Pakistan Journal of Applied Economics: Special Issue 2016, (43-70)

DEMOCRACY-GOVERNANCE-CORRUPTION NEXUS: Evidence from Developing Countries

Saranjam BAIG* and Yi FENG**

Abstract

In contrast to the arguments by the existing literature on corruption and democracy that democratic countries have lesser corruption, this paper argues that democracy, by itself, may not be a corruption-deterring institution. The authors, however, suggest that democracies coupled with effective governance structures are the ones to mitigate corruption. Despite the ubiquity of literature on corruption, missing in the academic scholarship is the question whether the impact of political institutions on corruption is conditional on governance effectiveness, although democracy and corruption are the phenomena for which the governance effectiveness of a country could be an important factor. Most importantly, the existing literature has failed to answer the question whether democracies always affect corruption in the same way, regardless of the country's governance effectiveness and capacity. Little attention has been paid on democracy-governance-corruption nexus. By assuming that democracies and political institutions are not corruption-deterring institutions, in themselves, at least in developing countries, this paper hypothesizes that the lack of governance effectiveness is a key driver of corruption. This comparative analysis of 98 developing countries for the years 2002-2010 using ordinary least-squares and two-stage least squares methods with lags as instrumental variables supports the authors' hypotheses using different measures of corruption (the World Bank's Control of Corruption Index and the Transparency International's Corruption Perceptions Index). The explanatory power of governance effectiveness is at least as important as conventionally accepted causes of corruption such as economic development.

I. Introduction

The persistence and uniformity of rampant corruption in developing countries suggest that they share common drivers of corruption [Khan (2006)]. On the one hand, understanding the determinants of corruption is crucial for any successful anti-corruption campaign. On the other hand, the failure of anti-corruption policiesin developing countries suggested by conventional economic and political analysis provides a rationale for a detailed investigation of corruption dynamics in these countries.

In the last two decades, the burgeoning academic scholarship on corruption and its correlates has helped shape the subject of corruption into a distinct study. Despite

* Assistant Professor, Department of Economics, Karakoram International University, Pakistan, **Professor, and Luther Lee Jr. Memorial Chair in Government at School of Social Science, Policy and Evaluation, Claremont Graduate Uni-versity, California, USA.

the fact that there is no single agreed-upon theoretical framework [Alt and Lassen (2003)], the previous literature has done a remarkable progress in examining the causes and consequences of corruption. These studies have extensively investigated the relationships between various explanatory variables and corruption. The ambit of these studies include but is not limited to demographics to culture, democracy to autocracy, economic development to inequality, ethnic fractionalization to religious diversity, political competition to bureaucratic quality, and government interventions in the economy to privatization for a detailed survey [see, Lambsdorff {(1999), (2005)}, Rose-Ackerman (1999), Triesman (2000), Lederman, et al. (2005), Jain (2011)].

In particular, one strand of literature has consistently emphasized on the negative relationship of corruption-political institutions nexus [see for example, Alt and Lassen (2003), Perrson, et al. (2001), Gerring and Thacker (2004), Aidt (2003), Triesman (2000)]. However, missing in their academic scholarship is the question whether the impact of political institutions and their economic policies on corruption is conditional on governance capacities,[1] although democracy and corruption are the phenomena for which the governance capacity of a country could be an important factor. Then, the question arises whether democracies and their economic policies always affect corruption in the same way regardless of the country's governance capacity. Xin and Rudel (2004), however, argue that democracy in a country provides only a partial measure for government legitimacy.

Yet, with few exceptions, all of the existing studies examining the links between democracy and corruption implicitly assume that political institutions of democracy and their economic policies are corruption-deterring institutions, in themselves. Little attention has been paid on democracy-governance capacity-corruption nexus. By assuming that democracies and political institutions are not corruption-deterring institutions, in themselves, at least in developing countries, this research hypothesizes that the lack of governance capacityis a key driver of corruptionin developing countries. This is in tradition to Huntington (1968), Shleifer and Vishny (1993), and Khan (2006), who have held under developed institutions, weak state machines, central governments, and weak governance capacities responsible for the pervasiveness of corruption, respectively. A similar analogy, is suggested by Aidt (2003) who relates weak political, administrative, and legal institutions to incidence of corruption, on the premise that weak institutions may create incentives for officials to exploit their discretionary power to extract or create rents. Yet their discussions are limited to theoretical frameworks with a focus on conventional definition of political institutions and do not shed light exclusively on the dynamics of corruption and governance capacities in developing countries.

[1] The study use governance capacity, governance effectiveness, and institutional quality as synonyms in this research.

The study of institutions, both theoretical and empirical, has gained much attention in contemporary political science and economics [Gerring and Thacker (2004), Lederman (2005)]. Although, the importance of the quality of institutions in deterring corruption has been rightly recognized [Rose-Ankerman (2004), Lambsdorff (2003), Aidt (2009)], there have been few attempts to examine the relationships between institutional quality and corruption in an empirical, cross-national setting that focuses exclusively on developing countries. This research aims to fill the gap by modifying the theoretic-agency models by relaxing the assumption of endogeneity of governance capacities in democracies and political institutions. Based on this modified agency-model, the empirical strategy assesses the effects of democracies, conditional on governance capacities, on corruption.

Conventional economic and political analysis refers institutions to democracy, autocracy, press freedom, judiciary and such like factors. Without denying their existence and importance, this research, however, distinguishes between the governance capacity and institutions. The governance capacity defines the quality and capacity of the institutions to implement rule of the law, and their ability to design policies. This is in conformity with [Rose-Ankerman (1999), (2004) and Klitgaard (1998), (1988)] who have continuously advocated a compressive reform agenda in order to make the anti-corruption policies successful.

Distinguishing institutions and their governance capacities in developing countries builds on the contention presented by Khan (2006) that developing countries following the policies of democratization, low government interventions, active civil participations, and wage compensations without building state governance capacities may not reduce levels of corruption. Moreover, Ocampo (1993)'s assertion that "corruption in Sweden and Nigeria are just not the same. To use the same for completely different situations can only generate confusion", as echoed in Johnston (2001), provides the backdrop to our theoretical and empirical analysis. Moreover, this research takes a critical look at the link between corruption and governance capacities and has broad policy implications.

The rest of the paper is organized as follows. Section II discusses theoretical framework and related literature. Section III outlines the empirical strategy whereas, Section IV explains the empirical evidence. The concluding remarks and policy implications are discussed in Section V.

