Chapter 1

Introduction

1.1 Introduction

In 1993, Douglass North received the Nobel Prize in Economics for his pioneering work on institutional change and economic development. Institutions are the humanly devised constraints that structure human interaction. They are made up of formal constraints (rules, laws, constitutions), informal constraints (norms of behavior, conventions, and self imposed codes of conduct), and their enforcement characteristics (North, 1993). In other words: institutions are the *rules of the game* that shape the incentive structure of utility optimizing agents. North’s notion that quantitative methods are useful to examine why equally endowed individuals behave and perform differently under different institutions has been the impetus for many scholars to examine institutions. As such, the interplay between institutions and economic outcomes plays a prominent role in the field of political economics, which is nowadays one of the most active research areas in economics (Persson and Tabellini, 2000, p. xv; Drazen, 2000, p. xi).

In this thesis, different quantitative methods are used to study the causes and consequences of political instability. It is commonly thought that political instability raises uncertainty with respect to future institutions and economic policies, thereby affecting the incentives of e.g., households, firms, and politicians (Carmignani, 2003).

Since the degree of political instability in a country is not directly observable, it has proven a challenge for many scholars to define the concept. As a result, many definitions exist, of which the following are prime examples. When Lipset (1960) defines democratic stability, he speaks of “uninterrupted continuation of political democracy” and “the absence … of a major political movement opposed to the democratic rules of the game”. Morrison and Stevenson (1971) use a similar definition conceptualizing that political instability is “a condition in political systems in which the institutionalized
patterns of authority break down”, but add that “the expected compliance to political authorities is replaced by political violence”. A more refined definition is given by Sanders (1981), who argues that political instability is “the extent to which the occurrence or non-occurrence of changes in and challenges to the government, regime or community deviates from the previous system specific ‘normal’ pattern”. More recently, Alesina, Ozler, Roubini and Swagel (1996) defined political instability as the propensity of a change in the executive power, either by constitutional or unconstitutional means. In sum: political instability is, broadly spoken, defined in terms of changes in, or challenges to, the political system.

Apart from the variety in definitions of political instability, there is at least as much ambiguity with respect to the measurement of political instability. Arguably, the reason is that changes in and challenges to the politically system may take many forms. For example, Perotti (1996) uses different variables capturing political violence, such as coups d’etats and political assassinations, in his study on the impact of political instability on economic growth. On the other hand, Alesina et al. (1996) base their political instability measure on major and minor changes in government when they study the relationship with economic growth. Apart from cabinet changes and coup d’etats, variables like mass non-violent demonstrations and civil wars are also regularly used in empirical studies to proxy political instability.

However, it is hard to believe that frequent cabinet changes in the Netherlands as observed in the period 2002-2007 have the same causes and consequences as a coup d’état such as the military takeover in Thailand in September 2006. Not to mention the little resemblance between peacefully protesting monks in Burma and the ongoing ethnic cleansing in Darfur, Sudan, or the ethnic disparities in Kenya after the 2007 elections.

In order to study the causes and consequences of political instability, it is important to know what different political instability proxies actually measure. Therefore, the first aim of this thesis is to use factor analysis on a large set of political instability indicators to measure political instability and to examine the coherence of these indicators. Furthermore, the analysis will be used to describe the concept of political instability more precisely.

When the measurement issue is settled, the next aim is to focus on the effect of political instability on economic growth. There are several theoretical models (e.g. Svensson, 1998) that predict an adverse effect of political instability on economic growth, but (as will be discussed below) the empirical framework in which this relationship is tested can be improved upon.

The third aim is to study two potential causes of particular types of political instability. Firstly, it will be examined whether, and under which circumstances, democratization and globalization cause ethnic violence. This
analysis is inspired by the international bestseller of Chua (2003), who claims that current democratization and globalization waves are responsible for outbreaks in ethnic violence in large parts of the developing world. Secondly, it will be studied whether terrorism affects the stability of cabinets. There are several reasons why terrorism is likely to affect electoral preferences and hence the stability of cabinets. These reasons will be explored and the relation between terrorism and cabinet stability will be subjected to an empirical analysis.

The remainder of this chapter elaborates upon the aims and content of this thesis.

