Corruption and the Duration of Political Regimes, 1984-2008

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Abstract

The objective of this thesis is to investigate the consequences of corruption for the duration of political regimes during the time period 1984-2008. I derive hypotheses following the extension of the "selectorate theory" (Bueno de Mesquita et al., 2003, chap.8) developed to investigate the situations causing threats to the institutional framework (the political regime). The welfare of societal groups and institutional preferences in light of private and public goods allocation are the main determinants of regime stability. Corruption is one of several factors that affect the welfare of societal groups through the allocation of private goods.

As a first step, a series of logistic regression models evaluate the relationship between corruption, political regimes and events linked to political instability and civil unrest. Corruption increases the likelihood of experiencing coup attempts, government crisis, revolution attempt, and demonstrations in the period 1984-2008. In relation to the main analyses, these events are intervening factors that under certain circumstances may lead to a change in the political regime of a country. Therefore, I test how the duration of political regimes are affected by corruption conditioned on political regimes. The main results extend "Model 2 1900-2000" in Gates et al. (2006, p.901), which find that institutionally consistent regimes (democracies and autocracies) endure longer than inconsistent regimes, by including an interaction term between corruption and political regimes. I hypothesize that corruption decreases the stability of democracies and increase the stability of autocracies, and thereby evaluate further the implications of *de facto* political power (defined as the sum of factors affecting the distribution of resources) on the duration of political regimes.

The main findings of this thesis, using survival analysis, suggest that corruption only affects the duration of democracies. This finding is consistent across model specifications and alternative operationalizations of political regimes, but there is a high degree of uncertainty linked to the estimates. Democracies are more durable, in the sense that they have a lower probability of regime change when corruption is low. An increase in corruption decreases the survival ratio of democratic regimes. The level of corruption does not affect the duration of autocratic regimes, nor are autocratic regimes more stable than inconsistent regimes in the period 1984 to 2008.

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Chapter 1

Introduction

Does corruption affect the duration of political regimes? With this research question I aim to analyze how the allocation of *de facto* political power affects the duration of political regimes. Gates et al. (2006, p.901) find that ideal types such as democracies and autocracies last longer than political regimes that are inconsistent (e.g. neither democratic nor autocratic). Their findings are part of an extensive literature (e.g. Gates et al. (2006), Gurr (1974), Przeworski et al. (2000) and Sanhueza (1999)) that evaluate how the duration of political regimes are affected by their internal properties and conditions such as economic development, type of resources and political institutions. Few quantitative contributions, exceptions being Hegre and Fjelde (2011) and Arriola (2009), look into the informal properties of a political regime; corruption and other factors measuring the quality of institutions have not been sufficiently investigated. Examining the informal properties gives us insight into how properties of *de facto* political power affect the duration of political regimes.

In order to analyse the effect of corruption, I start by replicating model "Model 2 1900-2000" in Gates et al. (2006, p.901) for the time period 1984 to 2008. There are theoretical reasons to expect that the corruption and political regimes are interlinked (see Section 2.3), meaning that the incentive to act on corruption, and the consequences of corruption for institutional duration depends on the initial political regime. Different political regimes, with different institutional frameworks, provide different opportunities and constraints on the possibility of corruption, and as a result the consequences of corruption on institutional duration must be conditioned on political regimes. Other studies have analysed similar research question, but with use of different research method (Hegre and Fjelde, 2011); the ones on institutional stability that have used survival analysis have not evaluated the effect of corruption. In sum, the reciprocal relationship between corruption, political regimes and the duration of political regimes have not before been analysed with survival analysis.

Explanatory factors. Figure 1.1 place corruption among some of the other main

determinants of the duration of political regimes in the literature (see e.g. Acemoglu and Robinson (2006), Epstein et al. (2006), Gates et al. (2006), Gurr (1974), Hegre and Fjelde (2011), Przeworski et al. (1996), Przeworski et al. (2000), Sanhueza (1999)), where a political regime in t is a measurement based on the three conceptual dimensions used in Gates et al. (2006, p.896): political participation, executive constraint and executive recruitment. In sum, the indicators of *de jure* distribution of political power. Corruption, inequality, income, economic growth and the nature of resources (e.g. natural resources) influence the distribution of resources between groups in society. In turn, these factors influence the level *de facto* political power between groups which is a function of the present allocation of resources within a political regime, and between societal groups. In total, de jure- and de facto political power equals the political power of any societal group. Political regimes are therefore distinguished in terms of which group hold the most political power at any given point. In democracies, political power is more evenly spread across groups and citizens, but can be skewed given the distribution of resources and the means available in attaining *de facto* political power. Autocracy, on the other hand, is characterized by an uneven spread of political power; in autocratic regimes citizen have less *de jure* political power through political institutions making the overall political power, by definition, more unevenly spread across groups and citizens. Overall, the allocation of *de jure-* and *de facto* political power between societal groups affects the stability and duration of political regimes (political regimes in $t + 1$).

The effect of corruption on the duration of political regimes have two dimensions; a strategic dimension inherent in the allocation of political power between groups (i.e. corruption as a strategic instrument), and a structural dimension where corruption affects the duration of political regimes through other factors such as economic development and growth. The object of this thesis is to explain how different constellations, or mix of allocations between those with and without *de jure* and *de facto* political power, can sustain over time. Corruption is therefore an indicator of the "quality" or "efficiency" of governmental structures, and how institutional structures favor certain societal groups. Economic growth, democracy and lack of corruption, are closely tied to the concept of efficiency and quality, and are considered to create incentives for public goods and public citizenship. Letki (2006, p.309-310) state that "high level of state capture (demonstrated by corruption and clientelism) make contributions to the public good a non-rational and gullible strategy". However, as the consequences of corruption depends on the initial political regime, I try to evaluate the allocation of goods as a strategy that affects the duration of political regimes if incompatible with the incentive structure of a given political regime.

Main argument. Using the selectorate theory as main theoretical source (Bueno

Participation
Constraint } Political Regime$_t$($dejure$)
Recruitment

Corruption
Income
Growth } Allocation of Resources$_t$($defacto$)
Resources
(Nature of)

Political Regime$_{t+1}$
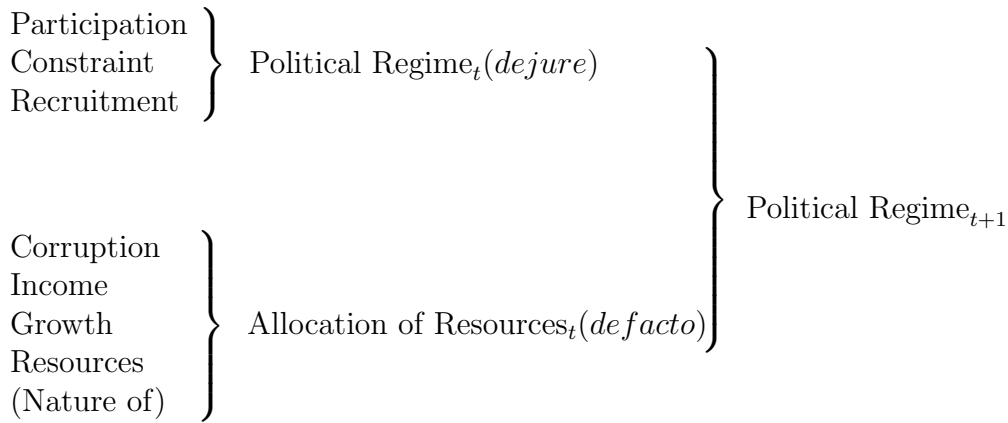
Figure 1.1: The domestic factors affecting regime duration; a simplified visualization of the main sub indicators of *de jure* and *de facto* political power as determinants of the future political regime

de Mesquita et al., 2003, chap.8), I hypothesize that the effect of corruption depends on political regimes. Furthermore, I hypothesize that corruption decreases the duration of democracies and increases the duration of autocracies. The selectorate theory offers a comprehensive overview of how allocation of resources, institutional preferences and initial political regime affects the welfare of societal groups and the stability of the stability of the current political regime. The welfare of societal groups is affected by the allocation of public and private goods. Corruption as an indicator of private goods allocation thus affects the duration of political regimes in cases where private goods are incompatible with the incentives structure of the regime. In democracies, political survival and depends on the lederships ability to allocate public goods. In autocracies, private goods such as corruption are used as a source of political support. As an increase in corruption simultaneously means a decrease in the overall level of public goods, corruption directly affects the welfare of societal groups. Political regimes are expected to be less stable if resources are not allocated stregically in accordance with the preferences of the societal groups sustaining the current leadership and political regime.

Several events may lead to a change in the political regime. Following the predictions derived from the selectorate theory I expect corruption to increase the likelihood of events of political instability and civil unrest. Specifically, I hypothesize that corruption increases the chances of coups, riots, demonstrations and government crisis. I include the test of these particular events in order to motivate the theoretical assumption concerning the duration of political regimes. While corruption is expected to increase political instability and civil unrest, the available counteractions differ between political regimes. In other words, corruption is simultaneously an instrument that increases the welfare of the supporters of the regime in autocratic regimes. In sum, political instability and civil unrest does not necessarily mean that the political regime will fail, but indicates some intervening consequences of corruption.

Main findings. The empirical analyses are presented in two turns. First I analyze the relationship between corruption and coup attempts, government crisis, riots, revolutions and demonstrations. These analyses investigate the relationship between corruption and political instability and civil unrest. I find that corruption significantly increases the likelihood of all events except riots. Furthermore, analyses that include interaction terms between regime types and corruption are either not significant or point in the direction of the general trend (more corruption increases instability and unrest). In other words, regardless of political regime, corruption increases the likelihood of political instability and civil unrest.

The relationship between corruption and the destabilizing events are linked to the duration of political regimes in a preliminary fashion. Democracies and autocracies are not equally sensitive to corruption as the incentive structure of the latter encourages corruption as a form of private goods. In other words, even though corruption increases instability and unrest in autocracies it simultaneously increases the political support of the leadership. In addition, the oppressive and repressive strategies available in autocratic regimes make them more robust to political instability and civil unrest.

When modeling the duration of political regimes directly, I find that corruption decreases the likelihood of survival in democracies. This finding is robust to alternative model specifications and operationalizations. In autocracies, on the other hand, I find no interaction effect between corruption and political regimes. Not under any model specifications or operationalizations are there any conditional effect between political regime and corruption on the stability of political regimes.

Chapter 2

Literature review and theoretical framework

This chapter consists of three main parts; first I summarize, narrow down and pinpoint a definition of corruption and political regimes. Second, I turn to give a broad overview of the factors that affect the duration of political regimes by summarizing the relevant literature on the topic. Two aspects of corruption are particularly interesting; corruption as a strategic instrument to gain political support, and the structural consequences of corruption (e.g. the effect on economic development). Third, I turn to the theoretical framework used to understand the role and consequences of corruption for the duration of political regimes. The framework applied is mainly influenced by the "selectorate theory" presented in Bueno de Mesquita et al. (2003, chap.8). While the main explanatory force of the selectorate theory concerns domestic political survival (e.g. length of political tenure), three articles extend the framework to include institutional change and duration: the formal properties are explained in "Political Survival and Endogenous Institutional Change" (Bueno de Mesquita and Smith, 2009) and "The Perils of Unearned Income" (Smith, 2008) while "Leader Survival, Revolutions, and the Nature of Government Finance" (Bueno de Mesquita and Smith, 2010) is an empirical evaluation of the topic. At the end of this chapter I summarize the main expectations and derive hypotheses.

2.1   Conceptual definitions

In order to build a bridge between the concept of the core variables corruption, political regimes and the duration of political regimes, and the measures used to operationalize and analyze the relationships between these concepts (see Section 3.2), I start by defining corruption conceptually according to the existing literature. I am interested in the link between background- and systematized concepts, and the ability of the indicators used

to measure exactly that (Adcock and Collier, 2001, p.531). Quite naturally, there is sometimes hard to find good measurements and data; this is to some extent true for the corruption index used in this thesis. One remedy is therefore a thorough introduction of the concept, and an evaluation of the measurements used in order to narrow down the scope and interpretation of the results to fit the choice of measurement. Consider this section an introduction to the concepts behind the data used in the statistical models, and therefore part of a discussion of the measurement validity (i.e. "the systematic error that arises when the links among systematized concepts, indicators, and scores are poorly developed") (Adcock and Collier, 2001, p.532).

2.1.1   Corruption

The usual starting point for studies of corruption, especially cross-national ones, is to define corruption as "the abuse of public power and influence for private ends" (Gardiner, 2008, p.25). Shleifer and Vishny (1993, p.1) introduce the concept of government corruption as "the sale by government officials of government property for personal gain", focusing on the actions of public agents in granting privileges, collecting bribes and utilizing their public position for private benefits. The diversity between the types and modes of corruption makes the conceptual delimitation challenging. The main problem is that corruption tend to be defined and perceived differently across the world Gardiner (2008, p.25).

First of all, in order to narrow down the scope of the term corruption, the main focus in this thesis is governmental corruption, but at the same time I follow Rothstein and Teorell (2008, p.69) in including "clientilism, nepotism, cronyism, patronage, discrimination, and cases where administrative agencies are "captured" by the interest groups that they are set out to regulate and control,...". Therefore, to specify, I consider only the consequences of governmental corruption, i.e. corruption where agents with political power are involved, to influence the prospect of political regime endurance. This choice is off course shaped by the available data material, where the corruption index used in this thesis measure the concept mentioned above such as patronage and nepotism. The type of corruption "that can lead to popular discontent, unrealistic and inefficient controls on the state economy, and encourage the development of the black market" (PRS Group, 2012)

In an analysis of the link between corruption, inequality and the rule of law in among other countries Romania, Uslaner (2008, p.133) find that "[w]henever corruption shapes people's evaluation of their state or their society, it is high-level corruption". It is exactly this effect of corruption, and this form of corruption that is the main inquiry of my thesis. It is high-level corruption among agents with political power that have the potential to affect the stability of the institutional framework by triggering destabilizing events

of political instability and civil unrest. To further quote Uslaner (2008, p.133): "The misdeeds of ordinary professionals don't matter". Given the magnitude of changing the political regime, the actions necessarily in catalyzing such events is likely to be rooted in widespread and systemic corruption rather than low-level corruption. Furthermore, high-level corruption is the form of corruption that is most closely intervened with the distribution of resources and therefore also *de facto* political power. Such forms of corruption will favor the leadership and the political elite, and create discomfort and unrest among the citizenry that potentially can lead to events shaping the future political regime (PRS Group, 2012, p.4-5).

Corruption is not merely the extraction of public monetary goods for private gains. Corruption also reflects the relationship between agents with political power, and the agents granting them with political support. A related concepts is the distribution of position and services, or the threat of removing such priviliges, in exchange for past and future political support ("clientelism" (Boix and Stokes, 2009, p.2-4)), and sub concepts such as patronage (exchange of public resources for political support by government officials) and vote buying (exchange of goods for votes) (Boix and Stokes, 2009, p.4-5). Clientelism, patronage and vote buying are thereby defined according to the relationship and position between actors. Clientelism, like corruption in general, is about position, political influence and survival: "[t]hose in control–patrons, subpatrons, and brokers–provide selective access to goods and opportunities and place themselves or their supporters in position from which they can divert resources and services in their favor" (Roniger, 2004, p.354). The main focus here is how these forms of "misuse" grant the buyer and seller with a advantage that they would not otherwise had if the formal rules of conduct had been followed. Party founding is therefore also included in the definition, and measured by the "International Country Risk Guide" as "suspiciously close ties between politics and business" (PRS Group, 2012, p.4-5).

The multitude of related concepts included in the definition of corruption means that corruption-indices compare cumulative events that vary extensively. Events such as when the information minister of Sierra Leone sold the national television transmitter in 1987, Robert Mugabe won the national lottery while governing Zimbabwe in 2000 and 50 percent of municipals budgets in east Colombia are directly transferred to the paramilitary group "Paramilitary Peasants of Casanare" (Acemoglu and Robinson, 2012, p.372-373,381); national parties in Romania started an investment program in 1992 promising 800 percent returns before collapsing two years later in 1994 and loosing the savings of a large amount of Romanians (Uslaner, 2008, p.127); lower level officials in Ukraine are threatened and blackmailed to aid and secure votes in favor of President Leonid Kuchma's reelection in the 1999 presidential election (Darden, 2008, p.49-50); or the Philippine President Ferdinand Marcos makes the "Guinness Book of Record 1999" for largest theft ever

committed (\$ 860.8 million in 1986) (Bueno de Mesquita et al., 2003, p.167) are all acts labelled corruption. It also means that terms such as "extraction institutions" (Acemoglu and Robinson, 2012) or the distinction between corruption as a behavioral pattern and as an informal institution are not differentiated (Helmke and Levitsky, 2004). In other words, the different aspects, modes and types of corruption are not distinguishable, but simplified as an indicator of the misuse of public goods for private gains.

Common sources. Mainly three sources are used in cross-national analysis of corruption (Treisman, 2007); "International Country Risk Guide", World Bank (WB), and Transparency International (TI). The corruption index from ICRG used in this thesis, the "Corruption Perceptions Index" (CPI) from TI, and the "Control of Corruption" index by the WB. The ICRG corruption index and the CPI corruption index are measurements of perceived corruption. In other words, they aggregate different sources such as risk ratings, surveys and polls to create a measurement of corruption. The WB corruption index, on the other hand, measure

Even though they are constructed differently there is a strong correlation between the corruption indices which indicates that they to some degree capture the main trends similarly (Treisman, 2007, p.214). For example, perceived corruption and experienced corruption tend to be correlated; Treisman (2007, p.217-219) report correlations in the range of 0.6 and 0.8 between common sources of corruption data such as the TI and World Bank index on the other, but the results are mixed depending on the survey and the formulation of the questions used. Olken (2009, p.26) also report a positive, but weak correlation between perceived and experienced corruption.

The correlation results do not hold up when using more sophisticated methods; Donchev and Ujhelyi (2009, p.2) report, in a comparison of the three corruption indices mentioned above and actual experience with corruption, that "..., corruption experience is found to be a weak and in most cases statistically insignificant determinant of all three corruption perception indices". Even though concluding optimistically about the evolution and future prospect of corruption indices, Urra (2007, p.8-9) conclude that the challenge of "obtaining simple and complete reliable indicators is impossible by the very nature of corruption". The task is challenging, especially in attaining cross-national time-series data enabling reliable analysis of both the determinants- and consequences of corruption. Due to the conflicting time series of the different corrupiton indices, it is not possible to use alternative measures in order to test the robustness of the results derived in this thesis. This is a weakness that highlights the need for consistent time series data on corruption and related concepts.

2.1.2 Political regimes

I distinguish between autocratic, democratic and inconsistent regimes following the operationalization of Gates et al. (2006) which use several indicators from the Polity IV project (Marshall, Jaggers and Gurr, 2010) in order to distinguish between these three ideal types. A change in political regime can mean a change between two ideal types (e.g. a transition from democracy to autocracy) or a change within an ideal type (e.g. democratization of a democracy).[1] Even though the conceptualization applied in these two indices are widely used, I find it beneficial for the remainder of the thesis to elaborate on the conceptualization across and within political regimes since there are no universal definition in the existing literature. First of all, I view political regimes as aggregated ideal types based on several formal institutional indicators granting agents with *de jure* political power over the allocation of resources. This distinction is important as one could easily define political regimes as an interlinked measurement of formal and informal institutions. Snyder and Mahoney (1999, p.103) does just that when arguing that "[r]egimes are the formal and informal institutions that structure political interaction, and a change of regime occurs when actors reconfigure these institutions". I modify this definition by distinguishing informal institutions from the definition of a political regimes, and add that the interaction between formal institutions and behavioral patterns reconfigure or sustain political regimes. By using institutions as a measurement of political regimes, leaving informal patterns aside, I tend towards a minimalist definition of regime types. I consider the substantial dimensions (i.e. the outcome regimes produce) as something distinctively different from the core definition of political regimes, or more precisely, the effect of political regimes rather than a composite part of the definition in itself.

At the core of the defining different political regimes is the distinction between democracies and non democracies, and the ongoing debate concerning the utility, and precision, of graded measurements of democracy (Coppedge et al., 2011, p.247-248 Elkins 2000, p.293-294; ; Treier and Jackman 2008, p.213-214). Beetham (1999, p.5) define democracy by highlighting two properties that universally distinguish democracies from other political regimes: (1) popular control, (2) political equality. The main insight from this definition of a democratic political regime is the fact that it can be applied to a large number of different institutional varieties while at the same time capture overall "essence" of the system. The definition follows Dahl (1971, p.1-2) when he writes that "I assume the key characteristic of a democracy is the continuing responsiveness of the government to the preferences of its citizens, considered as equals". The second property, popular control, or participation, have influences the gathering of data and indicators. Vanhanen

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[1]The actual measurements and degrees of changes in the institutions (sub components of regimes) necessary to change a political regime are discussed further in Section 3.2

(2000, p.251-252), in his "Polyarchy" dataset named after the already referenced book by Dahl (1971), gathers data and consider democracy as the sum of participation and competition, and formally defining democracy as "a political system in which ideologically and socially different groups are legally entitled to compete for political power, and in which institutional power-holders are elected by the people and are responsible to the people".

Two arguments are used in favor of defining political regimes according to formal properties: first, I find it easier to isolate and the effect of distinct phenomenon keeping them separated as opposed to including a large amount of behavioral patterns into the definition of political regimes, second, since the distinction between informal institutions and behavioral patterns vary across time and space an inclusive measure that account for both might end up confusing actions with institutions.

2.2 Literature review

I organize this literature review according to distinction between *de jure-* and *de facto* political power presented in the introdution. The literature review is therefore centered on the factors that influence the level of formal political power (institutions) and informal political power (income, growth resources, allocation, corruption etc.). I consider the factors that influence a regime transition to be distinctly different from the factors influencing the stability of political regimes (Shin, 1994, p.151; Przeworski 1997)

The literature on regime duration and institutional stability have not explicitly incorporated and analyzed the effect of political corruption. One of few exceptions, Hegre and Fjelde (2011), analyze the effect of corruption on the probability of regime transition and stability. I aim to do something similar, but with a different statistical method and model that better capture trends in regime stability. The literature on regime transition and regime survival highlight the fact that these to processes are different; the factors explaining transition and stability are different and, especially the factors explaining transitions, vary over time and space (Shin, 1994, p.151). A specialized model that analyzes duration spells is therefore, in addition to the conceptual distinction between transition and stability, a more efficient use of the data.

2.2.1 Formal (*de jure*) political power: political institutions

Several studies of institutional stability view stability and duration as an equilibrium between those with and without formal political power (Gates et al., 2006; Hegre and Fjelde, 2011; Przeworski et al., 2000; Przeworski, 2005). Gates et al. (2006, p.894-896) describe the equilibrium as the consistent relationship between three dimensions: (1)

executive recruitment, (2) executive constraints, (3) and participation. Their conceptual framework is based on the assumption that the executive is interested in maximizing current and future power and authority. In consistent regimes, one can expect institutions to be mutually reinforcing which in turn affects the duration of regimes. Gates et al. (2006, p.901) confirms that consistent regimes are in fact more stable than inconsistent regimes; democracies and autocracies tend to survive longer than inconsistent regimes in the period 1900-2000.

