be relatively more moral than a nonreligious one." Religion remained helpful in the past for the human beings in achieving social and economic goals. Barro and McCleary (2003) find that economic growth in the latter part of the 20^{th} century was strongest in countries with high levels of religious belief. Specifically, they conclude that higher levels of aggregate belief in hell and in heaven increase economic growth. North & Gwin (2004) quoted.... "Two possible mechanisms by which religion might influence growth. First, religion might increase the demand for and compliance with strong legal institutions and the rule of law. Second, religion may also have the beneficial effect of discouraging corrupt practices within a society. Both of these factors have been shown to have a positive effect on economic growth". (Barro 1997, 2003; Knack and Keefer 1995; La Porta *et al.* 1998; Rodrik 1999).

Many faith-based communities and groups have large youth constituencies. Supporting these pre-existing groups who are already involved in different moral building activities, an effective religious motivation based campaign against corruption can be launched. By monitoring and evaluating these programs, best practices and models can be formulated to outline anti-corruption strategy.

VII

Conclusion

It is important to remember that we can find bureaucrats with a high integrity also in countries at the bottom of a corruption index. Similarly, we can find sectors infested with corruption in countries were the problem is uncommon. We have discussed some of the weaknesses in the prevailing indexes, as well as empirical research based on these indexes.

It is impossible to obtain precise information about corruption due to its secrecy, illegality and varying nature. The corruption index (rankings) is based upon the aggregation of this imprecise information. A limited definition of corruption i.e. Public Office centred corruption is used in the construction of these indices, ignoring the grand corruption i.e. political and corporate corruption. Therefore the probability of misclassifying countries is significant. The ambiguities connected to the rankings of countries are significant. The margins of error in the index-scores are considerable. The information from indexes are therefore indicating, not precise.

These cross-country rankings are not useful for within country reforms because they tell nothing about internal dynamic dimensions of corruption. Using the corruption measures for assessment of level of corruption would not be appropriate as the probability of the misclassification of the countries is significant. Using this subjective data for empirical research (as it is being used cause and effect analysis of corruption in hundreds of papers) could lead toward ambiguous results, as the margins of error in the index-scores are considerable. These cross-country rankings are helpful in decision making for donor agencies and multinationals, but there are chances of politicisation of this data. Some statistical techniques and Causality test is used for further clarity regarding flaws and usefulness of these subjective measures.

The last part of this study comprises the politicisation of the issue of corruption. Multinational financial institutions like IMF and World Bank along with some international watchdogs like Transparency International are the main articulates of the Corruption Indices. They have started an anti-corruption global movement against corruption. Corruption is not such a homogeneous activity, which must be added in the list of global problems like poverty, pollution or AID. Any time political actors attempt to inject moral content into international politics, they face difficult theoretical and normative issues. In the end some alternative micro level anti-corruptions strategies along with social and institutional reforms are proposed, because these subjective indices are not much helpful to the reformer. The micro level strategies might be helpful, not only in improving the governance but also in combating the corruption. Public Expenditure Tracking Survey (PETS) are very useful for monitoring of the public funds. The most effective, feasible and practical diagnostic of this disease (corruption) is that the people of Pakistan should become promising Muslims and responsible citizens of Pakistan. In this connection, the role of government would be to provide an adequate atmosphere for character building and moral Training along with trustworthy institutions.

VII

Bibliography

Alam, M. Shahid. (1995). "A Theory of Limits on Corruption and Some Applications." *Kyklos* 48(3): 419–35.

Alesina, A. & B. Weder (1999), "Do corrupt governments receive less foreign aid?", *NBER Working Paper No. 7108*

Alhabshi Syed Othman (1996) "Definition Of Bribery According To Islam" Institute of Islamic Understanding Malaysia 1996

Al-Marhubi, Fahim(2000):"Corruption and Inflation" Economics Letters Vol. 66.

Alessio Moneta LEM, Sant'Anna School of Advanced Studies

Amundsen, Inge (1999): "Political corruption: An introduction to the issues", *Working Paper* 99:7, Bergen: Chr. Michelsen Institute.

Azfar, Omar; Lee, Young; and Swamy, Anand (2001), "The Causes and Consequences of Corruption." Annals of American Association of Political and Social Sciences, 573.

Azfar, Omar and Nelson Jr. (2003), "Transparency, Wages and the Separation of Powers: An Experimental Analysis of Corruption." IRIS, University of Maryland

Babbie, Earl. (1995). *The Practice of Social Research.* Belmont, CA: Wadsworth, 7th ed.

Barro, Robert. (1997). *Determinants of Economic Growth: A Cross-Country Empirical Study*. Cambridge, Mass.: The MIT Press.

Barro, Robert, and Rachel M. McCleary. (2003), "Religion and Economic Growth across Countries." *American Sociological Review* 68:760-81 (October).

Barro, Robert, and Rachel M. McCleary. (2004), "Which Countries Have State Religions?" NBER Working Paper No. 10438 (April).

Basu K., S. Bhattacharya and A. Mishra (1992), " Notes on bribery and control of corruption." J. of Public Economics Vol. 48 no.3.

Becker, Gary S (1968), "Crime and punishment: An Economic Approach," Journal of Political Economy, Vol. 76).

Besley, T. and J. McLaren (1993): "Taxes and bribery: The role of wage incentives", *Economic Journal*, 103

Broadman, H.G. and Recanatani, F. (2000): "Seeds of corruption. Do market institutions matter?" *World Bank Policy Research Working Paper* No. 2368, June.