1.2 Measuring political instability

The first aim of this thesis is to measure political instability. An important problem in this respect is that political instability cannot be observed directly. That is, political instability is a latent construct. To proxy for political instability, indicators have to be used that are observable. For example, Barro (1991) uses the sum of political revolutions and coups d’etat, as well as the number of political assassinations. In contrast, Aisen and Veiga (2005) take the number of major government crises and the number of cabinet changes as their proxies for political instability. These observable political instability indicators do contain some information about the true level of political instability, but they also suffer from measurement error. That is, every indicator also neglects some aspect of political instability.

To exemplify: if there is (only) a government crisis in a country, there is some degree of political instability, but the proxy used by Barro (1991) would not measure it. This probably leads to biased estimates when Barro’s political instability proxy is used as an explanatory variable in an empirical analysis. A simple solution to the problem would be to take the sum of the indicators as used by the studies mentioned above. But what, if one of these proxies contains more information about the true level of political instability than the others? Moreover, what if different indicators contain information about different types of political instability?

In order to deal with these kinds of questions, several studies have used latent variable techniques to measure political instability. Gupta (1990), for instance, constructs an index for political instability using discriminant analysis. A different approach is followed by, for instance, Cukierman, Edwards and Tabellini (1992), Alesina et al. (1996), and Feng (2000), who all include different political events and economic variables in a logit model to
predict the probability of government change. The predicted probability of a
government change is then used as a proxy for political instability. Yet,
another measurement strategy is followed by e.g. Hibbs (1973), Morrison and
Stevenson (1971), and Perotti (1996), who measure political instability using
principal components analysis. In their approach, a weighted average of a
small number of political instability indicators is calculated on the basis of the
largest eigenvalue of a set of political instability indicators.

Some of the studies that use the principal components framework,
also tried to identify different dimensions of political instability. Morrison and
Stevenson (1971), review several studies that examined the dimensionality of
political instability and report findings between two (Tanter, 1966) and nine
dimensions (Feierabend and Feierabend, 1966). Morrison and Stevenson
themselves conclude that political instability has three dimensions, i.e.,
communal instability, elite instability, and political turmoil.

In this thesis, the latent variable framework will also be used. More
specifically, an Exploratory Factor Analysis is used to measure political
instability. Although factor analysis is akin to principal components analysis,
the subtle difference is that the latter is a data reduction method to extract as
much of the variance contained in a set of indicators, while factor analysis is
based on a model and extracts only the information common to all indicators
(see Wansbeek and Meijer, 2000).

There are a number of other differences between this study and earlier
work. Firstly, a larger set of indicators is utilized than in any previous study,
i.e., the analysis contains 25 indicators, which all have been suggested in
earlier studies. Secondly, in contrast to previous work, this study decides upon
the appropriate number of dimensions on the basis of various statistical tests.
Thirdly, this study does not restrict the different dimensions to be
uncorrelated with each other, a restriction that for unknown reasons has been
imposed in previous studies. Finally, the measurement error of the individual
indicators is assessed and the different dimensions of political instability are
subjected to a cross country comparison.

1.3 Political instability and economic growth

The second aim of this thesis is to examine whether political instability and
economic growth are causally related. There are several reasons why political
instability may affect economic growth. Most obviously, violent challenges to
the regime may damage or destroy physical capital and affect production
levels. Moreover, political instability may hamper legal reforms since the
marginal costs of reform for incumbent politicians is likely to be larger than
the marginal benefits, since part of these benefits will flow to future incumbents (Svensson, 1998). No matter what framework is used, the theoretical prediction is very clear: political instability and economic growth are negatively related.

From an empirical point of view, the relationship between political instability and economic growth is less clear. Although there are many studies that focus on the topic, the results are mixed (e.g. Londregan and Poole, 1990; Barro, 1991; Levine and Renelt, 1992; Alesina et al. 1996; Perotti, 1996; Ades and Chua, 1997; Sala-i-Martin, 1997; Feng, 1997, Campos and Nugent, 2002, Sturm and de Haan, 2005).

The dissatisfying results have led to much criticism on the empirical studies present. Among others, De Haan (2007, p. 281) argues that “the methodology underlying most of the research may not be adequate to tackle this issue”. His criticism revolves around the robustness of estimation results, measurement error and the treatment of the time dimension in economic growth analysis.