Several scholars have evaluated the baseline hazard function of political regimes (the risk of regime transition when all covariates are zero), and there seem to be some disagreement (Gates2006;Gurr 1974; Przeworski et al. 1996; Przeworski et al. 2000; Sanhueza 1999). Przeworski et al. (1996, p.177-178) find no support of "consolidation" of democracies; democracies are, after controlling for level of development, "about equally likely to die at any age". Przeworski et al. (2000, p.139-141) confirms this, and finds that the hazard rates of dictatorships decreases slightly over time. This stand in contrast to the findings of Sanhueza (1999, p.355) which find that the risk of regime transition increases during the first and then stabilizes; after the initial period of increased risk stabilize and the "duration breeds stability". This is also the foundation for the survival model of institutional stability in Gates et al. (2006, p.898-899)

Hegre and Fjelde (2011, p.6-11) suggest that corruption creates informal institutions that can influence stability. Together with formal institutions informal ones can reinforce or weaken the equilibrium of institutional stability suggested in Gates et al. (2006). In autocratic regimes political corruption can be stabilizing. Since political corruption will benefit the incumbent, it will be stabilizing through the monopolization of power of the incumbent. By sharing resources with some necessary section of society, the elite, corruption and the illegitimate distribution of public resources into private hands is likely to consolidate the regime by widening the gap between the incumbent and the political opponents. Hence, political corruption can be viewed as a stabilizing mechanism in autocratic regimes. Even though an autocratic regime is not in best interest of the citizenry, this group lack formal and informal political power and coordination problems arise when organizing collective action. This stands as a critical barrier for institutional change in autocratic regimes (Hegre and Fjelde, 2011, 9).

In semi-democratic regimes corruption can prolong and slow down institutional change. The institutional structure grants an incumbent with *de jure* power while the institutions for control are weak. This enables incumbents to attain *de facto* power through informal institutions such as corruption. In terms of incentives, the mix of access to formal and informal power makes semi-democratic regimes more stable by limiting the benefits achieved by institutional change toward both democratic and authoritative regimes. The same is not the case in democratic regimes; the incentive structure in democratic regimes

does not stimulate political corruption. This is due to the fact that institutions and non-governmental organizations are better able to check, evaluate and control for corruption in democratic regimes. (Hegre and Fjelde, 2011, p.9-11)

Institutional diffusion. There are several studies that find a relationship between political neighborhood and domestic political regime; Gates et al. (2006, p.901) find that regimes surrounded by distinctly different political regimes are more likely to experience a regime transition than ones that are not. These effects suggest that the political conditions in neighboring countries also affect the domestic conditions of that country (Gleditsch and Ward, 2006, p.916). The "third wave" of democratization starting in the 1970s have received much attention in the literature (Huntington, 1991, 13-26). Even though all transitions to democracy does not sustain over time, the main notion is that the events occurring in one country can influence the events in another. The democratization of eastern Europe in the early 1990's after the fall of the Soviet Union, and the extensive number of regime transitions in Latin America during the 1970s (Huntington, 1991, 22), are well-suited examples of interlinked occurrences of transitional events and regime instability. For the analysis in this thesis, this literature suggest and support the notion that the political conditions and transitional trends can have a influence across borders, meaning that the duration of political regimes in one country can be shortened by popular discontent, revolutions, reform and other events occurring in close proximity to the given political regime.

Also Doorenspleet (2004, p.317-318, 327-328) find evidence in support a diffusion effect on the likelihood of democratic transitions, and point to the experiences in Eastern Europe after the fall of the Soviet Union in the late 1980s and early 1990s. Instability in neighboring countries is likely to affect domestic conditions, where transitions in one country can influence the transitions in other countries by serving "as models for later transitions in other countries within the same region" (Shin, 1994, p.153).

2.2.2   Informal (*de facto*) political power: allocation of resources

Income and growth. Przeworski et al. (1996, p.169-171) report evidence that the effect of economic development stabilizes democracies. The higher the level of economic development the more likely democracies are to sustain over time. Also, the factors increasing the probability of a regime surviving are "democracy, affluence, growth with moderate inflation, declining inequality, a favorable international climate, and parliamentary institutions" (ibid. p.167). Also Sanhueza (1999, p.354) find support that economic development foster political stability in democracies; the same is not true for autocracies where the main determinant of institutional stability where found to be popular unrest and discontent. Przeworski et al. (2000, p.122-123) find that economic development and

growth affect the stability of both democratic- and autocratic regimes, but the magnitude of the effect is greater for democracies. The overall effect of economic growth on political regime stability is confirmed by Gates et al. (2006, p.901) which find that the level of GDP per capita increases the expected survival of political regimes in the period 1900-2000.

Przeworski (1997, p.167) argues in favor of the positive effect of economic growth on the stability of political regimes[2]. The relationship between the economical situation and the stability of political regimes are summarized accordingly: "What destabilizes regimes are economic crisis, and democracies, particularly poor democracies, are extremely vulnerable to bad economic performance" (Przeworski, 1997, p.169). The relationship between income and duration is most apparent in democracies; Przeworski (2005, 253-255) report that no democracy with a higher income per capita than Argentina in 1975 ($6055) have ever failed. Furthermore, the effect, in terms of estimated life-span seems to be monotonically increasing according with higher income per capita. In other words, an analysis of political stability must account and control for the effect of the economy. Also important in Przeworski (2005, 265) is the effect of economic crisis; the growth rate in itself is not the important factor, it is the effect on income distribution of economic crisis (in close proximity to the survival threshold) that will manifest itself on the estimated survival of democracies.

Corruption. When evaluating the literature on the theoretical and empirical properties of corruption, most contributions analyze corruption as either a factor affecting growth and development (e.g. Mauro (1995) and Rose-Ackerman (1975)) or the quality, efficiency and level of public spending of governments/leaders (e.g. Acemoglu, Egorov and Sonin (2010) and Aidt (2009)). For instance, Shleifer and Vishny (1993), evaluate two properties of corruption; the institutional determinants of corruption and the negative effect of corruption on development. While the institutional determinants of corruption and the negative effect on development seem rather agreed upon, few theorize how corruption might affect the stability of political regimes.

Patronage and clientielism can remain a problem even though the incentive structure, the formal properties of the regime, has changed (Bratton and van de Walle, 1997, p.245). Formal institutions structure political action. In a study of informal institutions in transitional regimes, Grzymala-Busse (2010, p.322) write that "[i]nformal practices and institutions are seen as promoting corruption, delaying the consolidation of democratic institutions, and eroding emergent formal rules". Note that corruption in this case is a behavioral pattern, and not an institution itself, but that linked concepts such as clientelism and patronage are considered informal institutions. Informal institutions and corruption

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[2]Thereby contesting the notion in the previous literature that economic growth have a destabilizing effect on political regimes (see e.g. Olson (1963))

thereby undermine the role and effect of formal institutional framework.

The conceptual delimitation of corruption argues in favor of a broad definition of corruption (the misuse of public goods for private gains) including sub concepts such as patronage, cronyism, clientelism, party funding and more. The role of corruption in relation to formal political institutions such as elections, executive recruitment and institutional constraints is in the introduction categorized as influencing the level of de facto political power among societal groups. I therefore argue, in a similar manner as Helmke and Levitsky (2004, p.725-726), that corruption is a form of informal institution that shapes the incentives behind political behavior. The notion that "...much current literature assumes that actors' incentives and expectations are shaped primarily, if not exclusively, by formal rules" Helmke and Levitsky (2004, p.725-726), is indeed relevant for the literature on the duration of political regimes. In fact it is the main objective of this thesis. Cross-country variation in corruption, as an indicator of informal institutions and de facto political power, shapes the incentive structure and thereby political behavior which in sum affect the duration of political regimes: "Political actors respond to a mix of formal and informal incentives, and in some instances informal incentives trump the formal ones". The second part of the previous sentence is an empirical statement that must be tested; it is theoretically likely that informal institutions do matter for the duration of political regimes, but this statement must, and will, be tested.

Inequality. Corruption, rent-seeking and rent appropriation, and strategic allocation of resources have consequences for the degree of inequality within a polity. Acemoglu and Robinson (2006, p.2-7) use the distribution of resources as a parameter that affect the *de facto* political power between groups. They consider distribution of resources to be endogenously linked to political regimes where the distribution of resources in t shape the future economic institutions and thereby the future allocation of resources in $t + 1$ (Acemoglu and Robinson, 2006, p.2-7). In the introductory I establish a causal model that include corruption in this process; corruption is by definition related to the allocation of resources (see Section 2.1), and thus interlinked with the level of inequality. The choice of political regime is also linked to economic conditions and political resources in the theoretical framework of Boix (2003, p.27-46); "Besides the distribution and nature of economic assets, the choice of political regime is affected by the political and organizational resources of the parties in contention"[3]. Each individual supporting the political regime which redistribute in such a way that it maximizes its welfare. A result of his main model find that the likelihood of democracy increases the more egalitarian the allocation of resources are. Acemoglu, Robinson and Verdier (2006, p.36-38) does not reach such

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[3]Boix (2003, p.22) distinguish mainly between poor and rich, but extend the model to include class structure. The utility of each group is linear in income, and there are four political states in the framework: authoritarianism, communism, democracy, and revolutionary war

a clear prediction; when inequality is high the likelihood of revolutions are higher, but the ones getting the private goods are more likely to use repression in order to keep their position in place. Therefore, inequality, and the prospect of democracy, can go both ways dependent on the strategic choices of those gaining the most from inequality.

Acemoglu, Robinson and Verdier (2006, p.36-38) have a similar line of reasoning for the effect of inequality on consolidation of democracies; democracies redistribute resources away from the top (the elite); this will in turn influence the prospect of democracy; if too much wealth is redistributed away from the elite, the more discontent among this group; that might increase the probability of the elite mounting a coup. Therefore, the higher the level of inequality when a country becomes democratic, the less likely that regime is to succeed (the more is redistributed away from the top)).

Kleptocracy and government stability. Institutional design affects the prospect and sustainability of corrupt- and kleptocratic governments. Robinson (2004, p.189), develop a theoretical model trying to explain how "kleptocratic rulers that expropriate the wealth and income of their citizens remain in power without a significant base of support in society". The model predict that the success of such rulers rely on their ability to use "divide-and-rule" as a political strategy (ibid.). Even though the model first and foremost explain stable governments with corrupt and kleptocratic traits within weakly institutional frameworks, the model also consist of implications for institutional stability; a klepocratic rule must weaken and complicate the coordination of political opponents with incentives to change the institutional framework. Przeworski et al. (2000, p.123-125) support this notion by providing empirical evidence that intra-regime instability (rapid leadership turnover) influence the stability of political regimes. Robinson (2004) therefore offers an explanation, with implications for regime stability, for why weakly (inconsistent) institutional countries that does not provide the welfare of its citizens can sustain given that the rulers strategically allocate state resources. Furthermore, Bueno de Mesquita and Smith (2010, p.32), argues that natural resources can help sustain institutions that favor a small ruling elite by enabling the leadership to allocate private goods in exchange for political support.

Oil and natural resources. Authoritarian regimes with access to oil or other natural resources tend to last longer (Boix 2003, p.12; Morrison, 2006, p.365-368). Busse and Gröning (2011, p.9-10) find an empirical relationship between the degree of natural resources export and corruption, so this argues in favour of controlling for the level of natural resources when explaining the consequences of corruption. Smith (2008, p.781) explain why and how the effect of natural resources shape policies by looking at the prospect of survival given internal political competition and revolutionary threats, and state that "[c]oalition size determines whether free resources are spent to enhance societal well-being or used as rewards for the leader and her cronies". A small coalition size and

the presence of natural resources, foster autocratic change that limit the degree of public
goods spending. An initial large coalition size and natural resources foster democratic
change benefiting the society at large. While natural resources increase the threat of
revolution by increasing the incentives for citizens to support political movements advo-
cating more inclusive political systems (Bueno de Mesquita and Smith, 2010, p.781), the
pressure on kleptocratic leaders intensify and the divide-and-rule strategies becomes an
ever more important determinant of the duration of kleptocratic governments and insti-
tutions (Robinson, 2004, p.163-164). Also, the strength of institutions, and their ability
to restrict and hold leaders accountable to citizens influence the prospect of corruption
and kleptocracy, and the duration of such regimes Robinson (2004, p.163).

Summary. There are two main approaches to understanding the consequences of
corruption for institutional duration; the strategic element highlighting what agents want
and how they use available resources, and the structural highlighting the intermediate ef-
fect of corruption institutional duration through the influence on productivity, income and
growth. We know from the literature on institutional stability that consistent political
regimes tend to last longer than inconsistent ones (Gates et al., 2006; Gurr, 1974). Also,
economic growth and wealth, type of economy, political neighborhood, income equality,
and political history are associated with stability (Gates et al., 2006, 900-02; Gurr 1974;
Przeworski et al. 2000, chap.2; Sanhueza 1999, 354-355). Furthermore, several studies
treat the level of corruption as an endogenous effect of political regimes and institutions
which favours an interaction term between the two when explaining the duration of po-
litical regimes (Amundsen, 1999; Gunardi, 2008; Hegre and Fjelde, 2011; Montinola and
Jackman, 2002; Treisman, 2000, 2007).

2.3   The theoretical framework

The theoretical framework presented in Bueno de Mesquita et al. (2003) account for
the challenges and strategies that lead to political survival in response to three treats:
(1) domestic challenges to leadership, (2) revolutionary challenges to the political sys-
tem, and (3) external threats. While institutional survival is not the main focus of their
framework, they elaborate on institutional stability in Bueno de Mesquita et al. (2003,
chap. 8), and in "Political Survival and Endogenous Institutional Change" (Bueno de
Mesquita and Smith, 2010). The remainder of this section applies the selectorate the-
ory in order to understanding the relationship between corruption and the duration of
political regimes. When trying to maximize the length of tenure, political leaders must
satisfy the needs of the winning coalition (source of political support) while at the same
time prevent any institutional threat from the selectorate (those with ability to choose
leaders) and the disenfranchised (those without any form of political power). All in all,

given that political leaders value political survival, we can account for and analyze the institutional consequences occurring as a result of domestic threats to the political leaders themselves, and the institutions/regime that secures their tenure and power. The allocation of resources, in terms of private and public goods, is a crucial strategic tool available for political leaders in securing future political power and sustaining the current political regime. Corruption, by definition a private good Bueno de Mesquita et al. (2003, p.200), can therefore be evaluated as a strategic choice securing the wealth and welfare of the leadership and societal groups.

The size and influence of different societal groups given by the formal properties of the political regime in question, in combination with the current allocation of resources, are the main determinants of regime duration. If the allocation of resources is incompatible with the incentive structure of the political regime, we can expect an increase in destabilizing events (e.g. coup attempts, riots, revolution attempts, demonstrations and government crisis). Political instability and civil unrest may not necessarily lead to a change in the political regime. The prospect of regime duration in light of political instability and civil unrest varies according to the formal properties of the current political regime. Arriving at this insight requires a thorough discussion of private and public goods, the welfare of societal groups, their preferences over political regimes and the implications of resource allocation for political stability, civil unrest and the duration of political regimes. I therefore organize the theoretical presentation in a stepwise manner with definitions and discussions according to the following list of sub elements: (1) baseline motivation, (2) agents, (3) political regimes, (4) public and private goods, (5) corruption and the allocation of resources, (6) preferences over political regimes, and last (7) an overview of potential actions that affects the duration of political regimes. An overall summary of the theoretical expectations and specification of the hypotheses are found in the last section of this chapter.

The baseline motivation. The unit of analysis in the selectorate theory is political leaders, and societal groups that seek access to current and future political power. The main motivation of political leaders are: "[p]olitical leaders are motivated first to gain and retain political power and, conditional on meeting that goal, to maximize their discretionary control over government revenue" (Bueno de Mesquita and Smith, 2009, p.171). This baseline motivation is similar to the initial theoretical starting point of the replication framework in Gates et al. (2006, p.894): "a political executive's primary incentive is to maximize his/her current and future power and authority". The baseline motivation is the starting point for understanding the predictions derived from the framework concerning the stability of political regimes. It is the core assumption that is used to understand strategic interaction, and the outcome that follows from the interaction among agents and societal groups. Given the specification of the baseline motivation, leaders are expected

to allocate resources strategically in order to remain in office. Remaining in office also depends on the current political regime. Any change in the current political regime would be an act in line with the baseline motivation; either in order to remain in power, or to extract more resources for private gains.

Agents. The selectorate theory distinguish between four main societal groups that are subsets of the citizenry (N): the leadership (L), the winning coalition (W), the selectorate (S), and the disenfranchised (D). The leadership is the individual, or group of individuals, with "the authority to raise revenue and allocate resources" (Bueno de Mesquita et al., 2003, p.38). The size of the leadership varies according to the institutional design of a given political regime. Access and opportunity to shape the allocation of resources is the main source of political power, and grants the leadership with several strategies in order to maximize current and future political power. The welfare of societal groups are linked to choice of the distributive strategy of the leadership, and the type of goods allocated, discussed further below.

The leadership depends on the political support of the winning coalition in order to remain in office. The role of the winning coalition is best understood in relation to the selectorate. The selectorate as a group have two main characteristics; (1) the selectorate are involved in selecting leaders, and (2) have the possibility to become member of the winning coalition (Bueno de Mesquita et al., 2003, p.331). The subset of the selectorate that "endows the leadership with political power over the remainder of the selectorate as well as over the disenfranchised members of the society" (Bueno de Mesquita et al., 2003, p.51), are labeled the winning coalition.

If we evaluate the relationship between L, W, S and D in the United Kingdom (UK), we know from the design of the electoral system, often just called "first past the post", that all citizens above the age of 18 with citizenship have the right to vote. The candidate that receives the plurality of votes within each electoral district is elected "Member of Parliament" (MP) (Lijphart, 1999, p.15). The party with the majority of MP's can form the executive government, the "cabinet" (L), which commonly consist of MP's from the party with the majority of seats in the parliament.[4] In sum, a winning coalition in contemporary UK is, according to the differentiation of societal groups in the selectorate theory and due to the electoral system, one fourth of the citizenry with the right to vote in elections (i.e. the selectorate), given that every member of the selectorate votes in an election. The relative size of W is therefore determined by the size of the citizenry that can vote, and based on traits of the electoral system (e.g. plural, majoritarian, proportional etc.). Most contemporary democracies have developed universal suffrage since the second

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[4]Even though there have been some coalition and minority governments (e.g. from 1918 to 1945), which would alter the actual size of W, majority single-party governments are the most common in the UK (Lijphart, 1999, p.10-11), and also the most illustrative in this case.

half of the twentieth century, and most of the newly established democracies include universal suffrage (Przeworski, 2009, p.291). The leadership in contemporary UK equals the executive cabinet selected from the MP's (representatives of W), a fraction of the actual size of the winning coalition.

In autocratic regimes, elections are not the main channel of political participation.[5] The size of W and S are determined by other factors in autocracies. The main channel of participation and executive recruitment varies, but overall the size of both W and S are smaller in autocratic regimes than in democracies. Monarchies, military juntas, single party dictatorships have different sizes of W and S, but they are smaller than the size of W and S in democracies (regardless of electoral system). Autocratic regimes limit the size of the selectorate to include those with a particular position, heritage or party membership Bueno de Mesquita et al. (2003, p.69-74).

From the size of W and S to political regimes. The definition of W, S and D relates the size of each group to the political regime types used in the empirical section of this thesis. The size of each group are mainly intended to be evaluated as a continuum rather than categorical political regimes.[6] The larger the winning coalition the more a political regime resembles a democracy. The smaller the size of W the more a political regime resembles autocracy.

The distinction between autocracies and democracies based on the differentiation between societal groups presented within the selectorate theory framework, is visualized in Figure 2.1. The entire line represent the total population, the citizenry (N), and each group is a subset of the total population. The comparative statics of the selectorate theory are directly linked to the size of each group, as this affects other important parameters such as public and private goods allocation Bueno de Mesquita et al. (2003, p.130). A typical autocratic regime, as seen in the top of Figure 2.1, are political systems characterized by small winning coalitions, small selectorates and thereby a large group of disenfranchised citizens (i.e. without formal political power). Democracies, seen in the bottom of Figure 2.1, are characterized by large winning coalitions and large selectorates. In democracies, the selectorate usually equals the electorate, and as a consequence the

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[5]There are of course autocratic regimes that do hold election such as Egypt, Singapore, and Uzbekistan during the 1990s (Levitsky and Way, 2002, p.54). However, the election results does not directly translate into the *de jure* political power, nor the actual size of W as election fraud, repression, exclusion and other strategies are often used by the leadership in order to control the outcome of elections (Schedler, 2002, p.104-109). Electoral systems and elections are therefore not direct determinants of the selectorate and winning coalition size. In addition, autocratic regimes with democratic traits or a democratic regime with autocratic traits constitutes inconsistent regimes.

[6]Note that when translating the size of W and S into categorical political regimes I do so in accordance with the examples used in Bueno de Mesquita et al. (2003, p.69-74), but these categorizations are meant to be interpreted as analogies. In fact, Bueno de Mesquita et al. (2003, p.72) write that "[t]hough it is simple to relate W and S to well-known regime types, we make a conscious effort to move away from categorical discussions of political systems". For a further discussion of the similarities between size the of W, S and political regimes see Section 3.2.

size of disenfranchised group is small equaling those that are not allowed to vote in elections. As mentioned earlier, the actual ratio between W and S depend upon electoral system where the example presented in Figure 2.1 represent a majoritarian electoral system indicating that the party, or coalition of political parties, with the majority votes can form and sustain a government (the leadership L).
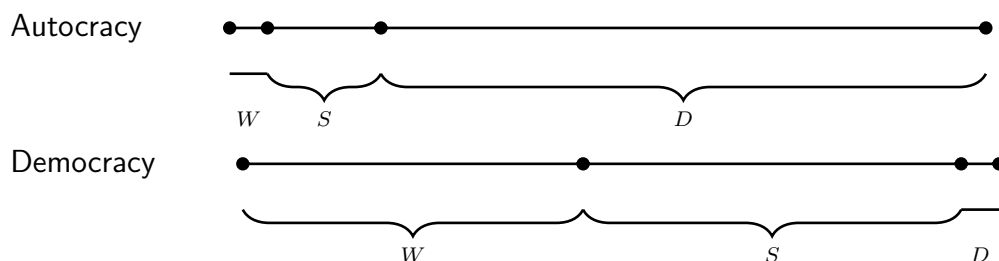
Figure 2.1: The distinction between autocracies and democracies based on the differentiation of societal groups presented in Bueno de Mesquita et al. (2003, p.69-74): the winning coalition (W), the selectorate (S) and the disenfranchised (D) as subsets of the total population (N)

The ratio between W and S (W/S) are interpreted as an indicator of "the loyalty norm" (, 65-68). The loyalty norm is important since it has implications of the level of domestic competition, and secondly which strategies and actions the leadership must apply in order to maximize current and future political power. Similar to the size of W and S, the ratio W/S also translated into categorical political regimes. In democracies, the loyalty norm is weak meaning that the size of the winning coalition is large and the selectorate is large. The leadership therefore must spend more in order to maintain domestic political support from the winning coalition. In autocracies, when the size of the winning coalition is small compared to the size of the selectorate, the ratio is low meaning that the loyalty norm is strong. This enables the leadership to allocate less in exchange for political support. In other words, when the loyalty norm is weak the leadership has more to lose, and when the loyalty norm is strong the winning coalition has more to lose. This implies that the leadership allocates more resources in order to maintain political support when the W/S-ratio is large (low loyalty norm), and the winning coalition accepts less in exchange for political support when the W/S-ratio is low (high loyalty norm).

A change in the size of W and S, and thereby also the W/S-ratio, are interpreted as a change in the institutional framework (the political regime). In order to understand how change and duration of political regimes are determined, I turn to define how the size of W, S, and the W/S-ratio affects the types and modes of goods allocation within a political regime. The allocation of goods shapes the preferences over political regimes and the welfare of each societal group, and the change and duration of political regimes are analyzed as a consequence of the mismatch between preferences and the current

allocation of de jure and *de facto* political power. In other words, the starting point for understanding the duration of political regimes must define goods, and the relationship between goods, preferences and utility. It is according to these properties, that the strategies and actions affecting the duration of political regimes are understood. I now turn to evaluate the indicators of utility within the selectorate theory framework focusing on how the allocation of resources influences the welfare of societal groups.

Utility: public and private goods. Bueno de Mesquita et al. (2003) distinguish between public- and private goods, where the distribution of state revenue (the total pool of resources) falls along a private-public goods continuum. Corruption is close to the private goods end of the scale, exclusively in the interest of the leadership and the supporters of the regime (the winning coalition). Increasing the level of one type of good (e.g. private) means less of the other (e.g. public), so defining corruption as a private goods simultaneously means that corruption is a negative public good. When there is a high degree of corruption, fewer resources are available for other purposes. The mix, and level of each, is determined by the strategic environment within each political regime. All else equal, the size of the winning coalition is the main indicator of mode and type of goods allocation. The leadership allocates resources in a strategic manner in order to remain in power and maximize discretionary use of state resources.

