STOCKHOLM SCHOOL OF ECONOMICS
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Master's Thesis

A Study of Economic Shocks and Regime Change in Developing Countries

Abstract

Economic crises have been considered as one of the contributing factors to changes in political regimes. As developing countries are regarded more vulnerable both to economic turmoil and political instability, they are of main interest in this field of study. In this thesis, the question of what impact economic crises may have on political regimes in developing countries is approached by conducting a likelihood analysis of regime changes of different magnitude. A large set of data is analyzed and the main findings confirm that economic crises affect the likelihood of regime change in developing countries. This effect is demonstrated first of all as an increased probability for all regime types to experience a transition in autocratic direction. For initially autocratic countries the probability of major democratic transition also increases slightly.

An attempt is also made to clarify whether the incidence of certain economic shocks together with a crisis increases our understanding of the mechanisms of regime change. The hypothesis is, that the type of shock affects the likelihood beyond the effect that crises alone have. No definite conclusions could be drawn from the results of the statistical analysis and the impact of shocks remains ambiguous.

Key words: regime change, developing countries, economic crisis

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1. Introduction

In most of the developed countries democracy and political stability are taken as given and considered as the foundation of our society and a building block for welfare. The opposite conditions are considered undesirable and it is only when we start considering how fragile or even unattainable these two are for many poor countries that their emergence and demise become interesting.

At a time when the economy fluctuates worries are expressed not only about the economic but also political stability in poor countries. Questions are raised about the effects the deterioration of developed economies may have on the poor countries that could see their aid flows decline and export earnings decrease as a result of stagnating demand elsewhere. Will regimes in developing countries be able to survive the possible economic and political pressure imposed on them by a crisis like the one that the world is experiencing at the writing moment? Will we see regimes breaking down and new ones emerging in the face of this pressure or could they come out of the situation in one piece or even strengthened?

A wide array of research looks into the conditions under which one type of political regime is likely to arise and survive. Much of the effort has however concentrated on long-term determinants of regime type. Lipset (1959) famously argues that socioeconomic factors, such as wealth, education and urbanization, are prerequisites for democracy. We would expect to observe a gradual transition towards democracy as countries become more developed and temporary changes in conditions have little role to play in this process.

While these socio-economic factors are considered important for the determination of political regime, the destabilizing effect of an economic crisis on the regime is widely accepted (e.g. Przeworski and Limongi, 1997 and Haggard and Kaufman, 1995). There are, however, few empirical cross-country studies that concentrate solely on the effect of economic crisis on regime stability. Much of the existing work on that field uses a small sample of countries, often Latin American ones, to assess the impact of crises on developing country regimes.[1] One of the broadest studies is Gasiorowski (1995) which consists of an analysis of 97 developing countries. The results imply that both recessionary and inflationary crises affected regime change in both autocratic and democratic direction either by facilitating or inhibiting it.

[1] For example Pei and Adesnik (2000) which surveys 22 developing countries in Asia and Latin America while Haggard and Kaufman (1995) have a sample of 12 countries from the same regions.

1.1. The Research Question

The aim of this thesis is to add to our knowledge of how economic crises[2] influence political regimes in developing countries.[3] This is done by first confirming to what extent experiencing an economic crisis affects the likelihood of a significant change in regime characteristics. Secondly, by looking deeper into the economic dimension, an effort is then made to clarify whether the economic character of the crisis adds insights to the political effects. The analysis includes an assessment of typical economic shocks that frequently occur in conjunction with a crisis. These shocks are shown to be detrimental for developing countries in economic terms (Becker and Mauro, 2006) and may have significant political implications as well (Borensztein and Panizza, 2008).

The research question thus is *"How do economic crises alone and in conjunction with a variety of shocks affect the likelihood, magnitude and direction of change in the political regime in developing countries?"*

The question has become increasingly topical in the light of the economic turbulence of the writing moment. Maintaining political stability has become an increasingly economic question as suspicions are raised about the political costs of crises becoming intolerable. There are, however, voices raised about these worries being exaggerated. Hence, any further insight in the probable outcomes is interesting both theoretically and in practice.

1.2. Focus of the Study and Limitations

As political regimes in today's developed countries lie on a relatively firm democratic basis it is justified to limit the analysis of regime changes to developing countries.[4] Regimes in developing countries tend to suffer from low legitimacy which also makes them more dependent on current

[2] For now, the term crisis is used when referring to deteriorating economic conditions in general. For the purpose of the empirical study, a more detailed definition is provided in section 3.2.

[3] For a description of how the sample for this thesis was constructed, see section 3.1.

[4] In the theoretical part of this thesis terms democracy and democratic are used to describe a political system that has regular elections where individuals and groups can meaningfully compete for the positions within the government, where civil and political liberties are not seriously repressed and the rights of all social groups are secured. Liberalization describes a movement towards a more democratic regime. The terms dictatorship and autocracy are used for systems where the power has been concentrated to an individual or a group (that may or may not have the support of the majority) which has reached the power or maintains it through non-democratic means or seriously depresses civil and political liberties. These characteristics for the two regime types commonly feature in related literature (e.g. Diamond et. al., 1995) but are not an exhaustive list.

performance and thus more vulnerable to collapse in periods of economic and social distress (Diamond et al., 1995).

The empirical analysis is not (contrary to e.g. Gasiorowski, 1995) limited to full regime transitions since smaller changes can also have important implications for the country. Thus both the magnitude and direction of regime change are of interest. It should be emphasized that changes in government or leadership that do not result in a significant change of the institutionalized characteristics of the regime are not considered in this study.[5]

To maintain the economic focus of the thesis I will limit the additional variables in the analysis to a minimum (despite the wide array of other structural, political and cultural features that frequently appears in other studies). The variety of shocks is limited to those that are considered to be of greatest importance for developing countries and further limited by the availability of relevant data.

1.3. Disposition

To answer the research question the remainder of this thesis is outlined as follows. Chapter two provides an overview of the research related to regime changes and economic crises in developing countries and outlines the hypotheses that are later discussed. The methodology and related issues are presented in chapter three. Chapter four provides a summary of the empirical results while chapter five relates the results back to the theoretical framework and discusses them. Chapter six summarizes the main findings.

2. The Framework

This section gives an overview of features that characterize different regimes and discusses the factors affecting and mechanisms behind regime changes focusing on the ones that are of significance for the economic focus of this study. Also economic crises in developing countries and their political implications are addressed. Finally, the hypotheses for the empirical analysis are presented.

2.1. Theoretical Background

Political regimes in developing countries have for long been of interest to researchers while much of the democratic western world has seen as its cause to promote democracy elsewhere through economic and political means, sometimes even using force (Diamond et al., 1995) and motivated by

[5] A more detailed description of what is regarded as a change in regime is given in section 3.2.

positive values attached to the presence of democratic institutions (as described in e.g. Lipset, 1993). Economic research has tried, without success, to establish a relationship and reveal the direction of causality between (democratic) institutions and growth (Glaeser et al., 2004). The question of which form of governance delivers best economic results remains open (Wintrobe, 1998). Where democracy is praised for its respect for human rights and equality, autocracies are often characterized as repressive dictatorships (Wintrobe, 1998)[6] relying on the support of a (rich) elite (Acemoglu and Robinson, 2001). As no country is like another, dividing countries purely on the basis of their political regime is overly simplifying the extremely complex reality. I will, however, maintain the division into democratic and autocratic regimes for now. This is done to discuss some general traits of the two regime forms and the mechanisms of regime transition.

2.1.1. Explaining Regimes

Modernization theories emphasizing the development process and emergence of favorable structural conditions may give a partial but not exhaustive explanation of the advancement of democracy while not focusing much on the breakdown of democratic regimes. The deterministic process put forth by for example Lipset (1959) leaves little room for individual action, as stable democracy emerges from development processes taking decades if not centuries. Despite this, the ideas still bear some value as empirical evidence proves the general connection of higher levels of development and democracy (Przeworski and Limongi, 1997). Emergence and survival of a regime can, besides the structural factors, also be analyzed by giving temporary changes more room, concentrating on choices and actions of individuals and groups. The more micro-oriented rational-choice approach assumes that individuals and political actors behave strategically. This approach, represented by Acemoglu and Robinson (2006) and Gordon Tullock (2005) among others, emphasizes the importance of solving the problems of public goods and collective action in accomplishing a change in the regime. In the rational choice frameworks opportunities and choice play a more important role than the constraints common for the modernization approach represented by for example Lipset.

All regimes need "legitimacy" or support in order to remain in power (Przeworski, 1986). In a democracy the power stems from the majority and is contested regularly (Lipset, 1959). Dictatorships, despite their formal monopoly on power, need support as well because the ruler cannot execute all his wishes by himself (Wintrobe, 1998). As the opposite of democracy,

[6] Wintrobe (1998) points out one type of dictatorship that makes an exception, timocracy, referring to a benevolent dictatorship which genuinely cares for the people (not claiming that they exist in reality).

dictatorships represent only a subgroup of the population, called the "elite" in Acemoglu and Robinson (2006). Lipset (1959), however, notes that the above-mentioned subgroup could also consist of the impoverished masses. Competition for power among individuals and organized groups and holding the rulers accountable for their actions by the citizens is required for a country to be defined as a democracy (Diamond et al., 1995).[7] A dictatorship functions by repressing competition and rewarding the supporters (Wintrobe, 1998). It thus faces a constant threat of losing power and being replaced and has to ensure that no one is unhappy and strong enough to take action against the leadership (Acemoglu and Robinson, 2006).

2.1.2. Changing the Regime

Autocracies

According to Gordon Tullock (2005) a dictator faces three potential threats: the high officials of the current regime, popular uprising and foreign intervention. To manage the first threat the leader faces a difficult balancing act of maintaining support while exerting power on the citizens. The latter is done more easily with the help of others – the larger the group of insiders the greater is the dictator's ability to repress (Blomqvist and Lundahl, 2002). At the same time, to keep them loyal, the dictator has to ensure sufficient remuneration to the insiders to avoid being overthrown by one or a group of them (Wintrobe, 2008). In reality, if a dictatorship is replaced through a coup from within there is often little change in the actual policies (Tullock, 2005). The risk of losing power to a popular movement is in the public choice literature considered much smaller than generally thought. The possibility of a successful revolution is constrained by the collective-action problem as the individual cost in most cases exceeds the benefits that are a public good (Tullock, 2005). An individual faces a personal cost of participating in an attempt to overthrow the current leadership (by risking e.g. imprisonment or their life) while the payoff, if the attempt succeeds, is shared by everyone. Free-riding becomes an attractive alternative. Hence, the dictator, in order to avoid the threat of a popular uprising, has to find the level of repression that keeps the cost of revolution sufficiently high but at the same time does not generate so much discontent that the individual benefits of a change in power become very high. Discussing reasons for and effects of foreign interventions (the third threat listed by Tullock) is not within the scope of this thesis.

To summarize, a dictatorship constantly faces the risk of losing power to an individual or a group from within the current administration or to forces that have a desire to reach power from the

[7] Obviously among several other conditions.

outside. The latter alternative thus includes both the so-called popular revolution that is thought to represent the majority (Tullock, 2005) and coups by other groups that have sufficient de facto power [8] to oust the current regime.