The first issue that is addressed in this study is the problem of measurement error. As said, using individual proxies for political instability that contain measurement error may lead to biased estimates of the impact of political instability on economic growth. Furthermore, using different indicators may obviously lead to different results. As the (multiple) factor analysis is superior to other proposed solutions, the variables distilled from the factor analysis prove useful to employ in a regression analysis.

The benchmark model to examine determinants of economic growth is the model by Mankiw, Romer and Weil (1992) (or, Islam, 1995), which is based on the neo-classical Solow (1956) growth model. In this study, this model specification is also used and augmented with the political instability variables distilled from the factor analysis. To estimate the model, the dynamic panel system Generalized Method of Moments estimator of Blundell and Bond (1998) will be used, which has several advantages over other panel estimators. Firstly, this approach allows us to model the persistence in the dependent variable as well as country fixed effects. The latter is especially important as many determinants of economic growth are time-invariant and hence are controlled for by country fixed effects. Furthermore, the approach is useful to cope with the potential endogeneity of political instability by using lagged values of political instability as instrumental variables. Finally, this approach can be used to evaluate whether political instability Granger-causes economic growth (see Granger, 1987). That is, it will be evaluated whether changes in political instability precede changes in the economic growth rate. Apart from an examination of the causal relation between political instability
and economic growth, it will also be evaluated to which extent the different dimensions of political instability have different effects on economic growth.

Apart from explanatory variables that are measured with error, the growth regression framework has other important limitations. Durlauf, Johnson and Temple (2005), for instance, argue that evidence based on cross-country regressions is hardly able to address causality. Furthermore, cross-country growth regressions rely on very strong assumptions about a single linear model being appropriate for all countries in all states, while only very few countries had constant growth rates over periods of several decades (De Haan, 2007). This is exemplified by the work of Pritchett (2000), who identifies different growth patterns called hills, plateaus, mountains and accelerators. Furthermore, Jones and Olken (2005a) report that no less than 48 countries have experienced at least one structural break in their economic development since 1950.

To take account of these distinct growth patterns several studies have suggested to focus on the determinants of these growth patterns (e.g. Jerzmanowski, 2006; Jones and Olken, 2005a; Jones and Olken, 2005b, Hausmann, Rodrik and Pritchett, 2005).

To further examine the effect of political instability on economic growth, the approach by Hausmann et al. (2005) is employed. In that study the assumption of a single growth rate for all countries in all states is dropped and only periods of rapid growth are examined. The analysis of Hausmann et al. (2005) can be improved upon. Firstly, it is argued that their data set contains an error in the political regime change variable. This error will be corrected and their results will be re-examined. Thereafter, the criticism focuses on the filter that is employed to identify growth accelerations. It will be shown that this filter produces some insensitive outcomes as to the timing of an acceleration and a simple alternative is suggested that renders more plausible identification. The other improvements in this study amount to model specification and robustness of the estimation results. That is, unlike Hausmann et al. (2005) who estimate their model using an ordinary probit model, this study takes into account the panel dimension of the data. Therefore, the model is estimated using conditional fixed logistic regression to take account of country fixed effects. Finally, this study acknowledges that different indicators are available to measure regime changes and provides an extensive robustness analysis using alternative measures for regime changes.

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1 Various authors have therefore used panel models, but the periods chosen in panel models are often justified only on the grounds that data were available at those frequencies or the researcher wanted to divide the whole period into equal chunks (Pritchett, 2000).
1.4 Democracy, globalization and ethnic violence

The third aim of this thesis is to examine the causes of different types of political instability. The first type of instability under examination is ethnic violence. Chua (2003) discusses the recent history of ethnic disparities in many countries and develops a theory why ethnic violence has increased in recent years. She argues that, in the presence of an ethnic minority that dominates economically the indigenous poor majority, democratization and globalization cause ethnic violence.