The allocation of private or public goods affects the welfare of societal groups. Bueno de Mesquita et al. (2003, chap.5) defines a set of core and general private and public goods, and link the allocation of these according to the size of the winning coalition and the selectorate. The particular goods (i.e. in which form the goods are allocated) are not specified directly, but "depend on the personal tastes and the needs of the winning coalition, selectorate, and leadership" (Bueno de Mesquita et al., 2003, p.179). Core public goods refer to goods such as civil liberties, political rights, transparency, peace, and prosperity; examples of general public goods within the theoretical framework are education, health care, and social security (Bueno de Mesquita et al., 2003, p.179-198). Private goods are exclusively allocated to members of the winning coalition. In this sense, corruption, patronage, cronyism and nepotism are good example of a private goods.[7]

The leadership allocates what is necessary in order to sustain political support among the winning coalition (Bueno de Mesquita et al., 2003, p.29-30). If W is small, i.e. autocratic regimes, it is less costly to supply private goods. If W is large, i.e. democracies, it is less costly to supply public goods due to the large size of the coalition. The overall insight is that all leaders, and political regimes, require some form of support (no leaders rule alone). The distribution of resources is therefore a strategic instrument for political

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[7]Note that the examples of private goods used in Bueno de Mesquita et al. (2002, p.559) overlaps with both the conceptualization of corruption, and the operationalization used in the empirical models. Therefore, higher levels on the corruption index correspond to an increase in private goods.

and institutional survival. The welfare of the selectorate and the disenfranchised is strictly linked to public goods, while the winning coalitions welfare is increases with private goods when the initial size of the winning coalition is low, and increasing in public goods when the initial size of the coalition is large (Bueno de Mesquita et al., 2003, p.390). It is in the interest of the leadership to spend as little as possible of the available resources, and thereby maximize the available discretionary funds. Before discussing the implications the provision of goods have for the stability of the political regimes, I elaborate on the implications of corruption for the welfare of societal groups.

Corruption and the allocation of resources. In relation to the allocation of goods, and thereby the welfare of societal groups, corruption is one of several strategies for the allocation of private goods. Therefore, evaluating the degree of corruption as a strategy for political survival and sustaining the current political regime leads us to derive predictions concerning the consequences of corruption based on the formal properties of the political regime. In other words, the consequences of corruption are linked to the initial size of societal groups. Corruption increases as the size of W is decreasing, and decreasing as the size of W is increasing. The prospects of corruption are greater in autocratic regimes than in democracies. In this sense corruption and political regimes are endogenous: "..., the extent to which leaders attempt to detect and eradicate corruption depends upon institutional arrangements" (Bueno de Mesquita et al., 2002, p.582). However, the degree of corruption in relation to the incentive structure of a political regime can destabilize the regime if corruption occurs while being incompatible with the utility functions of groups with *de jure* political power.

The incentive and possibility of corruption is greater in autocratic regimes making the duration of such political regimes less affected by corruption. In fact, since corruption can serve as a strategic element of reward for the winning coalition, corruption can increase the duration of autocratic regimes by making the winning coalition more dependent on private goods, and thereby have more to loose from changing the political regime (Bueno de Mesquita et al., 2002, p.582). Democracies, more dependent on public goods allocation in order to support their current and future political power, is a less attractive strategy for the leadership as it is incompatible with incentives of both the winning coalition, the selectorate and the citizenry at large. Democracies with a high degree of corruption are therefore likely to experience political turmoil, civil unrest and popular discontent in general that potentially may result in a change in the existing political regime.

The ideal ratio between coalition and selectorate size for autocratic leaders is to try an engineer the coalition size as small as possible while simultaneously increasing the selectorate as much as possible. When coalition size is small compared to the selectorate (strong loyalty norm), leaders need not spend much private gains in order to gain political support, and does not need to provide extensive public goods. This is also the institutional

design that creates the foundation for kleptocracy, defined as "...not mere corruption, but rather the outright theft of a nation's income by its leaders" (Bueno de Mesquita et al., 2003, p.131). The opportunities of corruption and kleptocary depends on the size of the winning coalition. When W increases the overall allocation of public goods increases, and the allocation of private goods increases as W decreases. Overall, the total expenditure of state revenue increases as with W and decrease when S increase. Furthermore, the opportunity of kleptocracy relates to the "discretionary founds" of political leaders; the surplus (revenue-expenditure) in combination with initial size of W (when low) predicts that kleptocracy and corruption increases in small W systems (Bueno de Mesquita et al., 2003, p.130-132). The structural effect of such a scenario should manifest itself through high levels of taxation, low economic growth and income per capita. The presence of natural resources, foreign aid or more generally what Smith (2008, p.780) label "unearned" or "free" resources should increase the likelihood of corruption and kleptocracy.

Preferences over political regimes. I present the institutional preferences of each group by answering the following question: how would the different groups alter the institutional framework given the opportunity? This question implies two things: (1) societal groups would alter the political regime in order to maximize their utility/welfare, and (2) there are constraints preventing societal groups from changing the political regime in favor of their preferences. The preferences over political regimes are closely linked to the allocation of public and private goods defined above.

The leadership prefer autocracy with a small winning coalition and large selectorate (a strong loyalty norm). Autocratic leaders have a longer expected tenure than democratic- and semi-democratic leaders (Przeworski et al., 2000, p.51), so it is a reasonable assumption (both theoretically and empirically) to state that any incumbent favor autocracy both if the main motivation is political survival. The welfare of the leadership, defined as tenure length, is therefore increasing when the size winning coalition is decreasing and the selectorate size is increasing. The available discretionary funds also increase under such circumstances as the leadership can limit the degree of public goods.

The selectorate and the disenfranchised prefer large W political regime (democracies) due to the expected increase in public goods in democratic regimes. Since S and D only can increase their welfare by extending the provision of public goods within a political regime (only W and L receives public goods), these groups would alter the political regime in the direction of democracy given no constraints on their actions.

Compared to the other agents/groups, the winning coalitions has less obvious preferences over political regimes. This is due to the curvilinear utility function of the coalition; the winning coalition favour a strong weak loyalty norm (large W/S) since this induces the leadership to spend more in return for political support. However, dependent on the initial size of W extending the size of the coalition diminishes the level of private goods

attained. Hence, it the size of W is initially small, extending the coalition size would impact the welfare of the winning coalition negatively since the share of private goods are spread among more members. When the coalition reaches a threshold, it is a better strategy for the leadership to allocate public goods. At this switch, the welfare of the winning coalition increases. When W is sufficiently large the winnng coalition gain more from public goods that benefit all citizens than from private goods (Bueno de Mesquita et al., 2003, p.335). Decreasing the coalition size increases the level of private goods for each member of the winning coalition. Also, this corresponds to a strong loyalty norm which makes the leadership less dependent on the coalition. More preciesely, the leadership can allocate less resources in exhange for political support since each member of the coalition have everything to lose from being excluded.

Given the opportunity to chose, different societal groups would change the existing political regime in order to maximize their welfare (according to their institutional preferences described above). A brief summary suggest that the disenfranchised would alter institutions in the direction of democracy and thereby increase the allocation of public goods, political influence and thereby increase the probability of winning coalition membership. The selectorate, those with a probability of winning coalition membership larger than zero would also democratize, but would under ideal circumstances only extend the size of the winning coalition while keeping the selectorate fixed (e.g. not extend to include the disenfranchised). The selectorate and the disenfranchised have the same agenda when W is small and S is large, but differ when the size of S is initially small; then S would not have a clear cut preference over institution since the probability of becoming a member of W is large when S is small. The disenfranchised would not gain any private goods under autocracy and therefore obviously prefer democracy and a greater focus on public goods that increase the overall welfare of this group. Corruption could also give the selectorate a greater incentive towards autocracy since they gain political access through informal channels that can compensate for lost public goods given that they already have a positive probability of inclusion in W. However, when the choice is between large W large S and small W large S, all citizens outside of W prefer the first option.

The winning coalition would alter institutions dependent on the probability of further membership in W; if any member could decrease the size of W while at the same time be certain of membership they would do so, and thereby increase the share of private goods. Overall, the winning coalition favor decreasing the selectorate size, and thereby weakening the loyalty norm. The leadership is interested in keeping the winning coalition low and the selectorate large so that the loyalty norm is strong, and the discretionary founds of the leader larger. Under such circumstances, the leader spend little private goods in order to maintain political support by W, and does not require to allocate public goods. Also, the selectorate will have a small probability of gaining membership to W, but members

of W are loyal due to the exclusiveness of the position and the perks that follow. (Bueno de Mesquita et al., 2003, p.329-338)

The preferences of each societal group lead to a better understanding of the strategies and actions that are likely to unfold given the right circumstances. The understanding regime endurance is linked to the preferences of societal groups, and to which degree the current regime shapes the welfare of each group. I now turn to describe some actions and counteractions that are likely to occur from the definition of the welfare functions and preferences of each societal group. The conditions that affect the likelihood of these events are also the conditions that affect the duration of political regimes.

Actions and counteractions. The preferences over institutions/regime are the starting point for understanding the duration of political regimes. These preferences are linked to policies through public and private goods allocation. In other words, the prospect of regime duration is linked to the allocation of goods, and to which degree goods increase the utility of societal groups. At a minimum, the allocation of resources must secure the welfare of the winning coalition. This is in the best interest of the leadership, as the winning coalition is the source of political survival and stability of the regime. However, the leadership and the winning coalition are not the only groups that can alter or prolong the current political regime. Under certain circumstances, members of the winning coalition, the selectorate and the disenfranchised take actions seeking to alter the political regime in favor of their preferences or to increase their welfare. This increases the degree of political instability and civil unrest that potentially leads to an alteration of the current poltical regime. The scenarios in which such actions are likely depend on the current political regimes ability to secure the welfare of these groups. Preferences over political regimes are latent and known, and the welfare of groups (or lack of welfare) is the factor that potentially manifests preferences into actions. I now turn to describe set of particular actions: coups and government crisis, riots, revolutions and demonstrations that are linked to political instability and civil unrest. The duration of political regimes thus depends on the on the ability to overcome and prevent such actions from overthrowing the regime. In sum, the prospects of regime duration given the initial level of *de jure* and *de facto* political power among societal groups, and "those conditions under which leaders can best overcome the opposition of other groups" (Bueno de Mesquita and Smith, 2010, p.182).

What each societal group prefer (what they would do given lack of constraints) set the basics for understanding the dynamical relationship that affect the probability of institutional change and duration. The duration of a particular political regime is thus sustainable as long as the welfare of the group with ability to alter political institutions is satisfied. This dynamic is not straightforward, as the initial distribution of political power (both *de jure* and *de facto*) among societal groups vary greatly across time and

space. The preferences over poltical regimes of the winning coalition are the least straight forward (most dependent on the initial size of the coalition). In autocracies (small W) the coalition receive private goods in return for political support. The level of private goods attained by each member of the coalition increased as the size of W decreases. In democracies (large W) the utility of the coalition is increasing with the level of public goods spending. The welfare of the winning coalition is an increasing function of public goods once the initial size of the coalition reaches a cirtical mass. While the leadership prefer a strong loyalty norm (low W/S) the coaltion prefer the opposite. When the loyalty norm is weak, the leadership is forced to spend more private goods in order to attain the support of the coalition. A strong loyalty norm, on the other hand, enables the leadership to spend less private goods on the coalition as the coalition members can easily be replaced. Two things follow from these preferences: (1) the leadership seeks to decrease the size of the winning coalition and increase the size of the selectorate in order to strengthen the loyalty norm, (2) the winning coalition seek to weaken the loyalty norm and gain more access to private goods.

Change in political regime can occur through purges or extension of the winning coalition by the leadership. The specific choice is linked to threats and actions by the citizenry and opposition. Bueno de Mesquita et al. (2003, p.392) label these threats anti-governmental in the sense that such action are caused by dissatisfaction among the groups other than the actual leadership. Coups, revolutions, riots, demonstration and government crisis are examples of particular actions induced by the disenfranchised, the selectorate or the winning coalition in order to attain a larger share of state revenues, or shift the allocation of goods.

Whether the result in fact lead to such reallocation or a change in the formal properties of the political regime depend on the strategic response of the leadership. The baseline motivation is political survival, so when facing credible threats the leadership must chose to contract or extend the public goods spending in order to prevent the threats from leading loss of leadership position to the opposition, and potentially a change in the political regime. The size of the disenfranchised group is larger in autocracies than democracies. By this fact alone one could expect there to be greater political instability in autocratic regimes than in democratic, but the lack of public goods makes coordination of resistance more difficult. Simultaneously, autocratic regimes have small winning coalitions with a high degree of loyalty to the leadership. In other words, the winning coalition has everything to lose from extending the winning coalition and shifting the resource allocation from private to public goods. In small W political regimes the welfare of the winning coalition is increasing along with private goods. The leadership also gains more discretionary resources under such circumstances. In sum, political regimes with small winning coalitions are often more repressive and oppressive as a strategy of keeping

anti-governmental and institutional actions at bay.

The disenfranchised prefer democracy, or large W political systems, due to the increased likelihood of public goods spending in such political regimes. There are a range of actions that can serve as a mean to attain that end (democracy) ranging from riots and demonstrations to revolutions and civil war (Bueno de Mesquita et al., 2003, p.364-382). The risk such actions bring with them varies according to the current political regime and *de facto* political power (the distribution of resources) of the leadership and the winning coalition. These factors indicate which counteractions are more likely to follow from a specific set of actions as well as the oppressive and repressive nature of the current political regime. From this point of view the likelihood of anti-government action, civil unrest and political instability are expected to be greater in autocratic regimes since the size of the disenfranchised group is larger. At the same time, this does not necessarily mean that these set of actions in fact occur. The occurrences of political actions aimed at altering the political regime also depend on the oppressive and repressive capabilities of the current political regime which is likely to be a more credible threat in autocratic regimes with a strong loyalty norm. Stated differently, autocratic regimes are more likely to strike down anti-governmental action since the leadership and the winning coalition have more to loose from extending the winning coalition (democratization).

Given that the leadership wants to decrease the size of the winning coalition, thereby strengthening the loyalty norm and increasing their available discretionary funds, and the fact that this preference is not shared by the citizenry at large, the duration of political regimes with small winning coalition depend on a lack of revolutionary threat and repressive actions from the leadership and winning coalition. The likelihood of repression as a strategic action increases the smaller the size of the winning coalition. The smaller the winning coalition, the greater the focus on private goods allocation in order to maintain the support of the winning coalition; such institutions therefore offer little public goods increasing the incentive of the current winning coalition to maintain the status quo (increased loyalty norm, more to lose if removed from the winning coalition). Repression is therefore supported by the winning coalition if the overall size of the coalition is small. The welfare of the winning coalition also, along with the welfare of the citizenry at large, increases along with the allocation of public goods when the size of the winning coalition reaches a critical size. The welfare of the winning coalition is therefore high both when the size of the coalition is low (gain private goods) and when the coalition size is large (gain public goods). According to the initial size of the coalition, the prospect of future welfare will either be increasing alongside private or public goods, and the determining factor shaping the institutional preferences of the winning coalition in the future, $t + 1$, is the size of the winning coalition at the present point in time, t. Translated to political regimes, we can expect that the winning coalition in autocratic regimes prefer the current

institutional framework due to the allocation of private goods from the leadership to the coalition in order to gain political support, and the same applies to the leadership since the allocation of private goods are less demanding on state revenue than public goods thereby increasing the discretionary funds available. In democracies, however, the initial size of the winning coalition is large, making the coalition prefer allocation of public goods rather than private. This preference stand in contrast to the leadership, but the leadership is forced to comply in order to maintain domestic political support, and will therefore support policies and actions that democratize the institutional framework. For intermediate (inconsistent) regimes, the wide variety of coalition sizes and constraints make a summary expectation difficult.

The main trend suggested by the theory is that all anti-government actions increase as the size of the winning coalition decreases, and, as the size of the disenfranchised group increases. This is linked to the allocation of private resources that follows from an decrease in the size of W. However, as I have argued, corruption also increases the level of political instability and civil unrest in democracies. A high degree of corruption decreases the level of public goods which thereby decreases the welfare of the selectorate and the disenfranchised. Another explanation, consistent with the parameters in the theoretical framework, is that democracies provide public goods which in turn increases social mobility, coordination, and the resources available to the selectorate. Anti-governmental actions do not necessarily mean that the intended outcome of the protest is to alter the institutional framework, but rather a channel of government protest (e.g. holding the government accountable). Anti-governmental actions in democracies are more likely to target the *de facto* allocation of resources since the level of *de jure* political power is an equilibrium outcome for everyone except the leadership. Anti-government actions are therefore not necessarily an act of institutional discontent, but more an act of discontent concerning the current distribution of resources. If anti-governmental actions are intended to alter the institutional framework, the political regime, it is either as an act of autocratization by the winning coalition seeking to replace the leadership and decrease the overall size of the winning coalition, or an act aimed at further democratization by the selectorate.[8]

2.4   Summary of expectations and hypotheses

The selectorate theory links the allocation of resources in terms of public and private goods to institutional instability (i.e. the duration of political regimes) through events leading to civil unrest and political instability. Coups, riots, revolutions, demonstrations

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[8]In democracies, the selectorate are the source of anti-government actions such as riots, demonstrations and revolutions while in autocracies the source of protest is the disenfranchised.

and governmental crisis are examples of such events. These events are however intervening factors that implicitly links the effect of corruption to the duration of political regimes. In order to motivate these theoretical assumptions I hypothesize and test the following proposition:

Hypothesis 1 *Corruption increases the chances of coup attempts, riots, revolution attempts, demonstrations and major government crisis.*

All of these events are intervening factors that may lead to change in the political regime. However, the literature review and the theoretical framework suggest that the consequences of corruption depend on the nature of the political regime. The formal properties of a political regime shape the allocation of *de jure* political power, the welfare of groups, and the distribution of public and private goods. Corruption also affect the allocation of resources, and thereby the distribution of *de facto* political power. The distribution of political power within a country in turn affect the duration of a particular political regime, and in addition to the inherit properties of political regimes to endure over time, I hypothesize that the effect of corruption is dependent on different political regimes. Corruption increases the chances of civil unrest and political instability across political regimes, but the strategies available to the leadership and winning coalition in preventing the consequences of corruption to affect the stability of the political regime vary between political regimes. Corruption affects the distribution of resources, the allocation of political power, and thereby the welfare of societal groups which are central determinants of regime duration. The interaction between de jure and de facto political power, and the strategies available given by formal and informal political power leads to the main hypothesis:

Hypothesis 2 *The effect of corruption on the duration of political regimes depends on the formal properties of a given political regime.*

The specific direction of the interaction between corruption and political regimes on duration is specified in the two following hypotheses. Democracies are political regimes defined by a large winning coalitions (the political base of support of the leadership) and large selectorate size (those that potentially can become members of the winning coalition), where the baseline motivation of any political leadership is gain and hold on to political power (Bueno de Mesquita and Smith, 2009, p.171; Bueno de Mesquita and Smith 2010, p.937). Following the logic of the selectorate theory, the leadership are better off allocating public goods once the winning coalition reaches a critical mass. The larger the winning coalition, the more private goods must to allocated in order to maintain political support, so in effect the leadership and the winning coalition are better

off allocating goods that benefit all members of society. Even though one could argue that corruption is in the best interest of the leadership, this incentive is not supported by the citizenry at large. I hypothesize that corruption is not sustainable in democratic regimes. A corrupt leadership in democracies can be expected to increase popular unrest and increase the level of domestic political challenge with incentives to change or alter the institutional framework. Or the other way around; it will create a disproportionate amount of de facto political power at the top, and thereby increasing the incentive among those with informal political power to alter the institutions to meet their preferences. In democracies I hypothesize that:

Hypothesis 3 *Corruption decreases the duration of democratic regimes.*

The welfare of the winning coalition and the leadership in autocratic regimes increases alongside the level of private goods. In order to maintain domestic political support, the leadership must secure the welfare of the winning coalition by allocating private goods. Corruption, by definition a private good, will therefore strengthen the political support of the leadership, and at the same time increase the welfare of the winning coalition. Alternatively, corruption can be seen as a negative public good, but the strategic opportunity of private goods allocation and the distribution of political power through clientilism (CHECK SPELLING) and patronage are expected to lower political threats to the regime by the strategic allocation of private goods to societal groups with opportunity to influence the future political regime. This is the rationale behind the next hypothesis:

Hypothesis 4 *Corruption increases the duration of autocratic regimes.*

I use inconsistent regimes as a reference category for two reasons: (1) in order for the main analyses to be consistent with the replication framework of Gates et al. (2006), (2) and to compare the political regimes in which the core predictions from the theoretical framework are the most clear cut. In terms of the sub indicators used to measure political regimes and the theoretical definition linking political regimes to the ratio between winning coalition size and the selectorate size, there a great varieties within the regime label inconsistent regimes. Since the main theoretical predictions for the duration of political regimes are linked to the welfare of groups given different initial sizes, the variety within inconsistent groups on these indicators confuses the expectations. For example, we would end up making the same predictions concerning the duration of LAND and LAND while in fact the political regimes in these two countries during this period would lead to predictions in opposite directions. However, while the direction is not consistent across all inconsistent regimes, they are at the same time expected to be less durable than democratic and autocratic regimes, and are thereby well suited as a reference category when evaluating the conditions influencing the duration of political regimes.

All in all, I hypothesize that the effect of corruption is conditional on political regimes, and that the implications of several of the sub indicators of the corruption-index (e.g. patronage, vote buying) vary according to the formal properties of a political regime. It is the effect of corruption on the welfare of groups, allocation of political power and resources that are expected to trigger events (such as civil unrest, domestic political competition and coups) consequential to the duration of political regimes. Democracies are less likely to survive when corruption is widespread. For autocratic regimes I expect the opposite. In autocracies, corruption can be a strategy that allocates political power to groups that threaten the stability of the regime. Next I organize the empirical tests of the propositions put forth in this section. Overall, I do not test the intervening effect of anti-government action on the duration of political regimes. Rather, I organize the empirical assessment around the effect of corruption in both cases. First I analyze the effect of corruption on political instability and civil unrest. The second and main empirical analyses the interaction effect between corruption and political regime to the duration of political regimes in the period 1984-2008. Before testing the theoretical hypotheses, I now turn to the research design.

Chapter 3

Research Design

The results in this thesis are derived using two different statistical methods. First I use several logistic regression models to evaluate the effect of corruption on events such as coups, government crisis, riots, revolutions and demonstrations. These events are in the theoretical framework indirectly linked to the stability of political regimes. In other words, they reflect political instability and civil unrest, and are therefore intervening factors that may result in a breakdown of political regimes. Second, using survival analysis, I evaluate the interaction effect between corruption and formal properties of a political regime on the duration of political regimes in the period 1984-2008.

The unit of analysis in the logistic regression models is country-year observations. The unit of analysis in the main analyses, the survival models, is political regimes and their duration measured in years where country-year observations are nested within each political regime. A political regime is defined according to an area in a three-dimensional space, and duration of a political regime as the interval in time from when a regime starts (or enters the data-set) until it transition to different or similar regime, or is censored (see operationalization in Section 3.2 and Figure 4.2). Alternatively, we can evaluate the unit of analysis in the models as the change in the hazard/survival ratio of experiencing the event of interest (regime transition) given a set of covariates. The unit of analysis is therefore how the hazard/survival ratio changes over the available duration span of political regimes.

All aspects of the research design; the data material, how the theoretical concepts are operationalized and the methods used to estimate the effects, and test the hypotheses, are described below.