II. Theoretical Framework and Related Literature

Conventional economic and political analysis on corruption has an implicit assumption about the endogeneity of governance capacities in democracies and political institutions. As Shleifer and Vishny (1993) argue, that the presence of competition and the availability of substitutes in the US have kept the corruption to zero. In line of agreement with Shleifer and Vishny (1993) are the arguments of Alt

and Lassen (2003), Perrson, at al. (2001), Gerring and Thacker (2004), Lederman (2005), who all have suggested that lower corruption is associated with democracies. This rests on the contention that political systems that make politicians to face electorate by allowing for clean and transparent elections will have lower levels of corruption [Lederman, et al. (2005)]. However, to allow for clean and transparent elections, existence of rule of law, quality of the institutions and policy, and the effectiveness of the state organs to conduct state functions is a necessary condition in any polity. Yet, common in the aforementioned is the agreement on the endogeneity of governance capacities in all the political institutions including democracies with unitary or parliamentary electoral systems. For instance, Lederman (2005) considers political competition, political accountability, transparency, reducing information asymmetries, and nature of the institutional design important for inhibiting corruption in any polity, yet his empirical strategy takes elections, decentralization, and regimes proxy for institutional design. Alt and Lassen (2003), Perrson, et al. (2001), Gerring and Thacker (2004), Aidt (2003) follow the same tradition.

However, Shleifer and Vishny (1993) also show that weak governments, mostly in developing, and authoritarian regimes - those who cannot fire or penalize public officials - can have higher levels of corruption, which this research examines empirically. Countries in the developing world with a history of sustainable democracies do not necessarily have lower levels of corruption. India - the World is largest democracy-for instance, has a durable democracy, yet with high levels of corruption. On the other hand, countries like Singapore with a record of low civil liberties are among the least corrupt countries in the world. In developing countries without critical governance capacities, the relationship between corruption and social and cultural factors, regime types, economic development, and liberalization of economic policies may lead to ambiguous outcomes [Khan (2006)].

In this backdrop, how do the governance capacities (quality and effectiveness of policy and institutions; rule of law; accountability) interact with the conventional political and economic institutions to influence the opportunities for corruption and rent seeking in developing countries builds the rest of the research agenda. To empirically test these conjectures within an agency-theoretic model, we borrow and modify a political agency model, in the tradition of Frejohn (1986) and Persson, et al. (1997), however, relying heavily on Alt and Lassen (2003).In a conventional neo-institutional economics and political agency model, the preferences of a public official can be presented as:

$$U^P(c) = U(c) + \rho(c, \beta)\, \delta V^P \rightarrow \qquad (1)$$

where politician's expected utility, $U^P(c)$, is positively related to the level of corruption, c, in current period as well as to expected future corruption, $\rho(c, \beta)\, \delta V^P$. Moreover, $\rho(c, \beta)$ represents probability of reelection or reappointment whereas δV^P stands for discounted reelection or reappointment value. β capture the con-

ventional economic and political institutions that hold politicians responsible for their policy choices. In neoclassical economics terms, β is the opportunity cost of being caught and punished. Higher the β, lower will be the level of rent-extracting, bribes, embezzlement and ultimately the level of corruption. The intuition of the model is that voters will vote out corrupt politicians [Alt and Lassen (2003)]. This model works perfectly for the developed countries as β is implicitly assumed endogeneized with strong governance capacity. Using this agency-model Alt and Lassen, (2003) have assessed the impacts of different political institutions on corruption in American states; showing that the states with campaign expenditure restrictions, direct initiatives and open primaries have lower levels of corruption. In their case β reflects the factors that hold politicians responsible for their actions.[2]

This in the backdrop, one interesting question to examine is whether democracy is a corruption-deterring institution in itself, at least, in developing countries. Shleifer and Vishny (1993), on the one hand, while examining the relationship between corruption and bureaucracy assumes inherent political competition in contemporary democracies. On the other hand, Rose-Ankerman (1999), and Jain (2011) consider institutional reforms a prerequisite for democracies to be able to inhibit corruption. They have argued that elections without institutional reforms are not a cure to corruption. In a similar vein, Jain (2011) and Aidt (2009) have held weak and ineffective institutions responsible for rampant and pervasive corruption. Yet the theoretic-agency models and the empirical investigations based on these models fail to distinguish between reformed and un-reformed political institutions and democracies.

For instance, Gerring and Thacker (2004) while exclusively studying the relationship between democracies and corruption suggest that the democratic and quasi-democratic polities including unitary and parliamentary political systems fosters lower levels of corruption. Despite the fact, they recognize that '….corruption is often a product of poor systems of public administration. Poorly crafted laws and bureaucratic 'red tape' create a situation in which regulations must be broken in order to accomplish needed tasks. This is a recipe for bribery… they have neither adequately developed the relationship corruption and public administration in their empirical model no bureaucratic corruption is taken into account.

Applying this model, as it is, to a set of developing countries would not be without distortions. If there is s reason to believe that reformed and unreformed institutions will not yield the same outcomes, then, we must redefine the utility-maximizing rule. By relaxing the assumption of inherent institutional competitiveness, we now assume that ß by itself doesn't reflect the quality of policy and institutions, the modified model for developing countries can be written as:

[2] Their variables include political competition, open primaries, progress governors, and campaign financing restrictions.

$$U^P(c) = U(c) + \rho(c, \beta^*\dot{G})\, \delta V^P \quad (2)$$

where, $U^P(c)$ is the expected utility of the public officials. $\dot{G}$ is state's governance capacity; that is a country's a capacity to devise and implement high quality policies, reform its civil service, ability to lower information asymmetries, and implement rule of law. It is pertinent to understand that $\dot{G}$ is distinct from conventional tangible institutions of judiciary, anti-corruption, security, and press. In fact, G is a measure of the effectiveness of these and such like institutions. Precisely, it rests on the premise that the existence of institutions and their governance capacities are distinct things. We assume that the ability of voters to vote out corrupt politicians depends upon $\dot{G}$, not on β alone. It is not a one size-fits-all measure; it will vary according to the specific characteristics of a country.[3]

Two conditions need to be defined. First, voters in democracies can punish the corrupt politicians by voting them out and reward the honest ones by keeping or bringing them in only if $\dot{G}$ is high. Let us assume that G ranges between 0 and 1 with latter showing the highest level of state governance capacities. Then, the quality of governance capacities in developing countries when G =1 become analog to institutions in the developed countries. Due to strong institutional framework and property rights, low information asymmetries, voters in these countries can vote out corruption politicians and reward the honest ones. This is a stage where governance capacities are endogenous to the political institutions; however, very rare in developing countries. On the other hand, if $\dot{G}$ is low, we expect equivocal and fluke outcomes. As Teorell (2007) explains that "how could it be that democracy does not help curbing corruption? It appears to be the case that the electoral mechanism does not work as expected: corrupt politicians are not severely punished at the polls, and regularly they stand good chances for re-election." Therefore, existence of democracy, by itself, may not be a necessary condition to inhibit corruptions in the developing countries.

In addition, assuming that politicians can extract rents and seek bribes without the help of bureaucracy would be misleading. In actuality, the bureaucracy align their interests with incumbent rulers, be it politicians or autocrats, given the former's promotions, and desirable posting and appointments are subject to latter's approval. This alliance allows us to consider both politicians/autocrats and bureaucrats as agents, where the principals are the voters or the civil-society.[4] However, following the tradition of Groenendijk (1997), the basic principal-agent model is amended and turned into a principals-agent model of corruption. In this final version of the model, in the case of bureaucratic corruption the agents are bureaucrats, and the principals are

[3] Klitgarrd (1998), (2006) and Rose-Annkerman (2004), (2007) has provided a detailed and comprehensive anti-corruption policies and strategies.