Cadot, O. (1987): "Corruption as gamble", *Journal of Public Economics.*

Campos, J. Edgardo, Donald Lien and Sanjay Pradhan (1999): "The impact of corruption on investment: Predictability matters" *World Development*, vol. 27, no.6

Doig, Alan and Robin Theobald (2000): *Corruption and Democratisation.* London: Frank Cass.

Diamond, L. and M.F. Plattner (1993): *The Global Resurgence of Democracy.* Baltimore: Johns Hopkins University Press.

Elliot, K.A. (1997): "Corruption as an international policy problem: Overview and recommendations" in *Corruption and the global economy.* K.A. Elliot, ed., Washington D.C.: Institute for International Economics. Pp. 175-233 .

Fishman, R. and R. Gatti (2000): "Decentralization and corruption: Evidence across countries", *World Bank Policy Research Working Paper*, No. 2290, February.

Friedrich, Carl J. (1989): "Corruption concepts in historical perspective", in Heidenheimer et al. (eds.) *Political corruption. A Handbook.* New Brunswick: Transaction Publishers.

Galting Fredrik, Tiri (2004) "Measuring the Immeasurable: Boundaries and functions of Macro corruption Indices"

Goldsmith, Arthur A. (1999): "Slapping the grasping hand: Correlates of political corruption in emerging markets", *American Journal of Economics and Sociology*, vol. 58, no. 4, pp. 866-883

Granger, C.W.J. (1969) Investigating casual relations by economic models and cross-spectral methods, Econometrica 37, 24-36.

Gulasekaran Rajaguru Tilak Abeysinghe 2003, " Temporal Aggregation, Causality Distortions,and a Sign Rule", National University of Singapore

Gupta ,Sanjeev, Hamid Davoodi, and Rosa Alonso-Terme, (1998), "Does Corruption Effect Income Inequality and Poverty?" IMF Working Paper (May)

Günther G. Schulze and Björn Frank, (2005) " Deterrence versus Intrinsic Motivation: Experimental Evidence on the Determinants of Corruptibility. University of Konstanz and University of Hohenheim

Harris-White, B. and G. White (eds) (1996): "Liberalization and the new corruption", *IDS Bulletin*, 27 (2). Sussex.

Heather Marquette (2004), "The Creeping Politicisation of the World Bank: The Case of Corruption". POLITICAL STUDIES: 2004 VOL 52, 413–430

Hellman, Joel S.; Geraint Jones, Daniel Kaufmann, and Mark Schankermann. (2000). "Measuring Governance, Corruption, and State Capture." Washington, DC: The World Bank (April)

Hellman, Joel S.; Geraint Jones, and Daniel Kaufmann. (2000). "Seize the State, Seize the Day: An Empirical Analysis of State Capture and Corruption in Transition." Draft of paper prepared for the Annual Bank Conference on Development Economics. Washington, D.C.: The World Bank (April);

Hooker John (2003), "A Cross-Cultural View of Corruption" Carnegie Mellon University

Hurlin, C. and B, Venet (2001) Granger causality tests in panel data models with fixed coefficients, Working Paper, EURIsCO, Universit´e Paris IX Dauphin.

Inna Cabelkova GERGE-EI "Perception of Corruption in Ukraine: Are they correct"

Jens Chr. Andvig and Odd-Hege Fjeldstad (2000), Commissioned by NORAD. "Research on Corruption: A policy oriented survey"

Jens Chr. Andvig, Odd-Helge Fjeldstad, Amit Shrivastava (2001), " Corruption: Critical assessments of contemporary research" Report from a multidisciplinary workshop Chr. Michelsen Institute Development Studies and Human Rights WP 2001: 17

Joel Kurtzman, Glenn Yago and Triphon Phumiwasana (2004)"The Global Costs of Opacity Measuring business and investment risk worldwide Publisher: MIT Sloan Management Review

Johnston, Michael. (1998) "What Can Be Done About Entrenched Corruption?", pp. 149-180 in Boris Pleskovic (ed.), *Annual World Bank Conference on Development Economics 1997.* Washington, DC: The World Bank.

Johnston, Michael. (2000) "The New Corruption Rankings: Implications for Analysis and Reform" Deptt. 0f Political Science. Colgate University, NY, USA

Kaufmann, Daniel, Aart Kraay, and Pablo Zoido-Lobatón. (1999a). "Aggregating Governance Indicators". Washington: The World Bank; August;

Kaufmann, D., A. Kraay and P. Zoido- Lobaton (1999b), "Governance Matters." World Bank Policy Research Working Paper No. 2196

Kaufmann, D. Aart Kraay, and Pablo Zoido-Lobatón. (1999c) "Aggregating Governance Indicators". Washington: The World Bank; unpublished (August).

Khan Mushtaq H. (2002), "State Failure in Developing Countries and Strategies of Institutional Reform" Department of Economics, SOAS, University of London

Knack, Stephen, and Philip Keefer. (1995.) "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." *Economics and Politics* 7(3): 207–27.

Klaus Abbink, Bernd Irlenbusch, And Elke Renner (1999), "An Experimental Bribery Game" SFB Discussion Paper B-459

Klitgaard Robert (1988): "Controlling Corruption" Berkeley: University of California press.

Krueger, Anne O (1974) "The political economy of the rent seeking society." American Economic Review 64.

La Porta, R., F. Lopez-de-Silanes, A. Schleifer and R.W. Vishny (1999): "The quality of government." *Journal of Law, Economics and Organization*, vol. 15, no. 1, pp. 222-279.