In addition to the above-mentioned threats an authoritarian leadership may also choose to change its policies or the institutions in response to discontent. Acemoglu and Robinson (2006) argue that democratization by the ruling elite is a possible result of the elite realizing that it is threatened by the citizens. The threats often take the form of strikes, demonstrations, riots and, more unlikely, a revolution. These protests are the primary political weapon of groups of citizens under authoritarian rule (Haggard and Kaufman, 1995). Instead of fully democratizing, the leadership may also choose to make concessions to the pressure groups, which would be less costly for the elite as they would be able to stay in power. Based on their somewhat restrictive theoretical framework, Acemoglu and Robinson (2006) claim that the promise of a concession does not satisfy the public due to the elite's inability to make credible commitments. (If still in power they may defect from their promise later when feeling less threatened[9]). This need not be the case in reality and an authoritarian leadership could indeed choose to liberalize its policies as a response to outside pressure to gain more support. Another possibility is that the regime instead manages the protest by repressing the citizens even more, which is also costly (Acemoglu and Robinson, 2006). Repression will further increase the discontent among the citizens and may have adverse consequences. Przeworski (1986) notes that liberalization can also be a result of an authoritarian regime having realized the functional needs that led to its establishment in the first place. It is thus no longer necessary, nor legitimate, and therefore collapses. Stepan (1986) argues that due to changing conditions power-holders within an authoritarian regime may also perceive their long-term interests to be best pursued under democratic institutions and therefore choose to liberalize.

Democracies

While authoritarian rule is inherently unstable, breakdown of democratic regimes is not uncommon in developing countries (Przeworski and Limongi, 1997; Haggard and Kaufman, 1995). Where authoritarian systems regularly use repression and remuneration to control conflicting interests democracy works by providing a legitimate channel – elections – for solving the conflict. Why

[8] De facto power is a concept used in e.g. Acemoglu and Robinson (2006) as opposed to de jure power to distinguish between political power based on institutions (de jure) and more transient real power (de facto).

[9] Full democratization can be considered as transferring the power to set rules from the government to the people. This makes democratization credible in contrast to minor liberalization where the power stays with the ruler.

cannot this system be sustained in all countries? According to Przeworski (2006), the electoral outcome is respected only under certain conditions. Some, like Tullock (2005), argue that it is because despotism, instead of democracy, is the equilibrium state of human society.

Assuming that democracy can be sustained, in order to do so it must be consolidated, meaning that the set of institutions endures through time (Acemoglu and Robinson, 2006). Lipset (1993) argues that it is the lack of legitimacy (of not yet consolidated democracy) that makes (especially) newly democratic regimes unstable and thus vulnerable to breakdown. Unfortunately, regimes that are unable to provide economic welfare find it difficult to build legitimacy while initially low legitimacy may inhibit effective economic management (Diamond et al., 1995). Przeworski and Limongi (1997) find that democracy is much more vulnerable in low-income countries and will almost always survive when income per capita is sufficiently high. The same is true for dictatorships; they too become more stable as income becomes sufficiently high but conversely seem also relatively stable in very poor countries. (The relationship between income and likelihood of regime survival is also not considered to follow a fully linear trend.) The explanation, reiterated in Przeworski (2006), is that the value of becoming a dictator is higher in poor countries. When income is sufficiently high the additional gain from being able to dictate redistribution of income is too small to motivate a potential dictator. Przeworski (2006) also notes that the threshold level of income above which democracy is likely to survive varies depending on other factors and that democracy can indeed be sustained in very poor countries if the distribution of income is very egalitarian or when neither the rich nor the poor have the capacity to overthrow it. There is no agreement on the crucial factors that make democracies arise and survive (Gasiorowski, 1995). O'Donnell and Schmitter (1986) note that the same factors that once were essential or conducive to democracy in a country may impede democratic consolidation or under some circumstances provide a motive for regression to a more repressive regime.

The implication of these results is that a democratic regime in a poor country facing an economic crisis is more susceptible to breakdown of democracy than one that is able to sustain growth or is initially wealthier. This view is actually reiterated in Lipset (1993); new democracies built on fragile foundations, in order to attain legitimacy, need to manage their economies well. Otherwise they risk falling back into autocracy.

2.1.3. A Look into the Economic Vulnerability of Developing Countries

Economic characteristics

The following very general description is based on Perkins et al. (2006). Public finances in developing countries naturally share common traits with those of developed countries but also have some features that significantly differentiate them from the rich countries.[10] These features give some insight in why developing countries are especially vulnerable to crises.

Measured as government expenditure as a share of GDP poor countries tend to have smaller public sectors than rich ones. Much of this difference is explained by expenditures on social protection; rich countries tend to have larger social welfare programs. Nevertheless, subsidies and other transfers intended to redistribute income account for a significant share of government expenditures in developing countries and are of great importance to the poor households as they may account for up to 50 percent of household income. Compared to developed countries interest payments on government debt is a notable cost for developing countries and is often difficult to reduce in the short term. Developing countries also spend a higher proportion of expenses on employee compensation. This implies that when hit by an economic crisis the direct effect on the livelihood of the people can be large. The lack of extensive safety nets together with the fact that transfers may represent a substantial part of a person's income indicates that welfare can be adversely affected when the government becomes more constrained and income decreases. The relatively large burden of interest payments makes a country more vulnerable to changes in international economic environment and interest rate changes in particular.

On the income side, tax base in developing countries is generally narrower than in developed countries. Comparatively weaker and less efficient institutions lead to taxation of the most accessible parts of the economy – for example imports and exports are easily taxed as they pass through bottlenecks such as harbors and income taxes are more easily collected from the urban high income population. Foreign aid, part of which is directed to governments as budget support, is a significant source of income for many developing countries, especially for the poorest ones. Developing countries just as developed ones finance a part of their investment and government spending with debt, borrowing from private and public lenders (such as the World Bank). Poorer countries tend to rely more on the latter and the ones that have limited access to market term loans

[10] The discussed patterns are general and as in developed countries the public sectors of an individual country may look nothing like the characteristics outlined here. Despite this the patterns are relevant for the question at hand as the main interest is general patterns.

receive concessional loans and grants from public lenders. Foreign capital flows to developing countries, especially in form of foreign direct investment, have grown in last decades and play an important role for some countries. The large inflows are, however, relatively concentrated to few countries and one region, Asia, dominates the picture. China alone accounted for almost a fifth of all foreign direct investment to developing countries in 2007 before the financial crisis (UNCTAD World Investment Report 2007). The risk of being adversely affected by shocks increases if a country relies on fewer sources of income that can also be relatively volatile. These shocks would not be crucial for more diversified economies.

The Impact of Economic Crises on Regimes

There is substantive empirical evidence that regime transitions to either direction are often associated with weak economic performance. And quoting Lipset (1993), new democracies best attain legitimacy by generating economic growth. "If they can take the road to economic development, it is likely that they can keep their political house in order." If not, their democratic stability may be undermined.

An empirical study by Gasiorowski (1995) concludes that economic crises have affected the likelihood of regime transition. Pei and Adesnik (2000) divide the way in which the regime can be affected by an economic crisis into three categories: by causing an immediate collapse, by gradually undermining a regime (thus contributing to an eventual regime change) or by causing a turnover of the leaders without changing the political regime. In the sample of 22 Latin American and Asian countries they find the first possibility, a regime change three to nine months after the onset of a crisis to be "the exception rather than the rule". The effect is more likely to come with a lag of 18 to 30 months. The third alternative appeared only in countries with democratic systems and the change in government mostly happened by constitutional means. Pei and Adesnik (2000) note that the effects of crises seem to differ between time periods. Economic crises often caused a complete collapse of a democratic regime in the early postwar decades. Overall, Pei and Adesnik (2000) consider the effect of crises small on Latin American countries and the reasons for regime change primarily political while concluding that democracies seem more resilient to economic turmoil. The last finding is thought to be the result of democratic elections being a less costly mechanism for punishing politicians that are responsible. The last argument contradicts the findings in Gasiorowski (1995) of recessionary crises facilitating democratic breakdown as well as the conclusions of

several other authors (e.g. Przeworski and Limongi, 1997, who find poor democracies very fragile in the face of economic crises[11]).

The evidence of democracies' performance during a crisis is thus ambiguous and, as Sørensen (1991) notes, autocracy is sometimes considered better for the economy. This might be the case when an economic crisis requires difficult policy choices that do not gain public support (Haggard and Kaufman, 1995) leaving the politicians to prefer inaction, a situation which Wintrobe (1998) considers one of the seeds of dictatorship. Wintrobe (1998) concludes that while the track record of autocracies is mixed, their advantage in managing the economy lies in their ability to take action. This would imply that strong autocracies may be more likely to survive an economic crisis, an argument that is at least partly supported by findings in Gasiorowski (1995). On the other hand, authoritarian regimes rely not only on their ability to control and repress but also on the loyalty and support of some subgroup which is often generated by looking after that group's economic interests. Crises may reduce the resources available for this purpose. As economic crises tend to affect a broad spectrum of social groups, public discontent could increas providing opportunities for the opposition to gain more support (Haggard and Kaufman, 1995). Acemoglu and Robinson (2006) argue that the collective-action problem is easier to solve, opposition easier to coordinate and revolutions less costly to carry out in times of crises.

Even if economic crisis is considered to influence the likelihood of regime change[12] not all regimes are adversely affected of economic turbulence, possibly because of strong underlying structures, while the less resilient ones might. Przeworski (2006) argues that economic crises matter only if they result in a decline from above to below a critical threshold level which varies between individual countries. This would imply that the size of the decline is crucial, although determining this threshold level empirically would be challenging.

What can thus be said about the effect of economic crises on political regimes is that the implications are mixed both on the theoretical and empirical side. Autocratic and democratic regimes gain their legitimacy from different sources but maintaining this legitimacy is crucial for both. For different reasons deteriorating economic conditions may undermine the credibility and

[11] The reason for the contradictory findings in Pei and Adesnik (2000) may well be that their sample is biased towards the better-doing developing nations and excludes Africa.

[12] Arguing that economic crises can trigger regime change does not amount to dismissing the political motivations of strategic actors (an approach favoured by e.g. O'Donnell and Schmitter, 1986) but rather implies that economic factors have an effect on their actions (Haggard and Kaufman, 1995).

legitimacy of the current regime. This can make it easier as well as more attractive for other actors to force the regime into making concessions or leave office.

Why would the shock matter?

Both purely exogenous economic shocks and those caused by bad policy choices or natural disasters as well as any combination of these can have serious consequences to a country's economy and lead to an economic crisis. The likelihood of any given shock leading to a crisis is dependent on both the inherent vulnerability of a country and its resilience to shocks (Briguglio et al., 2008).[13] In general, the countries facing higher risk – meaning that they are either more vulnerable or less resilient, or both – are developing countries (Briguglio et al., 2008). Even though crises occur in all countries they do so more frequently and impose higher costs in terms of lost output in poorer countries (Becker and Mauro, 2006). While a country cannot affect the features that make it vulnerable (in the sense that Briguglio et al., 2008, use the term) bad policy choices can significantly increase its risk of being adversely affected by a shock. Sound policies, on the other hand, help coping with unexpected events. From an economic perspective, the type of the shock matters. Becker and Mauro (2006) show that the effects of different shocks on countries vary also depending on the initial income level. Their paper finds that for emerging markets the largest expected costs are related to financial and macroeconomic shocks (especially sudden stops in financial flows) and for developing countries the highest expected costs are induced by adverse changes in the terms of trade. Other shocks that in the study result in relatively high expected cost for either country group are currency crises, debt crises, international interest rate hikes, political shocks and wars.