3.1   Data

The statistical models use a variety of variables from a range of sources; the dependent variable, the duration of political regimes, is a continuous positive number indicating the

number of years a political regime have existed, and therefore use the same sources as the operationalization of political regimes. The start and end point of a political regime follow from the operationalization of political regimes which is described in detail below. The measurement of political regimes, the SIP-index and the corresponding regime categories, combines two data sources: the "Polyarchy" dataset by Vanhanen (2000) which originally covers the time period 1810-1998, but have been updated to 2012, and several indicators (see operationalization below) from the "Polity IV Project" (Marshall, Jaggers and Gurr, 2010). Corruption is gathered from the "Researcher's Dataset" (part of "International Country Risk Guide") published by the PRS Group (2012). The dataset contain a range of political variables such as corruption, law and order, military in politics, and more, covering the time-period from 1984 to 2012.

The economic control variables are gathered from the data used Strand et al. (2012) covering the period 1800-2008. This dataset is an extension of the "MIRPS" data used in Gates et al. (2006). Two main sources are the starting point for the variables "GDP per capita" and "GDP growth": GDP data from "World Development Indicators" (World Bank, 2012), "Expanded Trade and GDP Data" (Gleditsch, 2002) and "Historical Statistics" economic data measured in 1990 International Geary-Khamis dollars (Maddison, 2010). The GDP per capita variable is interpolated and logarithmic transformed, while economic growth is simply the annual difference in the logarithm of GDP per capita.[1]. Data on natural resources rents as a percentage of GDP are taken from World Bank (2012).

In order to motivate and test the theoretical assumptions concerning the effect of corruption on events that promote civil unrest and political instability, I use data from "Global Instances of Coups from 1950 to 2010" (Powell and Thyne, 2011), and several variables from the *Domestic Conflict Event Data* (included in "Banks Cross-National Time-Series Data Archive, 1815 - [2011]" (Banks, 2011)).

All in all, when combining the data sources the main analyses cover 135 countries in the period 1984-2008 while the analyses of the intervening variables and theoretical assumptions cover 1984-2007. For a complete list of countries included in the sample, see Table A.1.

3.2   Operationalization of variables

This section takes a closer look at how the indices and indicators from the data sources are operationalized. The dependent variable, main independent variables, control variables and intervening variables are defined and discussed in turn.

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[1]The methodology behind the economic variables are more thoroughly explained in Strand et al. (2012, p.20)

3.2.1 Dependent variable: regime duration

Each political regime in the dataset is uniquely identified by a duration interval (in years) from when they originate to when they end. The duration of a political regime is the time-interval between two regime changes. Some political regimes last the entire time-span of the dataset, meaning that they never experience any regime changes. Those cases are right censored in the survival analyses (discussed further below). The dependent variable in any survival analysis with time varying covariates consists of three terms: (1) a start variable indicating the time of origin for a political regime, (2) a stop variable indicating when a political regime ends (e.g. changes/transitions), and (3) a binary censoring variable. The censoring variable is coded for every consequtive year of duration.

If a political regime experiences a regime transition during a particular year the political regime ends and the censoring variable is coded 1. If a political regime experiences a regime transition during a particular year that political regime ends, and the censoring variable is coded 1. Hence, the number of ones on the censoring variable equals the number of regime changes within the time-frame of the analysis. If a political regime is still ongoing by the final year of the analysis, 2008, the censoring variable is also coded 0. This is an important feature of survival analysis; those units that never end, or still ongoing at the end of the analysis, are used in order to estimate the models even though the actual duration interval is unobserved.

The time varying covariates (i.e. the independent variables and control variables) covers different time periods. The combination of coverage on the corruption index and the duration of regimes limit the time frame of the analyses to 1984-2008. As well as censoring at the end of the analyses (those regimes that are ongoing in 2008), the political regimes enter the dataset in 1984 with a predetermined duration. The analyses are therefore right-censored and left truncated. The number of years prior to 1984 are observed, but not modeled directly due to the time frame on the independent covariates. Figure 3.1 visualize regime duration and right censoring for the political regimes in USA, Bangladesh and Russia during the period. The cases are selected in order to visualize different examples of how cases and political regimes are coded. The first, USA, is the easiest. It enters the dataset in 1984 with a predetermined duration, and does not experience any regime changes during the period 1984-2008 (and thereby censored in 2008). Bangladesh, on the other hand, experiences three changes in the political regime during the period (each change/event indicated by the black dots on the dashed line). In 1991 there was a change in political regime from autocracy to democracy. The democratic regime was reverted to autocracy 2006 before breaking down again in 2008. This means that the entire duration of the political regime is observed. Similarly, Russia is coded with three distinct political regimes in the period. The comparison of Russia and Bangladesh
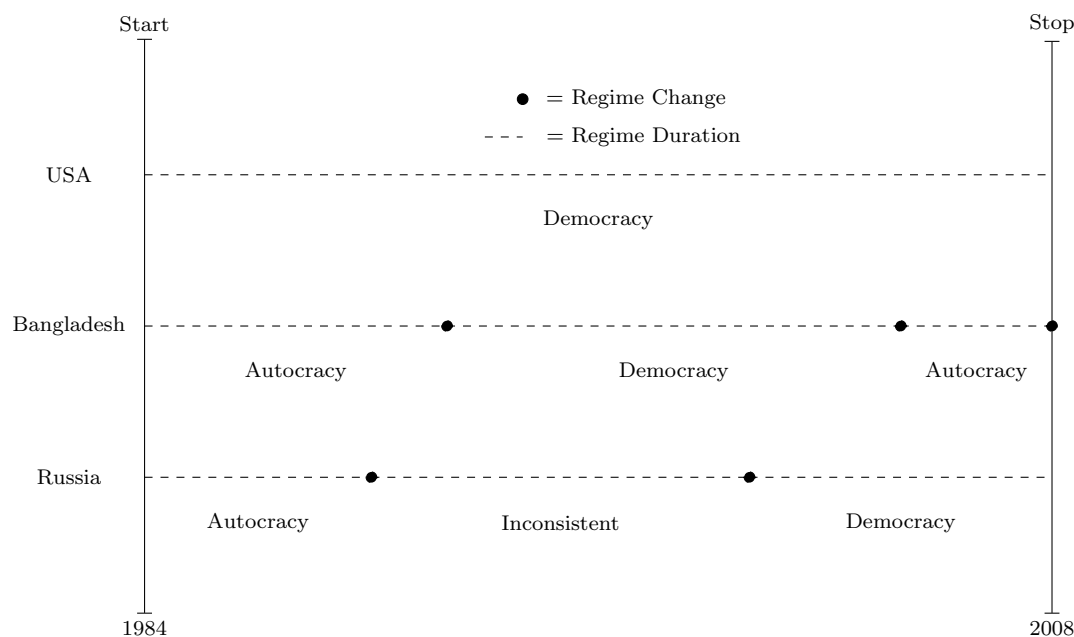
Figure 3.1: Examples of regime duration and right censoring: political regimes in USA, Bangladesh and Russia, 1984-2008. Political regimes are right censored in 2008 if ongoing by the end of that year. Each regime enters the dataset with the number of years they have endured prior to 1984. In effect this is left truncation.

illustrates the concept of right censoring. Russia does not experience a regime change in 2008, and are therefore censored.

In sum, three variables with information concerning the duration of political regimes are used. One measuring when the polity starts or enters the dataset (*start*), one when it ends (*stop*), and one indicating whether the political regime is still in existence at the end of a given year (*status.time*).

A change in political regime is operationalized in accordance with the definition of political regimes (see below). In general a regime change is coded in accordance with a predefined threshold of necessary changes in the sub indicators. There is no consensus concerning these necessary thresholds, as there are no overall consensus on the defining properties of political regimes. These different thresholds are discussed in further detail below, as this is of central importance to the theme of the thesis as well as the results derived from the analyses. Once the definition of regime change is in place, the general definition of regime duration follows as the interval between two regime changes, if any.

The data in the model are left-truncated which means that some of the political regimes have endured a predetermined number of years before entering the dataset in 1984. This is called "delayed entry" (Jenkins, 2005, p.74), and simply means that the survival of political regimes must be conditioned on prior duration. This is done by starting the counting process with the number of years survived prior to 1984 (Jenkins,

2005, p.74).

3.2.2 Main explanatory variables

The main explanatory variables political regimes and corruption, and the interaction term linking them, allow me to test the hypothesis presented in Section 2.4. I address the measurement of these variables in turn, and try to build a bridge between the theoretical concepts and choice of empirical representations.

Corruption. The International Country Risk Guide (ICRG) corruption index is a subjective six-point expert coded index based on available political and economical data (PRS Group, 2012, p.4-5). In order to make the interpretation of the results more intuitive, I have turned the original values of the index so that low values on the index represent a low degree of corruption, and high values a high degree of corruption. The different levels of the corruption index are based on the following list of sub indicators (PRS Group, 2012, p.4-5):

> "... actual or potential corruption in the form of excessive patronage, nepotism, job reservations, 'favor-for-favors', secret party funding, and suspiciously close ties between politics and business."

The sub indicators of corruption mentioned above are all related to a private use of public goods, and it is the consequences of such forms of corruption that is hypothesized to influence political institutions through "popular discontent, unrealistic and inefficient controls on the state economy, and encourage the development of the black market" (PRS Group, 2012, p.4-5).

Time-series data on corruption are in general weak. The most popular one, for example, the Transparency International's "Corruption Perception Index", is not consistent over time. It would not be possible to use this index to analyse the effect of corruption on regime duration since it would not be clear what the values on the index means from one year to another. The results could hence be biased and misleading. (Treisman, 2007)

Political Regimes. Since this thesis replicate and build upon an existing operationalization and conceptualization of political regimes, the measurement of political regimes used in this thesis are the same as used in Gates et al. (2006, p.897-898). The three conceptual dimensions (executive recruitment, executive constraints and participation) are summarized into the "Scalar Index of Polities" (SIP). The ideal types of democracy, autocracy and inconsistent regimes are derived from the SIP-index[2]; the three conceptual dimensions make up a three-dimensional space (for empirical visualization see Figure

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[2]The index is the average score on the three dimensions ranging from zero to one, where one equals perfect democracy; when score is close to zero a political regime is defined as autocratic.

4.2) where the distance to the corners (ideal democracy or autocracy) meaning either zero (autocratic) on all dimensions, or one (democratic) on all dimensions. The regime categorizes is therefore simply democratic if a political regime is closer to the democratic ideal types than the autocratic corner or the center of the conceptual space (inconsistent) (Gates et al., 2006, p.898). The regime categorization is therefore defined according to the distance to either one of the ideal types; if closer to one than any of the other then the political regime is defined according to that particular ideal type.

The operationalizations of the constitutive dimensions of political regimes are based on several sub indicators. The executive recruitment dimension[3] uses three variables from the Polity IV dataset. Executive constraints is operationalized using the "Decisions Constraints on the Chief Executive" (XCONST), also from the Polity dataset. Participation is operationalized using democratic participation (total votes in election divided by the total population) and competition (total number of votes to the minority parties) from the "Polyarchy"[4] dataset by Vanhanen (2000). In the case of a successful coup following an election, both indicators are coded zero. In addition, if the level of participation exeeds 70 %, participation is multiplied by competition divided by 30 % in order to accurately measure "the extent to which an election has a decisive impact on the selection of executive..." (Gates et al., 2006, p.898). The natural logarith of this number is the participation dimension.

In addition to using the original operationalization as Gates et al. (2006, p.897-898), I also test some alternative operationalization of similar nature. First of all, the indicators mentioned above are aggregated into the SIP-index ranging from zero to one (perfect democracy score).[5] Following the threshold used in Hegre and Fjelde (2011, p.14) the SIP-index is recoded accordingly: if below or equal .15 a polity is defined as autocratic/authoritarian. If above .80 a polity is defined as democratic. If in-between a polity is inconsistent or semi-democratic. The main difference between this operationalization and the original is that "Caesaristic" regime types are included in the autocratic ideal type.

Change in political regime. A change in the current political regime can occur by change of ideal type (institutions are altered so that the distance to another ideal type in the three-dimensional space is closer), or a change in the one of the sub indicators of each dimension so that institutional design of the political regime is substantially different, but still within the same ideal type. More specifically, any of the following events leads

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[3]"Regulation of Chief Executive Recruitment" (XRREG), "Competitiveness of Executive Recruitment" (XRCOMP) and "Openness of Executive Recruitment" (XROPEN) (Gates et al., 2006, p.897; Marshall, Jaggers and Gurr 2010)

[4]The dataset originally span from 1810 to 1998, but have been updated to 2012 based on the instruction in Vanhanen (1998) dataset and Vanhanen (2000)

[5]SIP equals $\frac{xconst+xrec+part}{3}$ normalized to range between 0 and 1. For further information see Strand (2006, p.4)

to a regime change (as defined as (Gates et al., 2006, p.898)):

> "(1) a movement from one category to another in the Executive dimension (i.e.,
> between ascription/designation, dual ascription/elective, and elective, (2) a change
> of at least two units in the Executive Constraints dimension, or (3) a 100% increase
> or 50% decrease in the Participation dimension (in the log-transformed variable,
> this is a change of 0.69 in either direction from the original level)".

The duration of political regimes is thus the number of years from one change in political regimes to another. The next chapter discusses more specifically how the choice of operationalization affects the number of regime changes and the duration of political regimes. In order to test the robustness of the results, I compare the results of using the original operationalization in Gates et al. (2006) using two operationalizations from Polity IV (Marshall, Jaggers and Gurr, 2010) in addition to the categorization based on thresholds on the SIP-index.

Alternative operationalizations. Since the operationalizations presented so far use several Polity IV indicators, I also include the Polity index in the analysis exploring the effect of alternative operationalizations on the main results (see Section 5.3). The Polity scale of polities is the composite measure of several sub indicators[6] aggregated into two dimensions scoring the degree of autocracy and democracy on a scale from 0 to 10. These two combined creates an continuum going from -10 (autocratic) to 10 (democratic). In order to compare this directly with MIRPS/SIP I have recoded the scale into similar regime categories: democratic if scoring above 5, autocratic if below 5, and inconsistent if in between these two values.

While the MIRPS operationalization and the polity definition of political regimes are different, the former use several of the indicators in the latter. The combination of indicators and the weights assigned differs between the two conceptualizations and operationalizations of political regimes. The polity index do not include the actual degree of participation and competition, but instead categorize the regulation and competiveness of participation into ten categories from "suppressed" to "Institutionalized Electoral" (Marshall, Jaggers and Gurr, 2010, p.28).For a complete overview of the indicators and weights that constitute the polity index see Marshall, Jaggers and Gurr (2010, p.13-18) In order to use the categorical ideal types of political regimes similar to the main models presented in Table 5.2 I have recoded the polity scale into categorical political regimes.[7]

The MIRPS and the SIP-index correspond on the levels of change needed in the sub indicators needed for a change in the political regime. The Polity IV duration dataset

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[6]See Marshall, Jaggers and Gurr (2010, p.16) for a complete list of indicators included in the Polity IV operationalization of political regimes.

[7]Following I recode the original scale, going from -10 (strongly autocratic) to +10 (strongly democratic), into autocratic if the score is below 5, democratic if above 5 and inconsistent if in between -6 and 6.

on political regimes use two different measures of regime changes. The first one code any change in the Polity scale as a regime change, and the second code a 3-point change in the scale as a regime change. The implications of these coding choices are discussed further in the next two chapters. The main motivation for using more than one definition of political regimes follow from lack of consensus regarding conceptualization and operationalization in the literature in general, and the fact that this choice obviously influences the duration of political regimes (and thereby also the results).

Since the theoretical concept and empirical operationalization of winning coalition and selectorate size rely on several Polity IV indicators similar to the MIRPS/SIP operationalization, the W/S ratio does not change within the duration of the political regimes used in the dataset. In other words, we are not missing any changes in the composition of the winning coalition of the selectorate by using alternative indices, and likewise, the number of regime changes is equal to the number derived from using any change in the Polity IV scale as a regime change. Indices of political regimes and the W/S-ratio are furthest apart when on intermediate levels of democracy or autocracy (i.e. inconsistent regimes). They also deviate in cases like the former Soviet Union and other autocratic regimes that have some democratic traits (e.g. elections). The original MIRPS operationalization of political regimes excludes many of the regimes labeled "Caesaristic" (e.g. Cuba), and inconsistent regimes are used as the reference category leading to an estimate only for the political regimes that are the most comparable in terms of the W/S relationship and MIRPS.

The theoretical framework presented applies a somewhat different conceptualization and operationalization of political regimes arguing that " ". However, in the operationalization used by Bueno de Mesquita et al. (2003, p.133-140). I argue that there is an adequate degree of overlap between the operationalization of the ratio between winning coalition and selectorate size (Bueno de Mesquita et al., 2003, p.133-140), the MIRPS/SIP (Gates et al., 2006, p.897-898) and the Polity IV operationalization (Marshall, Jaggers and Gurr, 2010) that the operationalization of choice does not prevent the empirical model from testing the hypothesis in Section 2.4. Their variable operationalizing the size of the winning coalition uses a combination of regime types from Banks (1996), and several Polity IV indicators (Marshall, Jaggers and Gurr, 2010) (XRCOMP, XROPEN, PARCOMP) as a composed measure of "...whether the regime is civil or military, the openness and competition of the executive recruitment, and the competitiveness of participation" ranging from zero to one (largest) (Teorell et al., 2011, p.31-32). The operationalization of the selectorate size based on the "LEGSELECT" variable from the Polity dataset which measures the degree of the "breadth of selectiveness of the members of each country's legislature (Bueno de Mesquita et al., 2003, p.134).

The conceptual and operational separation between the selectorate theory and the

conceptual definition in Gates et al. (2006) are therefore mostly due to the fact that the degree of executive constraints (XCONST) is not included in the selectorate theory measurement of political institutions.[8] Bueno de Mesquita et al. (2003, p.139) write that "[o]ur measure of W does not use the XCONST variable and so taps into dimensions of the nature of political competition that the commonly used measures of democracy do not utilize"; there are obviously advantages and disadvantages with this choice, and because the constraint on the executive is of theoretical importance when evaluating the effect of corruption on institutional duration, I benefit more from utilizing a definition of political regimes that include this dimension than excluding it from the analysis altogether.

To summarize, even though there are some discrepancies between the empirical operationalization used in this thesis, and the operationalization presented in Bueno de Mesquita et al. (2003, p.133-140), four elements legitimize the use of the Gates et al. (2006, p.897-898) to investigate theoretical properties derived from the selectorate theory: (1) there is a high correlation among the two operationalizations (0.82 from 1984 to 2000 between W/S-ratio and MIRPS), (2) autocratic and democratic regimes correspond to a low and high ratio score (the loyalty norm), respectively, (3) several sub indicators are shared by the two meaning that regime changes overlaps, and (4) the least compatible cases are either used as a reference category or excluded from the main operationalization in Gates et al. (2006, p.897-898).

3.2.3 Control variables

The explanatory variables, and the interaction between them, are the main extension to the original model which is replicated ("Model 2 1900-2000" in Gates et al. (2006, p.901)). Therefore, the control variables closely resemble the variables used original analysis. However, I add one control variable to the original model, natural resources rents, which is a central factor in the theoretical framework that alters the strategic landscape and prospects of regime duration. The operationalization of the relevant control variables are listed below.

GDP per capita. A log-transformed variable measuring the constant-dollar GDP per capita level of a country (Strand et al., 2012, p.20). The measurement is an updated and modified version of the GDP variable used in Gates et al. (2006, p.899). The variable is lagged by one year and interpolated to account for missing values using three sources (Strand et al., 2012, p.20): "Historical Statistics" (Maddison, 2010), "World Development Indicators" (World Bank, 2011), and "Expanded Trade and GDP Data" (Gleditsch, 2002).

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[8]The correlation between W/S and SIP in the time period 1984-2000 is 0.87 (correlation matrix between all oparationalizations can be found in Table X in Appendix A). In other words, there is a positive relationship between high values (read democracy) on the W/S-ratio and the SIP-index (0.87*0.87=69% shared variance)

GDP per capita squared. Gates et al. (2006, p.901-902) find a curvilinear relationship between GDP per capita and the duration of political regimes. I test using a squared GDP per capita term, but remove this term from the main model output as the effect is insignificant during the period.

GDP growth. The annual difference in the lagged GDP per capita as defined above. In order to report the difference in growth rate as a percentage difference between two years, I have first taken the exponential of the logged GDP per capita variable, and thereafter subtracted the values in $t-1$ from the values in t divided by the values in $t-1$, multiplied by 100 (GDP growth $= \dfrac{\text{GDP}_t - \text{GDP}_{t-1}}{\text{GDP}_{t-1}} * 100$). Finally, the growth variable is lagged by one year.

Natural resources. A dichotomous variable created based on the World Bank's "Total natural resources rents (% of GDP)". The variable is a percentage of the "...sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents". This variable is therefore suitable for capturing the concept of free resources or unearned income presented in Smith (2008, p.), which is expected to increase the .... The variable is given the value 1 if the percentage of natural resources rents are higher or equal to 33 percent of GDP, and 0 otherwise similar to the operationalization of oil export used in Fearon and Laitin (2003, p.81) and Hegre and Fjelde (2011, p.15). Countries that rely heavily on oil export "tend to have weaker state apparatuses than one would expect given their level of income because the rulers have less need for a socially intrusive and elaborate bureaucratic system to raise revenue..." Fearon and Laitin (2003, p.81). I directly extend, through Smith (2008, p.781), this argument to include other forms of natural resources, thereby assessing the impact of the concept often referred to as the "resource curse".

Political neighborhood. Strand et al. (2012, p.21) define this variable (lagged by one year) as "[t]he difference between the country's SIP value and the average SIP in the country's immediate neighborhood". Neighboring countries are defined according to the contiguity coding in Stinnett et al. (2002, p.61-63); they distinguish between five categories of contiguity (one for land and four for water), where land contiguity is defined as countries separated by land or river border. The political neighborhood variable only consider cases separeted by land or river borders (contiguity equals one). The theoretical and empirical literature on regime duration emphasizes the diffusion effect of political institutions. Political neighborhood is included in the model to control for this effect. REFERANCE Gleditch on use of immidiate neighborhood.

First Polity in Country. A binary variable coded 1 if the current political regime is the first regime in that country. The main expectation is that political regimes in newly formed countries are comparatively less stable: "[i]n newly independent countries most institutions are embryonic, not just the institutions regulating executive recruitment, executive constraints, and participation" (Gates et al., 2006, p.900).

3.2.4 Intervening variables

In Section 4.2 below I assess the impact of corruption on events linked to civil unrest, political instability and potential changes in political regimes. The variables operationalized below are used as as binary dependent variables, and the variables described above as covariates. In addition, I add a variable with the total number of years a political regime has lasted to the models.

Coups. A coup or coup attempt may not necessarily lead to change in the political regime, but yields insights into the nature of the political opposition and how well the ruling regime strategically allocate resources in order to decrease political discomfort among societal groups with different institutional preferences. The variable coups is a dichotomous variable indicating whether there has been at least one coup (coded 1) that particular year (successful or not) (Powell and Thyne, 2011, p.252). If there has not been any coups or coup attempts the variable is coded 0.

Riots. "Any violent demonstration or clash of more than 100 citizens involving the use of physical force" (Banks, 2008, p.11). If one or more riots occurred within a year the variable is coded 1, otherwise 0.

Revolutions. "Any illegal or forced change in the top government elite, any attempt at such a change, or any successful or unsuccessful armed rebellion whose aim is independence from the central government" (Banks, 2008, p.11). This variable is coded 1 regardless of the frequency of occurrences, otherwise 0.

Demonstrations. "Any peaceful public gathering of at least 100 people for the primary purpose of displaying or voicing their opposition to government policies or authority, excluding demonstrations of a distinctly anti-foreign nature" (Banks, 2008, p.12). This variable have been recoded into a binary variable (1 if at least one demonstration, otherwise 0).

Government Crisis. This variable count the number of major governmental crisis occurring a particular year defined as "[a]ny rapidly developing situation that threatens to bring the downfall of the present regime - excluding situations of revolt aimed at such overthrow" (Banks, 2008, p.11). I have dichotomized this variable (1 if at least one government crisis, otherwise 0).