Lambsdorff, Johann Graf. (1999b). "Corruption in Empirical Research: A Review". University of Göttingen , Internet Centre for Corruption Research.

Lambsdorff, Johann Graf. (2001). University of Göttingen , Internet Centre for Corruption Research.

Leite, C. and J. Weidmann (1999): "Does mother nature corrupt? Natural resources, corruption, and economic growth." *IMF Working Paper* 99/85.

Luis Gonz´alez¤, Werner G¨uth, Maria Vittoria Levati, (2003)"Speeding up Bureaucrats by Greasing Them - An Experimental Study"

Malik, Adeel (2002), "State of the Art in Governance Indicators", HUMAN DEVELOPMENT REPORT 2002

Mauro, P. (1995), " Corruption and growth", *Quarterly Journal of Economics.*

Miriam A. Golden and Lucio Picci (2004) "Proposals for new Measure of Corruption, Illustrated with Italian Data." University of California at Los Angles.

Mlada Bukovansky, Canberra (2002). "Corruption Is Bad: Normative Dimensions of the anti-corruption movement".

Myrdal' Gunnar. (1968) Asian Drama. Vol. II New York Random House, 1968.

Nauro F. Campos, Jeffrey B. Nugent 1999, "Who Is Afraid Of Political Instability?" University of Southern California Los Angeles, CA 90089-0253, USA

Nicola Jentzsch 2004, "The Construction of Superlative Indices for Regulatory Proxies" Free University of Berlin. Dept. of Economics and JFKI

N. Vittal 2003, "Corruption in India" Academic Foundation, New Delhi.

North, Charles M. & Gwin 2004: "Religion's Role in the Rule of Law" Baylor University.

Quah, Jon S.T. (1999): "Combating corruption in South Korea and Thailand", A. Schedler, L. Diamond and M.F. Plattner (eds.) *The Self-Restraining State. Power and Accountability in New Democracies.* Boulder, Colorado: Lynne Rienner Publishers.

Rajesh Chakrabartri 2001, "Corruption: A General Equilibrium Approach". Georgia Institute of Technology.

Rauch, James E. and Peter B. Evans (2000): "Bureaucratic structure and bureaucratic performance in less developed countries", *Journal of Public Economics*, vol. 75, pp. 49-71.

Rijckeghem, C. Van and Beatrice Weder (1997): "Corruption and the rate of temptation: Do low wages in the civil service cause corruption?", IMF *Working Paper* WP 97/73.

Ritva Reinikka and Jakob Svenson (2004) , Stockholm University Sweden. "Survey and Techniques to measure and Explain Corruption"

Rose-Ackerman, Susan (1975), "The Economics of Corruption" J. Public Economics 43.

Rose-Ackerman, S. (1999). "Corruption and Government: Causes, Consequences, and Reform" Cambridge : Cambridge University Press.

S.M.A. Ashraf 1998, "Bureaucracy and Corruption" Hamdard Foundation Karachi

Shleifer, & Vishny (1993): "Corruption", *The Quarterly Journal of Economics*, 108

Sik Endre (1999) "Some thoughts about the sociology of corruption from an East-European perspective", Princeton University . CEU conference on Corruption, Budapest,

Tanzi, Vito (1998) "Corruption Around the world: Causes , Consequences, Scope, and Cures" IMF Staff Papers Vol. 45. No.4.

Tanzi, Vito and Hamid Davoodi (1997): "Corruption, public investment, and growth", *IMF Working Paper* 97/139.

Tanzi, V. (2000a): "Corruption, governmental activities, and markets", chapter 6 (pp. 88-106) in Vito

Tanzi (2000) *Policies, Institutions and the Dark Side of Economics*. Cheltenham: Edward Elgar.

Treisman Daniel (1999), "The Causes of Corruption: A Cross Country Study" University of California, Los Angeles.

Treisman, Daniel (2000): "The causes of corruption: a cross national study", *Journal of Public Economics*, vol. 76, pp. 399-457

The Hungarian Gallup Institute (1999) "Basic Methodological Aspects Of Corruption Measurement: Lessons Learned From The Literature And The Pilot Study.

Tina Soreide, (2003), "Estimating Corruption: Comments on Available Data" Chr. Michelsen Institute.

Transparency International (CPI 1995-2005) CPI and other news bulletin.

Treisman, Daniel (2000): "The causes of corruption: a cross national study", *Journal of Public Economics*, vol. 76.

Usha Nair-Reichert,Diana Weinhold, (2000), "Causality Tests for Cross-Country Panels: New Look at FDI and Economic Growth in Developing Countries" London School of Economics

Wedeman, A. (1997): "Looters, rent-scrapers, and dividend-collectors: Corruption and growth in Zaïre, South Korea, and the Philippines", *The Journal of Developing Areas*, 31: 457–478.

Wei, Shang-Jin (1997b): "Why is corruption so much more taxing than tax? Arbitrariness kills", *NBER Working Paper* 6255, Cambridge, MA.

Wei, S.-J (2000): "Bribery in the economies", *Working Paper*, Brookings.

Wei, Shang-Jin (2000a): "Natural openness and good government", *NBER Working Paper* 7765 (June).

William L Miller (2004). "Perceptions, Experience and Lies : Measuring Corruption". IIPE (International Institute for Public Ethics) Biennial Conference: TI/KCELJAG Workshop on Measuring Corruption (4-6 Oct 2002) at Griffith University, Brisbane.