[4] Lederman (2005) consider a Citizens-governments agency model. This generalized model perfectly suits to our study.

elected, appointed public officials. The principals-agents[5] model corruption for all the public officials, in the developing countries, can be finally written as:

$$U^{O}(c) = U(c) + \rho(c, \beta^{*}\dot{G})\, \delta V^{O}$$

In sum, strong governance capacity is a necessary condition to make the public officials accountable that will ultimately discipline their rent-seeking demeanor and eventually help inhibit corruption levels.

III. Empirical Strategy

This section discusses the methodologies and data used to investigate the hypotheses framed by the theory in the preceding section. The research employed a cross-national regression analysis. The main estimation technique used in this paper is OLS. However, we have used 2SLS and WLS where appropriate. The majority of existing studies agree that panel data analysis is not the appropriate estimation technique for the type of data we are using. That is corruption indices; governance indices, religion index, and ethnic fractionalization index do not show enough 'within country variation' to use the panel estimation techniques. We use an aggregated approach suggested by You and Khagram (2005) that averaging the variables over the period under study minimizes the measurement error. As the corruption indices are susceptible to measurement errors [Triesman (2007)], the aggregate approach suits our analysis. We have averaged the dependent and independent variables over the years 2002-2010.

We chose year 2002 as the starting date due to data availability of the corruption indices for most of the developing countries. The World Bank and Transparency International corruption measures are not available for the years beyond 1996. For the years 1996-2002, data is available only for a handful of countries. The study ended with year 2010 because of data availability. The sample consists of 98 developing countries. By developing countries, we mean the countries ranked as low income, and middle income by the World Bank. For both dependent and independent variables used in this paper, we gathered information from secondary sources such as World Bank, Transparency International, Freedom House, and Polity IV.

Based on the theoretical-framework, our empirical work attempts to answer the question whether the effects of democracies on corruption in developing countries is conditional on strong governance capacities. More generally, we examine what other factors affect corruption and political institutions. To investigate these questions, we estimate variants of the following equations:

[5] Klitgaard (1988) noticed the corruption prone structure is regarded as a 'principal –agent-client model'. The principal recruits an agent to serve himself or a client.

$$Corr_i = \beta_o + \beta_1 x_i + \beta_2 yi + \beta_3 z_i + \beta_4 \check{g}_i + \varepsilon \quad (3)$$

$$Corr_i = \beta_o + \beta_1 x_i + \beta_2 y_i + \beta_3 z_i + \beta_4 \check{g}_i + \beta_5 x_i \check{g}_i + \varepsilon \quad (4)$$

More precisely, for Equation (4), which is our main model, we estimate:

Corruption = β_1 Democracy (Freedom House or Dummy) +
β_2 Governance Effectiveness +
β_3 Democracy × Governance effectiveness +
β_4 Trade openness +
β_5 Rents from natural resources (%GDP) +
β_6 Government revenue (%GDP) +
β_7 Logged GDP per capita +
β_8 Logged Population +
β_9 Ethnic fractionalization(index) +
β_{10} Religion fractionalization(index) +
β_{11} Region Dummies +
μi.

The following sections discuss the variables in detail.

1. Concept and Measures of Corruption

Being a multi-faceted phenomenon, giving a precise and an accurate definition to corruption is not an easy task. However, there have been several attempts to give corruption an appropriate definition. For example, Jain (2001) defines corruption as an act in which the authority of public office is used for private gain in a manner that contravenes the rules of the game. In a similar vein, Groenendijk (1997) suggests corruption to be any unauthorized transaction between agents and a third party. Corruption is the 'sale of government property for private gain', argues Aidt (2009). Yet the most accepted concept of corruption is given by Triesman (2000) as the misuse of public office for personal or private benefits. However, all these definition are slight alterations of each other. The reason being, the constraint imposed by the available subjective measures of corruption. The three widely used corruption measures are; international country risk guide corruption index (ICRG) provided by the Political Risk Services Inc., corruption perceptions index (CPI) provided by the Transparency International and the third one is the control of corruption index (WB) provided by the World Bank.

As these indices measure corruption in an aggregate manner, empirical investigations of corruption using these indices are constrained to define corruption in a broad sense. Misuse of governmental resources by government officials, including politicians, bureaucrats, and all civil servants for their personal benefit seems to be

the only definition that makes sense for the empirical examinations using these indices. Any other possible definition would only be a slight alteration of this one.

The primary measure of corruption used in this research is the World Bank's Control of Corruption Index (WB-CI), which is an estimated unobserved component model [see, Kaufman, et al. (1999), (2005)]. For most of the developing countries, WB-CI is not available for years beyond 2002. Our starting point is, therefore, 2002. As we are following an aggregated approach, our WB-CI is the average of the years 2002–2010 period and ranges from –2.5 to +2.5. Following the tradition, we rescaled the index {COR = − (WB-CI)} so that an increase in the index reflects a higher incidence of corruption. We use the average value of the control of corruption indicator for the period 2002-2010. The index varies from −0.95 (the most corrupt country) to 1.14 (the least corrupt country).

To check robustness of WB-CI estimates, we use CPI, which is a composite index based on individual surveys of corruption. Like WB-CI, the CPI is also the average of 2002-2010 and ranges from 0 to 10 with higher score signifying lower levels of corruption. To make compatible with WB-CI, we rescaled the index (CPI = 10 − CPI) so that a high score reflects higher levels of corruption.

2. Measures of Democracy

In this research, we consider two measures of democracy. First, we consider a dummy variable that takes one for countries where the head of the government is not serving military officer and takes zero for the countries with military officer as the head of the government. The purpose of defining democracy like this is allow the influence of countries like Iran, and China in our estimations and to examine whether countries without electoral reforms can mitigate corruption by otherwise reforming their policy institutions.

The second measure of democracy that we use in our models is the Political Rights, presented as PR throughout the rest of paper. Political rights enable people to participate freely in the political process, including the right to vote freely for distinct alternatives in legitimate elections, compete for public offices, join political parties and organizations, and elect representatives who have a decisive impact on public policies and are accountable to the electorate. Countries are ranked between 1 representing most free and 7 representing least free. We rescaled it to make its interpretation compatible with the remaining democracy indices so as 7 representing the highest degree of Freedom and 1 the lowest measured on a scale of 1-7.

3. Economic Policy and Control Variables

Identifying relevant control variables for a model of corruption is a complex task. The ubiquity of literature on corruption, on the one hand and non-existence

of commonly agreed determinants, on the other hand makes the task more challenging. However, based on our theoretical framework and reviews of literature in the preceding sections, we classify the control variables into three categories: (1) Cultural factors (2) Economic policy variables and (3) Origin dummies.