3.3 Statistical methods

I use two different methods in order to test the theoretical propositions presented in Section 2.4. First, I use logistic regression in order to analyse whether corruption increases the chances of coup attempts, riots, revolution attempts, demonstrations and major government crisis (i.e. the intervening variables) as presented in Hypothesis 1. Second, in

order to test the main propositions presented in Hypothesis 2 and 3 concerning the conditional effect of corruption and political regimes on the duration of political regimes, I use several survival models. From a methodological point of view using a survival models is the best method of modelling the duration of political regimes. We are able to account for censored information in the dataset; the data used in this thesis is both left- and right censored. Some of the observations are unobserved prior to the first observation point in the dataset. The data is also right-censored, meaning that some duration-spells have not ended before the last observation-point in the dataset (Mills, 2011, p.5-6; Box-Steffensmeier and Jones 2005, p.16-18).

Logistic regression. The intervening variables are all binary, distinguishing between the value 0 (no event) and 1 (event). I therefore make use of several binary logistic regression models specified the nonlinear relationship between the covariates and the probability of an event:

$$\Pr(y_i = 1 | \mathbf{x}_i) = \frac{\exp(\boldsymbol{\beta}\mathbf{x}_i)}{1 + \exp(\boldsymbol{\beta}\mathbf{x}_i)} \tag{3.1}$$

where the probability of any of the events, $y_i = 1$, given the vector of covariates and parameters, $\mathbf{x}_i$ and $\boldsymbol{\beta}$, are attained by exponentiation of the log odds divided by 1 plus the log of the odds (Long, 1997, p.51). The logistic regression model, as specified here, describe the expected (average value) on the binary variable, y_i, given values on the covariates $\mathbf{x}_i$. The transformation from absolute values on the covariates to the estimates are mainly the result of three steps: (1) calculate the proportion of units experiencing an event given certain characteristics (e.g. how many democratic regimes that experience revolution attempts compared to inconsistent regimes), (2) calculate the odds of that event based on the proportion with and without a particular value on the covariates (odds $= \frac{prop}{1-prop}$), and (3) thereafter looking at the changes in odds ratio (OR) given a unit change in the covariates (OR $= \frac{odds(x+1)}{odds(x)}$) (Long, 1997, p.79-82). While the odds reflect the changes in proportion and probability of an event, $y_i = 1$, between two values on a covariate, represented in $\mathbf{x}_i$, the OR reflect the relative change in odds between two outcomes on any of the covariates. The last step, attaining the OR from the regression estimates, is the same as taking the exponential of the coefficient (the change in log odds) as shown in equation (3.1). The interpretation of the results are described in more detail below when compared to the estimates from the cox proportional hazard model, which has a similar interpretation.

Survival analysis. The main purpose of survival analysis (or "Event History Modeling") is to evaluate time-to-event data or transition data (also referred to as survival time data or duration data) (Jenkins, 2005, p.1). The objective is to distinguish between

different states[9]. Box-Steffensmeier and Jones (2005, p.2-5) summarize well when they write that survival models are most frequently and best used when: (1) we are interested in the duration of events, (2) when events have a clear start and end point, (3) we wish to study how the risk of an event occurring is changing over time, (4) want to study the duration of events using panel data.

Survival analysis deal with conditional risk probability, meaning that events are conditional on their history (Box-Steffensmeier and Jones, 2005, p.14-15). The hazard rate describe the risk of experiencing an event in t conditional upon the duration up until that point in time. The building block of the hazard rate are the relationship between the slope of the failure function, $f(t)$, and the survivor function, $S(t)$, and is written $h(t) = \frac{f(t)}{S(t)}$ (Box-Steffensmeier and Jones, 2005, p.13-14; Jenkins 2005, p.14-15). It follows from this property that any change in a random variable, Δt, is conditional upon survival until t. To summarize with a relevant example, $f(t)$ is the probability that a political regime will fail (transition), $S(t)$ is the proportion of regimes surviving beyond a point in time. The $h(t)$ is the probability of regime ending in at a particular point in time given the fact that it have survived up to t. The hazard rate describe the relatioship between the probability of failing conditional upon survival for a given set of units.

Cox proportional hazard model. The specification of the failure function, the survival functions and hazard rate above does not include the potential differences among characteristics (covariates). In addition to changes in the hazard rate over time, I am also interested in how a set of covariates of theoretical importance influence the duration of a political regime. A survival model with a predefined baseline hazard function (the effect of time shared by all political regimes) and a set of covariates (varies among political regimes) can therefore be written as a linear log-hazard model (Fox, 2008, p.2), but the Cox-model does not specify the baseline hazard function, $h_0(t)$, and does therefore not have an intercept (Box-Steffensmeier and Jones, 2005, p.49). The Cox regression model is specified as following:

$$h_i(t|\mathbf{x}_i) = \exp(\boldsymbol{\beta}\mathbf{x}_i)h_0(t) \tag{3.2}$$

where the change in the hazard ratio at any given point in time and level one the covariate vector, $h_i(t|\mathbf{x}_i)$, is proportional by assumption. Similar to when we attain the change in odds between levels of the covariates, $\mathbf{x}_i$, from exponentiation of the linear log odds in a logistic regression model, exponentiation of the log hazard in a cox model yields the hazard ratio. The odds ratio and the hazard ratio have similar properties. The hazard ratio compares the duration of units (political regimes) by different levels of the

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[9]In this thesis the states are political regimes, but any defining property that can be measured by its duration (e.g. tenure, marital status, welfare benefits, type of government, conflict) can be applied (Box-Steffensmeier and Jones, 2005, p.2-5)

covariates, x_i, and the ratio thereby represent change in the hazard rate between two or more values on the covariates. The baseline hazard function, $h_0(t)$, is left unspecified, and any change in the covariates values $\mathbf{x}_i$ is interpreted as the $\exp(\boldsymbol{\beta})$ change in the hazard ratio when all other covariates are held constant (Jenkins, 2005, p.30). Presenting the results exponential yields the hazard ratio, which resembles odds ratios in logistic regressions.

Since I am first and foremost interested in quantifying the factors influencing the survival I report the inverse of the hazard ratio, $\exp(-\boldsymbol{\beta})$, which I label the survival ratio. Scores above 1 on the survival ratio is interpreted directly as a percentage increase in the survival ratio. If the survival ratio equals 2, there is a 100 % reduction in likelihood of regime transitions. If the ratio is 0.5, the scores above one can be interpreted as a percentage reduction in the survival ratio after dividing 1 with the ratio (1/0.5). This yields a score of 2 which equals a 100 % reduction in the survival ratio.

Chapter 4

Corruption and political instability

This chapter consists of two main parts: (1) descriptive statistics, and (2) preliminary analyses of the relationship between corruption and the events increasing political instability and civil unrest according to the theoretical framework. The descriptive statistics and the preliminary analyses set the stage for the main survival analyses presented in the next chapter. The empirical test of the theoretical propositions is therefore twofold: (1) does corruption increase the likelihood of politically destabilizing events, and if so, (2) does corruption affect the duration of political regimes?

The preliminary analyses indicate that corruption increases the chances of experiencing all events except riots. As a first stage towards evaluating the effect of corruption on the duration of political regimes, the proposition put forth in Hypothesis 1, that corruption increases the likelihood of all the above mentioned events, is confirmed with the exception of riots. The next chapter tests the ability of different political regimes to overcome such events of political instability and civil unrest (whether corruption also influences the duration of political regimes).

4.1 Descriptives

Following Jenkins (2005, p.45) I derive information about the survival ratio of political regimes given different levels of corruption by answering three questions: (1) how long are duration spells on average, (2) how does the covariates influence the duration lengths, (3) and what is the shape of the baseline hazard function? In this section I answer the first question, and other empirical relationships between the core variables in the model. When presenting and interpreting the results in the next chapter I answer the second and third question.

Table 4.1 gives a summary of the central tendency in the continuous variables men-

tioned above.[1] The average score (mean) and the standard deviation (sd) of the mean
are reported in the first two columns. The average duration span of almost 25 years for
all countries in the sample includes duration prior to 1984 (1900-2008). The standard
deviation of approximately 26 years means that there is a high degree of dispersion among
the duration of political regimes. The aberration of 26 years tells us that the data are
spread out over a large range of duration values, and that the typical unit has a average
distance of 26 year from the average value. The min and max show the range of the
lowest and highest observed score on the variables. The lowest number of years a regime
have endured, 0, simply means that that there have been political regimes that have not
lasted a full year before being overthrown or purged. There are several examples of coun-
tries with political regimes lasting less than a year: Algeria (in 1992 and 1995), Haiti (in
1994,1995,2004 and 2006), Liberia (in 1990 and 2003), Thailand (in 1991, 2006 and 2008)
and Zambia in 2008. The highest number of observed duration years is Oman which have
lasted 192 years. Oman is a consistent autocratic regime (absolutist monarchy) which
have had a score of zero on the SIP-index (perfect autocracy) in the time period 1984 to
2008. Supplementing the descriptive statistics for the duration span of political regimes
in Table 4.1 it is worthwhile to note the variation in average duration among political
regimes; autocracies last 30.87 years on average, inconsistent 9.48 years, and democracies
34.93 years when taking prior 1984 duration into account. All else equal, we can expect
democracies in the sample to last longer than autocracies and inconsistent regimes.

With the exception of natural resorces rents which is recoded to a binary variable given
the value 1 if above on third of total GDP[2], the control variables enters the model as
they are presented in Table 4.1. The column "missing" in Table 4.1 report the number of
missing observations compared to the total number of country year observations (3767)
between 1984 and 2008. Three variables mainly lead to a loss of observations in the
analysis below due to listwise deletion: the SIP-index, the corruption index and the level
of natural resources rents. The critical consequence of the degree of missing values is
the fact that several events are lost due to missing values on the main covariates that
particular year (year of regime transition).

Figure 4.1 supplements the descriptive statistics by showing the changes in corruption
(annual average score) over the available time-span for each of the political regimes and
in total (left plot in Figure 4.1). While autocratic and semi-democratic regimes follow
a similar path, democratic regimes have an overall lower level of corruption. This is
consistent with the theoretical expectation; large winning coalition political systems (e.g,
democracies) are expected to have a lower degree of corruption than political regimes

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[1]Table A.1 lists the countries included in Table 4.1, as well as the analyses presented below.

[2]Iraq had a score above 100 percent in 2001 and 2005. The original scale of the variable is included
to show the central tendencies among countries.

Table 4.1: Descriptive statistics of continuous variables used in the main models, 1984-2008

	mean	sd	min	max	missing
Duration (Years)	24.37	26.29	0	192	0/3735
SIP	0.57	0.36	0	0.98	275/3735
Corruption	3.01	1.35	0	6	184/3735
log(GDP per capita)	8.22	1.15	5.33	10.99	38/3735
GDP growth (%)	1.24	6.08	-61.49	45.45	56/3735
Natural resources (% of GDP)	9.4	14.39	0	107.09	218/3735
Neighborhood SIP	0.54	0.29	0	0.97	25/3735

with smaller winning coalitions (e.g. autocracies). However, it is surprising that the average level of corruption is increasing in within democracies. Some of this trend might be explained by methodological changes made to the index (Treisman, 2007, p.220-221). In the top right plot we see the bivariate relationship between scores on the corruption index and SIP-index. There is a correspondence between low levels on the SIP-index and high scores on the corruption. In other words, autocratic regimes are likely to be more corrupt than democratic regimes.
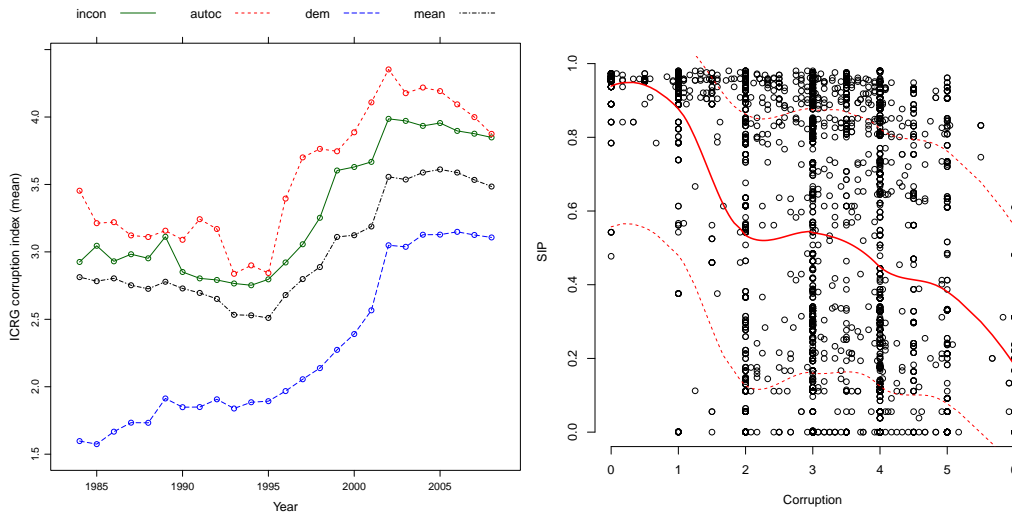
Figure 4.1: Descriptive plots 1984-2008. The left plot report the annual average corruption score for political regimes 1984-2008. The plot on the right hand side is a scatterplot of the relationship between levels on the SIP-index (y-axis) and corruption (x-axis)

Gates et al. (2006) categorize political regimes according to three main dimension: executive recruitment, executive constraint and participation. Figure 4.2[3] is an empirical assessment of the conceptual framework. All country year observations 1984-2008 are plotted within the three dimensional operationalization of political regimes. This plot

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[3]Note that there has been added jitter to the points in the plot in order to better visualize the variance. This means that the score on the axes in Figure 4.2 does not precisely represent the actual score on that dimension.

gives an overview of the variance on the sub-indicators (as described in the previous chapter) that corresponds to each ideal type of political regimes. As mentioned earlier, regimes scoring 1 on the executive recruitment dimension (the "XRREC" indicator from Polity IV) are political regimes where the "[c]hanges in chief executive occur through forceful seizures of power" Marshall, Jaggers and Gurr (2010, p.21). These political regimes are removed from the main analyses when using the original operationalization of political regimes found in Gates et al. (2006, p.897-898). The x-axis highlights the importance of executive constraints as a defining feature of political regimes. There are no autocratic regime with a score above 4 on the executive constraints dimension, and no democracy with a score below 4. Inconsistent regimes, on the other hand, cover the range of the executive constraints dimension. In general, autocratic regimes score low on the participation index, low on the executive recruitment, meaning that selection of the chief executive are "chosen by designation within the political elite, without formal competition", and low on the executive constraints dimension. As of Figure 4.2, we see that democracies have the opposite set of traits compared to autocratic regimes, and that inconsistent regimes vary across all three dimensions.
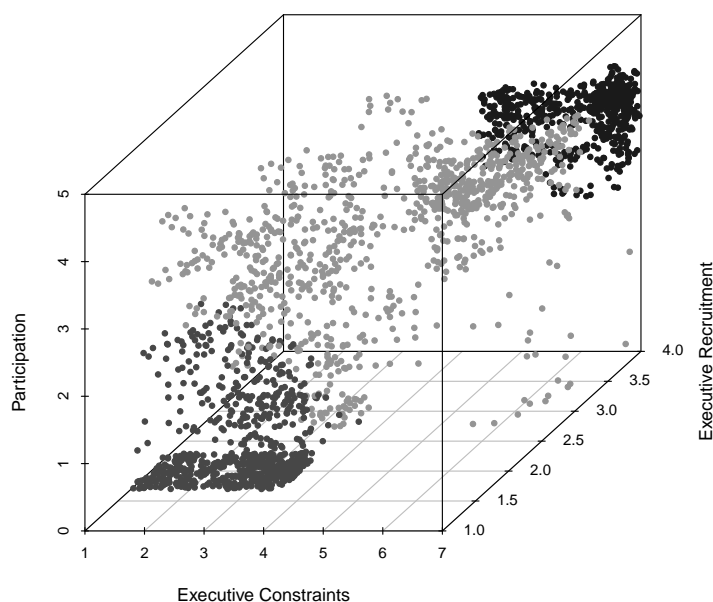

Figure 4.2: Empirical visualization of cases within the Gates et al. (2006, p.896) conceptualization of political regimes, 1984-2008. Ideal autocracy in the lower front left corner and ideal democracy in the upper back right corner. Points in dark grey color represent autocratic regimes, points in light grey inconsistent regimes and points in black democratic regimes.

Regime changes. Table 4.2 report the regime specific and total number of regime transitions from 1984 to 2008. The late 1980s and early 1990s have the highest number of political regimes changing, where most occurrences (30 in total) found place in 1992 in the aftermath of the fall of the Soviet Union, according to the operationalization in Gates et al. (2006). As we see from Table 4.2 the number of regime changes are highly influenced by the choice of operationalization.[4]. In the main operationalization, and the SIP-operationalization with extended coverage, autocratic regimes have over twice as many regime changes as democracies. However, using "Persist"[5] from Polity IV as operationalization, political regimes are approximetely equally prone to regime changes in the period. The second operationalization of regime changes, "Durable"[6] from Polity IV, autocracies experience over twice as many as democracies, but less than inconsistent regimes. The purpose of Table 4.2 is to highlight the problematic aspect of measuring regime types, and therefore also regime duration and change. The operationalization and conceptual definitions underlining each operationalization of choice are the crucial input that is likely to drive the results. Since there are discrepancies between the operationalization used to derive the main results and operationalizations of political regimes which share several of the subcomponents used in the main operationalization, I perform some robustness tests using all regime measurements in Table 4.2.

Table 4.2: Number of regime changes by type and operationalization, 1984-2008

	MIRPS	SIP	Persist	Durable
Inconsistent	134	175	104	75
Autocracy	74	95	108	64
Democracy	28	29	103	21
Sum	236	299	315	160

Figure 4.3 visualize the relationship between corruption and duration (in years) by regime types. There is not a distinct trend in autocracies and inconsistent regimes, but democracies with long duration spans tend to score low on the corruption index. The lower the mean duration span of democracies the higher the corruption level. Democracies with low levels of corruption tend to last longer than those with high levels of corruption on average. However, Figure 4.3 only yield information concerning the correlation between duration and corruption score. It does not specify whether corruption affects the duration of democracies. Also, there is a high degree of uncertainty linked to this relationship as

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[4]The number of regime changes in the second column (MIRPS) of Table 4.2 is the main operationalization used to estimate the main results in Section 5.2. The third (SIP), fourth (Persist) and fifth (Durable) are alternative, but similar operationalizations used to evaluate the robustness of the results in Section 5.3

[5]A change in any of the subindicators of the Polity-index are defined as a regime change.

[6]A change of at least 3 points on the Polity scale are labeled a regime change

seen by the confidence intervals (dashed lines) around the estimated mean (solid line) in Figure 4.3.
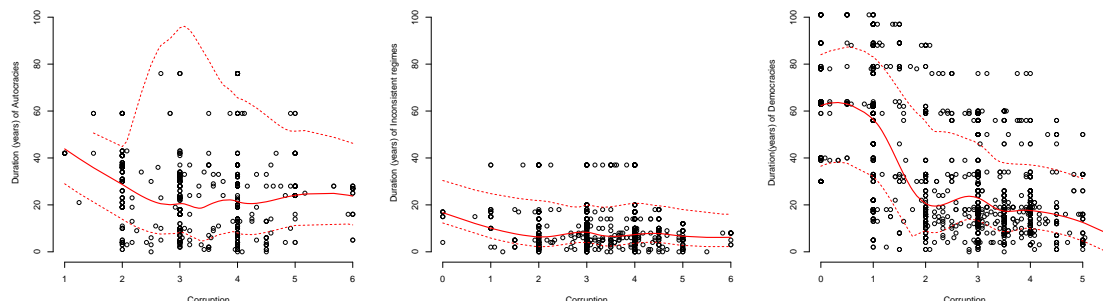

Figure 4.3: The relationship between corruption and duration in years for autocratic (left), inconsistent (middle) and democratic regimes (right), 1984-2008. Duration prior to 1984 are included and some cases with long duration span are removed from the plots. The lines on the scatterplots represent the estimated mean with 95 % confidence intervals

4.2   Corruption and destabilizing events

As a first step in direction of answering the research question, I test whether corruption increases the chances of coup attempts, riots, revolution attempts, demonstrations and major government crisis (Hypothesis 1). The results from this inquiry are a first step in the direction of evaluating the effect of corruption on the duration of political regimes. The relationship between corruption and the destabilizing events analyzes how the allocation of resources affects political instability and civil unrest.

Table 4.3 below report five logistic models, one using each intervening variable (coups, riots, revolutions, demonstrations and government crisis) as dependent variables, assessing the relationship between corruption and events promoting civil unrest and political instability. The results are presented in odds ratios where estimates significantly below or above one represent a decrease or increase in the chances of experiencing the event in question, respectively. According to Hypothesis 1, I expect corruption to increase the chances of every event tested in Table 4.3. With the exception of riots, the results in Table 4.3 support Hypothesis 1. A one unit increase in corruption yields a 1.62 increase in the odds ratio (1.62 more likely to occur for every one unit change in corruption) of experiencing coups or coup attempts (62 % increase in odds). Similarly, a one unit increase in corruption correspond to a 32 % increase in odds of experiencing revolutions or revolution attempts, 25 % increase in odds of experiencing anti-government demonstrations, and a 25 % increase in odds of experiencing governmental crisis. In other words,

with the exception of riots, corruption significantly increases the chances of experiencing all events linked to civil unrest and political instability.

Table 4.3: Corruption and coups, government crisis, riots, revolutions and demonstrations, 1984-2008

	Coups	Gov.Crisis	Riots	Revolutions	Demonstrations
Autocracy	0.892	0.503**	0.803	0.794	0.769
	(2.241,0.355)	(0.904,0.28)	(1.183,0.545)	(1.212,0.52)	(1.072,0.552)
Democracy	1.047	2.499***	1.45**	2.05***	1.515***
	(2.32,0.472)	(3.64,1.716)	(1.996,1.053)	(2.885,1.457)	(1.97,1.164)
Corruption	1.617***	1.248***	1.094	1.317***	1.245***
	(2.225,1.175)	(1.407,1.106)	(1.22,0.981)	(1.485,1.167)	(1.358,1.141)
log(Duration years)	0.663***	0.837**	0.847**	0.935	0.801***
	(0.885,0.497)	(0.997,0.702)	(0.982,0.731)	(1.101,0.794)	(0.906,0.707)
log(GDP per capita, t-1)	0.888	1.089	0.834**	0.64***	1.105
	(1.282,0.616)	(1.293,0.917)	(0.96,0.724)	(0.744,0.549)	(1.245,0.98)
GDP Growth(t-1)	0.936**	0.939***	0.976**	0.979*	0.981*
	(0.986,0.888)	(0.965,0.914)	(0.999,0.954)	(1.003,0.955)	(1,0.962)
Natural Resources	0.604	0.544	0.863	1.123	0.46***
	(2.682,0.136)	(1.165,0.254)	(1.457,0.511)	(1.879,0.672)	(0.754,0.281)
NeighboorSIP	0.563	1.28	0.649*	0.74	1.287
	(2.171,0.146)	(2.27,0.722)	(1.068,0.394)	(1.282,0.427)	(1.929,0.858)
log-likelihood	-189.83	-814.85	-977.77	-859.66	-1356.39
AIC	397.67	1647.69	1973.55	1737.31	2730.77
N	2567	2445	2444	2444	2445

Notes: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Estimates are reported in odds ratioes (exp(coef)).

95 percent confidence intervals in parentheses.

Unlike the survival models in Section 5.2 I do not report the interaction between corruption and regime type, but these results can be found in Table A.2 in Appendix A. With the exeption of demonstrations, none of the interaction terms between corruption and political yield any significant results. In the case of demonstrations, both democracies and autocracies have a lower odds when corruption is zero. For each increase in corruption the odds ratio increases by 38 % in autocracies and 40 % in democracies. This do not confund the main trend presented in Table 4.3; corruption increases the likelihood of every type of event except riots. When it comes to demonstrations, autocracies and democracies are less likely to experience demonstrations when corruption is low. For every increase in corruption the likelihood of demonstrations increases. The direction of the effect is does not change. Corruption increases the likelihood of demonstrations regardless of poltical regime.