APPENDEX

TI 2005 Corruption Perceptions Index				
Country rank	Country	2005 CPI score*	Confidence range**	Surveys used***
1	Iceland	9.7	9.5 - 9.7	8
2	Finland	9.6	9.5 - 9.7	9
	New Zealand	9.6	9.5 - 9.7	9
4	Denmark	9.5	9.3 - 9.6	10
5	Singapore	9.4	9.3 - 9.5	12
6	Sweden	9.2	9.0 - 9.3	10
7	Switzerland	9.1	8.9 - 9.2	9
8	Norway	8.9	8.5 - 9.1	9
9	Australia	8.8	8.4 - 9.1	13
10	Austria	8.7	8.4 - 9.0	9
11	Netherlands	8.6	8.3 - 8.9	9
	United Kingdom	8.6	8.3 - 8.8	11
13	Luxembourg	8.5	8.1 - 8.9	8
14	Canada	8.4	7.9 - 8.8	11
15	Hong Kong	8.3	7.7 - 8.7	12
16	Germany	8.2	7.9 - 8.5	10
17	USA	7.6	7.0 - 8.0	12
18	France	7.5	7.0 - 7.8	11
19	Belgium	7.4	6.9 - 7.9	9
	Ireland	7.4	6.9 - 7.9	10
21	Chile	7.3	6.8 - 7.7	10
	Japan	7.3	6.7 - 7.8	14
23	Spain	7	6.6 - 7.4	10
24	Barbados	6.9	5.7 - 7.3	3
25	Malta	6.6	5.4 - 7.7	5
26	Portugal	6.5	5.9 - 7.1	9
27	Estonia	6.4	6.0 - 7.0	11
28	Israel	6.3	5.7 - 6.9	10
	Oman	6.3	5.2 - 7.3	5
30	United Arab Emirates	6.2	5.3 - 7.1	6
31	Slovenia	6.1	5.7 - 6.8	11
32	Botswana	5.9	5.1 - 6.7	8
	Qatar	5.9	5.6 - 6.4	5
	Taiwan	5.9	5.4 - 6.3	14
	Uruguay	5.9	5.6 - 6.4	6
36	Bahrain	5.8	5.3 - 6.3	6
37	Cyprus	5.7	5.3 - 6.0	5
	Jordan	5.7	5.1 - 6.1	10
39	Malaysia	5.1	4.6 - 5.6	14
40	Hungary	5	4.7 - 5.2	11
	Italy	5	4.6 - 5.4	9
	South Korea	5	4.6 - 5.3	12
43	Tunisia	4.9	4.4 - 5.6	7
44	Lithuania	4.8	4.5 - 5.1	8
45	Kuwait	4.7	4.0 - 5.2	6
46	South Africa	4.5	4.2 - 4.8	11
47	Czech Republic	4.3	3.7 - 5.1	10
	Greece	4.3	3.9 - 4.7	9
	Namibia	4.3	3.8 - 4.9	8

	Slovakia	4.3	3.8 - 4.8	10
51	Costa Rica	4.2	3.7 - 4.7	7
	El Salvador	4.2	3.5 - 4.8	6
	Latvia	4.2	3.8 - 4.6	7
	Mauritius	4.2	3.4 - 5.0	6
55	Bulgaria	4	3.4 - 4.6	8
	Colombia	4	3.6 - 4.4	9
	Fiji	4	3.4 - 4.6	3
	Seychelles	4	3.5 - 4.2	3
59	Cuba	3.8	2.3 - 4.7	4
	Thailand	3,8	3.5 - 4.1	13
	Trinidad and Tobago	3,8	3.3 - 4.5	6
62	Belize	3.7	3.4 - 4.1	3
	Brazil	3,7	3.5 - 3.9	10
64	Jamaica	3.6	3.4 - 3.8	6
65	Ghana	3.5	3.2 - 4.0	8
	Mexico	3.5	3.3 - 3.7	10
	Panama	3.5	3.1 - 4.1	7
	Peru	3.5	3.1 - 3.8	7
	Turkey	3.5	3.1 - 4.0	11
70	Burkina Faso	3.4	2.7 - 3.9	3
	Croatia	3.4	3.2 - 3.7	7
	Egypt	3.4	3.0 - 3.9	9
	Lesotho	3.4	2.6 - 3.9	3
	Poland	3.4	3.0 - 3.9	11
	Saudi Arabia	3.4	2.7 - 4.1	5
	Syria	3.4	2.8 - 4.2	5
77	Laos	3.3	2.1 - 4.4	3
78	China	3.2	2.9 - 3.5	14
	Morocco	3.2	2.8 - 3.6	8
	Senegal	3.2	2.8 - 3.6	6
	Sri Lanka	3.2	2.7 - 3.6	7
	Suriname	3.2	2.2 - 3.6	3
83	Lebanon	3.1	2.7 - 3.3	4
	Rwanda	3.1	2.1 - 4.1	3
85	Dominican Republic	3	2.5 - 3.6	6
	Mongolia	3	2.4 - 3.6	4
	Romania	3	2.6 - 3.5	11
88	Armenia	2.9	2.5 - 3.2	4
	Benin	2.9	2.1 - 4.0	5
	Bosnia and Herzegovina	2.9	2.7 - 3.1	6
	Gabon	2.9	2.1 - 3.6	4
	India	2.9	2.7 - 3.1	14
	Iran	2.9	2.3 - 3.3	5
	Mali	2.9	2.3 - 3.6	8
	Moldova	2.9	2.3 - 3.7	5
	Tanzania	2.9	2.6 - 3.1	8
97	Algeria	2.8	2.5 - 3.3	7
	Argentina	2.8	2.5 - 3.1	10
	Madagascar	2.8	1.9 - 3.7	5
	Malawi	2.8	2.3 - 3.4	7
	Mozambique	2.8	2.4 - 3.1	8
	Serbia and Montenegro	2.8	2.5 - 3.3	7
103	Gambia	2.7	2.3 - 3.1	7
	Macedonia	2.7	2.4 - 3.2	7
	Swaziland	2.7	2.0 - 3.1	3