To start with, cultural factors associated with corruption include variables on religion and ethnic fractionalization. Unlike Triesman (2000), who used percentage of 'Protestants' in a country to capture religion's influence on corruption, we use a more direct measure of religion, conceived by Alesina, et al. (2003)[6] that reflects probability that two randomly selected people from a given country will not belong to the same religious group. The higher the number, the more fractionalized the society is. It ranges from 0 to 100 in percentage points. To control for effects of ethnicity, Triesman (2000); Gerring and Thacker (2004); and Rock (2009) have used an index of ethno-linguistic fractionalization. Unlike these studies, we use a measure of ethnic fractionalization developed by Alesina et al. (2003). This index has more characteristics of racial than linguistic fractionalization, the authors argue. Like the religious fractionalization index, ethnic index reflects higher fractionalization with higher number. It has been, argued that ethnic fractionalization has deleterious effects on institutional quality, economic policy, and economic development Alesina, et al. (2003).[6] In short, institutional quality is the transmitting channel through which ethnic fractionalization impacts corruption.

Second, in a given polity, a minimum set of economic and policy decisions are required to sustain the macro-structure. However, these decisions and policies greatly vary across the nations. Due to the absence of an established benchmark for such variables, controlling for all of the economic policies seems a task difficult to handle.[7] Rather, we have focused our attention on the economic variables widely used by majority of studies on corruption and those in conformity with our theoretical framework [see, for example {Goel and Nelson (2005), Lederman, et al. (2005), Rock (2009), Ades and di Tella (1999), Fishman and Gatti (2002), Gerring and Thacker (2004), and Triesman (2000)}].

To control for the effects of economic development on corruption across nations, we chose income per capita, measured as real GDP per capita, as indicator of development. It has been argued that countries with higher income are less corrupt [Gerring and Thacker (2004), Ades and Di Tella (1999), Goel and Nelson (2005)]. This indicator of development also captures 'unspecified dimensions' of development argues Lederman, et al. (2005). The question arises whether the 'unspecified dimensions' include state's governance capacities. Richer countries may have resources to build high quality institutions and policies that in turn help reduce

[6] Alesina, et al. (2003) provides a detailed description of methodology and concept of ethnic and religion indices.

[7] For an exhaustive study of relationship between corruption and a wide range of variables, Triesman (2000) provides a comprehensive review.

corruption. However, we argue that countries unable to channel their resources into building state governance capacities may have high corruption despite being rich. Our next choice for controls for economic policies is the openness of the economy based on the evidence presented by Ades and Di Tella (1999), Rick (2009), Chowdhury (2004), who all argue that economies that are more open tend to have lower levels of corruption. Their argument is based on the premise that opens economies foster competition that lowers rent-seek in opportunities for public officials thus reducing corruption. There seems a general agreement among most of the researchers about the positive effects of openness in controlling corruption. However, we are skeptical about these findings, and hypothesize that developing countries pursuing economic liberalization policies without fixing the internal structural problems may not be able to control corruption. This is in conformity with Lambsdorff (2003) arguments that weak bureaucratic quality and absence of rule of law foster corruption that inhibit capital inflows. To measure openness, we take total trade that is the sum of exports and imports as a fraction of GDP of a country. Likewise, due to the ample importance given to rents generated by minerals resources by existing literature, who argue that the abundance of mineral resources in a country is associated with higher levels of corruption [Gerring and Thacker (2004), Ades and Di Tella (1999), Triesman (2000), Rock (2009)], we include a variable on mineral and natural sources. This variable is defined as the total natural resources rents as a fraction of a country's GDP. The total rents are the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents. In the absence of strong governance capacities, we expect that the positive relationship between rents from minerals as suggested by the aforementioned studies. Finally, a variable on population is included to isolate the effects of size of the country on corruption. This is in tradition to Alt and Lassen (2003) and, Xin and Rudel (2004). Two region dummies, Asia and Africa are included to isolate the region's effects.

4. Measures of Governance Effectiveness and Capacity

We are constrained with the limited availability of governance data and therefore, to measure the policy content and the quality of policy design, we consider the governance indicators from the World Bank. The World Bank defines governance as, it "is the manner in which power is exercised in the management of a country's economic and social resources for development" [World Bank (1992)]. Good governance, as defined by the World Bank, captures justice, ethics and institutional quality, among other variables [Arbetman-Rabinowitz and Johnson (2007), World Bank (2007)].

As we have defined governance effectiveness as the quality of policy and institutions, we decided to keep the "Effectiveness of Government" variable provided by the World Bank as the proxy for governance based on its proximity to the theory

outlined in the preceding section. As an alternate, we considered a principal components analysis that is using the first principal component rather than using all or selecting one arbitrarily. Results with the first principal component as the governance indicator were not different from the results with the effectiveness of governance variable and therefore not reported in this paper.

IV. Empirical Evidence

This section presents results of our estimations. In order to compare with existing literature, we started with estimating a comparison model. However, due to space limitations, results are not reportedin this paper. All the regressions are estimated with White's standard errors and covariance.

1. Model with Governance Capacity

With few exceptions, the existing studies on causes of corruption havenot included the governance capacity or a related variable in their empirical models that could capture quality of institutions in developing countries; it means that previous studies may have produced biased results on the effects of democracy and the economic policies on corruption. However, it is possible that both institutional quality and corruption are affected by a third unobservable variable. Moreover, reverse causality can be yet another issue. For instance, weak institutions may be an outcome of corruption rather than determining it. Finding external instruments for governance variable that does not affect corruption may not be possible. To reduce possible endogeneity, we introduce the lags of the governance variable as the instruments. The lags are from the years 1996 and 1998 as data for the governance variable is not available beyond these years. The selection of instruments is based on the premise that reforms once done cannot be undone easily [Rose-Ankerman (1999)] and therefore minimizes the chances of reverse causality.

Our strategy here is discussing the results of 2SLS and OLS in parallel so that the impact of treating governance as endogenouscan be seen clearly. In Table 1 and Table 2, we present 2SLS and OLS results, respectively. We start by testing for the endogeneity of the governance variable. The statistics given at the bottom of Table 1 indicates Hansen's J Statistic for overidentifying restrictions has a p value of 0.4 to 0.9 whereas the p value for the test of exogeneity varies between 0.6 and 0.7. Hence, we could not reject that the governance variable is exogenous.