There is less knowledge about whether the political costs as well are affected by the type of the shock or whether the political outcome is only dependent on the seriousness of the downturn (as suggested in Przeworski, 2006). Why would the shock that precedes the crisis matter for the political outcome? In theory there are at least two possibilities. It should, however, be noted that observing and distinguishing these in the data may be challenging. The first explanation is based on the assumption of rational actors – if the primary cause of a crisis is bad previous policy choices, people would, in the face of deteriorating economic conditions, hold the current regime responsible

[13] Briguglio et al. (2008) studies the risk of being adversely affected by exogenous shocks and divides it into exposure arising from intrinsic features of the economy and coping ability that enables the country to withstand or bounce back from external shocks. The former depends for example on the economic openness and dependence on strategic imports (which are constrained by e.g. the size of the country and the availability of resources) and cannot be affected by policy while the latter is policy-induced and can be improved by e.g. sound macro-economic management and good governance.

and demand change. The second alternative is that the direct effect on the government varies depending on the type of shock; the government finances suffer and the required policy responses differ according to the shock. Hence, the outcome in terms of change in regime could also be affected differently. Another possibility, which supports the hypothesis in Przeworski (2006), is that people either do not care about who caused the misery or they cannot distinguish between the consequences of different choices made by the regime (which, considering the average education level in developing countries, citizens' general knowledge of economics and possibly less free media, is not unlikely).

The political effects of individual shocks have however drawn some attention. For example debt crises are shown to have high political costs for the incumbent politicians and the effects of currency crises are similar (Borensztein and Panizza, 2008), while the regime form seems to matter for the outcome as well (Van Rijckeghem and Weder, 2008). Exactly which crises have high political costs is however unclear.

As was discussed in the previous section the regime type may matter for the government's ability to handle a crisis. Regimes may also differ in their actions in the face of a crisis. Looking at terms of trade shocks Rodrik (1999) suggests that instead of devaluation and fiscal tightening governments often postpone the recovery because they face other social and institutional constraints. The government may quite naturally be inclined to choose the alternative that is least costly for it instead of taking a more comprehensive approach. For example in the case of a debt crisis the outcome is not only dependent on a country's ability to pay but also its willingness to do so, which is ultimately a political choice (Van Rijckeghem and Weder, 2008). Thus, even though a crisis may be triggered by an exogenous shock, it usually requires a domestic response and indeed the sequence of shocks may become long (e.g. consider a terms-of-trade decrease causing export earnings to drop making debt-repayment impossible or an oil crisis resulting in global recession which reveals the unsustainable path of government debt). Borensztein and Panizza (2008) suggest that the higher turnover of economic policymakers in dictatorships defaulting on their debt is a consequence of autocratic leaders finding it easier to blame and fire their Minister of Finance. Personalizing the cause into a single person who is easy to sacrifice might not be as easy in democracies where the decision-makers are generally held responsible in elections.

There may also be a political motivation behind the occurrence of the shock and the way the shock is handled can be affected by outside political forces. An example of the former is economic

sanctions imposed by foreign governments, nongovernmental organizations and private actors to pressure a regime (Diamond et al., 1995). Conditional help packages[14] exemplify the latter.

To summarize, the political consequence of an economic crisis is that governments face new conditions under which the old policies are not sufficient or sustainable and thus have to be changed. The optimal economic response depends on the type of the shock but the policy choice is to large degree affected by political considerations. As the new policies often affect not only the government but also the people, the incumbent government may be reluctant to employ harsh measures in fear of public discontent. The level of public discontent may also be affected by who bears the main cause of the crisis.

2.1.4. Structural Factors

As has been pointed out there are other underlying factors that affect the political regime as well as the economic conditions in the country. Many of the structural factors that have featured in the previous literature – such as religion, character of political institutions and ethnic division – are left out from this study. Some factors, however, may have both political as well as economic consequences. Hence, as the purpose of this study is to concentrate on the effect of economic crisis on the change in regime, the main focus is on the characteristics that have some economic bearing. Dependency on trade and aid are such, as the countries concerned rely on income flows that are affected by foreign powers and especially western countries have come to attach political conditions to these cash flows (Diamond et. al., 1995). The level of urbanization may imply something both about a country's economy and the threat the public forms to the regime. Highly agrarian societies are often characterized by high level of subsistence farming and financial exclusion (Perkins et al., 2006) thus making the average citizen possibly less affected by financial turmoil. Haggard and Kaufman (1995) note that geographically dispersed rural cultivators and thus the relative weakness of organized interests that were unable to launch sustained protest against declining economic conditions have made it possible for of rulers in very poor countries to prolong their domination. Considering this, one would expect that the threat to regimes in countries with such characteristic consists primarily of coups.

2.2. Hypotheses

Previous research, even though not unanimously, suggests that economic factors have an important role in explaining the survival of a political regime. Furthermore, deteriorating economic conditions

[14] An loan from the International Monetary Fund would be an example.

can affect the forces behind changes in political regimes both by weakening the current regime and strengthening its opposition. It thus seems reasonable to assume that an economic crisis increases the probability of a regime change. Gasiorowski (1995) finds that the likelihood of autocratic transition increases as a result of a recessionary crisis while inflation has over time both facilitated and inhibited democratization. Two opposite hypotheses are that all regime types are affected to the same extent by crises compared to the effects being different, i.e. testing the ability of different regimes to manage an economic crisis. (Here one should keep in mind Tullock's conclusion that autocratic rulers are most threatened by coups from within which may imply little change in actual policies.)

Similarly, transitions in democratic direction could be induced by the same factors that facilitate transition in autocratic direction, or alternatively, the factors that increase the likelihood of transition may differ depending on the direction. The idea behind this is to test whether crises simply weaken the current regime or whether they also induce certain behavior (e.g. increased repression or liberalization as a means to calm the opposition). A tentative presumption is that the seriousness of the crisis, as measured by the decline in GDP per capita, affects the magnitude of regime change; in the face of a major crisis a larger change is called for and made possible.

The level of development is significant for the probability of survival of a regime (Przeworski and Limongi, 1997) and it seems probable that the pre-crisis income would also be important for the resilience of the regime in the face of a crises. The relationship may not, however, be linear but rather vary between different income groups (as the results in e.g. Przeworski and Limongi, 1997, suggest). A more far-fetched hypothesis is that the type of the shock – not only the magnitude of decline in GDP per capita – matters for the outcome. The manner in which this relationship may be demonstrated is that if the blame of the crisis can be put on the government, the government will suffer and the probability for regime change increase. Or formulated in a more restrictive way: clearly exogenous shocks should cause less damage to the regime and the probability for regime change should be smaller than when a crisis coincides with endogenous shocks. Finally, it is assumed that the economic characteristics of the country may have an effect on both how it is affected by a crisis and the likelihood of regime change. For example, a high proportion of rural population may inhibit democratic transition and decrease the level to which a country is affected by global shocks.

Thus, the hypotheses analyzed in this thesis are the following:

Hypothesis 1: An economic crisis increases the likelihood of a regime change.

Hypothesis 2a: A crisis increases likelihood of transition in both directions to the same extent.

Hypothesis 2b: A crisis increases likelihood of transition in one direction more than in the other.

Hypothesis 3a: The effect of crisis on the likelihood of regime change is similar for all regime types.

Hypothesis 3b: The effect of crisis on the likelihood of regime change differs depending on the regime types.

Hypothesis 4: The economic characteristics[15] of the country affect the extent to which its regime is influenced by a crisis.

Hypothesis 5: The likelihood of regime change differs depending on the type of shock(s) associated with the crisis.

3. Method and Data

To examine how economic crises alone and in conjunction with a variety of shocks affect the likelihood of regime change in developing countries a quantitative study is carried out. The relationship between regime changes of different magnitude and the occurrence of crises and shocks is examined using a multinomial logistic regression model.

3.1. Data

The data for the empirical study come from online databases that were chosen due to their large coverage of countries and years and their credibility. Data on regime change and regime characteristics come from the Polity IV Project Political Regime Characteristics and Transitions 1800-2008 dataset collected by the Center for Systemic Peace at George Mason University. This dataset was chosen from a set of different indices for regime characteristics because the definitions used correspond well to the formulation of the research question and the coverage is broad.[16] Economic data for the selected countries were drawn from World Bank Development Indicators database and World Bank Development Finance database with the exception of financial account data that were drawn from the International Monetary Fund's International Financial Statistics

[15] The variables referred to as economic characteristics are clarified in section 3.2.

[16] For full account of how the variables in the Polity IV dataset are constructed and defined, see the Polity IV handbook, available at http://www.systemicpeace.org/inscr/p4manualv2007.pdf.

database. Data for U.S. federal funds rate for the sample period come from the Federal Reserve database and the years for oil price shocks are found in Becker and Mauro (2006).

The Selection of Cases

The constructed database consists of altogether 143 countries covering the period 1960-2008, but countries enter and exit the sample at different points in time. A country generally enters the sample during the first year of its independence or when sufficient economic data are available. To maintain as large a sample as possible while at the same time excluding countries that from a development point of view face no threat to regime stability (recall the results in Przeworski and Limongi, 1997), some countries are excluded from the sample prior to 2008 based on the author's somewhat arbitrary assessment. The decision of excluding a country from the sample prior to the final year and the choice of the exit year is based on the OECD historical overview of the list of official development aid recipients and the World Bank April 2010 list of economies. For example if a country was classified as 'high income' in 2010 a reference was made to the historical overview of OECD to determine the exit year from the sample. An exception from this is the European Union member states and candidate countries as democracy is a prerequisite for accession. The current member states that are initially part of the sample are removed three years prior to their accession and the current candidate states exit the year they have gained that status.[17] While the used databases have broad coverage of countries and years, the availability of data varies greatly between countries and variables and gaps in the data appear.

A Note on the Regime Characteristics Data

Using a ready dataset, in this case the Polity IV Project data has some disadvantages. Firstly, one cannot analyze the regime characteristics in great detail since they are recorded on an annual basis only. Not assessing each case individually makes loss of important information about the actual events that led to a regime change. This clearly results in omission of significant factors in some cases. Within the scope of this thesis it is, however, not possible to focus on individual cases and at the same time maintain the large sample and thus the general approach that is sought. The data provided by the Polity IV Project is thus deemed to be a suitable option for the question at hand.

3.2. Variables

Table 1. summarizes the variables of the empirical study. The dependent variable of this study is *regime change* measured as change in the Polity score of the country. The values of the variable are

[17] For information on the EU candidate countries see http://ec.europa.eu/enlargement/countries/index_en.htm.

discrete numbers and range from -3 to 3. The underlying Polity scores range from -10 representing full autocracy to 10 representing full democracy and give rise to three categories: autocratic, partially democratic and fully democratic. Major democratic transition is coded as 3 and means that a country has experienced a six point or greater increase in the Polity score and shifted either to category 'partial democracy' or 'full democracy'. Minor democratic transition is coded as 2 and implies a three to five point increase in the Polity score and a similar shift to a more democratic category. A three or more point increase without a shift in to a more democratic category is recorded as positive regime change and takes value 1. The base case of little or no change is represented by value 0. Negative regime change, value -1, implies a decrease of three to five points in the Polity score while adverse regime transition is recorded in case of six or more point decline or an interregnal period (a collapse of central state authority or a revolutionary non-democratic transformation). The value -3 represents a complete collapse of central political authority.[18] The data are recorded on a yearly basis and reflects institutionalized changes in the regime characteristics.