	Yemen	2.7	2.4 - 3.2	5
107	Belarus	2.6	1.9 - 3.8	5
	Eritrea	2.6	1.7 - 3.5	3
	Honduras	2.6	2.2 - 3.0	7
	Kazakhstan	2.6	2.2 - 3.2	6
	Nicaragua	2.6	2.4 - 2.8	7
	Palestine	2.6	2.1 - 2.8	3
	Ukraine	2.6	2.4 - 2.8	8
	Vietnam	2.6	2.3 - 2.9	10
	Zambia	2.6	2.3 - 2.9	7
	Zimbabwe	2.6	2.1 - 3.0	7
117	Afghanistan	2.5	1.6 - 3.2	3
	Bolivia	2.5	2.3 - 2.9	6
	Ecuador	2.5	2.2 - 2.9	6
	Guatemala	2.5	2.1 - 2.8	7
	Guyana	2.5	2.0 - 2.7	3
	Libya	2.5	2.0 - 3.0	4
	Nepal	2.5	1.9 - 3.0	4
	Philippines	2.5	2.3 - 2.8	13
	Uganda	2.5	2.2 - 2.8	8
126	Albania	2.4	2.1 - 2.7	3
	Niger	2.4	2.2 - 2.6	4
	Russia	2.4	2.3 - 2.6	12
	Sierra Leone	2.4	2.1 - 2.7	3
130	Burundi	2.3	2.1 - 2.5	3
	Cambodia	2.3	1.9 - 2.5	4
	Congo, Republic of	2.3	2.1 - 2.6	4
	Georgia	2.3	2.0 - 2.6	6
	Kyrgyzstan	2.3	2.1 - 2.5	5
	Papua New Guinea	2.3	1.9 - 2.6	4
	Venezuela	2.3	2.2 -2.4	10
137	Azerbaijan	2.2	1.9 - 2.5	6
	Cameroon	2.2	2.0 - 2.5	6
	Ethiopia	2.2	2.0 - 2.5	8
	Indonesia	2.2	2.1 - 2.5	13
	Iraq	2.2	1.5 - 2.9	4
	Liberia	2.2	2.1 - 2.3	3
	Uzbekistan	2.2	2.1 - 2.4	5
144	Congo, Democratic Republic	2.1	1.8 - 2.3	4
	Kenya	2.1	1.8 - 2.4	8
	Pakistan	2.1	1.7 - 2.6	7
	Paraguay	2.1	1.9 - 2.3	7
	Somalia	2.1	1.6 - 2.2	3
	Sudan	2.1	1.9 - 2.2	5
	Tajikistan	2.1	1.9 - 2.4	5
151	Angola	2	1.8 - 2.1	5
152	Cote d'Ivoire	1.9	1.7 - 2.1	4
	Equatorial Guinea	1.9	1.6 - 2.1	3
	Nigeria	1.9	1.7 - 2.0	9
155	Haiti	1.8	1.5 - 2.1	4
	Myanmar	1.8	1.7 - 2.0	4
	Turkmenistan	1.8	1.7 - 2.0	4
158	Bangladesh	1.7	1.4 - 2.0	7
	Chad	1.7	1.3 - 2.1	6

WORLD BANK INDEX ON CONTROL OF CORRUPTION

COUNTRY	2004	2002	2000	1998	1996
AFGHANISTAN	-1.33	-1.32	-1.56	N/A	N/A
ALBANIA	-0.72	-0.83	-0.61	-0.92	0.05
ALGERIA	-0.49	-0.72	-0.62	-0.7	-0.34
AMERICAN SOMAO	0.06	N/A	N/A	N/A	N/A
ANDORRA	1.17	1.29	N/A	N/A	N/A
ANGOLA	-1.12	-1.17	-1.44	-1.05	-1
ANGUILLA	0.78	N/A	N/A	N/A	N/A
ANTIGUA BARBUDA	0.88	0.84	N/A	N/A	N/A
ARGENTINA	-0.44	-0.78	-0.34	-0.22	-0.12
ARMENIA	-0.53	-0.69	-0.74	-0.71	-0.65
ARUBA	1.17	N/A	N/A	N/A	N/A
AUSTRALIA	2.02	1.87	2.07	2.21	1.86
AUSTRIA	2.1	1.85	1.95	2.02	1.66
AZERBAIJAN	-1.04	-1.04	-1.06	-1.01	-0.97
BAHAMAS	1.36	1.41	0.87	0.67	0.37
BAHRAIN	0.76	0.96	0.38	0.41	0.08
BANGLADESH	-1.09	-0.95	-0.6	-0.4	-0.47
BARBADOS	0.81	1.29	N/A	N/A	N/A
BELARUS	-0.91	-0.76	-0.05	-0.6	-0.92
BELGIUM	1.53	1.61	1.38	1.23	1.12
BELIZE	-0.07	-0.24	0.18	-0.29	N/A
BENIN	-0.34	-0.52	0	-0.76	N/A
BERMUDA	0.88	1.29	N/A	N/A	N/A
BHUTAN	0.69	0.88	0.55	0.46	N/A
BOLIVIA	-0.78	-0.82	-0.65	-0.41	-0.87
BOSNIA-HERZEGOVINA	-0.54	-0.61	-0.48	-0.35	N/A
BOTSWANA	0.86	0.8	1.02	0.53	0.4
BRAZIL	-0.15	-0.06	0.04	0.1	-0.11
BRUNEI	0.23	0.32	-0.12	0.06	0.37
BULGARIA	-0.04	-0.15	-0.13	-0.5	-0.67
BURKINA FASO	-0.35	0.13	-0.68	-0.51	-0.31
BURUNDI	-1.16	-0.98	-1.27	-0.8	N/A
CAMBODIA	-0.97	-0.95	-0.72	-1.27	-0.94
CAMEROON	-0.78	-1.04	-1.05	-1.11	-1.1
CANADA	1.99	2.05	2.32	2.51	2.14
CAPE VERDE	0.31	0.46	0.32	-0.29	N/A
CAYMAN ISLANDS	1.17	1.29	N/A	N/A	N/A
CENTRAL AFRICAN REPUBLIC	-1.36	-1.17	-1.02	-0.55	N/A
CHAD	-1.14	-0.94	-0.57	-0.84	N/A
CHILE	1.44	1.53	1.56	1.2	1.28
CHINA	-0.51	-0.35	-0.34	-0.14	-0.01
COLOMBIA	-0.16	-0.51	-0.4	-0.61	-0.43
COMOROS	-1.14	-0.92	-0.97	-0.8	N/A
CONGO	-1.02	-1.02	-0.98	-0.99	-0.81
CONGO, DEM. REP.	-1.31	-1.42	-1.49	-1.58	-1.98
COOK ISLANDS	-0.24	0.03	-0.22	N/A	N/A