We get similar results for Corr-TI when used as dependent variable. This gives us some confidence in our OLS results. After controlling for the governance, results for many variables are strikingly different as compared to the results without the governance variable (not reported here). Results for democracy (dummy) remain unchanged both, in 2SLS and OLS regressions as shown columns (1) and (2) in

TABLE 1

Effects of Democracy and Governance —2sls

Dependent Variable: Corr-WB - Estimation Method: 2SLS						
	-1 Dummy	-2 Dummy	-3 PR	-4 PR	-5 PR	-6 PR
Democracy	-0.0149	-0.0542	-0.012	-0.0173	0.0843*	0.0624
	(-0.28)	(-1.07)	(-0.50)	(-0.67)	-1.7	-1.29
Democracy (PR) Square					-0.006**	-0.0055**
					(-2.06)	(-2.00)
Income	0.0496	0.00744	0.0406	-0.00562	0.0257	-0.0154
	-0.94	-0.14	-0.75	(-0.10)	-0.47	(-0.27)
Trade Index	0.003	0	0.003	0.0001	0.002	-0.001
	-1.01	0	-1.11	-0.02	-0.8	(-0.27)
Rents	0.0027	0.0038	0.0029	0.0042	0.0049*	0.0058**
	-0.84	-1.17	-1	-1.4	-1.72	-2.02
Revenue	-0.007**	-0.005	-0.009**	-0.005	-0.008**	-0.006**
	(-2.08)	(-1.53)	(-2.17)	(-1.66)	(-2.83)	(-2.13)
Population (Log)	0.062**	0.044**	0.058**	0.039*	0.046*	0.03
	-2.43	-2	-2.23	-1.73	-1.74	-1.32
Ethnic	-0.271**	-0.173*	-0.251**	-0.146	-0.290**	-0.176
	(-2.70)	(-1.78)	(-2.40)	(-1.34)	(-2.86)	(-1.64)
Religion	0.15*	0.22**	0.14*	0.19**	0.17**	0.21**
	-1.9	-2.91	-1.89	-2.66	-2.24	-2.9
Governance	-0.82***	-0.74***	-0.77***	-0.68**	-0.63**	-0.58**
	(-4.11)	(-3.89)	(-3.44)	(-3.12)	(-2.63)	(-2.58)
Region (Asia)		0.0006		0.016		0.013
		-0.01		-0.24		-0.19
Region (Africa)		-0.21***		-0.18**		-0.18***
		(-3.62)		(-3.27)		(-3.19)
Constant	-1.2	-0.38	-1	-0.166	-0.63	0.1
	(-1.24)	(-0.43)	(-1.04)	(-0.18)	(-0.63)	-0.11
	Hansen's J statistic for test of overidentifying restrictions					
$\chi 2$ (1)	0.62	0.46	0.61	0.45	0.057	0.006
p-value	-0.42	-0.49	-0.43	-0.5	-0.81	-0.93
	Test for exogeneity of governance variable					
$\chi 2$ (1)	0.23	0.089	0.095	0.006	0.081	0.15
p-value	-0.62	-0.76	-0.76	-0.93	-0.77	-0.7
Countries	98	98	98	98	98	98
Adjusted R-Square	0.78	0.8	0.78	0.8	0.78	0.8

Note: t statistics in parentheses; *p<0.1, **p<0.05, ***p<0.01.

both Tables 1 and 2. Most importantly, democracy (PR) is insignificant in both 2SLS and OLS as presented in columns (3) and (4) in both Tables, which was highly significant in the regressions without the governance variable. It may be that democracy (PR) variable was capturing the effects of governance as well. The correlation between the two variables is 0.52. Both in 2SLS and OLS regressions, the evidence about the nonlinear effects of democracy are quite strong as shown in columns (5) and (6) of both tables. These results are in confirmation with Rock (2009).

However, in our case, effect of initial levels of democracy is significant at 10 percent only in one regression. Even after controlling for the governance capacity, we find that democracies only with high levels of political rights can inhibit corruption. At lower levels, democracy is corruption enhancing. On the other hand, the governance variable in not only significant with its intuitive sign across the six regressions, the magnitude of its effect is large as shown by the coefficients. In case of OLS regression, this impact is even higher. As Corr-WB and the governance variable have the same units, it implies that one point increase in the governance variable, measured on a scale of -2.5 to +2.5, produces a drop that varies between 0.6 to 0.8 in case of 2SLS and 0.7 points in case of OLS. These results suggest, keeping all things constant, reforming the civil service, producing quality policy decisions, and having a proper implementation mechanisms, developing countries can reduce corruption in a great magnitude. These reforms have been an integral part of developed and mature democracies thus making them corruption-deterring institutions. On the other hand, mature democracies in the developing like Nicaragua, Mongolia, India, and Paraguay are not among least corrupt countries. Least corrupt countries are those who have better governance structures like Malaysia, Tunisia, and Costa Rica. Interestingly, the democracies in the latter two have been frequently interrupted by coup d'états. Both the Corr-WB and Corr-TI indices rank Malaysia, Botswana, South Africa, and Hungary as the least corrupt nations among developing countries, which concurrently have the most reformed governance structures.

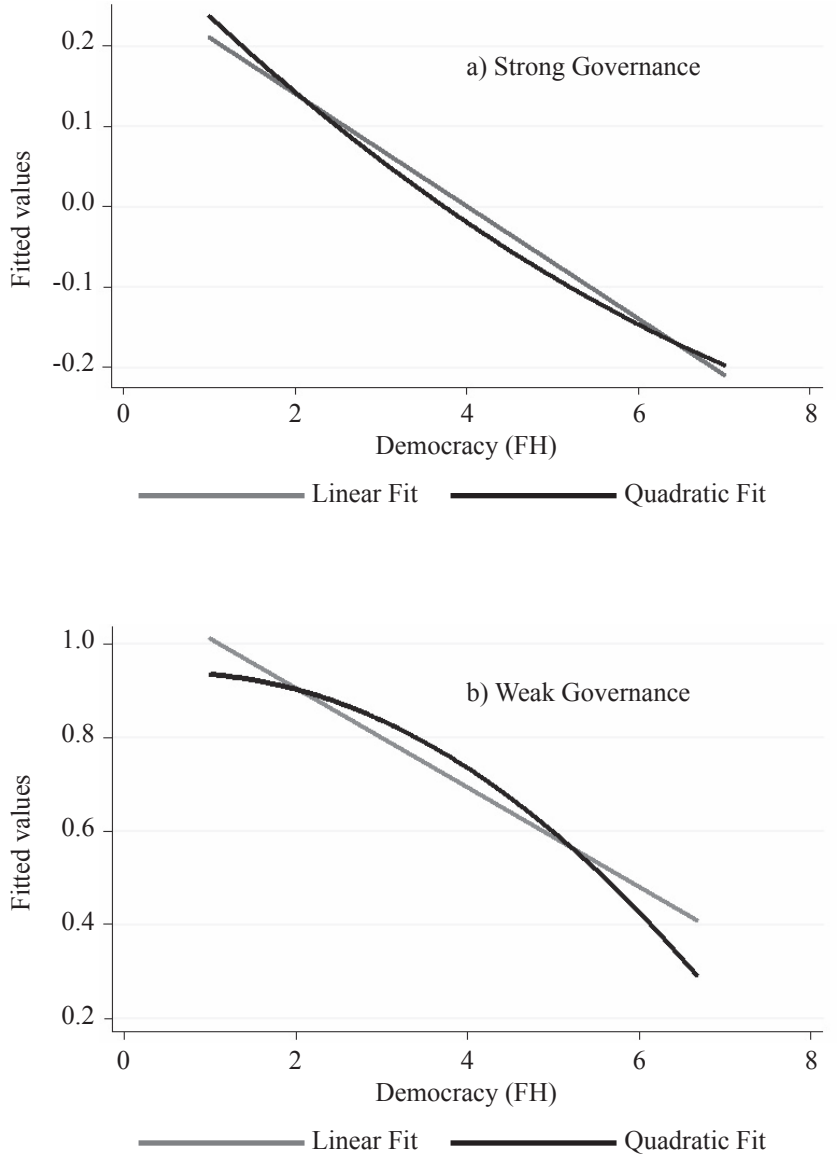
After controlling for governance, the Income variable turns insignificant in both 2SLS and OLS. The governance variable and Income are correlated at 0.57. The correlation between Corr-WB and Income is r =-0.46. This is much lower than what Triesman (2007) suggests (r=0.81) for a cross-section of both developed and developing countries. On the one hand, the insignificance of the Income variable contradicts Triesman (2007) claims that corruption and estimates of countries' economic development are negatively correlated even as of hundreds of years ago. On the other hand, the results are in line of agreement with Khan (2006) analytical assertions that, in the case of developing countries, states' governance capacity is what explains the variation in corruption across the nations. Ali and Isse (2003) empirical findings endorse these assertions, who have also conditioned the effect of growth on corruption on the rule of law.