Figure 4.4 report the predicted probabilities of coups and government crisis for different levels of the corruption-index in the period 1984-2008. The plots show how the predicted probabilities of each event changes when corruption is increased and the other

covariates in the model are at their average values. The trend is more clearcut in the case of corruption and government crises as the effect is stronger and the uncertainty lower than the effect of corruption on coup attempts. The "rug" at the bottom of each plot in Figure 4.4 denotes observations. There are few observations above 5 on the corruption index which explaines the size of the 95 % confidence intervals is larger at higher values of corruption.

Figure 4.4: Predicted probabilities of coups and government crises at different levels of corruption, 1984-2008. All other covariates are held at their average values. 95 % confidence intervals (dashed lines).

Similarly, Figure 4.5 report the positive relationship between corruption and the predicted probabilities of revolutions and demonstrations in the period 1984-2008. The effect of corruption on the probability of there being a demonstration is the far largest among the events reported in Table 4.3; when corruption is low, and the other covariates are at their average, the risk of demonstrations are between 15-20 %. Increasing the corruption score from minimum to maximum also doubles the probability of demonstrations. The shape of the increase in predicted probability is linear like meaning that one unit increase in corruption corresponds to around 7 % increase in the probability of demonstrations. The predicted probability of experiencing revolutions or revolution attempts is over 20 % when corruption is at maximum value (6) and all other covariates at their average values.

The results so far indicate that corruption influences events that threaten the existing political regime in line with the theoretical expectations. However, these results alone are not directly linked to the duration of political regimes. Even though corruption increases the chances of coups, government crises, revolutions, and demonstrations it is not certain that these events leads to a breakdown of the current regime. Political regimes are different strategic environments that determine the possibilities to prevent events
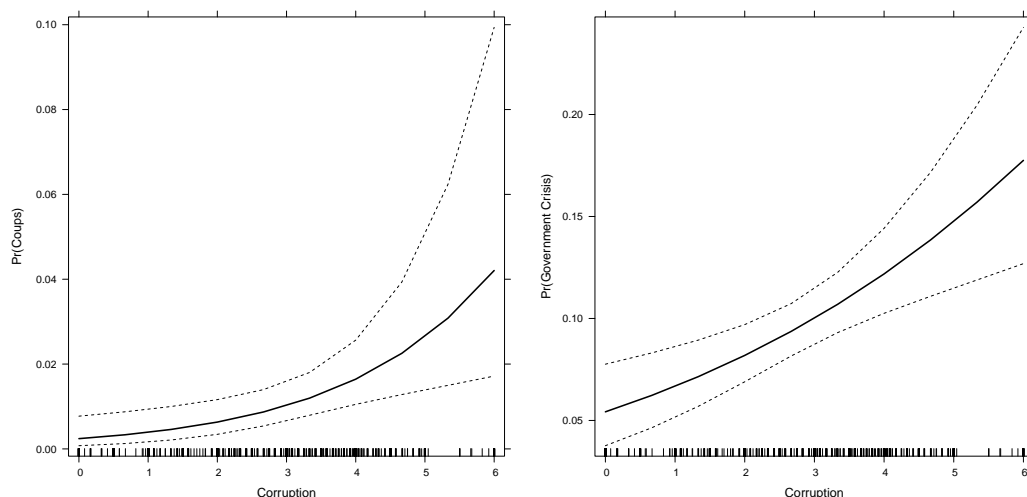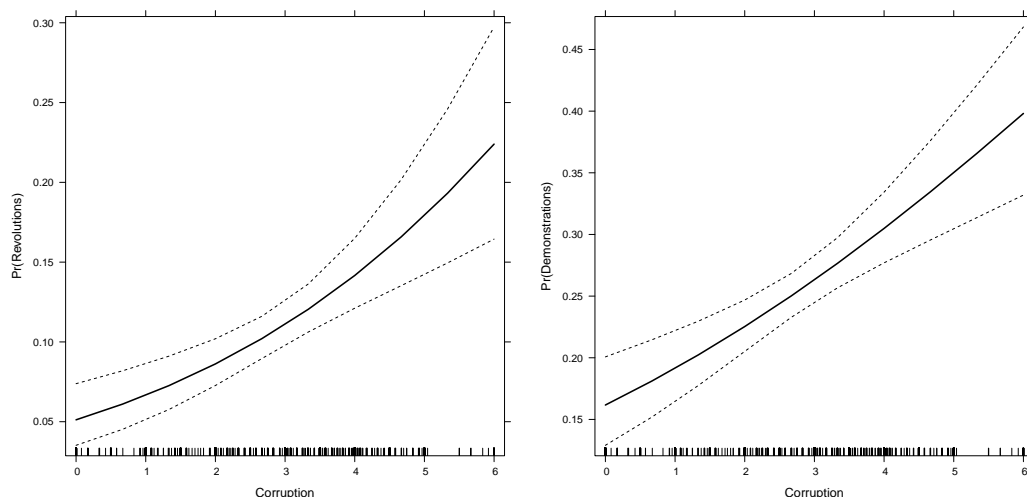
Figure 4.5: Predicted probabilities of revolutions and demonstrations at different levels of corruption, 1984-2008. All other covariates are held at their average values. 95 % confidence intervals (dashed lines).

investigated above from escalating to a regime change. In addition, successful coups and revolutions may not lead to changes in the political regime as agents overthrowing the current regime will find themselves in the same incentive structure as the leadership they replace. It is also noteworthy that the ability and purpose of the events analyzed can be different across regime types. The degree of public goods in democracies makes protest easily available strategy of expressing discontent with the regime. Whether the protest targets the regime or particular policies by the leadership is uncertain. In autocracies, protest against the current regime comes at a greater cost for the participants as autocratic regimes have greater oppressive and repressive means at their disposal. In the next chapter I turn to test whether corruption in interaction with formal properties of political regimes affect the duration of political regimes in the time period 1984 to 2008.

Chapter 5

Corruption and regime duration

This section present the main results from the survival analyses of the duration of political regimes based on a replication of "Model 2 1900-2000" in Gates et al. (2006, p.901). The unit of analysis, regime definition, and several covariates are the same as in Gates et al. (2006), where the main covariate, corruption, and the interaction between corruption and political regimes stand as the main extension of their model. I present the results in a step wise manner from replication to main results. First, I replicate "Model 2 1900-2000" Gates et al. (2006, p.901), and discuss the main trends in institutional duration in the 20th century compared to the period 1984-2000.[1] Furthermore, I compare their result which is estimated using an "Accelerated Failure Time Model" with a log-logistic baseline hazard function[2] to a Cox proportional hazard model within the shorter time period.

The main results are presented below in Section 5.2 organized around the presentation and interpretation of the three models presented in Table 5.2 in accordance with the hypotheses presented in Section 2.4. In order to assess whether the model with an interaction terms between regime types and corruption increases the model fit, a model without the interaction terms are included for comparison. This also enables an evaluation of the unconditional effect of each constitutive term that is combined in the interaction terms.

5.1 Replication

The replication of "Model 2 1900-2000" in Gates et al. (2006, p.901) are found in Table 5.1. The models in Gates et al. (2006, p.901), and the first two models in Table 5.1, are "Accelerated Failure Time models" (AFT) with a log-logistic baseline hazard function. Additionally, their models estimates the number of days survived while my main results

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[1]Due to the time frame of the replication dataset, I only subset the period from 1984-2000, but the time frame is extended to 2008 in the main results (Section 5.2)

[2]A log-logistic baseline hazard function is an assumption concerning the survival of political regimes when the covariates equals zero. A log-logistic specification of the baseline hazard function implies that the inherit risk of regime change is proportionally larger in the first years of a new political regime.

use number of years. Overall there are four differences between the models in Gates et al. (2006, p.901) and the main models here (see Table 5.2): (1) estimated using similar but different methods, (2) different time periods, (3) the duration is counted in number of years rather than number of days[3], and (4) one variable ("First Polity in Country") is removed while "Natural Resources" is added to the replication model. All estimates in "Model 2 1900-2000" (Table 5.1) are entirely equal to the original results in Gates et al. (2006, p.901). Autocracies and democracies are more stable than inconsistent regimes (reference category). Economic development (curvilinear), economic growth and whether the current political regime is the first in the country increases the expected survival times of political regimes. Political regimes are less stable when the average distance to neighboring political regimes on the SIP-index are increasing.

The "Gamma" value in bottom of Table 5.1 is the shape parameter that assesses whether the probability distribution, log-logistic, deviates from a monotonic baseline hazard (Gamma score of 1). A score significantly below one means that the conditional survival based on the model is first deacreases then increases. The log-likelihood of the model with a constant only (log-likelihood null) compared to the log-likelihood indicates that the inclusion of the covariates increases the model fit. Furthermore, comparing the number of failures between the first and second model in Table 5.1 shows that a great proportion of the regime changes, 224 out of 555 in total between 1900-2000, occur during the period 1984-2000.

The second model in Table 5.1 is the same model as "Model 2 1900-2000", but with a different time period. The most notable change in the results between these two models are that autocratic regimes are not significantly more stable than inconsistent regimes within this period. As we see from "Model 2 1900-2000" in Table 5.1 both autocratic and democratic regimes are more stable than inconsistent regimes. This is not true for autocratic regimes in the period 1984-2000 which indicate that the duration of political regimes in the period of my main analysis deviate from the main findings in Gates et al. (2006, p.901). The third model is a Cox proportional hazard model, where the results are presented as survival ratios $(\exp-(\boldsymbol{\beta}))$. The estimates from the AFT models yield information about the expected change in survival times, whereas the estimates Cox-models yield information about the survival ratio. The results are interlinked, but not entirely the same. I do not comment the differences in the estimates between the first and third model any further as the results from the main model are presented and discussed further in the next section.

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[3]Since the covariates all have annual scores I measure duration in number of years instead of days

Table 5.1: Replication "Model 2 1900-2000" in Gates et.al (2006, p.901)

	Model 2 1900-2000	ICRG timeperiod 1984-2000	Model 2 Cox 1984-2000
Autocracy/Kingdom	1.850***	1.136	0.979
	[1.516,2.259]	[0.815,1.583]	[0.726,1.319]
Democracy	3.613***	4.948***	4.620***
	[2.709,4.820]	[2.977,8.224]	[2.807,7.602]
Economic Development	1.273***	1.224**	1.153*
	[1.167,1.388]	[1.050,1.427]	[1.007,1.321]
Economic Development^2	1.160***	1.245***	1.126**
	[1.097,1.226]	[1.137,1.363]	[1.044,1.215]
GDP growth	1.018*	1.021	1.027**
	[1.002,1.035]	[0.996,1.047]	[1.008,1.046]
Political neighborhood	0.354***	0.477*	0.352**
	[0.216,0.579]	[0.195,1.164]	[0.175,0.707]
First Polity in Country	1.624*	1.545	1.140
	[1.105,2.386]	[0.854,2.793]	[0.711,1.829]
Period 1920-1959	0.583		
	[0.301,1.128]		
Period 1960-2000	0.543		
	[0.284,1.038]		
Gamma	0.645	0.639	
	[0.597,0.697]	[0.563,0.725]	
Observations	7018	2536	2536
Number of polities	716	377	377
Number of failures	555	224	224
ll_0	-985.686	-381.121	-996.059
ll	-895.276	-337.336	-943.442

Estimates are reported in survival ratioes; 95% confidence intervals in brackets

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.0005$

5.2   Extending the model: main results

This section extend the result of the replication in Table 5.1 in order to analyze and test the hypotheses concerning the conditional effect of corruption on the duration of political regimes. I find some tentavive support of hypothesis 2. The effect of corruption on the stability of political regimes depends on the regime type. Hypothesis 3 is supported by the analyses, but note that there is a high degree of uncertainty associated with the estimates. The survival ratio of democracies is negatively affected by the level of corruption. More precisely, the democracies are more stable when corruption is low and decreasing for each consecutive increase in corruption. This effect is significant (10 % level) across model spesifications. Hypothesis 4 is not supported. The survival ratio of autocratic regimes is not affected by the degree of corruption.

The transition from the last column of the Table 5.1 to the first column of Table 5.2 highlights the changes made to the original composition of variables in addition to including corruption. "Natural Resources" is added, and "First Polity in Country" is removed from the analyses. I remove "First Polity in Country" due to counter-intuitive results, and thereby lack theoretical support. Excluding the variable from the analyses does not influence the results.

Table 5.2 below compare the results from four Cox proportional hazard models. The estimates for democracies and autocracies are compared to inconsistent regimes (reference category) in all models. In the first model ("MIRPS"), being democratic significantly increases the survival ratio. Democracies are almost seven times as stable as inconsistent regimes. The higher the level of GDP growth the more likely a political regime is to survive; a one percent increase in GDP growth increases the survival ratio with around 5 % percent. Having over 33 % of GDP from natural resources rents does not significantly influence the likelihood of surviving. Being in a political neighborhood where neighboring political regimes have different institutional frameworks reduces the survival ratio by 0.43 which is equivalent to a 130 % reduction in the survival ratio. Corruption does not significantly influence the survival ratio of political regimes in this model. However, this is not expected theoretically, as the main argument link the effect of corruption on duration to the existing political regime.

To test hypotheses 3 and 4 – that corruption decreases the duration of democracies and increases the duration of autocracies – I include an interaction term between the regime types and corruption. The second model in Table 5.2 indicate support of Hypothesis 3; the constitutive term for democracies, which is the effect of democracy when the conditioning variable (corruption) is zero (Brambor, 2005, p.74) suggest that cases with this combination of values are far more durable than inconsistent regimes; the survival

Table 5.2: Main results: the duration of political regimes, 1984-2008

	MIRPS	MIRPS(interaction)	MIRPS(Frailty)
Autocracy	0.837	1.127	1.131
	(0.591,1.185)	(0.306,4.15)	(0.349,3.658)
Democracy	6.971***	21.096***	21.181***
	(4.243,11.453)	(6.635,67.07)	(5.35,83.856)
Corruption	1.047	1.133	1.134
	(0.909,1.206)	(0.947,1.356)	(0.94,1.368)
log(GDP per capita, t-1)	1.154	1.163	1.165*
	(0.963,1.383)	(0.967,1.398)	(0.985,1.377)
GDP Growth(t-1)	1.047***	1.048***	1.048***
	(1.018,1.076)	(1.019,1.077)	(1.024,1.072)
Resources	0.86	0.848	0.847
	(0.47,1.576)	(0.462,1.555)	(0.47,1.525)
NeighboorSIP	0.435**	0.406***	0.406***
	(0.226,0.835)	(0.212,0.776)	(0.217,0.758)
Autoc*Corr		0.916	0.916
		(0.649,1.295)	(0.661,1.269)
Democ*Corr		0.7**	0.7*
		(0.507,0.967)	(0.47,1.043)
log-likelihood null	-882.03	-882.03	-882.03
log-likelihood	-817.99	-816.39	-815.35
AIC	1649.98	1650.78	1650.34
N	2753	2753	2753
Number of events	197	197	197

Notes: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. 95 percent confidence intervals in parentheses.

Standard errors are clustered on country. Frailty: baseline hazard functions differ amoung countries.

Estimates are reported in survival ratioes.

ratio estimate of 21.1 means that democracies with the lowest degree of corruption are over 21 times more likely to last longer than inconsistent regimes with the same degree of corruption. Furthermore, the interaction term between democracy and corruption indicates that for every consecutive increase in corruption, the surival ratio is reduced by 43 %.

A democracy that have survived until a speisific point in time will have a greater chances of surviving until the next point in time when corruption is low. An increase in corruption decreases the chances of surviving until the next point in time, but regardless of corruption level the chances of survival are always greater in democracies than in inconsistent regimes. In terms of the difference in probability of survival, this is equivalent to 0.95.[4] The probability that a democracy with the value zero on the corruption index last longer than an inconsistent regime with the same value is high. The effect of corruption

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[4]The interpretation in this case is similar to the interpretation of odds ratios. Hence, the survival ratio can be interpreted as the odds that the time to an event (regime change) is longer than in the point of reference.

in inconsistent regimes is given by the estimate of corruption in the interaction model since corruption is a constitutive term when the conditional variable is zero (inconsistent regimes, the reference category). Corruption does not significantly affect the survival ratio of inconsistent regimes.

The constitutive terms and the interaction term tells us two things: (1) the estimate of each constitutive term when the conditional variable is zero, and (2) the effect of the constitutive term on the dependent variable (gradient of the slope) dependent on the values on the conditioning variable (Brambor, 2005, p.73-74). For the interpretation of the conditional effect between political regimes and corruption, the estimates must be interpreted as a combined effect. We already know that democracies with the lowest level of corruption have a high probability of survival. The survival ratio estimate for the interaction term between democracy and corruption, 0.7, indicates that for each subsequent change in corruption the effect of democracy on the survival ratio is decreasing. A survival ratio of 0.7 is equivalent to a 43 % reduction in the survival ratio, meaning that democracies have a higher probability of survival the lower the score on the corruption index. This is consistent with the expectation of hypothesis 3; low levels of corruption makes democracies more likely to survive, ceteris paribus.

A visualization of the interaction term in the second model of Table 5.2 is presented in Figure 5.1. The points represent the survival ratio estimate for democracies with that particular value on the corruption index, ceteris paribus.[5] The 95 % confidence intervals are represented by the vertical lines through each point on the scale. While the confidence intervals for each level on the corruption index overlap, there is a clear negative trend between the surival ratio estimate and higher levels of corruption in democracies (compared to inconsistent regimes). Due to the uncertainty of each estimated surival ratio, it is not possible to distinguish significantly between each particular score on the corruption index.

Hypothesis 4 suggest the opposite effect of corruption in autocracies, but this effect is not supported empirically by any of the models. Hypothesis 4 is not supported; the survival ratio of autocratic regimes is not influenced by the level of corruption. Figure A.1 in Appendix A plots the survival ratio of autocratic regimes following the same logic as Figure 5.1. The confidence intervals for autocracies overlap 1 for every level of corruption. The estimates are as well close to one. Corruption does not, according to any of the model, increase the survival ratio of autocratic regimes.

The third model is a frailty model that account for unobserved heterogeneity (differences between political regimes that are not observed through the covariates) (Jenkins,

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[5]The constitutive term for democracy in model "MIRPS(interaction)" is the estimated survival ratio for democracies when corruption is zero. The results in Figure 5.1 are estimated by changing the zero to represent each integer value on the corruption index.
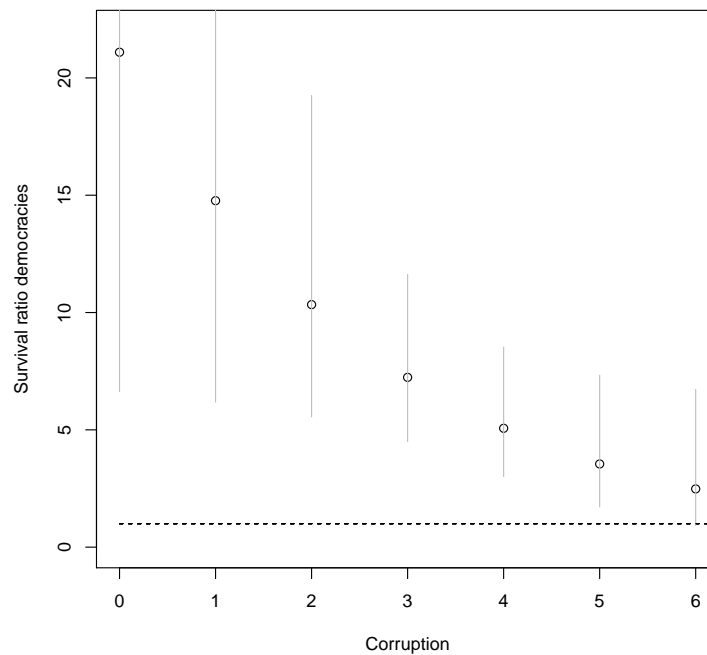
Figure 5.1: The survival ratio of democracy conditioned on levels of corruption from "MIRPS(interaction)" in Table 5.2, 1984-2008. Vertical lines represents the 95 % confidence intervals.

2005, p.81). The frailty term in the model is specified as countries, and is therefore similar to a random effects model that account for unobserved differences among countries (some are more at risk than others). The direction and scope of the interaction effect is similar to reported results in "MIRPS(interaction)".

The survival ratio of democracies decreases as corruption increases. Those democracies that have the lowest level of corruption are also those with the highest survival ratios. Examples include the Nordic countries which for longer periods are coded with a score of 0 on the corruption index. Canada, Belgium, France, Luxembourg and the Netherlands are other examples of European democracies that have had the lowest level of corruption during the period. More importantly, none of the democracies with zero on the corruption index have experienced a regime change during the period. In comparison, democracies with high levels of corruption (above five) include among others Bangladesh, Indonesia, Lebanon Niger, Russia, Ukraine and Venezuela. These countries have experienced one or several regime changes during the period. The democracies with high levels of corruption highlight the fact that corrupt practices from former political institutions are not curbed instantaneously. This is a potential problem for countries transitioning from autocracies or inconsistent regimes to democracies. If corruption is not curbed in democracies, the prospect of regime duration is less likely. While the democracies with low levels of corruption are well-established western democracies, the ones with high levels of corruption

are newly established democracies with a past history of instability.

Hypothesis 2 state that there is an interaction effect between corruption and political regimes that explains the duration of political regimes. In addition to the interpretation of each interaction effects, the log-likelihood and AIC values of Table 5.2 are suitable for comparing the performance of nested models.[6] The LR-test between "MIRPS" and "MIRPS(interaction)" is not significant (p-value: 0.2). This means that it is not possible to state with certainty that the interaction model fits the data better than the first model of Table 5.2. The same test between "MIRPS" and "MIRPS(Frailty)" is neither significant (p-value: 0.2)). The frailty model fits the data best of the three models presented in Table 5.2. The AIC values suggest that the frailty model is the best fit, but note that the difference in log-likelihood and AIC between the models are marginal and not significant. Democracies are significantly more stable at low values of corruption. This effect is decreasing for each consecutive increase in corruption.

To further assess the performance of the models presented in Table 5.2 I test the proportional hazard assumption and plot the influential observations in Appendix B. The core assumption underlying the statistical models is the proportionality of the hazard/survival ratio. Simply put, the Cox models estimate the survival ratio as a "fixed proportion across time" (Box-Steffensmeier and Jones, 2005, p.48). This enables the estimation of parameters that links absolute changes in the covariates to the proportional effect on the duration of political regimes (Jenkins, 2005, p.30). If this assumption does not hold among the survival rates of the units in the data, the effects of the covariates may be time dependent Golub (2008, p.543). This means that the duration of time in itself influences the hazard ratios of political regimes. In other words, there are unexplained factor that influences the survival of political regimes that are not assessed by the model (since ruled out by assumption). Table B.1 present the statistical test of the proportional hazard assumption of "MIRPS(interaction)" in Table 5.2, and the interaction models presented in the robustness evaluation of the main results in the next section. The proportional hazard assumption is not breached in the main interaction model ("MIRPS(interaction) in Table 5.2). Of the models presented in the next section, the proportional hazard assumption does not hold when using the "Durable" operationalization of political regimes. Since this model is included to assess the robustness of the main results, I do not address the issue any further.

Figure B.1 plots the influential observation on the democracy and autocracy covariate from model "MIRPS(interaction)"[7] in Table 5.2. The y-axis on these two plots show how

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[6]The log-likelihood and the AIC are used to assess how the models fit to the data. Based on the difference in log-likelihood I assess the models fit by a standard likelihood ratio test (LR-test). This test uses the -2 times the difference in log-likelihood distributed as a chi-square statistic between two nested models Box-Steffensmeier and Jones (2005, p.44).