COSTA RICA	0.78	0.91	1.05	0.71	0.76
COTE D'IVOIRE	-1.01	-0.92	-0.6	-0.35	0.41
CROATIA	0.08	0.25	0.04	-0.33	-0.48
CUBA	-0.62	-0.16	-0.32	-0.29	0.01
CYPRUS	0.8	0.89	1.11	1.38	1.58
CZECH REPUBLIC	0.3	0.36	0.4	0.35	0.59
DENMARK	2.38	2.25	2.38	2.57	2.24
DJIBOUTI	-0.94	-0.72	-1.15	-0.8	N/A
DOMINICA	0.25	0.54	-0.19	-0.29	N/A
DOMINICAN REPUBLIC	-0.5	-0.4	-0.3	-0.53	-0.33
ECUADOR	-0.75	-1	-0.96	-0.74	-0.75
EGYPT	-0.21	-0.28	-0.17	-0.25	0.11
EL SALVADOR	-0.39	-0.49	-0.16	-0.27	-0.75
EQUATORIAL GUINEA	-1.65	-1.86	-2.05	-0.8	N/A
ERITREA	-0.64	-0.09	0.08	0.46	N/A
ESTONIA	0.82	0.72	0.78	0.49	0.05
ETHIOPIA	-0.85	-0.32	0.06	-0.25	-0.98
FIJI	-0.14	0.15	0.53	0.2	N/A
FINLAND	2.53	2.45	2.56	2.55	2.23
FRANCE	1.44	1.39	1.48	1.75	1.39
FRENCH GUIANA	0.59	0.84	N/A	N/A	N/A
GABON	-0.58	-0.52	-0.74	-0.9	-1.24
GAMBIA	-0.61	-0.74	-0.15	-0.49	0.37
GEORGIA	-0.91	-1.03	-0.71	-0.64	-1.05
GERMANY	1.9	1.81	1.74	2.21	1.76
GHANA	-0.17	-0.39	-0.34	-0.44	-0.47
GREECE	0.56	0.58	0.82	0.85	0.37
GRENADA	0.52	0.73	0.19	-0.04	N/A
GUAM	0.45	N/A	N/A	N/A	N/A
GUATEMALA	-0.74	-0.71	-0.64	-0.63	-0.96
GUINEA	-0.81	-0.66	-0.41	-0.82	0.37
GUINEA-BISSAU	-0.71	-0.59	-0.53	-0.57	-0.98
GUYANA	-0.35	-0.48	-0.37	-0.26	-0.31
HAITI	-1.49	-1.68	-1	-0.85	-0.98
HONDURAS	-0.71	-0.76	-0.64	-0.75	-0.97
HONG KONG	1.57	1.43	1.52	1.73	1.5
HUNGARY	0.65	0.59	0.78	0.69	0.63
ICELAND	2.43	2.19	2.49	2.33	1.77
INDIA	-0.31	-0.36	-0.25	-0.17	-0.31
INDONESIA	-0.9	-1.15	-1	-0.95	-0.47
IRAN	-0.59	-0.36	-0.59	-0.63	-0.83
IRAQ	-1.45	-1.44	-1.18	-1.37	-1.36
IRELAND	1.61	1.67	1.57	2.15	1.84
ISRAEL	0.79	1.03	1.27	1.41	1.48
ITALY	0.66	0.8	0.91	1	0.46
JAMAICA	-0.52	-0.45	-0.17	-0.26	-0.33
JAPAN	1.19	1.2	1.39	1.16	1.22
JORDAN	0.35	0.04	0.15	0.21	-0.1
KAZAKHSTAN	-1.1	-1.06	-0.85	-0.86	-0.85
KENYA	-0.89	-1.09	-1.04	-0.92	-1.05
KIRIBATI	-0.02	0.2	-0.21	-0.55	N/A
KOREA, NORTH	-1.46	-1.17	-0.93	-0.55	-0.31
KOREA, SOUTH	0.17	0.36	0.37	0.11	0.54
KUWAIT	0.71	1.01	0.9	1.07	0.63

