

# The Effects of Democracy on the “Quality of Governance”.

## Evidence on the Capacity of Political Systems to Constrain Corruption.

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### Abstract

In the last decades democracy spreads in many parts of the world, and this generates several questions about its performance. The object of this work is the relationship between democracy and the “quality of governance”. The main purpose is to analyse empirically the consequences of democratization on one specific aspect of “good governance”, i.e. the efficiency and transparency of the decision making process measured with the capacity of a political system to constrain political corruption. Starting from a procedural conception of democracy the theoretical argument that guides my work claims that the transition to a democratic system introduces more competition in the political arena through the concrete possibility of government alternation. This credible threat strenghtens the relation of accountability between voters and government members inducing the latters to maintain an accountable behaviour. This should produce a general reduction of the degree of corruption among public servants. This argument generates a theoretical framework developed upon three main analytical dimension of democratization. The first dimension takes into account the presence of competitive political structure while the second analyses the actual level of democratization of a political system. Finally, the third dimension considers the longitudinal variation of democracy measuring the time exposure of different states to democratic competition. According to this analytical framework I advance five different research hypotheses concerning the role of the democratization process in constraining political corruption. To test these hypotheses I use a cross-national dataset containing data on democracy and performance indicators for 191 countries. To operationalize my dependent variable I use two indexes of perceived corruption, whereas as independent variables I use several democracy indicators. To obtain more generalizable results I test the validity of the hypothesised relations for the effects of several control variables. The results obtained seem to confirm in part my research hypotheses.

### Introduction

Starting with the “Third Wave of Democratization” (Huntington, 1991) in the last decades democracy spreads in many parts of the world. Now in every continent of the world we can observe at least some countries governed by democratic political structures, even if young and not consolidated yet. This expansion raises

several questions about the consequences of democratization and consequently the performance of different political regimes. The object of this paper is to analyse the relationship between democracy and one particular aspect that, among the others, indicates the quality of the governance of political systems.

The main purpose is to analyse the effects of different indicators of democracy on the state capacity to constrain political corruption. To do this, starting from a minimal conception of democracy that stresses the procedural element of political competition, I propose a theoretical framework based on three analytical dimensions. The first is called "*Presence of democratic institutions*" and distinguishes between democracies and autocratic regimes; the second is called "*Level of democratization*" and differentiates political regimes according to the specific level of democracy of their political structures. Finally, the third dimension is called "*Longitudinal variation of democracy*" and, measuring the time exposure to democracy of different countries, represents an indicator of the degree of consolidation of democratic institutions.

From this theoretical argument I advance five research hypotheses. The first is a kind of "preliminary" hypothesis claiming that the presence of democratic institutions increases the states capacity to control corruption. The other four research hypotheses can be considered two couples of alternative conjectures. The second claims that the higher the level of democratization, the higher the Control of Corruption Index, whereas, alternatively, the third affirms that the level of democratization of a political system affects the degree of political corruption in a non-linear way. This means that higher levels of democracy reduce corruption rates but only after a specific threshold. Instead, the fourth hypothesis claims that more consolidated democracies present a less degree of political corruption. Alternatively, the fifth hypothesis affirms that more consolidated democracies inhibit political corruption, but with a decreasing marginal effect for increasing values of time exposure to democracy. To test these hypotheses I operationalize my dependent variable using two indexes of perceived corruption, while as independent variables I propose five different indicators of democracy. To obtain more generalizable results I introduce in the empirical analysis also several control variables. These are alternative political, socio-economic and cultural explanatory factors of the phenomenon of corruption present in the literature. Regarding the first couple of alternative hypotheses previous empirical results (Montinola and Jackman, 2002; Sung, 2004) induce me to expect the presence of a non-linear relationship between the level of democratization and the degree of political corruption. Instead I prefer to consider the issue regarding the effects of the longitudinal variation of democracy as a merely empirical question. The results obtained confirm only some of my hypotheses, in particular regarding the positive effects of the time exposure to democracy.

The paper is divided in the following way. In the first section I define the phenomenon of political corruption, understood as a drag on the efficiency and transparency of the decision-making process. In the second section I make a brief review of the most important works on the effects of democracy on the degree of political corruption, while in the third I present the analytical framework and the research hypotheses that guides my analysis. In the fourth section I describe the dataset and the variables I use in the analysis, while in

the fifth I present the empirical results obtained. Finally, in the last section I advance the main conclusions I can draw from this work.

### **Defining Political Corruption**

The concepts of "Governance" and "Good Governance" are complex and elusive and in the literature we can find several definitions which stress different meanings of them. The first contemporary public appearance of the notion of good governance came in a 1989 World Bank report on Africa. The World Bank defines governance as "...*the exercise of political power to manage a nation's affair*"<sup>1</sup> (qtd. in Leftwich, 1993). Behind this general statement, the views on the meaning of governance and its relationship with the concepts of democracy and development are not all identical. Some of them, the most inclusive, tend to associate governance with the distribution of both internal and external political and economic power; others assimilate governance to the set of traditional principle ruling liberal democracies. A third group looks to governance from a narrow, administrative point of view; this is precisely the position of the World Bank (Leftwich, 1993). Ten years later the first appearance of the notion of governance, the World Bank Institute, started a new project with the aim to provide quantitative indicators in order to measure the quality of governance of different political systems. The researchers developed a series of six indicators measuring different aspects of governance<sup>2</sup>. They defines governance broadly as "*the traditions and institutions by which authority in a country is exercised. This includes 1) the process by which governments are selected, monitored and replaced, 2) the capacity of the government to effectively formulate and implement sound policies, and 3) the respect of citizens and the state for the institutions that govern economic and social interactions among them*" (Kaufmann, Kraai and Zoido-Lobaton, 1999). This conception of good governance refers to an efficient, open, accountable and audited public service which has the bureaucratic competence to help design and implement appropriate policies. It also entails an independent judicial system to uphold the law and resolve disputes arising in a largely free market economy (Leftwich, 1993). This is precisely the notion of governance accepted here.

Whereas the broader conceptions of governance tend to assimilate this notion to the concept of democracy, according to this last view, even if they are in some parts overlapped, governance and democracy are seen as two distinct notions. Assuming a strictly procedural conception of democracy, this view considers good governance as a consequence of the democratization process. A good governance should help political systems to increase their political and macro-economic performance and, at the same time, should help the consolidation of the democratization process and the legitimization of democratic institutions in the eyes of citizens.

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<sup>1</sup> World Bank. 1989. *Sub-Saharan Africa: From Crisis to Sustainable Growth*. Washington DC: The World Bank.

<sup>2</sup>This indicators are called "Worldwide Governance Indicators". For a more complete information around their development and their usage see <http://info.worldbank.org/governance/wgi/index.asp>.

However, the elusive concept of governance is not exempt from both theoretical and empirical problems. On theoretical side, the different views and interpretations of governance contribute to stretch this concept with the consequence to weaken its analytical boundaries and to assimilate it with the concept of democracy. Moreover, the direct relation between democracy, governance and socio-economic development has not always empirically confirmed, resulting more complex than the hypothesised one (Leftwich, 1993; Przeworski *et al.*, 2000). On the other side these theoretical doubts flow into problems in operationalising and measuring different aspects of governance. The indicators developed by the World Bank Institute try to measure six different analytical dimensions of the concept referring to the three specific aspects contained in the definition presented above. But these dimensions are often overlapped and the sources used to gather different indicators are more or less the same (Kaufmann, Kraai and Mastruzzi, 2006). The consequence is that the six indexes of governance are highly correlated (the Pearson's indexes of correlation ranges from a minimum of  $r = 0,7516$  to a maximum of  $r = 0,9502$ ), meaning in fact that they are not able to distinguish different aspects of the phenomenon. Rather these indexes can be considered as indicators of a single macro-dimension of governance referring to the efficiency, the transparency and the legitimacy of the decision making process.