TABLE 2

Effects of Democracy and Governance - OLS

Dependent Variable: Corr-WB - Estimation Method: OLS						
	-1 Dummy	-2 Dummy	-3 FH	-4 FH	-5 FH	-6 FH
Democracy	-0.015	-0.058	-0.0175	-0.019	0.085	0.067
	(-0.28)	(-1.09)	(-1.00)	(-1.15)	-1.62	-1.39
Democracy (FH) Square					-0.018**	-0.015*
					(-2.01)	(-1.81)
Governance	-0.73***	-0.69***	-0.71***	-0.66***	-0.7***	-0.66***
	(-11.52)	(-11.82)	(-11.28)	(-11.12)	(-12.11)	(-11.98)
Income	0.027	-0.01	0.026	-0.01	0.04	0.004
	-1.05	(-0.29)	-1	(-0.37)	-1.62	-0.18
Trade Index	0.003	-0.0003	0.003	0.00003	0.0022	-0.0006
	-0.92	(-0.12)	-1.05	-0.01	-0.81	(-0.20)
Rents	0.004**	0.005**	0.004*	0.005**	0.004**	0.005**
	-2.28	-2.28	-1.85	-2.14	-2.32	-2.54
Revenue	-0.007*	-0.005	-0.007**	-0.005*	-0.007**	-0.006*
	(-2.38)	(-1.61)	(-2.36)	(-1.69)	(-2.68)	(-1.93)
Population (Log)	0.06**	0.04*	0.05**	0.04*	0.05**	0.04*
	-3.13	-2.42	-3.1	-2.33	-3.14	-2.32
Ethnic Fractionalization	-0.28**	-0.17	-0.25*	-0.143	-0.29**	-0.19*
	(-2.72)	(-1.68)	(-2.21)	(-1.31)	(-2.78)	(-1.77)
Religion Fractionalization	0.14*	0.22**	0.14*	0.19**	0.17**	0.22**
	-1.78	-2.8	-1.75	-2.49	-2.14	-2.75
Region (Asia)		0.027		0.0064		0.018
		-0.4		-0.09		-0.25
Region (Africa)		-0.20***		-0.2***		-0.18**
		(-3.52)		(-3.43)		(-3.16)
Constant	-0.81	-0.15	-0.77	-0.098	-0.86*	-0.22

Note: t statistics in parentheses; *p<0.1, **p<0.05, ***p<0.01.



Note: Strong Governance = the governance variable (2002-2010)> 0. Weak Governance = the governance variable (2002-2010) < 0. *Data sources*: World Bank and Freedom House.

FIGURE 1

Corruption and Democracy in Countries
with Strong and Weak Quality of Governance

Unlike, Triesman (2007) who is critical of averaging the Income variable over the years citing that it may create measurement error and underestimate the relationship between the two variables, Gerring and Thacker (2004) rather suggest averaging the income over many years to reduce endogeneity. Likewise, You and Khagram (2005) suggest averaging the values of dependent and independent variables to minimize the measurement. In order to examine whether the results are susceptible to the averaging of the Income variable, we retested the model with GDP per capita on in the year 2002 (income in the initial year), the overall results remained unchanged. However, this result is not robust with Corr-TI as dependent variable. As we have entered the governance variable with lags, we have some confidence to suggest that keeping other things constant even poor countries with good governance also have the capacity to deter corruption.

After including the governance variable, the effects of the Revenue variable remain almost unchanged in both OLS and 2SLS. In contrast, the Rents variable is not significant in all the 2SLS regressions except where democracy (PR) is entered with its quadratic term in shown in columns (6) and (7). OLS results for OLS suggests that a one percent increase in rents produces a rise of approximately .004 points drop in the Corr-WB index on a scale of -2.5 to +2.5 over the years 2002-2010. Compare this to the 0.7 (approximately) points drop due to one point improvement in the quality of governance index. Clearly, countries with higher rents but reformed institutions of bureaucracy, accountability, and policy will be able to offset the rise the corruption due to the rise in rents. With respect to the variables of Ethnic Fractionalization, Religion Fractionalization, and Population, the inclusion of the governance variable turns them significant at 5 and 1 percent, respectively.

Our findings show a positive partial effect of population on corruption. Both 2SLS and OLS agree on this effect of population, though they slightly differ on the magnitude of this effect with 2SLS presenting larger coefficient on the population variable. Next, our ethnic fractionalization variable has partial negative impact on the control of corruption both in 2SLS and OLS results. When we control for regions, however, the coefficient slightly declines. The evidence that ethnic fractionalization reduces corruption is in contrast to Alesina et al. (2003), the authors of this index, arguments that ethnic fractionalization has deleterious effects on institutional quality, economic policy, and economic development. However, studies like Triesman (2000), La Porta (1999) have reported mixed results.[8] Another important result that is consistent in all the three sets of results reported so far is the insignificance of the trade openness (Trade Index) variable. In almost all the regression in Tables 1 and 2, Trade Index is predicting a positive partial effect on corruption, though this relationship is not statistically significant. With only few

[8] Ethnic fractionalization reduces corruption according to La Porta, et al. (1999), where Triesman (2000) had volatile results for different measures of corruption. Note that they use a measure of ethnic-linguistic f.

dissenting voices, the majority of existing literature seem to agree on the argument that trade openness reduces corruption. As majority of studies have used trade as a fraction of GDP to gauge whether the countries pursuing economic liberalization policies mitigate corruption, our findings remained unchanged when we retested the models using trade as a fraction of countries' GDP.[9] Finally, in relation to the regional dummies, the most consistent results across the all the specifications in both OLS and 2SLS refer to 'Africa'.