One example that illustrates this proposition is the position of the Chinese in Indonesia. With just three percent of Indonesia’s two hundred million population, they are estimated to control around seventy percent of the private economy and - although not all rich – they are ‘economically dominant at every level of society’ (Chua, 2003 p. 43). While Indonesia’s extraordinary economic growth of the 1980s and 1990s increased average incomes for all, the general perception among indigenous Indonesians was that it favored the Chinese disproportionately. They were seen as accumulating immense wealth supported by their ties to the Suharto regime. This massive, widespread hostility was suppressed by the regime but erupted after Indonesia became more democratic. Anti-Chinese violence broke out in all the country’s major cities throughout 1998 (Chua, 2003 p. 45).

Glaeser (2005) provides a theoretical foundation for Chua’s thesis. His model focuses on the market for hatred. On the supply side of this market, politicians with different income redistribution agendas compete for office and aim for the electorate’s support at the next election. To gain support, they supply hatred if it can discredit a competitor that is more lenient towards a minority. The demand side of the market consists of rational voters that may believe hate creating messages. However, the willingness to believe hatred depends on the incentives to find out the truth. These incentives depend on the costs of finding out the truth and benefits of knowing the truth. When costs are high, because of, e.g., language barriers, or when benefits are low, because of little economic interaction with the minority, the theory predicts an equilibrium with much hatred.2

Chua’s emphasis on the market-dominant minority being an ethnic group and active in (typically commercial and financial) sectors not normally

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2 The theory of Glaeser (2005) does not discuss the role of globalization. However, abundant empirical evidence (see the survey by Goldberg and Pavcnik, 2007) stresses a negative relationship between globalization and income inequality. Therefore, it can be argued that globalization increases the incentives of some politicians to supply hatred.
accessed by the majority of the population (which is employed in agriculture) naturally fits in with this model.

An important drawback of the book of Chua is that she only discusses cases that support her thesis. This frustrates a generalization of her work as her analysis may suffer from a confirmation bias. Yet, by exploiting data on a large set of countries over an extended period of time, the thesis of Chua can be empirically tested.

To test the thesis, data on market-dominant minorities is collected from Chua (2003). In turn, the obtained data is compared with data from the Minorities at Risk data set (Minorities at Risk Project, 2005) that provides similar variables. After a discussion of other relevant variables affecting ethnic violence an empirical model is estimated. The model that is chosen to examine the impact of democracy, globalization and ethnic violence is a panel fixed effects model that contains interaction effects. These interaction effects are included as Chua (2003) argues that ethnic violence breaks out when democracy, globalization and the presence of a market-dominant minority come together. The model also takes variables into account that are suggested by previous studies on ethnic violence. Finally, the results are subjected to an extensive robustness analysis.

1.5 Terrorism and cabinet instability

The second cause of political instability that will be examined is terrorism. In particular, it will be examined whether terrorism is related to cabinet instability. Although there are some studies that investigate the interplay between terrorism and politics in general (e.g. Frey and Luxhinger, 2003; Anderton and Carter, 2005; Siqueira and Sandler, 2007), and a few studies that focus on electoral change (Chari, 2004; Berrebi and Klor, 2006), there is no literature on terrorism and cabinet instability. However, there are various observations and theories that suggest such a relationship to be exist.

The link between terrorism and cabinet instability starts with the observation that terrorism affects public opinion. For instance, in the week following the assassination of Dutch artist Theo van Gogh by Mohammed Bouyeri, the weekly public opinion poll of Interview/NSS revealed that the popularity of right-wing (and anti-Muslim) politician Geert Wilders had increased by more than 100 percent. Furthermore, Hetherington and Nelson (2003) report that after the terrorist attacks on September 11, 2001, Gallup

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3 See http://www.politiekebarometer.nl/
Poll approval ratings for U.S. President Bush improved from 51 percent on September 10 to 86 percent on September 15.

Lupia and Strom (1995) develop a model in which they analyze the consequences of shifts in public opinion after a critical event. Their model starts from the premise that three parties bargain over a cabinet formation. Once a cabinet is installed, some unexpected event occurs that alters the power distribution in the coalition through a public opinion shock. If a coalition member perceives the marginal costs of remaining in the coalition to be higher than the marginal benefits, it is optimal to end coalition participation. When one coalition party decides to opt out, several scenarios are feasible. It is possible that the former coalition partners renegotiate and form a new coalition. Likewise, it is possible that part of the former coalition forms a new coalition with the opposition party. Finally, it is possible that new elections are held. In any case, changes in the composition of the cabinet are a likely consequence of the critical event.