This discussion leads me to take into account only one of the six indicators of governance for my empirical analysis, i.e. the "Control of Corruption Index". I choose this index because several works demonstrate that political corruption constitutes a drag on economic performance (Knack and Keefer, 1995; Mauro, 1995) and also reduces the legitimacy of government in the eyes of the governed (Seligson, 2002; Anderson and Tverdova, 2003). Moreover, especially in developing states, corruption contributes to create situations of profound social and economic inequalities weakening the borning welfare state. Therefore, it has relevant consequences in both economics and politics. Furthermore, even if there is a very huge literature on the causes of corruption, the results of empirical analyses are most of the time contradictory telling us that we have to make more efforts in order to understand which political and institutional conditions can constrain the negative effects of this phenomenon.

Political corruption is a complex phenomenon that is difficult to capture in a single definition. A narrow definition, which is now standard in comparative political studies, considers corruption basically as "...*the misuse of public office for private financial gain by an elected official*" (Rose-Ackerman, 1999; Treisman, 2000; Kunicová and Rose-Ackerman, 2005; Chang and Golden, 2006; Lambsdorff, 2006a). Philp (2006) proposes a more complex definition that explains which kind of actors and interactions are involved. He claims that we have a case of corruption when: a public official (A), acting for personal gain, violates the norms of public office and harms the interest of the public (B) to benefit a third party (C) who rewards A for access to goods or services which C would not otherwise obtain (Philp, 2006). This definition has three key components: 1) a conception of public office with rules and norms for the conduct of that office, which entails the view that the

office is defined in terms of the public interest it serves. 2) A view that corruption involves the distortion of the exercise of public office so that it meets private rather than public interests. 3) The idea that three actors are normally involved or affected by corrupt activity: the occupant of the public office (A), the intended beneficiary of that office (B), and the actual beneficiary of the particular exercise of that office (C) (Philp, 2006).

The implicit assumption of a triadic relationship, even if it is not always present<sup>3</sup>, is significant in making the difference between cases of fraud and embezzlement, where A simply steals from the state, and cases of corruption more properly understood, where the exercise of power for personal gain is perverted. Using the language of the principal-agent theory we can consider political corruption and, more in general, every form of rent extraction by elected officials as a kind of "*agency loss*" (Lupia, 2003). This term indicates the damage suffered by the principal, in this case the citizen, because an agent, the public official, lacks the skill or incentives to complete the task delegated to him (Strøm, Muller and Bergman, 2003). There are different sources of agency loss; political corruption can be considered one of these because when public agents are committed to extract personal gains from their privileged positions social and economic resources are turned away from the realization of the public interest. I'm particularly interested in capturing the form of rent-seeking defined in the literature with the term "Grand Corruption"<sup>4</sup> because it pervades the highest levels of national government, leading to a broad erosion of confidence in good governance, the rule of law and economic stability. Grand corruption involves the distortion or corruption of the central functions of the government (Langseth, 2006).

Unfortunately as Lancaster and Montinola (1997) point out in defining political corruption we have to take into account several problems. The main relevant probably is based on what they call "deviations from a social ideal". Most notably, the nature and the size of the private gain derived from the public office by a corrupt politician is often dependent on accepted moral standards and/or laws and regulations in a particular society. Thus, a specific action can be considered corrupt in one country but quite innocuous in another one.

In this work I emphasize the institutional roots of corruption under the presumption that changes in institutional structures will change the incentives for political rent-seeking. In the next two sections I present the recent and most important works on the topic of corruption, the general theoretical framework that guides my empirical analysis and the relative research hypotheses generated by it.

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<sup>3</sup> There are cases in which the triad of actors collapses into a dyad; for example there may be no independent agent C benefiting, since A is identical with the beneficiary C, however there are few doubts that such situations constitute cases of corruption.

<sup>4</sup> In the literature "Grand" corruption is usually opposed to "Petty" corruption that is a form of rent-seeking that can involve the exchange of very small amounts of money, the granting of minor favours by those seeking preferential treatment or the employment of friends and relatives in minor positions. For a better explanation of the differences between the two corrupted interactions see Rose-Ackerman (2000).

## Background Literature

In the literature we can find different explanations of the phenomenon of political corruption and, more in general, of all the activities of rent extraction by elected officials while holding their office<sup>5</sup>. Two main arguments were initially advanced to explain the incidence of corruption in the newly sovereign states. The first took a cultural approach, suggesting that corruption stems from social norms that emphasize gift-giving and loyalty to family or clan, rather than the rule of law. Generalized trust, traditionalism, religion and acceptance of hierarchy play a crucial role in explaining the phenomenon of corruption (La Porta et al., 1999; Treisman, 2000). Besides cultural explanations some specific geographic variables are considered to foster corruption. Abundance of natural resources and large distance to the world's major trading centers significantly increase corruption. The second approach, the so called "revisionist" approach attributed the phenomenon to a country's particular stage of development. Some authors agreed that corruption was a product of the process of modernization, but were ambivalent about its efficiency consequences (Scott, 1972). Among them some scholars argue that corruption is efficiency-enhancing; it helps alleviate capital formation and administrative inflexibility, characteristic of modernizing economies (Leff, 1964). But a general lack of exhaustive empirical observations encouraged scholars to adopt new approaches to explain why the phenomenon of corruption is more pervasive in some countries than in others.

One such approach generated with the "Public Choice" school. At their core, public choice explanations of corruption attribute the phenomenon to a lack of competition in either or both economic and political arenas (Montinola and Jackman, 2002)<sup>6</sup>. On one side, some scholars have focused especially on problems associated with the state intervention in the market. The possibility to intervene in markets gives officials a distinctive opportunity to extract bribes from those affected by laws and regulations. Djankov *et al.* (2002) find that a stricter regulation of market entry is positively associated with corruption as well as the size of the unofficial economy. These results support the argument that politicians and bureaucrats themselves are beneficiaries of the market distortions they introduce, because they receive campaign contributions, bribes as well as other kind of "favours" (Djankov *et al.*, 2002; Strøm *et al.*, 2003). Hence one possible solution to the problem of corruption requires decreasing government intervention in the economy and the number of government officials with discretion over economic activities.

Some other scholars focus essentially on the political arena and this is precisely the aspect that I am going to stress in this work. This part of the argument stresses the fact that political competition assured by democratic institutions, giving to the voters the power to "throw the rascals out" (Powell, 1989), increases the relation of accountability between them and elected officials inducing these to maintain an honest behaviour.

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<sup>5</sup> For a review of the possible explanations of the phenomenon of corruption see Montinola and Jackman (2002), Treisman (2000) and Rose-Ackerman (2006).

<sup>6</sup> For a comprehensive survey of the public choice literature on corruption see Rose-Ackerman (1999).

The easier way to capture the degree of political competition of different regimes is to measure the level of democratization of their political institutions. Several recent studies have examined the effects of democracy in constraining political corruption. Goldsmith (1999) limits his analysis only to 34 low-income and middle-income countries for which data are available. He tested four independent variables: national wealth, economic freedom, political freedom and federalism. Only national wealth is positively linked to the minimization of corruption. Democratic political freedom, measured with Freedom House Index, has a statistically significant relationship only when national wealth was omitted from the model. Sanholtz and Koetzle (2000) conducted an empirical analysis on a sample of 50 countries. They tested the effects of some socio-economic and cultural variables plus the index of political freedom already used by Goldsmith (1999). However, also here support for political factors was limited: none of the political factors was consistently significant, even if the signs appeared in the expected direction.