2. Model with Interaction of Governance and Democracy

As we move to the specifications of corruption defined in equation (4) in the empirical strategy section we present estimates obtained using OLS in columns (1) to (4) and WLS in columns (5) and (6) of Table 3. In our theoretical-framework, we argued that effect of democracy on corruption is conditional on the effectiveness of governance. To examine this, we entered an interactive term, democracy*governance, into our regressions. As the exogeneity test for the governance variable gives us some confidence in our OLS results, we will not report 2SLS results any further. Rather, to test the accuracy of the specifications, we use weighted least squares (WLS). Following Gerring and Thacker (2004), and Triesman (2007), we have weighted the independent variables by the inverse of standard deviation of Corr-WB. Furthermore, when squared democracy (PR) variable was included in the regressions, it turned the interaction variable, the democracy (PR), and the governance variable insignificant. We found that adding the squared democracy variable along the interaction variable produces high multi-collinearity.

When we run the regressions without the squared variable, multi-collinearity was low (VIF<3). Therefore, it does not affect our overall results. The findings in the previous section have established the democracy tends to be inverted U-shaped and it mitigates at corruption at high levels of political rights. However, we hypothesize that good governance can deter corruption even at the low levels of political rights. We also tested separately whether the dynamics of political rights (PR) at high levels and corruption change when the former is interacted with the governance variable. Both political rights (PR) square and its interaction term remained highly significant with their intuitive sign. When we entered the interaction, democracy*governance, variable in the regression, an interesting story then emerges as shown in Table 3. The results in column (1) and (2) suggest the all developing countries, except those where the country's chief executive is a serving military ruler, regardless of what sort of electoral reforms they are pursuing, good governance mitigates corruption. To be precise, these findings suggest that developing

[9] Results not reported here.

TABLE 3

Effects of Interaction of Democracy and Governance

Dependent Variable: Corr-WB						
Estimation:	OLS	OLS	OLS	OLS	WLS	WLS
	-1 Dummy	-2 Dummy	-3 PR	-4 PR	-5 Dummy	-6 PR
Democracy	-0.17**	-0.22***	-0.037*	-0.035*	-0.22**	-0.034*
	(-2.21)	(-2.95)	(-1.92)	(-1.98)	(-2.59)	(-1.94)
Democ x Gov.	-0.22**	-0.22**	-0.049**	-0.040*	-0.23**	-0.042*
	(-2.69)	(-2.86)	(-2.29)	(-1.96)	(-2.39)	(-1.87)
Governance	-0.55***	-0.51***	-0.58***	-0.56***	-0.5***	-0.6***
	(-6.80)	(-6.55)	(-7.87)	(-8.02)	(-5.10)	(-6.80)
Income (Log)	0.03	-0.006	0.041	0.0041	-0.0063	0.0061
	-1.18	(-0.23)	-1.63	-0.16	(-0.22)	-0.2
Trade Index	0.0026	-0.00017	0.0031	0.0003	0.00066	0.0011
	-0.96	(-0.06)	-1.09	-0.11	-0.25	-0.4
Rents	0.0046**	0.0054**	0.0042*	0.0049**	0.0052**	0.0044*
	-2.78	-2.82	-2.29	-2.73	-2.91	-2.44
Revenue	-0.0074*	-0.0053	-0.008**	-0.0058*	-0.0061*	-0.01**
	(-2.49)	(-1.75)	(-2.75)	(-2.10)	(-2.20)	(-2.20)
Population (Log)	0.054***	0.039**	0.050***	0.036**	0.039**	0.037**
	-3.25	-2.49	-3.02	-2.25	-2.45	-2.3
Ethnic Fract.	-0.26**	-0.16	-0.25**	-0.15	-0.17*	-0.16
	(-2.53)	(-1.59)	(-2.32)	(-1.46)	(-1.67)	(-1.51)
Religion Fract.	0.19**	0.26***	0.19**	0.23***	0.27***	0.24**
	-2.54	-3.37	-2.4	-2.89	-2.88	-2.49
Region (Asia)		0.00055		0.00053	0.0068	0.027
		-0.01		-0.01	-0.11	-0.42
Region (Africa)		-0.21***		-0.187**	-0.21***	-0.17**
		(-3.62)		(-3.39)	(-3.41)	(-2.88)
Constant	-0.732	-0.052	-0.77	-0.13	-0.068	-0.21
	(-1.70)	(-0.11)	(-1.82)	(-0.29)	(-0.15)	(-0.48)
Countries	98	98	98	98	98	98
Adj. R-Square	0.78	0.8	0.78	0.8	0.81	0.81

Note: t statistics in parentheses; *p<0.1, **p<0.05, ***p<0.01.

countries having the capacity to reform their civil service, have higher quality of public services, and independence of bureaucrats from political pressures, having the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies[10] are the ones to control corruption. the interaction of the democracy and the governance, which is significant at more than 5 percent, also explains the reasons behind the inability of some sustainable and mature democracies like India, Paraguay, Indonesia and Nicaragua to control corruption. These countries lag behind in the effectiveness of institutions. For instance, among the rest of the developing countries in the sample, Botswana, Malaysia, Hungary, and South Africa have strong governance capacities in the form of their ability to reform the governance structure in their respective countries. Yet these are the countries with least corruption among the countries in the sample as ranked by both Corr-WB and Corr-TI.

The measures of democracy do not capture the extent of institutional reforms. Electoral reforms, as the democracy indicators reflect are not sufficient in themselves to mitigate corruption as presented by our empirical findings. However, our findings suggest that in the absence of the governance variable, effects of governance are captured by the democracy variable. This is particularly true for the democracies in the developed world where reformed institutions are an integral of the system and institutions once reformed cannot be reversed (Rose-Ankerman 1999, 2004). In case of democracies in the developing world, omitting the governance variable produce distorting results as discussed in the preceding sections. The evidence in column (1) and (2) of Table 3 also refutes the claims by one strand of literature that democracies at their early stages and those transiting from authoritarian regimes to democracy (transition from 0 to 1 in the dummy) are unable to mitigate corruption. In contrary, the results in column (1) and (2) suggest that developing countries, at least those in the sample, with a capacity to reform the institutional fabric, regardless of the level of democracy, are able to inhibit corruption. For instance, take the case of Paraguay-0.91, Nicaragua -0.84, and India -0.04; all sustained democracies. The mean of their governance variable for the years 2002 to 2010 is -0.91, -0.84, and -0.04, respectively. The mean for the governance variable itself is -0.53 with a standard deviation of 0.55 over the years 2002-2010. On the other hand, another set of democracies like Malaysia, Hungary, South Africa, and Botswana have a mean of governance variable over the years 2002-2010 of 1.13, 0.81, 0.6, and 0. 6, respectively. The second set of countries has lesser levels of corruption as well. The large coefficient on the interaction of democracy dummy and the governance variable indicates the partial effects of good governance in all the developing countries, which were are not ruled by a military autocrat.

[10] A detailed of the governance is in the empirical strategy chapter.