The main explanatory variable is *economic crisis*. Optimally, one would like to have a measure for the effects that a crisis has on the people affected. In practice no such measure is available and GDP per capita is considered as an appropriate proxy for the effects. Economic crisis is a dummy variable taking value 1 if the country is classified as experiencing a crisis that year and 0 otherwise. Which cases to classify as having a crisis is not obvious and in the previous literature varying definitions are used. Becker and Mauro (2006) choose to focus on large output drops while Przeworski and Limongi (1997) note that one year of negative growth rates is enough to have effects on the regime. I first define a crisis as cases where the downturn shows persistence. At least two consecutive years of negative per capita growth is used for the simplicity of that definition. I then modify the definition to account for all cases of negative growth rates. Gasiorowski (1995) simply uses the real per capita growth rate to evaluate the effects of recessionary crises. I opt for including the dummy for crisis to capture the additional effects of situations were welfare is likely to decrease. The per capita growth rate will however also be included to capture the magnitude of the downturn.

[18] The values of the regime change variable correspond to the 'regtrans' variable in the Polity IV dataset with some adjustments made. All years with no change recorded in the dataset were transformed to zero while the special cases outside the range from -2 to 3 were turned into missing observations with the exception of value -77 (state failure) that was changed to -3. The interested reader is again referred to the Polity IV handbook for more detailed information on the coding.

Table 1. Names and description of the variables used.

Variable name	Description
Dependent variable	
regime change	3 = Major regime transition 2 = Minor democratic transition 1 = Positive regime change 0 = Little or no change in Polity score -2 = Adverse regime transition -3 = State failure
Independent variables	
crisis	A dummy for crisis
log(growth)	Log of annual per capita growth
log(inflation)	Log of annual inflation rate
year*log(inflation)	An interaction term for the year of obsevation times log of inflation
log(income)	Log of GDP per capita in constant year 2000 U.S. dollars
terms of trade	A dummy for terms of trade crisis
sudden stop	A dummy for a sudden decline in capital flows
debt	A dummy for debt crisis
currency	A dummy for currency crisis
oil	A dummy for the first year of oil price shock
interest hike	A dummy for an international interest rate hike
rural	Rural population as % of total
trade	Trade as % of GDP
aid	Aid as % of GNI
durability	Number of years since the most recent regime change
regime	Pre-change regime type represented by an adjusted polity score.

Other examined events of economic shocks are large declines in the terms of trade, the value of domestic currency or capital inflows, debt crises, international interest rate hikes and oil price shocks. When applicable, the definitions of the shocks are similar to those used in Becker and

Mauro (2006). The dummy for *terms-of-trade shock* takes value of 1 if a country's net barter terms of trade worsen by at least 10 percent during one year. *A currency crisis* is recorded if the nominal value of domestic currency against the U.S. dollar depreciates by 25 percent or more within one year and the depreciation is at least 10 percentage points larger than the previous year. The dummy for *sudden decline in capital flows* takes the value of 1 if when the financial account balance worsens by more than 5 percentage points of GDP compared with the previous year. The U.S. federal funds rate is used as a reference for international interest rates and an *interest rate hike* is observed in case of an increase by more than 150 basis points in one year. The years of *oil price shocks* are also taken from Becker and Mauro (2006) and refer to 1973, 1978, 1989 and 1999.

For the purpose of this study, debt crises are identified using the method suggested in Ishihara (2005). As countries' debt tolerance varies widely and there is thus no agreed level of sustainable debt (Perkins et al., 2006), a relative measure is more suitable than an absolute threshold. A *debt crisis* is defined by looking at large deviations of debt to exports ratios from individual averages. Cases with values larger than two standard deviations from the mean are recorded as years of crisis. The downside of this approach is that crisis may be recorded for countries with relatively stable debt levels and due to the ambiguity of the definition the results regarding debt crisis should be interpreted with caution. To strengthen the results the debt variable is also tested in combination with the cases where non-concessional loans from the International Monetary Fund being larger than two standard deviations from the individual mean.

Other types of shocks were omitted mostly due to the lack of uniform definition or because of difficulties obtaining relevant data.

Inflationary crises could be represented by a dummy but I opt for using yearly inflation rate (measured as yearly change in the consumer price index) to better capture the difference between high inflation and hyperinflation. To assess the effect of *income level* on the probability of regime change GDP per capita measured in constant year 2000 U.S. dollars is included in the analysis. To control for the magnitude of the crisis, *growth in GDP per capita* is also included. *Aid* as a percentage of GNI and *trade* as a percentage of GDP together with *the fraction of rural population* provide information on the importance of these characteristics. The initial *regime type* is represented by an adjusted polity score[19] describing the regime characteristics as well as the

[19] The author's modification to the original polity scores of the Polity IV dataset are as follows: Cases of foreign interruption (-66) are transformed to missing values (as they are relatively unlikely to be affected by economic crises) and cases of interregnum (-77) and transition (-88) are rescaled to value -11.

duration in years of the previous regimes are added to control for the possible effect they may have on the probabilities.

A Short Note on the Identification of Debt Crises

In this thesis the construction of the variable for debt crisis is constrained both by the availability of data and the time constraint that did not permit case-by-case evaluation of the large sample. For example Becker and Mauro (2006) refer to a number of studies that have identified debt crisis using different methods. Conceptually, a debt crisis can be defined as the inability of debtors to make timely payments of interests and principals (Ishihara, 2005). Applying this definition to the data is, however, not simple. The inability to pay may be a result of both insolvency and illiquidity – the former can be assessed by looking at e.g. the debt to GDP ratio or debt to exports ratio and one suitable indicator for the latter is the debt service to exports ratio (Perkins et al., 2006).

3.3. The Model

A multinomial model is chosen due to the discrete nature of the dependent variable. The logistic regression is non-linear and it assigns probabilities for each of the observed outcomes of the dependent variable. The provided estimates for parameter values tell what the effect of the explanatory variables is on observing a certain outcome relative to a base case. The estimated equation can be presented in the form of a linear function that is assumed to be the underlying relationship giving rise to the logistic model. Hence, the impact of each explanatory variable can be easily interpreted as either increasing or decreasing the probability for a country to experience a regime change of certain magnitude. Furthermore, the effects of these variables can be compared between different outcomes. The effects can also be interpreted by estimating the odds ratios for each outcome and explanatory variable. The odds ratio tells how the probability of observing certain outcome is affected by a one unit change in the explanatory variable and is calculated simply as the exponential of the estimated coefficient. A coefficient value of *b* would thus imply that an increase in that explanatory variable of one unit increases the likelihood of that outcome *exp(b)* times if all other explanatory variables are held constant.

The first model tests the effect of economic crises and includes only the dummy for crisis, variables for economic performance and structural variables that are thought to affect the probabilities. Different specifications for the regression are tried in this setting to find the correct form. This is done by testing several lag lengths and definitions for crisis. Following the suggestion in Gasiorowski (1995) interaction terms for time-varying effects were also checked for. Regression 1 presents the final form of the model. The base case is chosen to be the outcome zero – no change –

in all cases. The same regression is also run for a slightly modified dependent variable to test for the robustness when excluding the extreme negative outcome. Additionally, the sample is split according to the initial regime type and the model was estimated on samples of democratic and autocratic countries separately. The modifications and results are discussed in section 4.2.

Regression 1.

$$regime\ change_t = \beta_0 + \beta_1 crisis_t + \beta_2 \log(inlfation)_{t-1} + \beta_3 \text{year} * \log(\text{inflation})_{t-1} + \beta_4 \log(\text{growth})_{t-1} + \beta_5 \log(\text{income})_{t-2} + \beta_6 \text{rural}_{t-2} + \beta_7 \text{aid}_{t-2} + \beta_8 \text{trade}_{t-2} + \beta_9 \text{durable}_{t-1} + \beta_{10} \text{regime}_{t-1}$$

After excluding some of the explanatory variables a new model described by Regression 2 is estimated. Inflation and GDP per capita were dropped from the model due to suspected multicollinearity. The dummy for each shock *i* is added separately to the model and new coefficients are estimated separately. The structural explanatory variables were kept in the model as they were assumed to relate to one or several of the shocks.

Regression 2.

$$regime\ change_t = \beta_0 + \beta_1 crisis_t + \beta_2 \text{shock}_{i,t-1} + \beta_3 \log(\text{growth})_{t-1} + \beta_4 \text{rural}_{t-2} + \beta_5 \text{aid}_{t-2} + \beta_6 \text{trade}_{t-2} + \beta_7 \text{durable}_{t-1} + \beta_8 \text{regime}_{t-1}$$

3.4. Possible Sources of Concern

The question of causality causes some concerns in this exercise. While the aim here is to test whether economic crises affect the probability of regime change it is quite clear that political turbulence can cause deterioration of economic conditions.[20] If the regime change was anticipated and assumed to cause political instability leading to an economic crisis this could become a self-fulfilling prophecy thus causing an output drop followed by regime change. While this scenario cannot be dismissed completely, it is reasonable to assume that economic crises are not systemically caused by anticipated political turbulence, especially when the crises are preceded by exogenous shocks. Another source of concern is the relationship between different shocks and output drops. As was discussed in section 2.1.3, one shock may trigger another and several shocks often coincide while decreasing output may be the cause of a shock.[21] Considering that the aim of this thesis is to

[20] For example Becker and Mauro (2006) include political shocks (defined as a deterioration of at least three points in the Polity score) in their analysis.

[21] However, Becker and Mauro (2006) find evidence suggesting that shocks are not routinely caused by expected output drops (if they were that would suggest that forecasting recessions is relatively easy).

find out whether the presence of some shocks has significant effect on the probability of regime change beyond the effect of an output drop only the way in which these shocks interact is of secondary importance. However, this issue should be kept in mind when interpreting the results as it may result in multicollinearity between variables.

Data availability should also be considered since it may cause the sample to become biased towards more stable countries. It is possible that missing observations in economic variables are more frequent when political environment is unstable. More developed countries also tend to have better coverage of data than less developed one.

4. Results

4.1. Description of the Data

The number of observations in regression 1 was 3290 after missing observations were deleted from the sample and the sample period decreased due to the use of lagged variables. Table 2. presents the descriptive statistics for the variables included. The values range widely which is understandable considering the large number of countries included in the sample. It should be noted that the logged variables log(growth) and log(inflation) were first adjusted for negative values by adding the minimum value of that variable plus one to avoid the numerical difficulties that would arise when taking logs of negative values. Thus 51,046 and 22,675 were added to per capita growth and inflation respectively before taking the natural logarithms. The statistics for the sample of Regression 1 are similar to those of the whole dataset (see Appendix B for the table) and the exclusion of observations due to missing data on some variables should not cause problems. It should however be noted that the regression sample is mildly biased towards more democratic and stable countries as the mean of regime type is -1,6 for the whole sample and -0,06 for the regression sample. The difference in the mean of regime duration is very small but positive in favor of the regression sample. Mean of the dependent variable regime change is also slightly larger for the regression sample indicating minor overrepresentation of democratic transitions.