Treisman (2000) conducted a multivariate regression analysis using several political, institutional, socio-economic and cultural independent variables on a sample that goes from 36 to 47 cases. Treisman analysed the effects of democracy using two indicators: the length of exposure to democracy measured with the number of years a country has been continuously democratic from 1950 (Przeworski *et al.*, 2000), and a dummy indicating those political systems that were currently democracies in the reference year of the cross-sectional analysis. Whereas the current presence of democracy has no significant effects with the degree of political corruption, the exposure to democracy predicted lower corruption (Treisman, 2000).

Montinola and Jackman (2002) tested the effects of democracy, the degree of state intervention in the economy and the level of economic development on the degree of political corruption on a sample that goes from 51 to 66 cases. They operationalized "Political Democracy" with a measure developed by Bollen (1993) that is the average of three subjective indicators (freedom of group opposition, political rights and effectiveness of the legislative body) and an indicator of turnout<sup>7</sup>. Their analysis confirmed that the level of democracy affects the degree of corruption, but this effect is non-linear. They found support for a quadratic relation between democracy and corruption. Political corruption seems to be typically lower in dictatorships than in partially democratized countries. But once past a threshold, democratic institutions inhibit corruption. Also Sung (2004) found support for a non-linear relation between the level of democracy and political corruption. He conducted an analysis on a sample of 103 countries using, as indicator of the level of democracy, the Political Rights Index compiled by Freedom House. Results shows that a cubic function best fitted the data but the main conclusion is the same of Montinola and Jackman (2002): despite eruptions of corruption among intermediate democracies, the consolidation of advanced democratic institutions eventually reduced corruption.

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<sup>7</sup> The original data are from Banks (1979) and Gastil (1985). The specific democracy scores employed by the authors are available from Bollen, K. A. 1999. *Cross-national Indicators of Liberal Democracy, 1950-1990*. Ann Arbor: Interuniversity Consortium for Political and Social Research, Study No. 2532.

Blake and Christopher (2006) study the relationship between democracy and corruption on a sample that goes from 50 to 82 cases. Among other explanatory factors, already used in previous studies, they use two democracy indexes: "Political Freedom" measured with the Political Rights category of the Freedom House Index, and "Consolidated Democracy" that is a dummy indicating those countries that were categorized by Freedom House as "Free" for 20 or more years. They show that the more powerful relationship between democracy and the control of corruption takes place over time. Specifically, consolidated democracies are more likely to reduce the prospects for corruption than non-democracies, unstable democracies, or recently constituted democracies (Blake and Christopher, 2006).

I think that this work can improve the results obtained by these studies in several ways. First of all, all the works quoted above, apart from Montinola and Jackman (2002), uses as dependent variable just one measure of political corruption, precisely the CPI (Corruption Perception Index) developed by Transparency International<sup>8</sup>. In my work I use a more confident indicator of perceived corruption, that is the "Control of Corruption Index" developed by the World Bank Institute (Kaufmann, Kraai and Mastruzzi, 2006) that is more able to capture "grand" corruption and covers a higher number of countries. But, in order to increase the validity of the results obtained, as a further check I replicate my analysis with the CPI as dependent variable. Secondly, apart from Sung (2004), all the previous studies were conducted on relatively small samples of countries. Instead I perform my analysis on a sample of 191 countries that permits to me to obtain the most generalizable results possible. Thirdly, like Montinola and Jackman (2002) and Sung (2004), I take into account the possibility of a non-linear relationship between the level of democracy and corruption. Fourthly, probably the most important point is that, apart from Treisman (2000) and Montinola and Jackman (2002), all these scholars measure the actual level of democracy using a single index, that is the Freedom House Index of Democracy<sup>9</sup>. This choice raises two orders of problems; one theoretical and one methodological. The first concerns which conception of democracy we have in mind when we decide to approach this kind of study. Freedom House Index as well as Bollen's Index (used by Montinola and Jackman, 2002) are based on a *non-minimal* conception of democracy that takes into account not only procedural elements referred to the electoral process but also other aspects like, for instance, socio-economic rights, freedom from gross socio-economic inequalities, property rights and freedom from war. The methodological problem is strictly connected to the theoretical one since authors (Goldsmith, 1999 and Sandholtz and Koetzle, 2000) that use the Freedom House Index of Democracy do not take in consideration a problem of "endogeneity". Actually this index already includes a measure of perceived corruption. To avoid this model specification problem Sung (2004) and Blake and Christopher (2006) employ the seven point Political Rights scale of the Freedom House Index because they claim that is the Civil Liberties portion of the general index that contains a measure of political corruption,

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<sup>8</sup> Data available from [http://www.transparency.org/policy\\_research/surveys\\_indices/cpi](http://www.transparency.org/policy_research/surveys_indices/cpi).

<sup>9</sup> Treisman (2000) uses a dummy to indicate systems currently democratic and Montinola and Jackman (2002) uses an aggregate indicator developed by Bollen (1993).

whereas none of Political Rights dimensions overlap with the dependent variable. But looking into the official web page of the Freedom House Foundation that describes the methodology employed to develop all the specific sub-categories composing the Index, we can easily see that the analysis of the problem made by these authors, and the proposed solution is inappropriate<sup>10</sup>. Actually it's not the Civil Liberties portion of the index that, among other things, account for political corruption, but rather the Political Rights part. More precisely the sub-category called "Functioning of Government" contains a section that accounts for the "government freedom from pervasive corruption", even using the corruption score attributed by Transparency International. Therefore, because of the non-minimal conception of democracy on which it is based and this problem of model specification I decide to exclude Freedom House Index from the analysis and to use other indexes of the level of democracy<sup>11</sup>.

To sum up I would like to save all the positive elements of the previous studies, trying to overcome the relative theoretical and empirical weaknesses, with the aim to develop a framework of analysis in order to analyse the effects of democracy not only on corruption but also on every other possible consequences of democratization<sup>12</sup>.

## Theoretical Framework

Susan Rose-Ackerman (1999; 2006), one of the most important scholars that study the phenomenon of corruption, suggests that competition among politicians and also among bureaucrats minimizes corruption in government. If voters can easily replace politicians, or clients can readily reapply for bureaucratic privileges from different officials, individual officials have fewer incentives to engage in corruption. The basic logic is that in a liberal democracy the position of politicians is not automatically guaranteed, in fact they must periodically compete in elections (Schumpeter, 1942; Dahl, 1971). In order to be reelected politicians need to appear honest, efficient and to satisfy as much voters as possible, because the citizens have the power to reject them from the government at regular time intervals (Riker, 1982). Political competition means basically that democratic leaders routinely experience a distinctively high risk of being replaced. The electoral process in most democracies ensures the possibility of substantial alternation in office for individual leaders and parties. In other words we can say that government alternation, at least in some democratic regimes, constitutes a "credible threat" for politicians. Przeworski (1991 1999; Przeworski *et al.*, 2000) shows that this is *the* substantial difference between democracies and autocracies. Actually in almost all the autocratic regimes government alternation is not a concrete possibility; only some forms of turnover among people of the same ruling group are possible. But, even if some public officials periodically change, the party in power does not

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<sup>10</sup> See [http://freedomhouse.org/template.cfm?page=351&ana\\_page=341&year=2008](http://freedomhouse.org/template.cfm?page=351&ana_page=341&year=2008).