Whereas the model of Lupia and Strom assumes that shifts in the power distribution occur, it is silent about the direction of public opinion change. There are several views on the relationship between terrorism and public opinion. On the one hand, terrorism may decrease the popularity of the government as the electorate may hold the cabinet accountable for terrorist attacks. This argument is formalized in the models of Barro (1973) and Ferejohn (1986), which are based on the idea that incumbent governments face a trade-off between rent extraction and public goods provision. Since the competence of the incumbent cannot be observed in these models, the level of public goods provided should be such that the electorate is indifferent between this cabinet and any other. However, as counter terrorism measures of the government cannot be fully observed, it is probable that the realization of terrorism will be taken as a signal about the effort and competence of the incumbent. On the other hand, terrorism may also increase the popularity of the government. The reason is that citizens tend to become patriotic when their country is attacked by a foreign aggressor. This phenomenon is called the “rally around the flag” effect and fits in with the in-group out-group theory of Tajfel and Turner (1977). Ever since the first study by Mueller (1970), evidence for rally effects is found by, e.g., Arian and Olzaeker (1999), Lai and Reiter (2005), and Chowanietz (2007).

To test whether terrorism is related to cabinet instability, data on terrorism is constructed on the basis of information provided by the Memorial Institute for the Prevention of Terrorism (MIPT, 2004). Since not all terrorist attacks are the same, different measures are constructed that capture different types of terrorism as well as differences in severity.
The empirical analysis mainly concentrates on the duration of cabinets. The probability of a cabinet failure is modelled using conditional fixed effects logistic regression. However, as the probability of a cabinet change may depend on the years in office of the current cabinet, the method of Beck, Katz and Tucker (1998) will be used to control for duration dependence. Besides the focus on cabinet failure, the analysis also provides additional robustness checks in which the focus is on sample heterogeneity and electoral outcomes.

1.6 Outline

The remainder of this thesis is organized as follows.

Chapter 2 deals with the measurement of political instability. The chapter starts with an exploratory factor analysis on 25 indicators of political instability that are suggested in the literature. After a discussion of the appropriate factor model, the results of the factor analysis are presented. Using the rotated estimation results, the main dimensions of political instability are identified and for each dimension a new variable is constructed. In turn, the distilled variables are subjected to a cross-country comparison. The second part of the chapter focuses on the (Granger causal) impact of the separate dimensions of political instability on economic growth. This relationship is examined in a so-called augmented Solow growth regression model using the dynamic panel system GMM estimator of Blundell and Bond (1998). The chapter ends with an extensive robustness analysis.

Chapter 3 focuses on the relationship between political regime changes, economic reform and economic growth accelerations. First, the results of a seminal study on growth accelerations by Hausmann et al. (2005) are replicated. Second, a filter is constructed that improves upon the work of Hausmann et al. (2005). Using corrected data and a modified filter, new models are estimated using the method of conditional fixed effect logit regression. While the main focus is on political reform and economic reform, the impact of other political and economic institutions is also examined. The chapter ends with an extensive robustness analysis.

Chapter 4 contains an empirical assessment of the proposition put forward by Chua (2003) that democratic transition in globalizing countries with a market-dominant minority increases ethnic violence. On the basis of newly collected data as well as existing data sources, a panel fixed effects model is estimated that includes two-way and three-way interaction effects. The results, in turn, are interpreted using so-called marginal effect plots. The
chapter ends with an extensive robustness analysis on the sensitivity of the empirical results.

Chapter 5 examines the impact of terrorism on the stability of cabinets. The main focus is on the question of whether terrorism affects the duration of cabinets. To that end, empirical models are used that take into account the issue of duration dependence. Apart from the impact of terrorism in general, the analysis concentrates on the impact of different types of terrorism as well as the intensity of terrorism. Furthermore, the results are used to examine the relative importance of terrorism in affecting cabinet duration. The chapter ends with several robustness checks such as an assessment of the presence of sample heterogeneity in the relationship between terrorism and cabinet duration, and an evaluation of the impact of terrorism on election outcomes.

Chapter 6 provides an overview of the main research findings, and concludes.
Part I

Political Instability
and Economic Growth