Regression 2 assesses the impact of shock-related crises. Table 3. presents the frequency of shocks preceding a crisis. The number of observations in Regression 2 varies depending on the availability of data for a given shock but is generally smaller than that of regression 1 due to lack of data for the crises variables especially in the beginning of the time period. The dependent variable was also chosen to exclude cases of state failure due to extreme values for that case. Due to multicollinearity shocks are tested one by one and the original crisis variable is excluded for the same reason.

Table 2. Descriptive statistics for variables in Regression 1.

Variable	**Mean**	**Std. deviation**	**Min**	**Max**
regime change	0,064	0,739	-3	3
crisis	0,148	0,355	0	1
log(inflation)	3,589	0,624	0,000	10,077
year*log(inflation)	7137,683	1243,796	0,057	20094,1
log(growth)	3,964	0,110	2,981	4,761
log(income)	7,089	1,049	4,381	10,776
rural	59,310	21,482	2,06	97,8
aid	5,900	8,587	-0,745	98,755
trade	65,401	36,777	6,320	275,232
durability	14,558	16,875	0	103
regime	-0,064	7,172	-11	10
constant	0,064	,739	-3	3

Table 3. Frequency of shocks preceding a crisis.

	Shock					
regime change	debt	interest hike	oil	currency	terms of trade	sudden stop
-2	2	4	1	3	1	1
-1	0	3	1	1	0	0
0	14	118	51	77	71	72
1	0	4	0	1	1	2
2	0	0	0	0	0	0
3	3	12	6	5	12	15
Total	**19**	**141**	**59**	**87**	**85**	**90**

The results are generally assessed on five percent significance level. However, also coefficients with p-values below 0,10 may be considered interesting and are reported.

An additional note on the data:

There are relatively few cases of minor democratic transitions and negative change which may result in unreliable results for those cases. Thus, the coefficients should be considered with some suspicion. The results of those two cases will be considered but not much weight is put on their interpretation.

4.2. Regression Results

The most suitable definition of a crisis was found to be including events of at least two consecutive years of negative output. Different lag lengths were tested but the most significant results were provided with no lags. This may on one hand indicate that the effects of a recession are somewhat immediate but on the other hand when the crisis variable records 1 at time *t* the country has already experienced at least one year of negative growth at time *t-1*.

Regression 1

Table 4. Estimated coefficients and p-values for the explanatory variables of Regression 1.

	Regime Change					
Independent variables	-3	-2	-1	1	2	3
crisis	2,43**	0,68*	1,79**	-0,24	-30,76**	0,63**
	(0,000)	(0,087)	(0,028)	(0,525)	(0,000)	(0,013)
log(inflation)	-42,00*	40,13**	7,05	-39,96**	-24,14	-25,32**
	(0,074)	(0,000)	(0,612)	(0,000)	(0,266)	(0,000)
year*log(inflation)	0,02*	-0,02**	0,00	0,02**	0,01	0,01**
	(0,070)	(0,000)	(0,608)	(0,000)	(0,276)	(0,000)
log(growth)	-2,13	-0,81	1,29	-2,96**	-2,16	0,07
	(0,281)	(0,579)	(0,728)	(0,000)	(0,440)	(0,931)
log(income)	-0,52	-0,82**	0,82**	0,04	0,28	0,14
	(0,214)	(0,001)	(0,006)	(0,862)	(0,511)	(0,467)
rural	0,01	-0,01	0,04**	0,01	-0,02	-0,01
	(0,796)	(0,398)	(0,008)	(0,445)	(0,312)	(0,337)
aid	0,02	-0,04	0,05	0,00	-0,04	0,03**
	(0,376)	(0,173)	(0,206)	(0,904)	(0,399)	(0,002)
trade	-0,01	0,00	-0,02**	-0,01*	-0,01	-0,01**
	(0,222)	(0,376)	(0,004)	(0,052)	(0,156)	(0,005)
durability	-0,11*	-0,11**	-0,10**	-0,02*	-0,12**	-0,08**
	(0,009)	(0,000)	(0,041)	(0,062)	(0,014)	(0,000)
regime	-0,29*	0,09**	0,03**	-0,27**	-0,03	-0,27**
	(0,004)	(0,000)	(0,149)	(0,000)	(0,535)	(0,000)
constant	3,78	4,81	-17,41	5,72	4,88	-2,95
	(0,674)	(0,442)	(0,272)	(0,147)	(0,703)	(0,446)

** p<0,05 *p<0,10

Results of regression 1 are presented in Table 4. Crisis is significant on five percent level for four out of six cases. The two cases that show no significant results are positive regime change and adverse regime transition. However, the p-value for adverse regime transition is 0.087 and the coefficient thus significant on ten percent level while the coefficient for positive regime change is highly insignificant and close to zero. Occurrence of crisis increases the likelihood of observing major democratic transitions but only slightly. The positive effect on the probability of negative regime change is larger, while a crisis increases the likelihood of state failure markedly. The coefficient for minor democratic transition is highly significant and the large negative value would imply that crises decrease the probability of observing this outcome (and the impact is large as the odds ratio of the crisis variable becomes practically zero).

Of the other measures of economic performance per capita growth rate is only significant for positive change in which case higher growth decreases the likelihood of observing the outcome. Inflation alone and the interaction term year*inflation are significant for positive change and major democratic transition as well as for adverse regime transition. While higher inflation decreases the probability for transitions in democratic direction (as the coefficient is large and negative) overall, the effect seems to be more pronounced in the earlier part of the time period as the interaction term has a positive coefficient. For adverse regime transition higher inflation has the opposite effect, increasing the likelihood, while the interaction term is practically zero implying that the similar time-varying effects are not observable for this outcome. The coefficients for state failure are significant at 10 percent level and the effects nearly identical to those of adverse regime transition.

Income level is only significant for two of the outcomes – negative change and adverse regime transition – with an increase in income having weakly positive impact on likelihood of observing the former and weakly negative in the case of the latter. The three control variables for country characteristics – trade dependence, aid dependence and proportion of rural population – contribute little to the model and the hypothesis that the coefficients are significantly different from zero is not supported. The only significant values are found for negative regime change where rural has very small but positive effect while trade decreases the probability, but only extremely little.

Regime characteristics themselves are significant at five percent level for all cases except for the regime type coefficient for minor democratic transition and regime durability for positive change (although p-value for that is 0,06) but the coefficients are rather small for all cases. Durability of the regime decreases the likelihood of transition but only marginally.

As GDP per capita is suspected to affect the outcome in a manner different from the log-linear presentation in regression 1 a new regression was run without the income variable. The results are similar to those of regression 1 with the exception that the coefficients for rural, aid and trade now become significant for major democratic transition, while only trade is almost significant (p-value is 0,053) for minor democratic transition and rural for positive regime change. Trade and rural affect the outcome negatively in all three cases while aid has a weak but positive effect on the likelihood of observing a major democratic transition. Using a less restrictive definition for crisis that records all years of negative GDP per capita growth gives significant results especially when the variable is not lagged. However, concerns of causality led to dropping that model.

To test for different effects of crises on democracies and autocracies, regression 1 was run on two separate samples. The results for the sample of autocracies are similar to those of the whole sample presented above with the exception that income level now has a positive impact on the probability of major democratic transition. For the democratic sample, only the likelihood of adverse regime change and state failure are significantly affected by occurrence of a crisis and in both cases the likelihood increases.

Regression 2

In total six regressions were run for Regression 2. Table 5. presents a summary of the coefficient values. The full results can be found in Appendix B. One should however interpret these values with caution. Despite estimating the coefficients separately near-collinearity arises in some cases. They are represented by a dot (.) in the full tables. When significant, a global shock (i.e. interest rate hike or oil price shock) preceding a crisis decreased the probability of observing a change into democratic direction. While oil is significant for adverse regime transition, the large negative value may be correlated with the inflation variable. When inflation is removed, oil contributes positively to the likelihood of transition to negative direction. Interest rate hikes also increase the likelihood of negative regime change, but the effect is small. Terms of trade shocks are significant for all cases except for positive regime change. The effect is very small and positive on major democratic transitions and otherwise negative. When excluding inflation the coefficient for adverse regime transition also becomes insignificant while the results otherwise are the same. The dummy for currency crisis is not significant to any of the outcomes. The coefficient for sudden stop is small and positive for major democratic transitions. The outcome with significant effects is adverse regime transition and the coefficient is large and negative for that case.

Table 5. Coefficients and p-values for the shock variables.

	Regime change				
Shock variable	-2	-1	1	2	3
Terms of trade	-0.4982869	-35.36515	-1.244478	-.7158232	.3570256
	(0.646)	(0.000)**	(0.255)	(0.022)**	(0.409)
Interest hike	0.0650329	1.437972	.379504	-.1799144	-.0236223
	(0.909)	(0.082)*	(0.538)	(0.742)	(0.542)
Debt	1.503981	-40.71163	-40.6284	-9.790108	.2424258
	(0.065)*	(0.000)**	(0.000)*	(0.000)*	(0.747)
Currency	-0.1189497	0.3392555	-0.430136	-0.663409	-0.1143221
	(0.857)	(0.761)	(0.677)	(0.002)**	(0.828)
Sudden stop	-0.9098499	-30.78639	-.0839518	-.3564953	.654614
	(0.425)	(0.000)**	(0.913)	(0.127)	(0.105)
Oil	-0.5658516	0.7067389	-39.03078	.2073615	.0979986
	(0.597)	(0.522)	(0.000)**	(0.702)	(0.854)

** p<0,05 *p<0,10

5. Discussion

The research question presented in section 1.1. that I have sought to answer is "How do economic crises alone and in conjunction with a variety of shocks affect the likelihood, magnitude and direction of change in the political regime in developing countries?" A number of hypotheses were outlined in section 2.2 and the data was analyzed according to the model formulated in 3.3. The empirical findings of chapter four are discussed below one hypothesis at a time and an analysis of the findings is provided thereafter. Section 5.3 then discusses the validity of the results.

5.1. Assessment of the Hypotheses

Hypothesis 1: "An economic crisis increases the likelihood of regime change."

As has been discussed in the previous sections there is a broad range of previous research suggesting that economic crises affect the probability of regime change. This hypothesis is generally confirmed by the empirical results of this thesis shown by the significant values for the crisis variable in regression 1. It can also be concluded that the effect is more pronounced when the

crisis shows some persistence, i.e. there are at least two consecutive years of decline in per capita income.

Hypothesis 2a and 2b: "A crisis increases likelihood of transition to both directions to the same extent." vs. "A crisis increases likelihood of transition to one direction more than to the other."

The effects of crises seem to differ depending on the direction and magnitude of observed regime change. The probability of experiencing a transition to autocratic direction – a more or less adverse one – increases if a country experiences a crisis. Transitions to democratic direction may however be inhibited to some extent by the immediate presence of a crisis. Or, as in the case of major democratic transition, the possible positive impact is very small. The empirical results thus support hypothesis 2b since while a crisis seems to increase the likelihood of autocratic transitions, it either has small or inhibiting effect on transitions to democratic direction.

Hypotheses 3a and 3b: "The effect of crisis on the likelihood of regime change is similar for all regime types." vs. "The effect of crisis on the likelihood of regime change differs depending on the regime types."