<sup>11</sup> I do not consider an appropriate solution take just the "Civil Liberties" portion of the Freedom House Index because it is based on attributes that move away from a procedural conception of democracy.

<sup>12</sup> For a brief review of the literature on the consequences of democratization and several possible positive effects of democratization process on performance of political systems see Carbone (2007; 2009).

change. Often in these regimes the only way to generate an “alternation” in power is through the use of violence. But of course these “irregular changes” (Taylor and Jodice, 1985) represent a source of political instability rather than contribute to consolidate a democracy and to increase the quality of its governance (Sanders, 1981). Political competition is posited to reduce corruption through two fundamental mechanisms. First, the freedom of information and association helps monitoring of public officials, thereby limiting their opportunity for corrupt behaviour. Second, the possibility of political turnover implies that politicians cannot always credibly promise that particular laws and regulations will continue in the future. This minimizes the size of bribes that rent-seekers are willing to pay (Montinola and Jackman, 2002). Therefore, democracies can be considered “*governments pro-tempore*” (Linz, 1984), i.e. political systems characterized by routinized uncertainty (Przeworski, 1991) where the continuous risk to be sanctioned in elections and then removed from the office makes government members maintain an accountable and transparent behaviour if they want to maximize the chances of their re-elections. Hence, the theoretical framework that guides my analysis stems from a minimal conception of democracy defined as institutionalised political competition through free and fair elections (Schumpeter, 1942; Dahl, 1971; Przeworski *et al.*, 2000). This choice permits to me to reduce at the minimum the number of defining attributes of democracy allowing for the study of numerous empirical questions. I do not want to resolve in a definitional way those issues that are too interesting to be empirically analysed.

In my theoretical framework I distinguish three main dimensions that characterize the process of democratization of a country that permit to me to advance several research hypotheses on the possible effects of democracy on the degree of political corruption.

The first analytical dimension of democratization process is called “*Presence of democratic institutions*”. This takes into account just if in a specific time period a political regime presents democratic political structures, namely institutions that guarantee free and fair elections and give to the voters the possibility to replace policy makers. This dimension leads me to generate my first hypothesis:

*H<sub>1</sub>: the presence of democratic political structures inhibit political corruption.*

I expect that the mere presence of institutions that foster political competition help to reduce corruption compared to non-democratic political regimes.

The second dimension is called “*Level of democracy*” and refers to the magnitude of regime change. The performance of political systems may not be explained only by the fact that a given country introduced democratic institutions, but also by the extent of the political changes that the democratization process implied (Carbone, 2007). Therefore, measuring the effective level of democracy in a specific time period makes

possible to distinguish among democratic systems those where political change has been more fundamental. My second research hypothesis is:

*H<sub>2</sub>: the higher the level of democracy of a country, the higher its capacity to constrain political corruption.*

The expectation is that more democratic political regimes offers more opportunities to citizens and opposition parties to monitor and sanction rent seeking behaviour of government members reducing the degree of political corruption. But theoretical discussions and empirical evidence induce me to take in consideration an alternative argument. Actually the relationship between democracy and different indicators of performance need not to be linear. It has been argued that where a poor and imperfect form of democracy has been established is likely to be associated, for instance, with a reduction of political stability and an explosion of social conflict due to an increase in economic inequalities. Montinola and Jackman (2002) and Sung (2004) show that young and still not consolidated democracies are associated with higher levels of political corruption compared to some electoral autocracies and, above all, to fully consolidated democracies. This empirical evidence lets me advance an alternative hypothesis:

*H<sub>3</sub>: the effective level of democracy of a country affects its capacity to constrain political corruption in a non-linear way.*

This means that basically I expect that those political regimes in transition to democracy are likely to present higher levels of corruption than some dictatorships, especially electoral autocracies, and consolidated democracies. More specifically in the following analysis I test the linear, the quadratic and the cubic relation between the level of democracy, operationalized with two different indexes, and the degree of political corruption.

But, if we are inquiring into the effects of democratic reforms time becomes a crucial factor. When looking into the effects of democratization one should not seek for immediate, proximal results, but rather for distal, long-term and incremental outcomes that are generated by the cumulative, historical effects of institutions. Thus the key distinction may not be neither between authoritarian countries and states that are currently under democratic rules, nor according their relative level of democracy. The crucial difference may run between countries that have cumulated a certain level of experience with democracy and countries that have not. (Carbone, 2007; 2009). This discussion lets me to introduce a third dimension of democratization that Muller (1988) calls "*Longitudinal variation in democracy*". The aim of this dimension is to quantify the experience with democracy that countries have cumulated over time. Therefore the fourth hypothesis I make is:

*H<sub>4</sub>: countries that have cumulated more “democratic experience” over time are less corrupt.*

Introducing this last analytical dimension time becomes a critical element for democratic process to flourish. This means that older democracies are supposed to generate more efficient institutions and procedures in order to constrain political corruption. But, looking more deeply inside this analytical dimension I can advance an alternative research hypothesis. Actually we can hypothesize that the effects on the degree of political corruption are dependent on different values of time exposure to democracy. More specifically the effects on corruption could decrease for increasing values of time exposure to democracy. This means that for young democracies the marginal effects of an annual increase in time exposure to democracy are higher than the effects for more consolidated democracies. Therefore, the fifth hypothesis affirms that:

*H<sub>5</sub>: more consolidated democracies inhibit political corruption, but with a decreasing marginal effect for increasing values of time exposure to democracy.*

This is exactly the same argument advanced by economists when they analyse the effects of economic development on several dependent variables. Therefore, to test the last hypothesis I take the natural logarithm of the two indicators of time exposure to democracy I propose, as well as economists do when they analyse the effects of variables like GDP per capita (Przeworski, 2005).

At first sight these three dimensions seem conflicting aspects of democratization process. Instead they need to be employed in a combined fashion: while minimal democracy (*presence*) remains the basic requirement that must be met before we can start to investigate the possible consequences of democratization, it is then important to consider both the extent (*level*) to which a country has been fully democratized as well as the length of time (*longitudinal variation*) for which it has been democratic (Carbone, 2007).

## **Data and Variables**

In order to test the validity of research hypotheses advanced above I use the “Democracy Cross-national Dataset” developed by professor Pippa Norris from Harvard University<sup>13</sup>. It contains data on social, economic, cultural and political characteristics of 191 nations with over 1000 variables<sup>14</sup>.

Given the fact that it is almost impossible to define and measure the actual level of corruption of a political system, to operationalize my dependent variable I use two different indexes of “perceived” corruption

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<sup>13</sup> Dataset available at <http://ksghome.harvard.edu/~pnorris/data/Data.htm>.

<sup>14</sup> I complete the Norris' dataset including also some variables from the “Democracy and Development Extended Dataset” developed by Alvarez et al. (2002). More precisely from this dataset I take the measure of the presence of democracy (ACLP). This dataset is available at <http://politics.as.nyu.edu/object/przeworskilinks.html>.

commonly used in comparative politics. These indicators are based on a large number of individual data sources on perceptions of the degree of political corruption and more in general of the quality of governance in different political systems. These data sources consist of surveys of firms and individuals, as well as the assessments of commercial risk agencies, non-governmental organizations, and a number of multilateral aid agencies. These data try to reflect the views of a very diverse group of respondents. Several of these data sources are surveys of individuals or domestic firms with first-hand knowledge of the corruption situation in the country. Others base their assessments on a global network of correspondents typically living in the country they are rating. The first index I use is called "*Control of Corruption*" (*CC*) and measures the extent to which public power is exercised for private gains, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. This is part of a series of six indexes called "Worldwide Governance Indicators" developed by a research group of the World Bank and collected every two years from 1996 to 2002 and every year from 2003 to 2007 for all the countries of my sample (Kaufmann, Kraai and Mastruzzi, 2006)<sup>15</sup>. This indicator is supposed to range from -2,5 (more corruption) to +2,5 (less corruption).