For the countries with an agenda to reduce corruption over a course of almost a decade, the policy implications would be to improve their governance effectiveness. India, for instance, by bringing improvements in it governance that produces a one standard deviation rise in the mean of its governance variable can mitigate corruption equivalent to the one prevalent in South Africa and Botswana. These results are further endorsed when the democracy dummy is replaced with the democracy (PR) variable as presented in column (3) and (4) of Table 3. A causal inspection of the data reveals that among the freest countries, according to the democracy (PR) measure, are Hungary, Costa Rica, and Mauritius. In addition, these are the countries with lowest corruption levels on both the Corr-WB and Corr-TI indices. A cursory look at Corr-TI index for the year 2014 further explores that these countries continue to top the least corrupt countries list. Our findings in the Tables 1 and 2 captured these observations where the squared democracy predicts a negative effect. Corruption is low in the freest countries according to the PR measure of democracy strong governance capacities as reflected by the governance variable. Then, what determines corruption? Democracy or good governance? The correlation between them is r=0.52. To take care of endogeneity between the two variables, Rock (2009) has instrumented democracy with the latitude of a country's city and with the percent of the population, which is protestant. This relationship becomes strong and robust when we include the governance variable as indicated by the last columns in Table 1 and 2. On the other hand, the same set of countries has. His findings are consistent with our results that democracy and corruption have a nonlinear relationship. Likewise, to consider endogeneity between corruption and democracy, Wiig (2011) has instrumented democracy with a dummy that captures conflict history between democracies.

He finds a negative relationship between democracy and corruption. In contrast to Rock (2009) findings, our estimates suggest that in countries with low levels of political rights, as measured by the PR index, the effect of democracy is not different from zero. This is shown in columns (5) and (6) of Tables 1 and 2.

Next, the democracy variable, both dummy and PR, turned significant with the intuitive sign across all the six specifications once we included the interaction variable. However, the findings are no robust when we use another measure of governance with Corr-WB as dependent variable. In addition, the democracy variable could not hold its significance with Corr-TI as dependent variable. However, the result that the effect of democracy on corruption is not robust is in line of our arguments in the theoretical-framework that the impact can be a fluke. Stable across all the specifications is the governance variable. The large coefficient indicates the importance of good governance. Yet again, the partial effect of the governance variable is huge compared to all other variables in the models. An improvement of one point in the governance reduces the corruption by approximately 0.5 to 0.6 points on the -2.5 to +2.5 Corr-WB scale.

V. Conclusion and Policy Implications

In contrast to the arguments by the existing literature on corruption and democracy that democratic countries have lesser corruption, this paper argues that democracy, by itself, may not be a corruption-deterring institution. The authors, however, suggest that democracies coupled with effective governance structures are the ones to mitigate corruption. Despite the ubiquity of literature on corruption, missing in the academic scholarship is the question whether the impact of political institutions on corruption is conditional on governance effectiveness, although democracy and corruption are the phenomena for which the governance effectiveness of a country could be an important factor. Most importantly, the existing literature has failed to answer the question whether democracies always affect corruption in the same way, regardless of the country's governance effectiveness and capacity. Little attention has been paid on democracy-governance-corruption nexus. By assuming that democracies and political institutions are not corruption-deterring institutions, in themselves, at least in developing countries, this paper hypothesizes that the lack of governance effectiveness is a key driver of corruption.

This comparative analysis of 98 developing countries for the years 2002-2010 uses ordinary least-squares and two-stage least squares methods for estimation. Lags have beenused as instrumental variables. The findings supports the authors' hypotheses that he explanatory power of governance effectiveness is at least as important as conventionally accepted causes of corruption such as economic development. Our focus on developing countries is based on the premise that, (1) the persistence and homogeneity of rampant corruption in developing countries suggest that share they common drivers of corruption. (2) The failure of anti-corruption policies in developing countries proposed by conventional economic and political analysis provides a rationale for a detailed investigation of corruption dynamics in these countries. (3) Almost all the cross-national studies on the causes and consequences of corruption focus on both developed and developing countries. To the best of our knowledge, we are not aware of any noteworthy study that specifically examines the dynamics of corruption in developing countries. Yet to have clear policy implications on controlling corruption, we believe that investigating causes of corruption in developing countries, separately from developed countries, is imperative.

The paper provides a theoretical-framework upon which our empirical work relies. We have discussed different theoretical works in some detail and developed a simple theoretical framework that also highlights some of the fallacies associated with the view that democracy in particular and economic policies in general can control corruption. Most of the theoretical-frameworks on corruption rely on political agency and neo-institutional economic models with the presumption that voters - the principals - vote out corrupt politicians - the agents. Principal-agent models assume that the interests of principal and agent diverge, that there is in-

formational asymmetry to the advantage of the agent, but that the principal can prescribe the pay-off rules in their relationship. By modifying the existing agency models, we suggest that political institutions and economic policies alone are not sufficient to monitor and punish corrupt politicians and bureaucrats. We instead purpose that the effectiveness of political institutions and economic policies to deter corruption may be conditional upon the quality of policy design and implementation. The empirical findings show that governance effectiveness variable is highly significant in all the specifications in both OLS and 2SLS. These findings suggest that controlling corruption in developing democracies is conditional upon the quality of governance.

Our findings have profound policy implications for the policy-makers in developing countries. First, our results suggest electoral reforms alone are not sufficient in mitigating corruption. Opposition leaders across the developing countries seek and promise electoral reforms in order to control corruption in their respective countries. However, evidence suggests that the effectiveness of electoral reforms is conditional on reforms in civil service and improving the quality of policy design and implementation. This is in accordance with Klitgaard (2000)'s policy recommendations for controlling corruption. His extensive analytical work on designing anti-corruption strategies extensively suggests that strategies to fight corruption should focus on corrupt systems rather than just focusing on corrupt individuals. And the empirical evidence in this paper shows that just by overhauling one segment of the governance, the bureaucracy, governments in the developing countries can drastically reduce corruption---both political and bureaucratic. The metaphorical formula suggested by Klitgaard (2000): C=M+D-A where corruption (C) equals monopoly power (M) plus discretion by public officials (D) minus accountability (A) succinctly summaries the idea of reforms in developing countries.

It is important to note that this study has limitations, and leaves considerable scope for future research. Several issues should be mentioned here.Any study examining the causes and consequences of corruption are not without complications. Estimating the causal effect of the independent variables is complicated by the fact that many of them are likely to be affected by a third variable that is unlikely to observe. Likewise, the endogeneity of two independent variables may bias our estimates. Reverse causality can be yet another issue. Finding instruments, where instruments are short in supply [Triesman (2007)], for all the endogenous variables is a huge task to tackle.

With these caveats in mind, we have taken utmost care to consider all the appropriate variables to minimize specification bias. However, we intentionally have not included the variables with no clear policy implications. Our primary variable of interest is the indicator of governance. For this variable, we have tried to minimize endogeneity by using instruments. We have also used lagged independent variables to compare the results. For testing endogeneity of other variables like

democracy, and income, we have relied on the findings of the existing literature. We have also provided several robustness tests. Yet we have interpreted our findings with utmost caution given the complexity of topic itself.

Karakoram International University, Pakistan and
Claremont Graduate University, California, USA.

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