KYRGYZ REPUBLIC	-0.92	-0.83	-0.85	-0.69	-0.79
LAOS	-1.15	-0.97	-0.81	-0.7	-0.94
LATVIA	0.23	0.09	0.04	-0.1	-0.56
LEBANON	-0.51	-0.37	-0.5	-0.32	-0.18
LESOTHO	-0.05	-0.18	0.32	0.03	N/A
LIBERIA	-0.86	-1.3	-1.29	-1.44	-1.66
LIBYA	-0.91	-0.79	-0.91	-0.91	-0.9
LIECHTENSTEIN	1.69	1.29	N/A	N/A	N/A
LITHUANIA	0.36	0.26	0.29	0.07	-0.13
LUXEMBOURG	2.16	2.17	2.07	2.17	1.8
MACAO	1.65	-0.07	N/A	N/A	N/A
MACEDONIA	-0.52	-0.73	-0.45	-0.3	-0.99
MADAGASCAR	-0.15	0.05	-0.76	-0.8	0.37
MALAWI	-0.83	-0.85	-0.21	-0.5	-0.99
MALAYSIA	0.29	0.36	0.28	0.73	0.51
MALDIVES	0.12	-0.05	-0.45	-0.55	N/A
MALI	-0.52	-0.11	-0.54	-0.58	-0.31
MALTA	1.25	0.8	0.21	0.67	0.37
MARSHALL ISLANDS	-0.84	-1.06	-0.73	-0.55	N/A
MARTINIQUE	0.69	0.84	N/A	N/A	N/A
MAURITANIA	0.02	0.2	-0.66	-0.29	N/A
MAURITIUS	0.33	0.49	0.59	0.2	0.48
MEXICO	-0.27	-0.21	-0.36	-0.39	-0.34
MICRONESIA	-0.3	-0.26	-0.35	-0.29	N/A
MOLDOVA	-0.86	-0.9	-0.84	-0.51	-0.21
MONGOLIA	-0.51	0.11	-0.21	-0.28	0.37
MOROCCO	-0.02	-0.05	0.37	-0.1	0.22
MOZAMBIQUE	-0.79	-0.84	-0.32	-0.77	-0.52
MYANMAR	-1.49	-1.36	-1.23	-1.3	-1.17
NAMIBIA	0.18	0.16	1.13	0.24	0.77
NEPAL	-0.61	-0.37	-0.56	-0.59	-0.28
NETHERLANDS	2.08	2.16	2.36	2.48	2.13
NETHERLANDS ANTILLES	1.02	N/A	N/A	N/A	N/A
NEW ZEALAND	2.38	2.27	2.38	2.55	2.22
NICARAGUA	-0.34	-0.46	-0.88	-0.75	-0.15
NIGER	-0.87	-1.06	-0.84	-0.88	-0.31
NIGERIA	-1.11	-1.32	-1.06	-1.01	-1.2
NORWAY	2.11	1.99	2.13	2.35	2.01
OMAN	0.78	1	0.75	0.89	0.12
PAKISTAN	-0.87	-0.81	-0.8	-0.76	-0.98
PANAMA	-0.06	-0.24	-0.33	-0.28	-0.5
PAPUA NEW GUINEA	-0.9	-0.75	-0.85	-0.7	-0.27
PARAGUAY	-0.99	-1.2	-1.01	-0.97	-0.5
PERU	-0.35	-0.23	-0.07	-0.17	-0.1
PHILIPPINES	-0.55	-0.5	-0.46	-0.26	-0.4
POLAND	0.16	0.4	0.49	0.49	0.41
PORTUGAL	1.23	1.33	1.44	1.56	1.22
PUERTO RICO	0.88	1.18	1.41	1.46	1.18
QATAR	0.55	0.92	0.74	0.81	-0.06
REUNION	1.02	N/A	N/A	N/A	N/A
ROMANIA	-0.25	-0.32	-0.45	-0.38	-0.18
RUSSIA	-0.72	-0.92	-1.02	-0.69	-0.74
RWANDA	-0.36	-0.34	0.06	-0.55	N/A
SAMOA	0.05	0.22	-0.12	-0.29	N/A