As a further check, I replicate my analysis with an alternative measure of corruption, the "*Corruption Perception Index*" (*CPI*) developed by the global network called "Transparency International" (Lambsdorff, 2006b)<sup>16</sup>. This is an aggregate index annually compiled since 1995 for an increasing set of countries. This is developed to range on a ten-point scale that goes from 0 (more corruption) to 10 (less corruption).

Given the fact that for these indexes low scores indicate more corruption and high scores less corruption, they should be considered as indicators of the capacity of a political system to constrain rent-seeking of public officials. The two indexes of corruption are almost perfectly correlated ( $r = 0,9795$ ) indicating that, apart for some differences in the sources used to generate the aggregate indicators, these reflect the same assessment about the citizens' perception of political corruption in different countries. For simplicity in the following empirical analysis I will show the results just for the "Control of Corruption Index".

To operationalize my independent variables I use several indexes of democracy based on the three different analytical dimensions described above. As indicator of the *presence* of a democratic system I use a dummy variable developed by Przeworski *et al.* (2000) that assumes value of 1 for every country that in 2000 can be defined a democracy and value of 0 for dictatorships (*ACLP*)<sup>17</sup>. According to the authors a political system in order to be defined as a democracy must satisfy four conditions: the chief executive must be, directly or indirectly, elected, the legislature must be elected, there must be more than one party, and the system must have experienced at least one alternation in office (Przeworski *et al.*, 2000).

To measure the *level* of democracy of political regimes I use two different indexes. The first is the "Polity IV Index" (*POLITY*) originally developed by Ted Robert Gurr in the 1970. The Polity conceptual scheme

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<sup>15</sup> Data available on <http://info.worldbank.org/governance/wgi/index.asp>.

<sup>16</sup> Data available on [www.transparency.org](http://www.transparency.org).

<sup>17</sup> In the original version Przeworski *et al.* develop the index in a way that assume value of 1 for dictatorship and value of 0 for democracies. But for the pur pose of my work I take the inverse.

examines the concomitant qualities of democratic and autocratic authority in governing institutions. This index captures a spectrum of different governing authorities on a 21-point scale that goes from -10 (hereditary monarchy) to +10 (consolidated democracy). The Polity scheme consists of six component measures that record key qualities of executive recruitment, constraints on executive authority, and political competition. It also records changes in the institutionalized qualities of governing authority<sup>18</sup>. The second indicator of the level of democracy is the "Vanhanen's Index of Democracy" (*VAM*), also called "Polyarchy Dataset", developed by professor Tatu Vanhanen of the University of Helsinki. According to the Dahl's theory there are two main dimensions that compose the index: electoral competition and participation. The first is measured with the proportion of votes gained by all the parties apart from the biggest one; whereas the second with the percentage of people that have voted in a specific election. These two dimensions are aggregated into a measure of the level of democracy in a multiplicative way<sup>19</sup>. For a comparative purpose in the following empirical analysis I use a standardised version of these indexes on a 100 point scale where 0 indicates the least democratic level and 100 the most democratic level in the year 2000. Both these two indexes are based on a minimal conception of democracy and contain only procedural elements of it. Nevertheless, as we have seen, they present several differences in the attributes considered and in the way the measures of these are aggregated into a single index (Munck and Verkuilen, 2002). It is possible that, due to these differences, the two indexes proposed perform differently in constraining political corruption.

To operationalize the *longitudinal variation* in democracy I propose two similar variables. The aim of these two indicators is to measure the time exposure of a political system to democracy and they differ because the first (*AGEDEM1*) measures the number of years a democratic system has been uninterruptedly in existence in the year 2000, whereas the second (*AGEDEM2*) measures the overall number of years of democratic experience, regardless of interruptions. These two indexes are based on *ACLP* index used to define a democratic system. Despite their specific differences, in general these two indexes are the sum of the years in which *ACLP* assumes value of 1. As I have already explained, to test the fifth hypothesis I take the natural logarithm respectively of *AGEDEM1* (*logAGEDEM1*) and *AGEDEM2* (*logAGEDEM2*).

In Table 1 I present the indexes of correlation among all these indexes of democracy. As we can see almost all the indicators of democracy used are significantly and positively correlated. Furthermore the level of correlation among them is high (the average Pearson's index of correlation is  $r = 0,6538$ ). This indicates that, despite the different aspects of the concept they stress, all these indexes can be considered effective good indicators of democracy.

- Table 1 in the Appendix -

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<sup>18</sup> Data available on <http://www.systemicpeace.org/polity/polity4.htm>.

<sup>19</sup> Data available on <http://www.prio.no/CSCW/Datasets/Governance/Vanhanens-index-of-democracy/>.

To obtain more generalizable results I introduce in the empirical analysis several control variables. These are alternative explanatory factors of the phenomenon of corruption already proposed in other empirical works and can be divided in three sets. The first set includes *political-institutional* variables like the type of government (*TYPEGOV*), the type of electoral system (*MAJ*) and the presence of a federalist structure (*FED*). These are three dummy variables where the first assumes value of 1 if a specific country is a presidential system and value of 0 if it is a parliamentary one; the second assumes value of 1 if a country adopts majority or plurality electoral rules and value of 0 if it adopts PR electoral rules; the third assumes value of 1 if a country is a federalist state and value of 0 if it is not. Several works in the literature demonstrates that presidential systems and countries that adopt PR electoral rules tend to be more corrupt (Perrson, Tabellini and Trebbi, 2003; Gerring and Tacher, 2004; Chang, 2005; Kunicová and Rose-Ackerman, 2005). Instead the literature offers contradictory results regarding the effects of the presence of federalist structures. Treisman (2002) finds evidence in favour of negative effects of federalism on corruption, whereas Gerring and Tacher (2004) find empirical support for positive effects of federalism on the reduction of political corruption. Both the works offer valid theoretical arguments and empirical evidence in support of them, so I leave this issue subject of empirical research.

The second set of control variables includes several socio-economic explanations of corruption like the natural logarithm of population (*logPOP*) and GDP per capita (*logGDP*) in the year 2000. In fact it is widely believed that more populated and less developed countries are more corrupt (Treisman, 2000; Rose-Ackermann, 2006). As we have seen before, according to the Public Choice School more competition both in politics and in economics contributes to offer less opportunities to public officials to extract private gains from their positions. Montinola and Jackman (2002) in their analysis use, as indicator of economic competition, the central government expenditure, measures as a % of GDP<sup>20</sup>. The more the level of state intervention in the market, the less competition and so the higher the degree of political corruption. Instead of the total central government expenditure I prefer to use the central government expenditure for health care service in 2000 (*HEALTH*). This because for less developed countries an economically active state often is synonymous of a state that is trying to establish a strong central government and fight corrupt interest groups. Thus, it is important to distinguish which kind of government expenditures can be corrupt-enhancing and which not. I use the government expenditure for health care service because it can be a good indicator of a state active in establishing strong insitutional structures that contribute to reduce socio-economic inequalities and so the degree of political corruption<sup>21</sup>.