[7]There are not influential observations on any of the other covariates in the model (see Figure B.2)

the estimate for democracies and autocracies changes given that the particular observation is removed. The change in change in the estimates are scaled in units of standard errors, and a score above 0.1 are usually the threshold for influential observations (Stevenson, 2012, p.30). Some observations are above this threshold; removing Argentina 1989, Brazil 1989, Greece 1986, Madagascar 1998, and Nicaragua 1995 would decrease the estimated survival ratio of democracies. On the other side of the scale, removing Kenya 2008 increases the survival ratio estimate. In the estimate for autocracy, most observation are below or close to the 0.1 threshold (see Figure B.1 for a complete overview).

The next section evaluate the robustness of the main results. I apply the same model using different operationalizations of political regimes. Since the duration of political regimes depends on the definition used, I find it valuable to asses similar operationalizations in order to evaluate the sensitivity of the resutls.

5.3 Robustness: SIP, Persist and Durable

I evaluate the robustness of the finding in two steps: (1) test the models using similar, but different operationalizations of political regimes, and (2) run the analyses from Table 5.2 after lagging the corruption index by one year in order to evaluate issues related to endogeneity.

As seen from Table 5.3, the alternative operationalizations, both with and without the interaction terms, finds similar results as reported in Table 5.2. Operationalizing the political regimes according to thresholds on the SIP-index, as any change in the Polity IV sub indicators, or as a minimum of three point change on the Polity-index, find similar trend as the main models. The interaction term between corruption and democracy is not significant in the "Durable(interaction)" model in Table 5.3. However, the actual significance of the interaction terms and constitutive terms are not the main inquiry. Since interaction terms rely on the covariance of all terms included in the interaction the interaction effect can be significant over some levels of the conditioning variable even though the terms are insignificant (Brambor, 2005, p.73-74). The "Durable(interaction)" model stand in close resemblance to the results presented in Table 5.2. The main difference between the "MIRPS" in Table 5.2 and "Durable" in Table 5.3 operationalization of regime duration is the results concerning the duration of autocratic regimes. In the former, the duration of autocratic regimes are not distinguishable from inconsistent regimes while autocratic regimes are less stable in the latter. It is sufficient, however, in this case to note that the same trend as established in the main results remain relatively unchanged across operationalizations of political regimes, regime changes and duration spells.

An additional problem that potentially challenges the results is endogeneity. In other words, there is a degree of uncertainty concerning the direction the causal relationship

between the independent variables and the dependent variables. Here, this uncertainty is first and foremost linked to the relationship between corruption, political regimes and the duration of political regimes. Treisman (2007, p.230-231) find that there is a relationship between political institutions and corruption where democracies tend to have lower levels of corruption. This, however, is a matter of multicollinearity in my analyses, but what is more problematic is the fact that changes in corruption levels might be explained by the duration of political regimes. In fact there are some empirical evidence that well established democracies have lower corruption than newly established; Treisman (2007, p.230-231) find that there is significantly less corruption in democracies, but that this effect is not significant when excluding democracies established before 1950 from the sample. Also, which my results show, democracies with low levels of corruption are regimes that have been in existence for longer periods before entering the dataset in 1984, and remain in existence the entire time period. Questions linked to the direction of causality in these particular cases are a natural concern. It is possible that the low levels of corruption are results of long duration spans. In other words, it might be the case that democracies curb corruption over time.

I address the potential problem by lagging the corruption index with one year by following the logic of Box-Steffensmeier, Brady and Collier (2008, p.19-20) in considering "values of variables that occur earlier in time to be 'predetermined'–not quite exogenous but not endogenous either". The main trends remain unchanged (the results are reported in Table A.3). The results are similar to the main results in Table 5.2, but the interaction effect between corruption and democracy is weaker in the models with lagged corruption index Table. Note that this "test" is only preliminary. Lagging the corruption index does not rule out endogeneity, but indicate whether the issue is of relevance. Further testing of this issue is beyond the scope of this thesis.

5.4   Summary of results

The main results indicate that the survival estimate of democracies is decreasing when corruption is increasing within the sample of countries and time period. The surival of autocracies are not affected by the level of corruption, nor are autocracies more stable than inconsistent regimes in this particular period. This finding contrasts the main trend of the 20th century. Gates et al. (2006, p.901) find that autocracies are expected to endure longer than inconsistent regimes (see "Model 2 1900-2000" in Table ??). The diminishing prospect of regime endurance within the period for autocracies is a robust finding across model specifications. All results point in that direction. The interaction effect between corruption and democracy seem to some degree to be consistent across

alternative operationalizations. The actual estimate differs, but the overall trend in the results point in the same direction.

Compared to the preliminary analyses in the previous chapter (Table 4.2), linking corruption to an increase in the probability of attempted and successfull coups, government crises, revolution attempts and demonstrations, the increase in political stability and civil unrest seems to affect democracies the most. The fact that corrupiton does not affect the stability of autocratic regimes while at the same time increase the probability of event of political instability and civil unrest suggest that the strategies available for the leadership and winning coalition in autocracies are better adapt at preventing such events from leading to a change in the political regime.

The operationalization of political regimes and regime changes does not alter the results greatly. The main trend is consistent even though the magnitude and influence of corruption varies according to operationalizations. When using the three point change in the polity scale as operationalization of regime change the interaction between corruption and democracies are no longer significant. However, the main trend is the same as presented in Table 5.2: democracies are relatively more stable at low levels of corruption, and each concecutive increase in corruption decreases the survival ratio. The effect is overall weaker in this model and the uncertainty linked to the interaction effect is larger.

Due to a lack of corruption data with compatible time frames, I am not able to assess the robustness of the results using alternative measures of corrupiton. I rest on the findings of others (e.g. Treisman (2007, p.215-221)) that corruption indices usually overlap and correlate highly indicating that the general trends in corruption are captured by the different indices. However, this is obviously a problem for the validity of the main results in addition to the general criticism of corruption data; lack of consistency in many indices including the one used in this thesis, and limited insight into the coding of the cross-national corruption data are issues to keep in mind when interpreting the results Treisman (2007, p.215-221).

Even though the alternative regime measurements support the main trends presented in Table 5.2, there are still a limited amount of countries and years included in the sample due to lack of coverage on the corruption index. This limits the ability to generalize the main results. Therefore, the results should be treated in a probabilistic sense only.

Table 5.3: Alternative operationalizations of political regimes: SIP, Persist and Durable, 1984-2008

	SIP	SIP(interaction)	Persist	Persist(interaction)	Durable	Durable(interaction)
Autocracy	0.69***	1.024	0.849	1.297	0.707*	1.81
	(0.528,0.903)	(0.464,2.263)	(0.614,1.175)	(0.489,3.439)	(0.471,1.061)	(0.481,6.808)
Democracy	7.157***	18.981***	1.623***	5.355***	7.148***	14.924***
	(4.481,11.432)	(5.529,65.161)	(1.166,2.257)	(2.065,13.885)	(3.215,15.895)	(2.296,96.986)
Corruption	0.99	1.056	0.941	1.106	0.985	1.137
	(0.89,1.101)	(0.926,1.204)	(0.924,1.043)	(0.839,1.158)	(0.839,1.158)	(0.894,1.447)
log(GDP per capita, t-1)	1.076	1.08	1.207**	1.209**	1.221	1.243
	(0.906,1.278)	(0.909,1.284)	(1.042,1.397)	(1.041,1.403)	(0.94,1.587)	(0.947,1.632)
GDP Growth(t-1)	1.041***	1.041***	1.032***	1.032***	1.021	1.019
	(1.014,1.068)	(1.015,1.068)	(1.008,1.055)	(1.009,1.055)	(0.99,1.053)	(0.988,1.052)
Resources	1.112	1.1	1.534*	1.461	2.12**	2.024**
	(0.639,1.936)	(0.631,1.918)	(0.922,2.553)	(0.872,2.45)	(1.131,3.975)	(1.082,3.786)
NeighboorSIP	0.376***	0.367***	0.571*	0.543**	0.468**	0.462**
	(0.229,0.615)	(0.225,0.598)	(0.326,1.002)	(0.311,0.945)	(0.236,0.928)	(0.236,0.904)
Autoc*Corr		0.896		0.884		0.766
		(0.734,1.093)		(0.679,1.151)		(0.535,1.097)
Democ*Corr		0.733*		0.7***		0.797
		(0.52,1.033)		(0.537,0.913)		(0.494,1.285)
log-likelihood null	-1193.88	-1193.88	-1285.36	-1285.36	-562.54	-562.54
log-likelihood	-1118.96	-1117.57	-1262	-1258.83	-511.29	-510.07
AIC	2251.92	2253.13	2538	2535.67	1036.58	1038.14
N	3108	3108	3048	3048	2786	2786
Number of events	255	255	272	272	136	136

Notes: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Estimates are reported in survival ratios. 99 percent confidence intervals in parentheses.

Standard errors are clustered on country.

Chapter 6

Concluding Remarks

In this thesis I have hypothesized that the effect of corruption is conditional upon regime type, and that corruption decreases the duration of democracies and increases the duration of autocratic regimes. The survival analyses suggest that corruption decreases the survival ratio of democratic regimes. The effect of corruption, conditioned on political regimes, is only relevant and significant for democratic regimes. The results derived from the main models therefore confirms Hypothesis 2 and 3. The effect of corruption depends on the formal properties of a political regime, and corruption decreases the survival ratio of democracies.

I find no support of Hypothesis 4; the duration of autocracies are not affected by the level of corruption, nor are autocracies more stable than inconsistent regimes during the period 1984-2008. In relation to the replication framework of Gates et al. (2006), the main findings are altered when looking at the time-period 1984-2008; autocratic regimes are not more stable than inconsistent regimes within the period. From 1984 to 2008 democracies are substantially more durable than inconsistent regimes while autocracies are not.

In the preliminary analyses in Section 4.2 I linked corruption to an increase in the probability of coup attempts, government crisis, riots, revolution attempts and demonstrations. Except for riots, corruption increases the probability of each event consistent with the expectation presented in Hypothesis 1. Compared to the main analyses, events causing political instability and civil unrest are not necessarily translated into regime instability. Corruption increases political instability and civil unrest unconditionally, but corruption only influences the stability of political regimes in interaction with democracy.

The hypotheses were derived based on the insights of the selectorate theory (Bueno de Mesquita et al., 2003). More precisely, the allocation of resources and the welfare of societal groups within an initial political regime were used in order to analyze the role and effect of corruption. Corruption is a private goods which allocates wealth in the hands of the winning coalition and the leadership. The selectorate and the disenfranchised are

not influenced by private goods, and naturally prefer political regimes allocating public goods rather than private. Corruption as a strategy of political survival increases the level of private goods spending which simultaneously decreases the level of public goods. The allocation of goods and the preferences of societal groups have been used to explain the future prospects of political regimes. If the distribution of resources are incompatible with the preferences of the groups with *de jure* political power, we can expect political instability and civil unrest and in turn institutional instability.

The trend in the main analysis are robust to alternative operationalizations of political regimes as shown in Table 5.3. Overall, my findings display similar trends across operationalizations of political regimes. While many of the indicators are shared by the composite measurements of political regimes, the definition of a change in political regimes varies. Therefore, the actual duration of political regimes vary across the measurements. The fact that a somewhat similar trend is shown across operationalizations favors the robustness of my results. Even though the estimates differ, the trend is consistent. Democracies are more stable than inconsistent regimes, and in interaction with corruption the survival ratio estimate is decreasing for each consecutive level of corruption.

Combined with the many fallacies of available corruption data, also true for the data used here (Treisman, 2007, p.220-221), any generalizations of the main findings are difficult. Also, theoretically, corruption is a subject hard to investigate due to the scope of the concept (i.e. the wide range of sub indicators). The selectorate theory offers an explanation of the consequences of corruption for regime duration, but more can be done in order to better understand the consequences of corruption for the duration of particular institutions and aggregated measures of political regimes.

The lack of consistent time series data is the main challenge for any study analyzing the determinant and effects of corruption. The perception and expert coded corruption indices that are most commonly used in cross-country analysis of both determinant and effects are questionable, poorly documented and not consistent over time. In sum, they have a low degree of reliability and measurement validity. Improving the data collection and documentation of indices already being used stand as a challenge that needs to be addressed. Alternatively, one could find better proxies by looking at the structural implications of the existing body of research. Data material such as minister extensions of cabinet size (Arriola, 2009, p.1349-1350) used as a measurement of patronage politics, are creative solutions that increase our insight into the consequences of corruption. The available corruption-indices (especially the ICRG corruption-index) use a wide range of indicators under the term corruption which might lead to confusion and misunderstandings of the actual casual mechanisms.

Overall, the research question asked whether corruption influences the duration of

political regimes. The results presented in this thesis suggest that corruption decreases the survival ratio of democracies. The results also indicate that the survival ratio of autocratic regimes are unaffected by the degree of corruption.

Bibliography

Acemoglu, Daron, Georgy Egorov and Konstantin Sonin. 2010. "Political Selection and Persistence of Bad Governments*." *The Quarterly Journal of Economics* 125(4):1511–1575.

Acemoglu, Daron and James A. Robinson. 2006. "A Framework for Studying Institutional Persistence and Change.".
URL: *http://www.ebrd.com/downloads/research/economics/japan/jrp2.pdf*

Acemoglu, Daron and James A. Robinson. 2012. Why Nations Fail Today. In *Why Nations Fail: the Origins of Power, Prosperity, and Poverty.* Crown Business chapter 13, pp. 368–403.

Acemoglu, Daron, James A. Robinson and Thierry Verdier. 2006. *Economic Origins of Dictatorship and Democracy.* Cambridge University Press.

Adcock, Robert and David Collier. 2001. "Measurment Validity: A Shared Standard for Qualitative and Quantitative Research." *American Political Science Review* 95(3):529–546.

Aidt, Toke S. 2009. "Corruption, Institutions, and Economic Development." *Oxford Review of Economic Policy* 25(2):271–291.

Amundsen, Inge. 1999. *Political Corruption: An Introduction to the Issues.* Christian Michelsen Institute.

Arriola, L. R. 2009. "Patronage and Political Stability in Africa." *Comparative Political Studies* 42(10):1339–1362.

Banks, Arthur S. 1996. "Cross-National Time-Series Data Archive.".

Banks, Arthur S. 2008. "Cross-National Ttime-Series Data Archive User's Manual.".

Banks, Arthur S. 2011. *Banks Cross-National Time-Series Data Archive, 1815 - [2011].* Databanks International.
URL: *http://hdl.handle.net/10573/42657*

Beetham, David. 1999. *Democracy and Human Rights.* Polity Press.

Boix, Carles. 2003. *Democracy and Redistribution.* Cambridge University Press.

Boix, Carles and Susan C. Stokes. 2009. Political Clientelism. In *The Oxford Handbook of Comparative Politics*, ed. Carles Boix and Susan C. Stokes. Number April 2013 Oxford University Press pp. 1–40.

Box-Steffensmeier, Janet M. and Bradford S. Jones. 2005. *Event History Modeling: A Guide to Social Scientists.* Cambridge University Press.

Box-Steffensmeier, Janet M., Henry E. Brady and David Collier. 2008. Political Science Methodology. In *The Oxford Handbook of Political Methodology.*, ed. Janet M. Box-Steffensmeier, Henry E. Brady and David Collier. Oxford University Press pp. 3–31.

Brambor, T. 2005. "Understanding Interaction Models: Improving Empirical Analyses." *Political Analysis* 14(1):63–82.

Bratton, Michael and Nicholas van de Walle. 1997. *Democratic Experiments in Africa: Regime Transitions in Comparative Perspective.* Cambridge University Press.

Bueno de Mesquita, Bruce and Alastair Smith. 2009. "Political Survival and Endogenous Institutional Change." *Comparative Political Studies* 42(2):167–197.

Bueno de Mesquita, Bruce and Alastair Smith. 2010. "Leader Survival, Revolutions, and the Nature of Government Finance." *American Journal of Political Science* 54(4):936–950.

Bueno de Mesquita, Bruce, Alastair Smith, Randolph M. Siverson and James D. Morrow. 2003. *The Logic of Political Survival.* The MIT Press.

Bueno de Mesquita, Bruce, James D. Morrow, Randolph M. Siverson and Alastair Smith. 2002. "Political Institutions, Policy Choice and the Survival of Leaders." *British journal of political science* 32(4):559–590.

Busse, Matthias and Steffen Gröning. 2011. "The Resource Curse Revisited: Governance and Natural Resources." *Public Choice* 154:1–20.

Coppedge, Michael, John Gerring, David Altman, Michael Bernhard, Steven Fish, Allen Hicken, Matthew Kroenig, Staffan I. Lindberg, Kelly McMann, Pamela Paxton, Holli A. Semetko, Svend-Erik Skaaning, Jeffrey Staton and Jan Teorell. 2011. "Conceptualizing and Measuring Democracy: A New Approach." *Perspectives on Politics* 9(02):247–267.

Dahl, Robert. 1971. *Polyarchy: Participation and Opposition.* New Haven: Yale University Press.

Darden, Keith. 2008. "The Integrity of Corrupt States: Graft as an Informal State Institution." *Politics Society* 36(1):35–59.

Donchev, Dilyan and Gergely Ujhelyi. 2009. "What do Corruption Indices Measure?".

Doorenspleet, Renske. 2004. "Structural Context of Recent Transitions to Democracy." *European Journal of Political Research* 43(3):309–335.

Elkins, Zachary. 2000. "Gradations of Democracy? Empirical Tests of Alternative Conceptualizations." *American Journal of Political Science* 44(2):293–300.

Epstein, David L., Robert Bates, Jack Goldstone, Ida Kristensen and Sharyn O'Halloran. 2006. "Democratic Transitions." *American Journal of Political Science* 50(3):551–569.

Fearon, James D. and David D. Laitin. 2003. "Ethnicity, Insurgency, and Civil War." *The American Political Science Review* 97(1):75–90.

Fox, John. 2008. *Cox Proportional-Hazards Regression for Survival Data.* SAGE Publications chapter Appendix.

Gardiner, John A. 2008. Defining Corruption. In *Political Corruption: Concepts & Contexts*, ed. Arnold J Heidenheimer and Michael Johnston. 3 ed. Transaction Publishers chapter 2, pp. 25–40.

Gates, Scott, Håvard Hegre, Mark P Jones and Håvard Strand. 2006. "Institutional Inconsistency and Political Instability: Policy Duration, 1800-2000." *American Journal of Political Science* 50(4):893–908.

Gleditsch, Kristian Skrede. 2002. "Expanded Trade and GDP Data." *Journal Of Conflict Resolution* 46(5):712–724.

Gleditsch, Kristian Skrede and Michael D Ward. 2006. "Diffusion and the International Context of Democratization." *International Organization* 60(4):911–933.

Golub, Jonathan. 2008. Survival Analysis. In *The Oxford Handbook of Political Methodology.*, ed. Janet M. Box-Steffensmeier, Henry E. Brady and David Collier. Vol. 1 Oxford, England: Oxford University Press pp. 530–546.

Grzymala-Busse, Anna. 2010. "The Best Laid Plans: The Impact of Informal Rules on Formal Institutions in Transitional Regimes." *Studies in Comparative International Development* 45(3):311–333.

Gunardi, Harry Seldadyo. 2008. *Corruption and Governance around the World: An Empirical Investigation.* PPI Publishers.

Gurr, Ted Robert. 1974. "Persistence and Change in Political Systems, 1800-1971." *American Political Science Review* 68:1482–1502.

Hegre, Håvard and Hanne Fjelde. 2011. "Political Corruption and Institutional Stability.".
URL: *http://folk.uio.no/hahegre/Papers/DemDep$_1$0032011.pdf*

Helmke, Gretchen and Steven Levitsky. 2004. "Informal Institutions and Comparative Politics: A Research Agenda." *Perspectives on Politics* 2(04):725–740.

Huntington, Samuel. 1991. *The Third Wave: Democratization in the Late Twentieth Century.* University of Oklahoma Press.

Jenkins, Stephen P. 2005. "Survival Analysis.".

Letki, Natalia. 2006. "Investigating the Roots of Civic Morality: Trust, Social Capital, and Institutional Performance." *Political Behavior* 28(4):305–325.

Levitsky, Steven and Lucan A. Way. 2002. "The Rise of Competitive Authoritarianism." *Journal of Democracy* 13(2):51–65.

Lijphart, Arend. 1999. *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries.* Yale University Press.

Long, J. Scott. 1997. *Regression Models for Categorical and Limited Dependent Variables.* SAGE Publications.

Maddison, Angus. 2010. "Background Note on "Historical Statistics".".
URL: *http://www.ggdc.net/MADDISON/Historical$_s$tatistics/BackgroundHistoricalStatistics$_0$3−2010.pdf*

Marshall, Monty G., Keith Jaggers and Ted Robert Gurr. 2010. "Polity™ IV Project: Dataset Users' Manual.".
URL: *http://www.systemicpeace.org/inscr/p4manualv2010.pdf*

Mauro, Paolo. 1995. "Corruption and Growth." *The Quarterly Journal of Economics* 110(3):681–712.

Mills, Melinda. 2011. *Introduction to Survival and Event History Analysis.* SAGE Publications.

Montinola, Gabriella R. and Robert W. Jackman. 2002. "Sources of Corruption: A Cross-Country Study?" *British Journal of Political Science* 32:147–170.

Morrison, Kevin M. 2006. "Natural Resources, Aid, and Democratization: A Best-Case Scenario." *Public Choice* 131(3-4):365–386.

Olken, Benjamin A. 2009. "Corruption Perceptions vs. Corruption Reality." *Journal of Public Economics* 93(7-8):950–964.

Olson, Mancur Jr. 1963. "Rapid Economic Growth as a Destabilizing Force." *The Journal of Economic History* 23(4):529–552.

Powell, Jonathan M. and Clayton L. Thyne. 2011. "Global Instances of Coups from 1950 to 2010: A New Dataset." *Journal of Peace Research* 48(2):249–259.

PRS Group. 2012. "International Country Risk Guide Methodology.".
  URL: *http://www.prsgroup.com/ICRG$_m$ethodology.aspxPolRiskRating*

Przeworski, Adam. 1997. "Modernization: Theories and Facts." *World Politics* 49(1):155–183.

Przeworski, Adam. 2005. "Democracy as an equilibrium." *Public Choice* 123:253–273.

Przeworski, Adam. 2009. "Conquered or Granted? A History of Suffrage Extensions." *British Journal of Political Science* 39(02):291.

Przeworski, Adam, Michael Alvarez, José Antonio Cheibub and Fernando Limongi. 1996. "What Makes Democracies Endure?" *Journal of Democracy* 7(1):39–55.

Przeworski, Adam, Michael Alvarez, José Antonio Cheibub and Fernando Limongi. 2000. *Democracy and Development.* Cambridge University Press.

Robinson, James A. 2004. "Alfred Marshall Lecture Kleptocracy and Divide-and-Rule: A Model of Personal Rule." *Journal of the European Economic Association* 2(2-3):162–192.

Roniger, Luis. 2004. "Political Clientelism, Democracy, and Market Economy." *Comparative Politics* 36(3):353–375.

Rose-Ackerman, Susan. 1975. "The Economics of Corruption." *Journal of public economics* 4:187–203.

Rothstein, Bo and Jan Teorell. 2008. "What Is Quality of Government? A Theory of Impartial Government Institutions." *Governance* 21(2):165–190.

Sanhueza, Ricardo. 1999. "The Hazard Rate of Political Regimes." *Public Choice* 98(3-4):337–367.

Schedler, Andreas. 2002. "The Nested Game of Democratization by Elections." *International Political Science Review* 23(1):103–122.

Shin, Doh Chull. 1994. "On the Third Wave of Democratization: A Synthesis and Evaluation of Recent Theory and Research." *World Politics* 47(1):135–170.

Shleifer, Andrei and Robert W. Vishny. 1993. "Corruption*." *The Quarterly Journal of Economics* .

Smith, Alastair. 2008. "The Perils of Unearned Income." *The Journal of Politics* 70(3):780–793.

Snyder, Richard and James Mahoney. 1999. "Review Article The Missing Variable Institutions and the Study of Regime Change." *Comparative Politics* 32(1):103–122.