The suggestion that different regime types are affected differently by crises gains little support from the obtained results. Autocracies are not very likely to become democratic as a direct result of a crisis but if they do experience a change to this direction the transition will most likely be a major one. Autocratic regimes are more likely to slide further down the autocracy scale. Democratic countries face a significantly larger risk of a major shift towards autocracy or state failure during a crisis while they are not expected to experience any further democratization. Thus, not enough evidence was found to prove any significant differences between autocratic and democratic regimes.

Hypothesis 4: Economic characteristics of the country affect the extent to which its regime is influenced by a crisis.

It seems reasonable to believe that factors beyond the immediate economic outcome affect the likelihood and for this reason the effects of three development-related characteristics were controlled for. These factors however contribute little to the probabilities of regime changes. When statistically significant, the results show that higher proportion of rural population inhibits transitions to democratic direction as does trade dependency. Interestingly, larger dependency on aid increases slightly the likelihood of major democratic transition. Income level has important implications only on the likelihood of adverse regime change where higher GDP per capita

decreases the probability. A higher income level in autocratic countries also seems to increase the likelihood of major democratic transition.

Hypothesis 5: The likelihood of regime change differs depending on the type of shock(s) associated with the crisis.

Relating to the different mechanisms causing a regime to change it was hypothesized that the effect to which a regime is affected by a crisis may depend on the economic nature of the downturn. Proving statistically the additional effect of shocks related to the crisis beyond that of the crisis alone turned out to be challenging. No firm evidence could be found to support the argument that identifying the type of shock would provide further information on why crisis cause regime change. If anything, looking at the empirical results one could conclude that the type of the shock may explain why the regime does not change. This hypothesis can thus neither be rejected nor accepted as the implications of the results are unclear.

5.2. Discussion of the Results

The empirical results of this study prove that understanding how economic crises affect political regimes is not trivial. Crises are significant in explaining change or absence of it as well as the direction and magnitude of regime change. The finding that a crisis increases the probability of autocratic regimes becoming more autocratic implies that the leaders either consider increased control to be the best response to get the economy back to its feet or use further repression to manage discontent. A third possible explanation is that they are weakened by the crisis to the extent that they lose power (to a more autocratic ruler). The first option corresponds to the point made about autocratic leaders' better ability to act in face of a crisis (Wintrobe, 1998).

Major democratic transitions also become more likely although the effect is not as large as for autocratic transitions. This could provide some evidence for the theorem of public discontent and popular uprising against the prevailing rule causing enough pressure for the government to either democratize or withdraw. And Acemoglu and Robinson (2006) may have been right when claiming that autocratic regimes will not make small concessions to silence the opposition and arguing that only major liberalization is credible. The effect of a crisis caused by economic sanctions being imposed to exert political pressure on the current regime should not be ignored as a partial explanation of democratization an authoritarian regime during a crisis. Independent of the direction, a change in regime of an initially autocratic government may be triggered by a decrease in the ability to remunerate a crucial support group. The resulting regime may in that case thus be an even more autocratic one, if for example one support group decides to reach for power.

The argument of poor performance undermining the legitimacy of democratic regimes in developing countries is supported by the finding that both the occurrence of a crisis and high inflation increase the likelihood of the breakdown of democracy. While increasing the likelihood of autocratic transitions inflation cannot be considered conducive to democracy as the effect on democratic changes is overall negative. The decreasing impact of inflation over time could have several explanations. One possibility is that it reflects the better availability of tools to protect oneself from the effects of inflation in the more recent years.

As has been discussed in previous sections income level of the country may not have a straight forward implication on the regime. The empirical findings can lend support to several of the hypothesis in the previous literature. A higher income level may be considered as a partial insurance against adverse regime transitions while it may not help to prevent a negative change. Poorer countries are thus more vulnerable to an adverse change. On the other hand, supporting the modernization theory, higher income level increases the likelihood of an autocratic country making a U-turn to democracy (i.e. the probability of an autocratic regime experiencing a major democratic transition increases).

The finding that none of the structural control variables were significant in general terms exemplifies most likely the fact that these factors play an important role only in conjunction with others. Despite the lack of more general evidence the findings are well aligned across different outcomes when significant. The finding that high proportion of rural population may discourage democratization and in some cases promote transitions to autocratic direction reflects probably both the importance of the level of development (when less urbanized countries are assumed to have a lower level of development) and the practical implications of geographically dispersed population (which is considered harder to mobilize and easier to control). While trade dependency seems to some extent discourage change of all kinds it is difficult to infer any clear causal relation from this due to the various consequences and conditions of trade dependency. The variable was initially included as it was thought to affect a country's vulnerability and dependence on outside factors. For many, the finding that aid dependency increases the likelihood of major democratic transitions while possibly hindering further shifts towards autocracy is a proof of western countries' development policies working as they should. A high proportion of national income being conditional on certain policies certainly provides a motive for complying with more democratic norms or at least not reverting to more repressive policies. However, another possibility is that aid is directed to countries that have more democratic potential and the democratic transition thus is "anticipated".

The strongest and maybe least surprising finding is that stability creates stability. The impact of regime duration is similar among the outcomes and the likelihood of change in general decreases in the longer a certain regime has persisted.

To conclude with a more subjective note, the findings of this thesis lend support to the worries expressed about the destabilizing effects economic crises may have on developing country regimes and strengthens the point made about increased vulnerability to regime change in the face of an economic crisis. If one believes that major democratization is the only way to go, some comfort may be found in the finding that its likelihood also increases in times of crises. The story does not tell whether the predicted transitions in autocratic direction improve the ability of the government to manage the crisis, as has been implied by some authors. On the positive note, the results are based on historical data and thus previous events. Inferring tomorrow's outcomes from them would be rather ambitious.

Discussion on the shocks and the problems with assessing them

While there was no clear a priori theory on the relative importance of the type of shock on regime change the purpose was to either accept or reject the hypothesis that shocks have additional explanatory power beyond that of a crisis and the control variables. Some of the shocks are indeed significant on five or ten percent level but they mostly decrease the likelihood of transition while the impact of crises also decreases in significance. The significant coefficients often appear for outcomes that were concluded having worrisomely few observations to start with. This together with the fact that several of the significant variables of the first model had to be excluded due to multicollinearity makes the author unwilling to draw any definite conclusions about the significance of the shocks.

As was discussed in previous sections there admittedly is interaction between the shocks and the identification is not always simple. Fitting a general description on all countries may be too optimistic. For example a relative measure of debt crises fails to identify crises events in several cases and the results were not improved when using alternative methods. It may also be that additional economic characteristic would have improved the probability of identifying the shocks that are relevant for the country in question.

The lack of results on the part of the shocks does not make the question uninteresting. It simply implies that the statistical model used would need to be redefined and the data more rigorously analyzed. Case-by-case identification would provide accurate data on the economic shocks but this time-consuming task was not possible in the scope of this thesis. A more careful analysis of the

additional explanatory power that the character of the crises may have is thus left for future research to take on.

5.3. Robustness of the Model

The model is not intended to fully predict the likelihood of regime changes and for that reason it was admitted from the beginning that evidently important variables were omitted. While it is possible that the chosen variables capture some unintended effects there is no clear suspicion of that being the case. Regression 1 is relatively robust to small adjustments of both the dependent and independent variables after initial exclusion of some insignificant control variables.[22] Appendix X provides statistical results of estimations using different definitions.

The coefficient values and their significance may be affected by the large variation in the explanatory variables for cases of no change which represent the clear majority. While this is a statistical problem, it describes the reality quite well. The regime characteristics of a country may be stable (both firmly democratic and firmly autocratic or anything in between) despite economic turbulence. It thus seemed unrealistic to constrain regimes to represent a prototype of a stable state.

6. Final Words

In this thesis I have considered a wide array of previous research on political regime change in developing countries and the economic and political effects of economic crises in those countries. I suggested that the economic character of the crisis, i.e. what type economic shocks it coincides with, may provide additional insights in why economic crises matter for the change in political regime. By conducting an empirical analysis of a large group of developing countries I found support for the hypothesis that economic crises affect the likelihood of regime change. The impact could be considered similar on minor and major changes nor were autocratic and democratic regimes affected to the same extent. Overall, observing a change in autocratic direction in times of crises was deemed more likely, while crises could also be considered to increase the probability of major democratic transitions slightly.

Little support was found for the claim that the type of shock associated with the crisis would have additional explanatory power. I did not, however, feel confident to draw the opposite conclusion of

[22] It may be noted that year was first included to control for the effect of number of democracies increasing over time. Population growth was also included to test for its suggested destabilizing effect. Neither of these variables was found significant and they were thus excluded.

the shocks being irrelevant since the statistical results remained unclear. The main finding of this thesis thus remains that economic crises have largest impact on transitions in autocratic direction.

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8. Appendices

8.1. Appendix A: Country list

Afghanistan
Angola
Albania
United Arab Emirates
Argentina
Armenia
Azerbaijan
Burundi
Benin
Burkina Faso
Bangladesh
Bulgaria
Bahrain
Bosnia and Herzegovina
Belarus
Bolivia
Brazil
Bhutan
Botswana
Central African Republic
Chile
China
Cote d'Ivoire
Cameroon
Congo, Rep.
Colombia
Comoros
Costa Rica
Cuba
Cyprus
Czech Republic
Djibouti
Dominican Republic
Algeria
Ecuador
Egypt, Arab Rep.
Eritrea
Spain
Estonia
Ethiopia
Fiji
Gabon
Georgia
Ghana
Guinea
Gambia, The
Guinea-Bissau
Equatorial Guinea
Greece
Guatemala
Guyana
Honduras
Croatia
Haiti
Hungary
Indonesia
India
Ireland
Iran, Islamic Rep.
Iraq
Jamaica
Jordan
Japan
Kazakhstan
Kenya
Kyrgyz Republic
Cambodia
Korea, Rep.
Kuwait
Lao PDR
Lebanon
Liberia
Libya
Sri Lanka
Lesotho
Lithuania
Latvia
Morocco
Moldova
Madagascar
Mexico
Macedonia, FYR
Mali
Myanmar
Montenegro
Mongolia
Mozambique
Mauritania
Mauritius
Malawi
Malaysia
Namibia
Niger
Nigeria
Nicaragua
Nepal
Oman
Pakistan
Panama
Peru
Philippines
Papua New Guinea
Poland
Portugal
Paraguay
Qatar
Romania
Russian Federation
Rwanda
Saudi Arabia
Sudan
Senegal
Singapore
Solomon Islands
Sierra Leone
El Salvador
Somalia
Serbia
Slovak Republic
Slovenia
Swaziland
Syrian Arab Republic
Chad
Togo
Thailand
Tajikistan
Turkmenistan
Timor-Leste
Trinidad and Tobago
Tunisia
Turkey
Tanzania
Uganda
Ukraine
Uruguay
Uzbekistan
Venezuela, RB
Vietnam
Yemen, Rep.
South Africa
Congo, Dem. Rep.
Zambia
Zimbabwe

8.2. Appendix B: Full Regression Results

Regression 1:

1.a) Full results of Regression 1

```
Multinomial logistic regression                 Number of obs   =       3290
                                                Wald chi2(60)   =   11000.40
                                                Prob > chi2     =     0.0000
Log pseudolikelihood = -1118.5858               Pseudo R2       =     0.2399

------------------------------------------------------------------------------
             |               Robust
   regchange |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
-3           |
     crisis |   2.429503   .4588949     5.29   0.000     1.530086     3.32892
   log(infl) |  -42.00418   23.47044    -1.79   0.074     -88.0054     3.99705
 year*infl |    .021323   .0117634     1.81   0.070    -.0017328    .0443787
log(growth) |  -2.126862   1.970855    -1.08   0.281    -5.989667    1.735942
log (income) |  -.5226096   .4202959    -1.24   0.214    -1.346374    .3011554
  rural % |   .0059611   .0231031     0.26   0.796    -.0393202    .0512424
    aid as % |   .0179484   .0202883     0.88   0.376    -.0218159    .0577128
  trade % |  -.0069317   .0056766    -1.22   0.222    -.0180576    .0041942
lag1_durable |  -.1078734   .0415538    -2.60   0.009    -.1893174   -.0264294
 lag1_regime |  -.2914378   .0998841    -2.92   0.004     -.487207   -.0956687
       _cons |    3.77664    8.97925     0.42   0.674    -13.82237    21.37565
-------------+----------------------------------------------------------------
-2           |
```

```
     crisis |   .6839806   .3993672     1.71   0.087    -.0987647    1.466726
   log(infl) |   40.13189   8.986184     4.47   0.000     22.51929    57.74448
 year*infl |  -.0200127   .0045192    -4.43   0.000    -.0288702   -.0111552
log(growth) |  -.8060542   1.454523    -0.55   0.579    -3.656867    2.044759
log (income) |  -.8248274   .2588579    -3.19   0.001    -1.332179   -.3174753
  rural % |  -.0108159   .0127964    -0.85   0.398    -.0358963    .0142645
    aid as % |  -.0356423   .0261571    -1.36   0.173    -.0869092    .0156246
  trade % |   .0043374   .0048987     0.89   0.376    -.0052638    .0139386
lag1_durable |  -.1064541   .0284738    -3.74   0.000    -.1622617   -.0506466
 lag1_regime |   .0873451   .0219936     3.97   0.000     .0442383    .1304518
       _cons |   4.808419   6.252491     0.77   0.442    -7.446238    17.06308
-------------+----------------------------------------------------------------
-1           |
     crisis |   1.794951   .8151975     2.20   0.028     .1971932    3.392708
   log(infl) |   7.050533   13.89709     0.51   0.612    -20.18727    34.28834
 year*infl |  -.0035951    .007007    -0.51   0.608    -.0173286    .0101384
log(growth) |   1.285258   3.698375     0.35   0.728    -5.963423    8.533939
log (income) |   .8243714   .2982797     2.76   0.006     .2397538    1.408989
  rural % |   .0360201    .013539     2.66   0.008     .0094842     .062556
    aid as % |   .0482317   .0381385     1.26   0.206    -.0265183    .1229817
  trade % |  -.0162123   .0055834    -2.90   0.004    -.0271556    -.005269
lag1_durable |  -.0951152   .0465661    -2.04   0.041    -.1863831   -.0038473
 lag1_regime |   .0339448   .0235488     1.44   0.149    -.0122101    .0800997
       _cons |  -17.41139   15.84978    -1.10   0.272    -48.47639    13.65361
-------------+----------------------------------------------------------------
1            |
     crisis |  -.2429584   .3819017    -0.64   0.525     -.991472    .5055553
   log(infl) |  -39.96056   9.215091    -4.34   0.000    -58.02181   -21.89932
```

```
 year*infl |   .0202409   .0046343     4.37   0.000     .0111577     .029324
log(growth) |  -2.956201   .7712482    -3.83   0.000     -4.46782   -1.444583
log (income) |   .0373852   .2156173     0.17   0.862    -.3852169    .4599873
  rural % |   .0072275   .0094547     0.76   0.445    -.0113033    .0257583
    aid as % |  -.0016514    .013646    -0.12   0.904    -.0283971    .0250942
  trade % |  -.0103211   .0053198    -1.94   0.052    -.0207476    .0001055
lag1_durable |  -.0241363   .0129472    -1.86   0.062    -.0495123    .0012396
 lag1_regime |  -.2693881   .0418291    -6.44   0.000    -.3513717   -.1874045
       _cons |    5.71959   3.947101     1.45   0.147    -2.016586    13.45577
-------------+----------------------------------------------------------------
2            |
     crisis |  -30.75872   .6200563   -49.61   0.000    -31.97401   -29.54343
   log(infl) |  -24.14492   21.68566    -1.11   0.266    -66.64802    18.35819
 year*infl |   .0120143   .0110364     1.09   0.276    -.0096166    .0336451
log(growth) |    -2.1633   2.803788    -0.77   0.440    -7.658623    3.332024
log (income) |   .2791299   .4245008     0.66   0.511    -.5528764    1.111136
  rural % |  -.0191238   .0189101    -1.01   0.312     -.056187    .0179393
    aid as % |  -.0373576   .0442622    -0.84   0.399      -.12411    .0493948
  trade % |  -.0116175   .0081979    -1.42   0.156    -.0276851    .0044501
lag1_durable |    -.11669   .0473852    -2.46   0.014    -.2095632   -.0238167
 lag1_regime |  -.0315791   .0509226    -0.62   0.535    -.1313857    .0682274
       _cons |   4.879728   12.79323     0.38   0.703    -20.19455      29.954
-------------+----------------------------------------------------------------
3            |
     crisis |   .6280508   .2542231     2.47   0.013     .1297828    1.126319
   log(infl) |  -25.32023   6.090198    -4.16   0.000     -37.2568   -13.38366
 year*infl |   .0126127   .0030625     4.12   0.000     .0066103    .0186151
log(growth) |   .0669246   .7676207     0.09   0.931    -1.437584    1.571433
```

```
log (income) |   .1433562   .1971002     0.73   0.467    -.2429531    .5296655
  rural % |  -.0091072   .0094846    -0.96   0.337    -.0276967    .0094823
    aid as % |    .033751    .010771     3.13   0.002     .0126402    .0548619
  trade % |  -.0108715   .0038394    -2.83   0.005    -.0183965   -.0033464
lag1_durable |  -.0820669    .015085    -5.44   0.000    -.1116329   -.0525009
 lag1_regime |  -.2673113   .0239437   -11.16   0.000    -.3142401   -.2203826
       _cons |  -2.951788   3.873802    -0.76   0.446     -10.5443    4.640724
------------------------------------------------------------------------------
(regchange==0 is the base outcome)
```

1.b) Results for Regression 1 when log(income) is dropped

```
Multinomial logistic regression                 Number of obs   =       3295
                                                Wald chi2(54)   =   19709.71
                                                Prob > chi2     =     0.0000
Log pseudolikelihood =  -1127.607               Pseudo R2       =     0.2340

------------------------------------------------------------------------------
             |               Robust
   regchange |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
-3           |
     crisis |    2.38418     .49789     4.79   0.000     1.408333    3.360026
   log(infl) |  -52.74103   21.09629    -2.50   0.012      -94.089   -11.39306
 year*infl |   .0267472   .0105698     2.53   0.011     .0060309    .0474636
log(growth) |  -1.679085   2.075873    -0.81   0.419    -5.747722    2.389552
  rural % |   .0235116   .0146645     1.60   0.109    -.0052303    .0522536
    aid as % |   .0266916   .0190683     1.40   0.162    -.0106815    .0640647
```

```
  trade % |  -.0073263   .0056869    -1.29   0.198    -.0184725    .0038199
lag1_durable |  -.1120103    .043308    -2.59   0.010    -.1968923   -.0271283
 lag1_regime |  -.2982035   .1027727    -2.90   0.004    -.4996342   -.0967728
       _cons |  -2.795091    8.37795    -0.33   0.739    -19.21557    13.62539
-------------+----------------------------------------------------------------
-2           |
     crisis |    .571821    .387574     1.48   0.140    -.1878101    1.331452
   log(infl) |    27.7422   7.573163     3.66   0.000     12.89907    42.58532
 year*infl |  -.0137572    .003808    -3.61   0.000    -.0212208   -.0062937
log(growth) |  -.7059111   1.479707    -0.48   0.633    -3.606083    2.194261
  rural % |   .0135383   .0086881     1.56   0.119      -.00349    .0305666
    aid as % |  -.0067039   .0207362    -0.32   0.746    -.0473462    .0339383
  trade % |  -.0001772   .0050416    -0.04   0.972    -.0100585    .0097042
lag1_durable |   -.111087   .0280615    -3.96   0.000    -.1660866   -.0560874
 lag1_regime |   .0762416   .0216467     3.52   0.000     .0338148    .1186684
       _cons |  -2.744031   5.946584    -0.46   0.644    -14.39912     8.91106
-------------+----------------------------------------------------------------
-1           |
     crisis |   1.853097   .8091709     2.29   0.022     .2671511    3.439043
   log(infl) |    19.5839   13.33872     1.47   0.142    -6.559504     45.7273
 year*infl |  -.0098842   .0067271    -1.47   0.142    -.0230691    .0033007
log(growth) |   .9016831   3.716055     0.24   0.808     -6.38165    8.185017
  rural % |   .0125424   .0123683     1.01   0.311     -.011699    .0367839
    aid as % |   .0264629   .0472516     0.56   0.575    -.0661485    .1190742
  trade % |  -.0091104   .0048169    -1.89   0.059    -.0185513    .0003305
lag1_durable |  -.0803105   .0407769    -1.97   0.049    -.1602317   -.0003893
 lag1_regime |   .0509375   .0225468     2.26   0.024     .0067465    .0951285
       _cons |   -9.12548   14.96061    -0.61   0.542    -38.44773    20.19677
```

```
------------+----------------------------------------------------------------
1           |
     crisis |  -.2392476   .3798007    -0.63   0.529    -.9836434    .5051481
   log(infl) |  -39.19262   8.253944    -4.75   0.000    -55.37006   -23.01519
 year*infl |   .0198484   .0041416     4.79   0.000      .011731    .0279657
log(growth) |  -2.971927   .7856072    -3.78   0.000    -4.511689   -1.432165
  rural % |   .0058439    .007016     0.83   0.405    -.0079072    .0195949
    aid as % |  -.0021147   .0133457    -0.16   0.874    -.0282717    .0240424
  trade % |  -.0101966   .0052621    -1.94   0.053    -.0205101    .0001169
lag1_durable |  -.0236623   .0122809    -1.93   0.054    -.0477323    .0004078
 lag1_regime |  -.2681281   .0412136    -6.51   0.000    -.3489052   -.1873509
       _cons |   6.165579   3.444893     1.79   0.073     -.586287    12.91744
------------+----------------------------------------------------------------
2           |
     crisis |  -41.75123   .6286332   -66.42   0.000    -42.98333   -40.51913
   log(infl) |  -20.37954   18.57719    -1.10   0.273    -56.79016    16.03107
 year*infl |   .0100951   .0094816     1.06   0.287    -.0084886    .0286788
log(growth) |  -2.366837   2.823415    -0.84   0.402    -7.900628    3.166954
  rural % |  -.0281868    .011591    -2.43   0.015    -.0509047   -.0054689
    aid as % |  -.0542659   .0541819    -1.00   0.317    -.1604604    .0519285
  trade % |  -.0107781   .0074048    -1.46   0.146    -.0252914    .0037351
lag1_durable |  -.1155571   .0468982    -2.46   0.014    -.2074759   -.0236383
 lag1_regime |  -.0275845   .0473795    -0.58   0.560    -.1204466    .0652776
       _cons |   8.384864   11.81329     0.71   0.478    -14.76876    31.53849
------------+----------------------------------------------------------------
3           |
     crisis |   .6289157   .2507422     2.51   0.012       .13747    1.120361
   log(infl) |  -22.75489   5.005297    -4.55   0.000    -32.56509   -12.94468
```

```
 year*infl |   .0113142   .0025113     4.51   0.000     .0063922    .0162362
log(growth) |  -.0545813   .7619825    -0.07   0.943     -1.54804    1.438877
  rural % |  -.0141537   .0052664    -2.69   0.007    -.0244756   -.0038317
    aid as % |   .0309458   .0106171     2.91   0.004     .0101367    .0517549
  trade % |  -.0103753   .0039426    -2.63   0.008    -.0181027    -.002648
lag1_durable |  -.0804153   .0142321    -5.65   0.000    -.1083096    -.052521
 lag1_regime |  -.2669772   .0242235   -11.02   0.000    -.3144545      -.2195
       _cons |  -1.143328   3.095449    -0.37   0.712    -7.210297    4.923641
------------------------------------------------------------------------------
(regchange==0 is the base outcome)
```