The last set of control variables contains three cultural explanatory factors of political corruption. *PROTEST* is a dummy variable that assume value of 1 for those countries in which the majority of citizens is

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<sup>20</sup> Actually Montinola and Jackman (2002) as indicator of state's intervention in the market take also a dummy variable indicating those countries that are OPEC members. I prefer to exclude this variable from my analysis.

<sup>21</sup> I do not use the central government expenditure for welfare state in general because this variable covers only few countries.

protestant. *BRITCOL* is a dummy indicating those countries that are former british colonies, whereas *ETHFRACT* is a measure of the level of ethno-linguistic fractionalization of a society (Alesina and Werder, 2002). According to the literature, protestant countries, former british colonies and states that present lower levels of ethno-linguistic fractionalization are supposed to be less corrupt (Treisman, 2000; Kunicová and Rose-Ackermann, 2005).

In table 2 I present the descriptive statistics of all the explanatory factors described above; in the last column I indicate the expected signs of the relative relations between these variables and the degree of political corruption.

- Table 2 in the Appendix -

## Empirical Results

The empirical analysis is divided in two main parts. In the first part I perform a series of bivariate regression analyses between the relative indexes of democracy proposed and the two indexes of perceived corruption. The main purpose of this first part is to understand the effects of the different indicators on the control of corruption and the shape of their relations. In the second part I perform a series of multivariate analyses introducing all the control variables described above in order to control the effective validity of my research hypotheses. I adopt a cross-sectional research design using OLS regression models with the values of democracy and corruption indexes taken in the year 2000. For simplicity I present only the results obtained using the Control of Corruption Index (*CC*) as dependent variable, but I obtained exactly the same results using the Corruption Perception Index (*CPI*).

In the first part of the analysis I test eleven statistical models. In the Model 1 I test the effects of *ACLP* on *CC*. In Models 2 to 4 and 5 to 7 I test the linear, the quadratic and the cubic relationship respectively of *POLITY* and *VAN* with *CC*. In Models 8 and 9 I test the linear effects of *AGEDEM1* and *AGEDEM2* on *CC*, while in the last two models (Model 10 and 11) I test the log-linear relation between these two indexes and the dependent variable.

- Table 3 in the Appendix -

As we can see from the results presented in Table 3 all the indexes of democracy are highly significantly related with the Control of Corruption Index. There are several interesting points that should be stressed. First, democracies seem to be less corrupt than autocratic regimes. Second, using *POLITY*, as indicator of the democratic level of countries, the shape of the relationship that best fits the data is the quadratic one indicating that political regimes in transition to democracy present higher rates of corruption than some dictatorship, and

only after a certain threshold an increase in the level of democratization actually helps constraining corruption. According to the results obtained in Model 3 I can calculate the empirical value after which with an increase in the level of democracy the degree of corruption starts to decline. This value is equal to 34,38 on the 100 points scale of the standardized index used in the analysis that corresponds to a value more or less equal to 3 on the original scale of the Polity Index, indicating that those hybrid regimes defined as “Anocracies” tend to present higher rates of corruption than dictatorships and consolidated democracies<sup>22</sup>. This result is in line with the argument claiming that political regimes in transition to democracies in general have a worse performance than autocracies (Montinola and Jackman, 2002; Sung, 2004)<sup>23</sup>. Instead between *VAN* and *CC* the relationship that best fits the data is linear and positive<sup>24</sup>; the higher the level of democratization, the higher the capacity of a state to control political corruption. According to these results both the alternative, third and fourth, hypotheses on the effects of the level of democratization on the control of corruption are confirmed. It seems rather that the diverse shape of the relation is due to the specific indexes of democracy used, and in particular to the differences in their construction. Actually *POLITY* is developed aggregating, in an additive way, six different attributes belonged to three sub-categories into a democracy index from which an index of dictatorship, developed with the same scale, is subtracted. This could mean that a state can obtain a quite good democratic score performing well in some dimensions of analysis but neglecting some others that, maybe, contribute more to the restraint of corruption. Instead *VAN* is based only on two components, competitiveness and participation, that are aggregated in a multiplicative way. This means that a country can increase its level of democracy only performing well in both the two procedural components constituting the index. Thus in the multivariate analysis I test the validity of respectively the quadratic relationship between *POLITY* and *CC* and the linear relationship between *VAN* and *CC*. Third, all the indicators of the longitudinal variation of democracy are significantly and positively correlated with *CC*. Each of these indexes taken alone accounts for more than 40% of the variability of *CC*, indicating the high effectiveness of this dimension of democracy in constraining political corruption. To understand which models best fit the distribution of my data I compare the two models that use respectively *AGEDEM1* and *AGEDEM2* as independent variable and the two that use their logarithmic transformation with the same sample of countries<sup>25</sup>. Looking to the Table 3 we can see that the AdjR<sup>2</sup> of the two linear models (Model 8 and 9) are superior than the one of log-linear models

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<sup>22</sup> According to the classification made by the PolityIV Project those political regimes that obtain a polity score between -10 and -6 are defined as “autocracies”, those that obtained a score that ranges between the values of -5 and +5 are defined as “anocracies”, while those regimes that obtain a score between 6 and 10 are defined as “democracies. For a more complete explanation see Marshall and Jaggers (2009).

<sup>23</sup> For bibliographic references regarding other aspects of social and political performance see Carbone (2007; 2009).

<sup>24</sup> Using a sample composed by all the 154 countries for which data are available there is no significance for the quadratic relationship and little evidence for a cubic relationship but with signs contrary to the expectation. Actually this cubic relationship is totally dependent from the position of Russia that presents a quite high level of democracy but a very low rate for *CC*. Excluding Russia from the analysis there is no more statistical evidence for the cubic relationship.

<sup>25</sup> This is necessary because the logarithmic transformation of *AGEDEM1* and *AGEDEM2* generates several missing values in the distribution, decreasing the original size of the sample (from N=124 to N=112 for *AGEDEM1*, and from N=138 to N= 125 for *AGEDEM2*). The only way to make an effective comparison between these two couples of models is to test them on the same sample of countries.

(Model 10 and 11) showing that the formers are able to explain more variability of the dependent variable than the latters. Moreover, looking to the AIC (Akaike Information Criterion) of Model 8 and 9 we can understand that these two models, minimising the selected information criterion, best fit the distribution of the data (Stock and Watson, 2005). This is why in the second part of the analysis I test the effects of *AGEDEM1* and *AGEDEM2* on *CC* controlling the validity of these relations for the effects of alternative explanatory factors. In Figure 1 I combine four graphs showing the quadratic relation between *POLITY* and *CC* and the linear relations respectively between *VAN*, *AGEDEM1*, *AGEDEM2* and *CC*.

- Figure 1 in the Appendix -

According to the bivariate analysis it seems that all the research hypotheses presented above are confirmed by the results obtained, but only introducing the control variables I can test their effective validity, controlling for the effects of other possible explanatory factors. The results of multivariate analyses are shown in Table 4. In this part of the analysis for every democracy index tested I firstly introduce the three groups of control variables separately, then, in the final models I introduce only the control variables that have previously resulted significantly correlated with *CC*. For simplicity in Table 4 I present just these final models. More precisely, in Models 12 to 16 I respectively test the effects of the five democracy indexes (*ACLP*, *POLITY* in a quadratic form, *VAN*, *AGEDEM1* and *AGEDEM2*).