Stevenson, Mark. 2012. "An Introduction to Survival Analysis." pp. 1–32.

Stinnett, Douglas, Jaroslav Tir, Paul F. Diehl, Philip Schafer and Charles Gochman. 2002. "The Correlates of War (COW) Project Direct Contiguity Data, Version 3.0." *Conflict Management and Peace Science* 19(2):59–67.

Strand, Håvard. 2006. "Appendix to "Institutional Inconsistency and Political Instability: The Duration of Polities"."
URL: *http://www.prio.no/Data/Governance/MIRPSSIP/*

Strand, Håvard, Håvard Hegre, Scott Gates and Marianne Dahl. 2012. "Why Waves? Global Patterns of Democratization, 1816-2008.".

Teorell, Jan, Marcus Samanni, Soren Holmberg and Bo Rothstein. 2011. "The Quality of Government Dataset Codebook.".

Treier, Shawn and Simon Jackman. 2008. "Democracy as a Latent Variable." *American Journal of Political Science* 52(1):201–217.

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

Treisman, Daniel. 2007. "What Have We Learned About The Causes Of Corruption From Ten Years Of Cross-National Empirical Research?" *Annual Review of Political Science* 10:211–244.

Urra, Francisco-Javier. 2007. "Assessing Corruption An Analytical Review of Corruption Measurement and Its Problems: Perception, Error and Utility." *Edmund A. Walsh School of Foreign Service, . . .* (May).

Uslaner, Eric M. 2008. *Corruption, Inequality, and the Rule of Law.* Cambridge University Press.

Vanhanen, Tatu. 1998. "Introduction : Measures of Democratization*.".

Vanhanen, Tatu. 2000. "A New Dataset for Measuring Democracy, 1810-1998." *Journal of Peace Research* 37(2):251–265.

World Bank. 2011. "World Development Indicators 2011.".
   URL: *https://openknowledge.worldbank.org/handle/10986/6014*

World Bank. 2012. "World Development Indicators 2012.".
   URL: *https://openknowledge.worldbank.org/handle/10986/6014*

Appendix A

Additional output

Table A.1 below is a list of all countries included in the ICRG corruption index.

ICRG country list			
Albania	**Algeria**	**Angola**	**Argentina**
Armenia	**Australia**	Austria	**Azerbaijan**
Bahamas	**Bahrain**	**Bangladesh**	**Belarus**
Belgium	Bolivia	**Botswana**	**Brazil**
Brunei	**Bulgaria**	Burkina Faso	**Cameroon**
Canada	**Chile**	China	Colombia
Congo	Congo, DR	Costa Rica	**Cote d'Ivoire**
Croatia	**Cuba**	Cyprus	Czech Republic
Czechoslovakia	Denmark	**Dominican Republic**	East Germany
Ecuador	**Egypt**	**El Salvador**	Estonia
Ethiopia	Finland	France	**Gabon**
Gambia	**Germany**	**Ghana**	**Greece**
Guatemala	**Guinea**	**Guinea-Bissau**	**Guyana**
Haiti	**Honduras**	Hong Kong	**Hungary**
Iceland	India	**Indonesia**	**Iran**
Iraq	Ireland	Israel	Italy
Jamaica	Japan	**Jordan**	**Kazakhstan**
Kenya	**Korea, DPR**	**Kuwait**	Latvia
Lebanon	**Liberia**	Libya	Lithuania
Luxembourg	Madagascar	**Malawi**	**Malaysia**
Mali	Malta	Mexico	**Moldova**
Mongolia	**Morocco**	**Mozambique**	Myanmar
Namibia	Netherlands	New Caledonia	New Zealand
Nicaragua	**Niger**	**Nigeria**	Norway
Oman	**Pakistan**	**Panama**	Papua New Guinea
Paraguay	**Peru**	**Philippines**	**Poland**
Portugal	Qatar	**Romania**	**Russia**
Saudi Arabia	**Senegal**	Serbia	**Serbia & Montenegro**
Sierra Leone	**Singapore**	Slovakia	Slovenia
Somalia	**South Africa**	South Korea	Spain
Sri Lanka	**Sudan**	**Suriname**	Sweden
Switzerland	**Syria**	**Taiwan**	**Tanzania**
Thailand	**Togo**	Trinidad & Tobago	**Tunisia**
Turkey	United Arab Emirates	**Uganda**	**Ukraine**
United Kingdom	United States	Uruguay	USSR
Venezuela	**Vietnam**	West Germany	Yemen
Zambia	**Zimbabwe**		

Notes: countries in bold characters have experienced at least one regime change, 1984-2008

Table A.1: List of countries used in the main analyses, 1984-2008

Unlike the main results, the preliminary results does not interact corruption and regime type. Table A.2 supplements Table 4.3 in Section 4.2 by interacting corruption

and regime type.

Table A.2: Corruption and coups, government crisis, riots, revolutions and demonstrations, 1984-2008

	Coups	Gov.Crisis	Riots	Revolutions	Demonstrations
Autocracy	0.691	0.138*	0.38	1.736	0.256**
	(15.829,0.03)	(1.049,0.018)	(1.315,0.11)	(6.842,0.44)	(0.754,0.087)
Democracy	0.497	1.559	0.774	0.952	0.485**
	(7.546,0.033)	(4.591,0.529)	(1.84,0.326)	(2.742,0.331)	(0.973,0.241)
Corruption	1.47	1.097	0.94	1.196	0.95
	(2.44,0.886)	(1.442,0.834)	(1.165,0.759)	(1.531,0.934)	(1.133,0.797)
log(Duration years)	0.671***	0.842*	0.859**	0.959	0.826***
	(0.9,0.5)	(1.006,0.704)	(0.998,0.739)	(1.13,0.813)	(0.937,0.729)
log(GDP per capita, t-1)	0.886	1.08	0.827***	0.651***	1.092
	(1.28,0.613)	(1.283,0.909)	(0.954,0.718)	(0.758,0.559)	(1.232,0.968)
GDP Growth(t-1)	0.934**	0.939***	0.975**	0.977*	0.979**
	(0.985,0.886)	(0.965,0.914)	(0.998,0.953)	(1.002,0.954)	(0.999,0.96)
Natural Resources	0.6	0.542	0.861	1.136	0.461***
	(2.661,0.135)	(1.161,0.253)	(1.454,0.509)	(1.906,0.677)	(0.756,0.281)
NeighboorSIP	0.604	1.314	0.688	0.815	1.456*
	(2.382,0.153)	(2.355,0.733)	(1.145,0.413)	(1.428,0.466)	(2.207,0.961)
Autoc*Corr	1.07	1.429	1.245	0.796	1.383**
	(2.358,0.486)	(2.41,0.847)	(1.755,0.884)	(1.162,0.545)	(1.86,1.028)
Democ*Corr	1.221	1.146	1.205	1.242	1.404***
	(2.45,0.608)	(1.538,0.853)	(1.535,0.946)	(1.646,0.937)	(1.708,1.155)
log-likelihood	-189.67	-813.91	-976.5	-855.57	-1350.55
AIC	401.34	1649.82	1975	1733.14	2723.1

Notes: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Estimates are reported in odds ratioes (exp(coef)).

99 percent confidence intervals in parentheses.

Figure A.1 is a visualization of the main interaction results between autocracies and the level of corruption presented in the main results.

Table A.3 is included as an attempt to adress the issue of endogeneity by lagging the corruption index by one year. The main results are relatively unchanged after lagging the index.
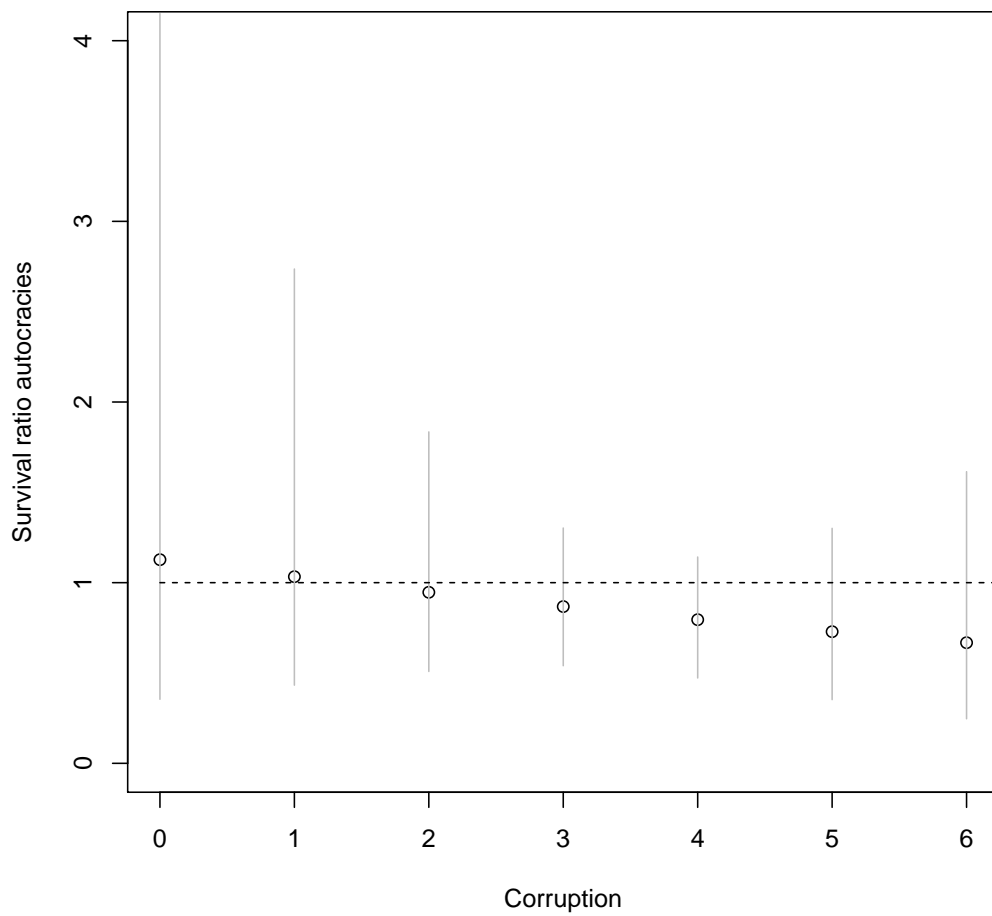
Figure A.1: The survival ratio of autocracy conditioned on levels of corruption, 1984-2008. Point estiamates for each integer value on the corruption-index with 95 % confidence intervals (vertical grey lines) based on model "MIRPS(interaction)" in Table 5.2. The horisontal dashed line represent a surival ratio of 1 (no difference in survival)

Table A.3: Models with lagged corruption index, 1984-2008

	MIRPS	MIRPS(interaction)	MIRPS(Frailty)
Autocracy	0.829	1.162	1.193
	(0.583,1.179)	(0.346,3.906)	(0.369,3.858)
Democracy	6.429***	16.975***	17.536***
	(3.907,10.581)	(5.353,53.828)	(4.592,66.967)
Corruption (t-1)	1.023	1.104	1.112
	(0.887,1.179)	(0.921,1.323)	(0.921,1.342)
log(GDP per capita, t-1)	1.165*	1.173*	1.189*
	(0.974,1.392)	(0.978,1.407)	(0.999,1.417)
GDP Growth(t-1)	1.05***	1.052***	1.051***
	(1.022,1.08)	(1.023,1.081)	(1.028,1.075)
Resources	0.912	0.903	0.892
	(0.494,1.684)	(0.489,1.666)	(0.481,1.651)
NeighboorSIP	0.44**	0.414***	0.415***
	(0.232,0.834)	(0.22,0.779)	(0.219,0.784)
Autoc*Corr		0.906	0.903
		(0.657,1.25)	(0.653,1.249)
Democ*Corr		0.732*	0.731
		(0.529,1.012)	(0.495,1.079)
log-likelihood null	-876.64	-876.64	-876.64
log-likelihood	-812.8	-811.51	-804.28
AIC	1639.61	1641.01	1638.65
N	2725	2725	2725
Number of events	196	196	196

Notes: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Estimates are reported in survival ratioes.

Standard errors are clustered on country. 99 percent confidence intervals in parentheses.

Appendix B

Diagnostics

I follow the tests presented in Stevenson (2012, p.22-23,29) when evaluating the correlation between Schoenfeld residuals and time. The Schoenfeld residuals evaluate the proportional hazard assumption by taking the "observed minus the expected values of the covariates at each failure time" Box-Steffensmeier and Jones (2005, p.121). If the effect of the covariates on the survival ratio of political regimes dependent on the duration of time itself, the assumption of proportional hazard would underestimate the effect of the covariate up until that point, and overestimate for the subsequent duration (Box-Steffensmeier and Jones, 2005, p.131-132). Table B.1 report statistical test (chi-square) of the proportional hazard assumption for the main interaction models (Model 2 and 3 in Table 5.2), and indicate that the assumption is not breached for any of the main explanatory variables nor the models at large (i.e. "Global" is not significant. The rho from Table B.1 is defined by Stevenson (2012, p.29) as "the Pearson product-moment correlation between the scaled Schoenfeld residuals and time", where the hypothesis on no correlation is tested based on chi-squared test statistics. The proportional hazard assumption does not hold in model "Durable(interaction)" as several of the covariates report significant rho values. In addition, the global test is significant.

Figure B.1 and B.2 combined report how the observations influence the coefficient for every covariate in "MIRPS(interaction)" in Table 5.2. Labels are added to the the plots in Figure B.1 since some of the observations exceeds a 0.1 change scaled in units of standard errors. A score above 0.1 are usually the threshold for influencial observations (Stevenson, 2012, p.30).
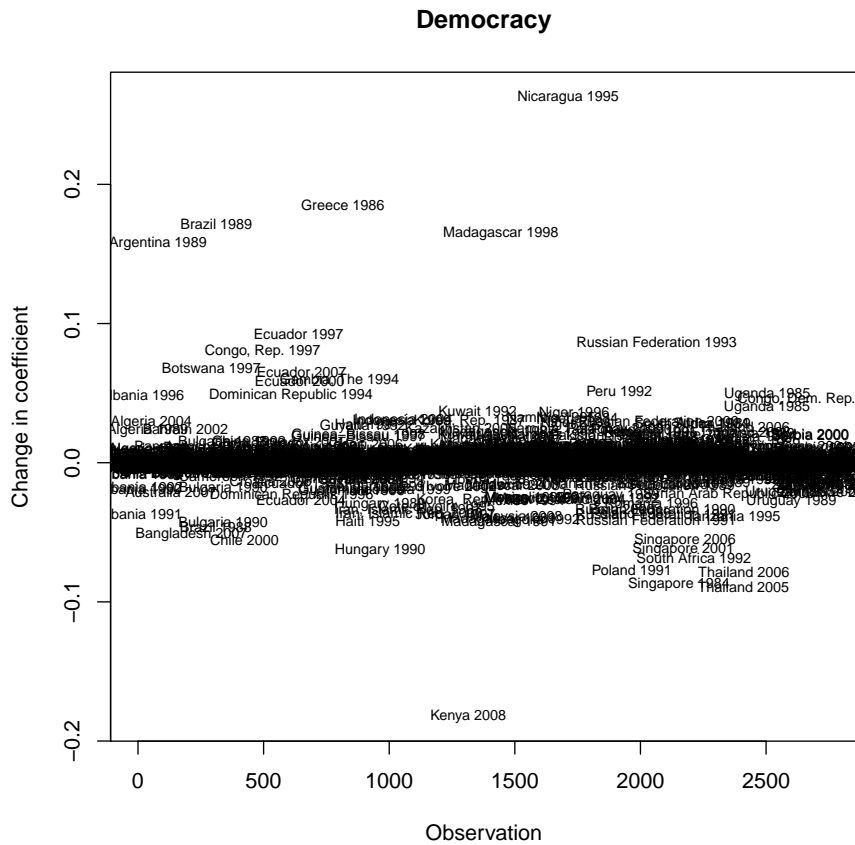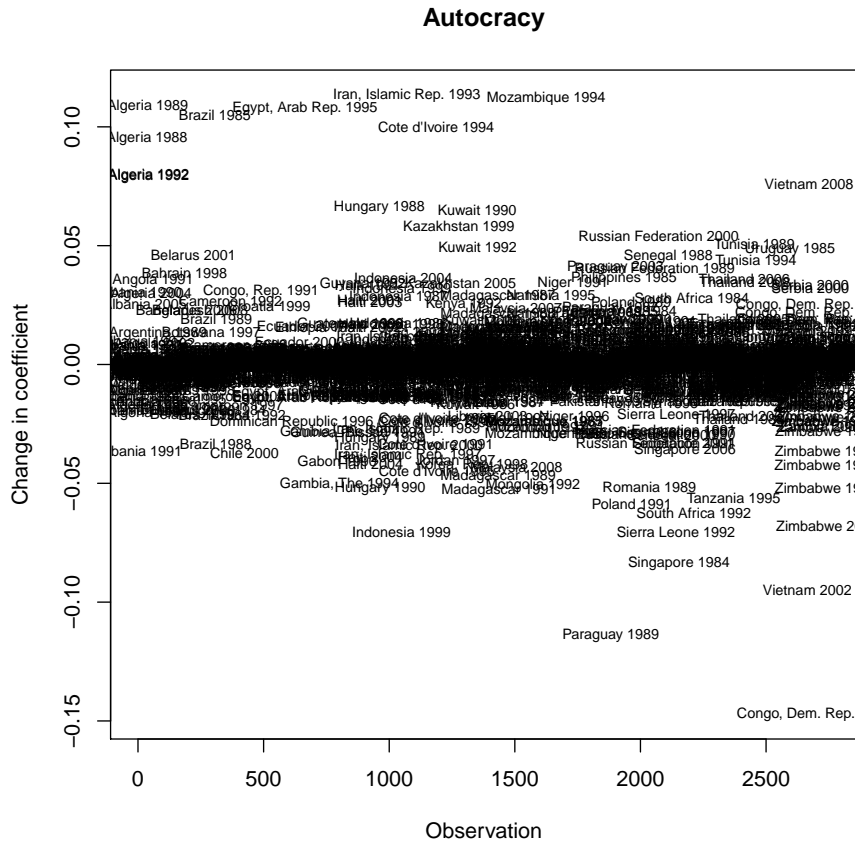
Figure B.1: Influencial observations autocracies and democracies, 1984-2008. The change in coefficient scaled in units of standard errors (y-axis) when removing each observation (x-axis) from model "MIRPS(interaction)" in Table 5.2
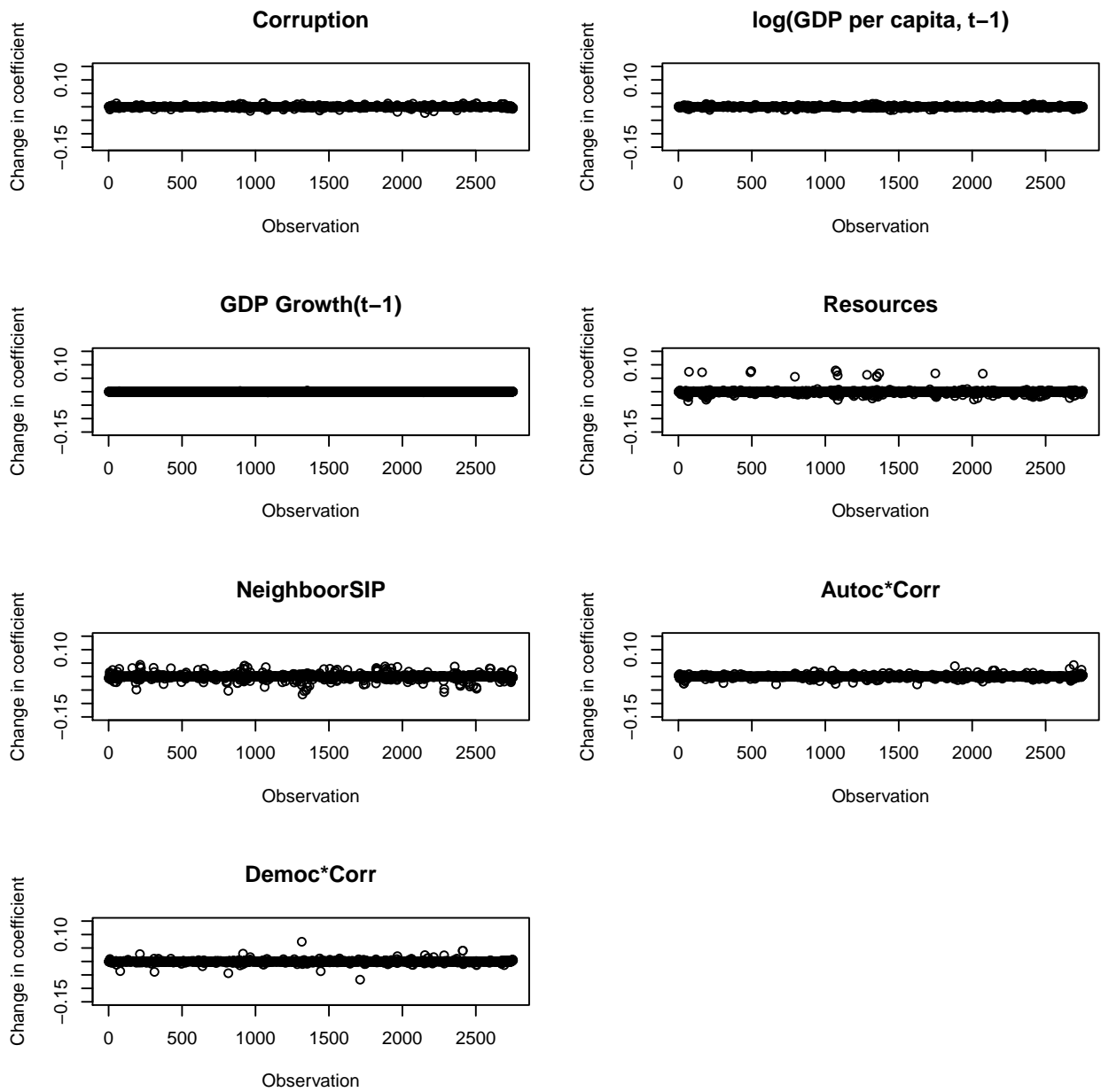
Figure B.2: Influencial observations, 1984-2008. The change in coefficient scaled in units of standard errors (y-axis) when removing each observation (x-axis) from model "MIRPS(interaction)" in Table 5.2

Table B.1: Statistical test of the proportional hazard assumption in the interaction models, 1984-2008

Variables	MIRPS(interaction)	SIP(interaction)	Persist(interaction)	Durable(interaction)
Autocracy	0	-0.03	0.07	0.07
	(0.975)	(0.645)	(0.25)	(0.361)
Democracy	-0.05	-0.08	0.03	0.06
	(0.507)	(0.261)	(0.59)	(0.313)
Corruption	-0.02	-0.05	0.03	0.06
	(0.762)	(0.511)	(0.663)	(0.461)
log(GDP per capita, t-1)	-0.02	-0.01	-0.07	-0.22
	(0.739)	(0.886)	(0.19)	(0)
GDP Growth(t-1)	0.07	0.1	0.03	-0.15
	(0.131)	(0.016)	(0.57)	(0.077)
Natural Resources	-0.01	0	0.01	0.24
	(0.905)	(0.944)	(0.796)	(0.006)
NeighboorSIP	0	-0.04	-0.07	0.15
	(0.992)	(0.533)	(0.218)	(0.089)
Autoc*Corr	0.01	0.04	-0.07	-0.07
	(0.856)	(0.604)	(0.224)	(0.325)
Democ*Corr	0.05	0.06	0.01	-0.03
	(0.561)	(0.438)	(0.885)	(0.688)
Global	(0.819)	(0.342)	(0.277)	(0.001)

Notes: P-value in parentheses.

Appendix C

Syntax

All relevant R-files used to create the main models, tables and figures in this thesis are available upon request (contact: jonas.kjarvik@gmail.com).