SAO TOME AND PRINCIPE	-0.66	-0.31	0.06	-0.8	N/A
SAUDI ARABIA	0.15	0.51	0.11	0.35	-0.32
SENEGAL	-0.4	-0.19	-0.38	-0.45	-0.39
SERBIA AND MONTENEGRO	-0.48	-0.74	-1.05	-0.97	-0.92
SEYCHELLES	0.01	0.35	0.19	-0.29	N/A
SIERRA LEONE	-0.88	-0.79	-0.79	-0.72	-1.66
SINGAPORE	2.44	2.32	2.51	2.5	2.18
SLOVAK REPUBLIC	0.39	0.29	0.27	-0.08	0.41
SLOVENIA	0.97	0.91	1.1	0.83	1.05
SOLOMON ISLANDS	-1.23	-1.58	-0.95	-0.55	N/A
SOMALIA	-1.58	-1.18	-1.6	-1.44	-1.66
SOUTH AFRICA	0.48	0.35	0.57	0.42	0.63
SPAIN	1.45	1.44	1.69	1.59	0.77
SRI LANKA	-0.16	-0.13	-0.09	-0.24	-0.23
ST. KITTS AND NEVIS	0.34	0.41	0.19	-0.04	N/A
ST. LUCIA	0.29	0.41	0.58	-0.04	N/A
ST. VINCENT AND THE GRENADINES	0.34	0.41	0.19	-0.04	N/A
SUDAN	-1.3	-1.03	-1.08	-0.75	-1.08
SURINAME	0.36	0.19	0.21	0.06	-0.31
SWAZILAND	-0.95	-0.3	-0.13	-0.19	N/A
SWEDEN	2.2	2.24	2.5	2.55	2.19
SWITZERLAND	2.17	2.17	2.24	2.58	2.11
SYRIA	-0.74	-0.28	-0.72	-0.58	-0.71
TAIWAN	0.64	0.72	0.67	0.86	0.74
TAJIKISTAN	-1.11	-1.07	-1.05	-1.12	-1.64
TANZANIA	-0.57	-0.97	-0.97	-0.95	-1.03
THAILAND	-0.25	-0.28	-0.3	-0.26	-0.32
TIMOR, EAST	-0.29	-0.52	N/A	N/A	N/A
TOGO	-0.92	-0.68	-0.63	-0.45	-0.98
TONGA	-0.68	-0.73	-0.59	-0.29	N/A
TRINIDAD AND TOBAGO	0.02	-0.04	0.38	0.13	0.33
TUNISIA	0.29	0.44	0.7	0.11	-0.05
TURKEY	-0.23	-0.4	-0.28	-0.01	0.08
TURKMENISTAN	-1.34	-1.21	-1.12	-1.13	-1.43
TUVALU	-0.78	0.47	-0.07	N/A	N/A
UGANDA	-0.71	-0.92	-0.86	-0.62	-0.52
UKRAINE	-0.89	-0.97	-0.96	-0.89	-0.74
UNITED ARAB EMIRATES	1.23	1.17	0.69	0.78	0.19
UNITED KINGDOM	2.06	1.93	2.19	2.33	1.91
UNITED STATES	1.83	1.75	1.79	1.95	1.71
URUGUAY	0.5	0.81	0.76	0.42	0.45
UZBEKISTAN	-1.21	-1.03	-0.8	-0.98	-0.99
VANUATU	-0.53	-0.83	-0.83	-0.29	N/A
VENEZUELA	-0.94	-0.94	-0.61	-0.77	-0.72
VIETNAM	-0.74	-0.67	-0.71	-0.6	-0.64
VIRGIN ISLANDS (U.S.)	0.88	N/A	N/A	N/A	N/A
WEST BANK/GAZA	-0.6	-0.92	0.79	0.49	N/A
YEMEN	-0.84	-0.7	-0.67	-0.57	-0.25
ZAMBIA	-0.74	-0.91	-0.82	-0.56	-0.98
ZIMBABWE	-1.01	-1.22	-0.87	-0.13	-0.12

Exhibit 1

The Opacity Index

Country	Category					OPA	Opacity Premium/ Discount (%)
	COR	LEG	ENF	ACC	REG		
Finland	3	15	21	17	9	19	-1.83
United Kingdom	20	3	25	33	13	19	-0.44
Denmark	6	15	21	33	19	19	-0.44
Sweden	8	21	21	25	19	19	-0.31
Hong Kong	26	12	14	33	15	20	0.21
USA	28	19	27	20	10	21	0.00
Australia	19	16	26	33	10	21	0.00
Switzerland	20	27	20	25	21	23	0.40
Austria	21	11	32	33	17	23	0.42
Belgium	28	25	30	17	14	23	0.42
Canada	26	7	37	20	16	23	0.48
Singapore	15	19	25	50	10	24	0.65
Netherlands	16	21	22	38	23	24	0.67
Germany	28	14	33	17	32	25	0.86
Ireland	33	19	29	38	9	26	1.03
Japan	38	24	31	22	22	28	1.51
Chile	41	24	30	40	17	29	1.71
Israel	33	30	44	20	25	30	2.09
Taiwan	47	33	20	40	28	34	2.83
S. Africa	65	34	28	33	18	34	2.85
Spain	39	25	32	50	23	34	2.86
Malaysia	55	35	28	30	26	35	3.08
Thailand	72	33	29	20	31	35	3.11
Portugal	37	26	31	50	32	35	3.22
Hungary	51	31	36	50	24	36	3.40
Korea	61	35	22	30	37	37	3.52
France	59	47	31	33	32	37	3.53
Brazil	47	48	32	40	35	40	4.29
Poland	63	38	42	40	19	41	4.43
Greece	58	30	36	50	30	41	4.43
Czech Rep	61	35	35	44	35	41	4.66
Ecuador	64	60	34	25	29	42	4.78
Colombia	67	61	45	29	21	43	4.81
Italy	52	32	45	63	24	43	4.94
Turkey	67	41	27	44	36	43	4.95
Mexico	65	60	35	33	25	44	5.01
Argentina	65	64	33	30	27	44	5.06
Pakistan	75	49	47	33	22	45	5.35
Saudi Arabia	61	34	32	33	69	46	5.52
Russia	78	44	39	40	31	46	5.64
Egypt	71	37	39	40	51	48	6.01
India	74	44	49	30	46	48	6.09
Nigeria	80	65	48	0	60	49	6.32
China	74	39	39	56	43	50	6.49
Philippines	75	56	52	33	39	50	6.51
Venezuela	75	68	49	30	30	51	6.56
Lebanon	83	60	65	44	42	59	8.47
Indonesia	82	54	90	22	49	59	8.54