- Table 4 in the Appendix -

The main results can be summarized in this way. Firstly, *ACLP* is no more significantly related to *CC*, indicating that the mere presence of democratic institutions that enhance political corruption is not enough to constrain corruption. It seems rather that the type of government makes the difference; presidential systems tend to be more corrupt than their parliamentary counterparts (Kunicovà and Rose-Ackerman, 2005). Hence my first research hypothesis is not confirmed. Secondly, the quadratic relation between *POLITY* and *CC* survives to the control for the effects of alternative explanatory factors. Instead the regression coefficient of *VAN*, after the introduction of control variables, is no more significant. This seems to indicate that my third research hypothesis is confirmed unlike its alternative, the second hypothesis. Thus, empirical evidence supports the argument of a non-linear relationship between the actual level of democratization and the states capacity to constrain political corruption, as already shown by Montinola and Jackman (2002) and Sung (2004). Thirdly, the two indicators of the longitudinal variation in democracy (*AGEDEM1* and *AGEDEM2*) are still highly significantly correlated with the dependent variable. This indicates that more consolidated democracies offer higher opportunities to citizens and opposition parties to monitor and sanction corrupt

behaviours of public officials. Therefore my fourth research hypothesis on the positive effects of the time exposure to democracy on the capacity to constrain political corruption is strongly confirmed, even after controlling their effects for other variables. This finding confirms the results already obtained by Treisman (2000) and Blake and Christopher (2006). Fourthly, among the alternative explanatory factors I tested, the only two that are always significantly related to *CC* are *logGDP* and *HEALTH*. This result is completely in line with other findings in the literature (Goldsmith, 1999; Sanholtz and Koetzle, 2000; Treisman, 2000; Montinola and Jackman, 2002; Blake and Christopher, 2006), showing that the higher the economic development of a country and the higher the government expenditure for the provision of health care service, the higher the state's capacity to control political corruption. Other control variables sometimes result to be significantly correlated with *CC* but, in the final models shown in Table 4, only *TYPEGOV* is significantly related in four out of seven models, showing that the type of government matters in constraining corruption.

Finally, in order to provide more consistent results, I decided to test at the same time the level of democratization measured with *POLITY* and the longitudinal variation of democracy measured with *AGEDEM1* and *AGEDEM2*. The last two models (Models 17 and 18) shows that both the time exposure to democracy and the actual level of democratization continues to be highly and positively correlated to the states capacity to control political corruption. Empirical evidence supports again the presence of a quadratic relation between *POLITY* and *CC* and linear and positive effects of *AGEDEM1* (and *AGEDEM2*) on *CC*, confirming the validity of hypotheses 3 and 4. These last results show that, when we aim to study the consequences of democratization on different aspects of the performance of political systems, it is particularly important to consider, not only the actual level of democratization in a specific time period, but also the vertical or longitudinal dimension of democracy.

### **Implications for further research**

Given the results obtained in this work we can say that, in general, the democratization process has positive effects on the states capacity to constrain political corruption. More precisely there are three main conclusions that I can draw. Firstly, the mere presence of democratic institutions that enhance political competition does not necessarily help constraining political corruption. This preliminary result shows that, even if the presence of democratic structures is sufficient to distinguish democracies from autocratic regimes, if we want to analyse the consequences of democratization we need to introduce other dimensions of analysis.

The first conclusion seems to be related to the results obtained in favour of a quadratic relationship between the level of democratization and the corruption index, that is the second implication I can draw. In fact this result indicates that political regimes in transition to democracy tend to present higher rates of corruption than both autocratic regimes and consolidated democracies. However, my analysis seems to indicate that the shape of the relation between the level of democratization of a country and its capacity to constrain corruption

is highly sensitive to the relative index used. This is undoubtedly the weaker point of the work and, in general, a topic that should be investigated more deeply. Starting from a conception of democracy that is appropriate to the purpose of the research, we need to deepen the analysis and the discussion of the various democracy indicators present in the literature and, maybe, develop new and more appropriate indexes (Munck and Verkuilen, 2002).

The third, and more interesting, conclusion I can draw is that the longitudinal variation in democracy is undoubtedly the most significant factor in constraining the degree of political corruption of a country. Apart from the actual level of democratization of a political regime, the time exposure to democracy assumes a fundamental relevance in constraining its degree of political corruption. The more a political regime experienced political pluralism and electoral competition, the more it is able to offer opportunities to citizens and opposition parties to monitor and sanction government members. Actually this vertical dimension of democracy seems to be very important in order to understand, in general, the degree of political, social and economic performance of a country. In fact I think that the theoretical framework presented in this work and the results obtained analysing the topic of political corruption can give an important contribution to the analysis on the consequences of democratization (Carbone, 2009).

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## Appendix

Table 1 - Table of correlations among democracy indexes

	<i>ACLP</i>	<i>POLITY</i>	<i>VAN</i>	<i>AGEDEM1</i>	<i>AGEDEM2</i>	<i>logAGEDEM1</i>	<i>logAGEDEM2</i>
<i>ACLP</i>	1,000						
<i>POLITY</i>	0,8497 (0,0000)	1,000					
<i>VAN</i>	0,5927 (0,0000)	0,7929 (0,0000)	1,000				
<i>AGEDEM1</i>	0,4758 (0,0000)	0,5930 (0,0000)	0,5653 (0,0000)	1,000			
<i>AGEDEM2</i>	0,4788 (0,0000)	0,6130 (0,0000)	0,6130 (0,0000)	0,9645 (0,0000)	1,000		
<i>logAGEDEM1</i>	-0,0831 (0,3773)	0,5307 (0,0000)	0,5134 (0,0000)	0,8453 (0,0000)	0,8385 (0,0000)	1,000	
<i>logAGEDEM2</i>	0,1453 (0,1017)	0,4952 (0,0000)	0,5091 (0,0000)	0,7798 (0,0000)	0,8750 (0,0000)	0,9448 (0,0000)	1,000

Table 2 - Descriptive statistics of the main explanatory factors

Variable	Obs	Mean	St. Dev.	Min	Max	Expectation
ACLP	189	60,31	49,05	0	100	+
POLITY	151	51,78	39,63	0	100	+
VAN	155	33,25	21,27	0,81	88,73	+
AGEDEM1	189	17,87	29,55	0	131	+
AGEDEM2	189	20,88	30,17	0	131	+
logAGEDEM1	115	2,81	1,11	0	4,87	+
LogAGEDEM2	128	2,92	1,07	0	4,87	+
TYPEGOV	191	0,46	0,50	0	1	-
MAJ	191	0,38	0,48	0	1	+
FED	191	0,72	0,44	0	1	+/-
logPOP	157	15,59	2,02	9,82	20,95	-
loGDP	141	8,47	1,15	6,19	10,75	+
HEALTH	189	3,53	1,82	0,4	8,5	+
PROTEST	191	0,24	0,42	0	1	+
BRITCOL	191	0,32	0,47	0	1	+
ETHFRACT	188	0,43	0,25	0	0,93	-

Table 3 - OLS results, with standard errors in parentheses, between CC (year 2000) and democracy indexes

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
<i>ACLP</i>	0,0078*** (0,5139)										
<i>POLITY</i>		0,1410*** (0,0017)	-0,0339*** (0,0062)	0,0033 (0,0155)							
<i>POLITY</i> <sup>2</sup>			0,0004*** (0,00006)	-0,0004 (0,0003)							
<i>POLITY</i> <sup>3</sup>				0,0006** (0,0002)							
<i>VAN</i>					0,0280*** (0,0030)	0,0151 (0,0105)	-0,0228 (0,0257)				
<i>VAN</i> <sup>2</sup>						0,0001 (0,0001)	0,0011 (0,0007)				
<i>VAN</i> <sup>3</sup>							-0,0006 (0,0006)				
<i>AGEDEM1</i>								0,0234*** (0,0017)			
<i>AGEDEM2</i>									0,0220*** (0,0018)		
logAGEDEM1										0,6216*** (0,0621)	
LogAGEDEM2											0,6172*** (0,0653)
_cons	-0,5139*** (0,1082)	-0,8130*** (0,1153)	-0,4227*** (0,1084)	-0,5241*** (0,1132)	-0,8980*** (0,1191)	-0,7391*** (0,1720)	-0,4497** (0,2227)	-0,4628*** (0,0624)	-0,5035*** (0,0675)	-1,4836*** (0,1889)	-1,6520*** (0,2035)
N	185	150	150	150	154	154	153	112	125	112	125
AdjR <sup>2</sup>	0,1439	0,2952	0,5043	0,5230	0,3586	0,3613	0,4280	0,5456	0,5147	0,4716	0,4159
AIC	500,75	388,16	339,36	337,59	375,24	378,62	363,38	234,89	274,39	251,54	297,55

\*\*\* p-value < 0,01 \*\* p-value < 0,05 \*p-value < 0,1

Figure 1 – Graphic representations of the relations between *CC* (year 2000) and the indexes of democracy (*ACLP*, *POLITY*, *AGEDEM1*, *AGEDEM2*)

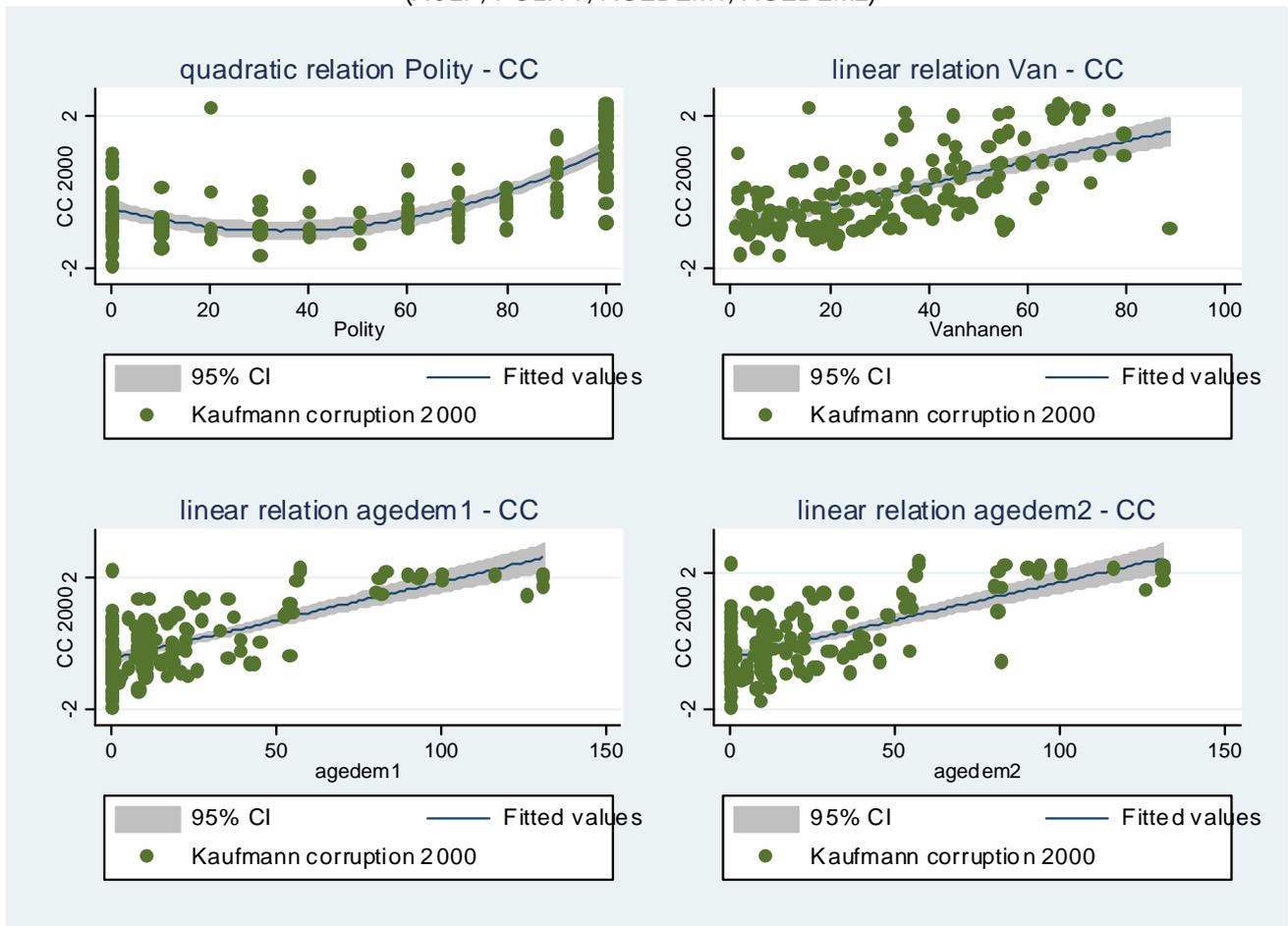


Table 4 - OLS results, with standard errors in parentheses, between CC (year 2000) and several explanatory factors

	Model 12	Model 13	Model 14	Model 15	Model 16	Model 17	Model 18
<i>ACLP</i>	0,0009 (0,0011)						
<i>POLITY</i>		-0,0153** (0,0063)				-0,0127** (0,0060)	-0,0135** (0,0061)
<i>POLITY</i> <sup>2</sup>		0,0001*** (0,00006)				0,0001*** (0,00009)	0,0001** (0,00006)
<i>VAN</i>			0,0021 (0,0033)				
<i>AGEDEM1</i>				0,0099*** (0,0020)		0,0096*** (0,0022)	
<i>AGEDEM2</i>					0,0088*** (0,0019)		0,0082*** (0,0021)
<i>TYPEGOV</i>	-0,2256** (0,1027)		-0,1672 (0,1076)	-0,1710* (0,0965)	-0,01897* (0,0974)		
<i>MAJ</i>	0,0608 (0,1052)			0,0447 (0,1001)	0,0158 (0,1006)	-0,0158 (0,1131)	0,0209 (0,1135)
<i>logPOP</i>				-0,0423 (0,0271)	-0,0448 (0,0277)		
<i>LogGDP</i>	0,5068*** (0,0634)	0,3624*** (0,0719)	0,5483*** (0,0700)	0,3983*** (0,0635)	0,3996*** (0,0648)	0,3088*** (0,0699)	0,3121*** (0,0711)
<i>HEALTH</i>	0,1907*** (0,0394)	0,1576*** (0,0454)	0,1671*** (0,0410)	0,1195*** (0,0390)	0,1362*** (0,0385)	0,1049** (0,0442)	0,1254*** (0,0439)
<i>BRITCOL</i>			0,1912 (0,1160)				
<i>ETHFRACT</i>	0,3325 (0,2245)		0,3542 (0,2471)	0,2971 (0,2107)	0,3049 (0,2131)		
_cons	-5,0445*** (0,5483)	-3,6765*** (0,5557)	-5,4061*** (0,5866)	-3,3322*** (0,7044)	-3,3751*** (0,7177)	-3,1505*** (0,5613)	-3,2479*** (0,5670)
N	141	124	128	138	138	124	124
AdjR <sup>2</sup>	0,6965	0,6895	0,7196	0,7377	0,7317	0,7285	0,7206

\*\*\* p-value < 0,01 \*\* p-value < 0,05 \*p-value < 0,1