1.c) Results of Regression 1 when cases of -3, 'state failure', are dropped.

```
Multinomial logistic regression                 Number of obs   =       3257
                                                Wald chi2(50)   =   14749.84
                                                Prob > chi2     =     0.0000
Log pseudolikelihood = -1016.9714               Pseudo R2       =     0.2098

------------------------------------------------------------------------------
             |               Robust
  regchange2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
-2           |
     crisis |   .6965787   .4023373     1.73   0.083    -.0919878    1.485145
   log(infl) |   40.35713   8.993352     4.49   0.000     22.73048    57.98378
 year*infl |  -.0201248   .0045231    -4.45   0.000    -.0289899   -.0112597
log(growth) |  -.6693575   1.467189    -0.46   0.648    -3.544995    2.206281
log (income) |  -.8325008   .2593883    -3.21   0.001    -1.340892   -.3241091
```

```
  rural % |   -.010833   .0127785    -0.85   0.397    -.0358784    .0142124
    aid as % |  -.0361977   .0265726    -1.36   0.173    -.0882791    .0158836
  trade % |   .0042159   .0048358     0.87   0.383    -.0052621     .013694
lag1_durable |  -.1070835   .0287501    -3.72   0.000    -.1634326   -.0507343
 lag1_regime |   .0886289   .0222562     3.98   0.000     .0450076    .1322502
       _cons |   4.321611   6.270676     0.69   0.491    -7.968688    16.61191
-------------+----------------------------------------------------------------
-1           |
     crisis |    1.79274   .8169245     2.19   0.028     .1915978    3.393883
   log(infl) |    7.07704   13.84732     0.51   0.609    -20.06321    34.21729
 year*infl |   -.003608   .0069803    -0.52   0.605     -.017289     .010073
log(growth) |   1.327729   3.721938     0.36   0.721    -5.967137    8.622594
log (income) |   .8247107   .3004282     2.75   0.006     .2358823    1.413539
  rural % |   .0361263   .0134665     2.68   0.007     .0097324    .0625202
    aid as % |   .0483059   .0378777     1.28   0.202    -.0259329    .1225448
  trade % |  -.0162178   .0055691    -2.91   0.004     -.027133   -.0053026
lag1_durable |  -.0950049   .0467338    -2.03   0.042    -.1866016   -.0034083
 lag1_regime |   .0345676   .0238469     1.45   0.147    -.0121715    .0813067
       _cons |  -17.59243   15.91086    -1.11   0.269    -48.77714    13.59229
-------------+----------------------------------------------------------------
1            |
     crisis |  -.2228102   .3788566    -0.59   0.556    -.9653554     .519735
   log(infl) |  -42.09082   9.584396    -4.39   0.000    -60.87589   -23.30575
 year*infl |   .0213296    .004821     4.42   0.000     .0118807    .0307785
log(growth) |  -3.371834   .8270389    -4.08   0.000      -4.9928   -1.750867
log (income) |   -.073635   .2288757    -0.32   0.748    -.5222231    .3749532
  rural % |   .0034668   .0098163     0.35   0.724    -.0157727    .0227064
    aid as % |  -.0028683   .0132366    -0.22   0.828    -.0288116     .023075
```

```
  trade % |   -.011012   .0052033    -2.12   0.034    -.0212103   -.0008136
lag1_durable |  -.0240908   .0132108    -1.82   0.068    -.0499835    .0018019
 lag1_regime |  -.2926379   .0490364    -5.97   0.000    -.3887474   -.1965283
       _cons |   8.120247   4.044002     2.01   0.045     .1941484    16.04635
-------------+----------------------------------------------------------------
2            |
     crisis |  -36.13829   .6347263   -56.94   0.000    -37.38233   -34.89425
   log(infl) |  -24.16958   21.80076    -1.11   0.268    -66.89828    18.55912
 year*infl |   .0120267   .0110952     1.08   0.278    -.0097195    .0337728
log(growth) |  -2.189181   2.833978    -0.77   0.440    -7.743676    3.365315
log (income) |   .2784914   .4246685     0.66   0.512    -.5538436    1.110826
  rural % |  -.0192005   .0188933    -1.02   0.310    -.0562306    .0178297
    aid as % |  -.0368952   .0449687    -0.82   0.412    -.1250321    .0512418
  trade % |  -.0115929   .0081816    -1.42   0.156    -.0276285    .0044426
lag1_durable |  -.1169489   .0475673    -2.46   0.014    -.2101791   -.0237187
 lag1_regime |  -.0320405   .0512845    -0.62   0.532    -.1325564    .0684754
       _cons |   4.990554   12.87462     0.39   0.698    -20.24324    30.22435
-------------+----------------------------------------------------------------
3            |
     crisis |   .6469955   .2580422     2.51   0.012      .141242    1.152749
   log(infl) |  -27.49164   6.239823    -4.41   0.000    -39.72147   -15.26181
 year*infl |   .0137048   .0031354     4.37   0.000     .0075594    .0198501
log(growth) |  -.1405342   .8168376    -0.17   0.863    -1.741506    1.460438
log (income) |    .126943   .2042337     0.62   0.534    -.2733476    .5272337
  rural % |  -.0094001   .0097479    -0.96   0.335    -.0285057    .0097055
    aid as % |   .0323939      .0111     2.92   0.004     .0106383    .0541496
  trade % |  -.0104792   .0037624    -2.79   0.005    -.0178534    -.003105
lag1_durable |  -.0841972   .0152959    -5.50   0.000    -.1141766   -.0542177
```

```
 lag1_regime |  -.2812592   .0265142   -10.61   0.000    -.3332261   -.2292923
       _cons |  -2.072292   4.052358    -0.51   0.609    -10.01477    5.870182
------------------------------------------------------------------------------
(regchange2==0 is the base outcome)
```

1.d) Results for Regression 1 for autocratic countries only.

```
Multinomial logistic regression                 Number of obs   =       1721
                                                Wald chi2(54)   =          .
                                                Prob > chi2     =          .
Log pseudolikelihood = -716.75681               Pseudo R2       =     0.2680

------------------------------------------------------------------------------
             |               Robust
   regchange |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
-3           |
     crisis |   2.413853   .7613909     3.17   0.002     .9215547    3.906152
   log(infl) |  -81.57184   36.39705    -2.24   0.025    -152.9088   -10.23493
 year*infl |   .0412905   .0182918     2.26   0.024     .0054393    .0771417
  lag2_gdppc |   5.34e-13   5.22e-12     0.10   0.919    -9.70e-12    1.08e-11
log(growth) |  -3.802174    1.85625    -2.05   0.041    -7.440356    -.163991
  rural % |   .0153946   .0175565     0.88   0.381    -.0190155    .0498048
    aid as % |  -.0000686   .0249921    -0.00   0.998    -.0490521     .048915
  trade % |  -.0208679   .0089117    -2.34   0.019    -.0383346   -.0034013
lag1_durable |  -.0294827   .0125675    -2.35   0.019    -.0541145   -.0048508
 lag1_regime |  -1.227737   .1856055    -6.61   0.000    -1.591517   -.8639569
       _cons |  -3.115308   7.676012    -0.41   0.685    -18.16001     11.9294
-------------+----------------------------------------------------------------
```

```
-2           |
     crisis |    .296785   .7381903     0.40   0.688    -1.150041    1.743611
   log(infl) |   43.87697    17.8802     2.45   0.014     8.832424    78.92151
 year*infl |  -.0217729    .008969    -2.43   0.015    -.0393519   -.0041939
  lag2_gdppc |  -1.83e-11   2.18e-11    -0.84   0.400    -6.09e-11    2.43e-11
log(growth) |  -1.707883   2.076221    -0.82   0.411      -5.7772    2.361434
  rural % |  -.0111707   .0153766    -0.73   0.468    -.0413082    .0189668
    aid as % |   .0000607   .0593525     0.00   0.999    -.1162679    .1163894
  trade % |   .0075848    .009532     0.80   0.426    -.0110975    .0262671
lag1_durable |  -.2407614   .1498254    -1.61   0.108    -.5344138    .0528911
 lag1_regime |   .1434395   .1266642     1.13   0.257    -.1048177    .3916968
       _cons |   2.401551   8.427935     0.28   0.776     -14.1169       18.92
-------------+----------------------------------------------------------------
-1           |
     crisis |   4.987846   1.857128     2.69   0.007     1.347942     8.62775
   log(infl) |   38.69712   23.40582     1.65   0.098    -7.177455    84.57169
 year*infl |  -.0193154   .0117701    -1.64   0.101    -.0423844    .0037535
  lag2_gdppc |  -9.68e-12   7.72e-12    -1.25   0.210    -2.48e-11    5.45e-12
log(growth) |   .6227737   3.381642     0.18   0.854    -6.005123    7.250671
  rural % |    .038727   .0526037     0.74   0.462    -.0643743    .1418283
    aid as % |   -.553557   .2926988    -1.89   0.059    -1.127236     .020122
  trade % |  -.0116334   .0148039    -0.79   0.432    -.0406485    .0173817
lag1_durable |  -.0707084   .0475851    -1.49   0.137    -.1639735    .0225567
 lag1_regime |   .9468593   .2171711     4.36   0.000     .5212117    1.372507
       _cons |  -7.687167    12.6234    -0.61   0.543    -32.42858    17.05424
-------------+----------------------------------------------------------------
1            |
     crisis |  -.1869335    .392093    -0.48   0.634    -.9554217    .5815547
```

```
   log(infl) |  -46.49232   9.584523    -4.85   0.000    -65.27764     -27.707
 year*infl |   .0235616   .0048049     4.90   0.000     .0141442     .032979
  lag2_gdppc |   3.13e-13   7.04e-13     0.44   0.656    -1.07e-12    1.69e-12
log(growth) |  -3.614238   .8438458    -4.28   0.000    -5.268145   -1.960331
  rural % |    .009913   .0078213     1.27   0.205    -.0054165    .0252424
    aid as % |  -.0086678   .0153085    -0.57   0.571    -.0386719    .0213364
  trade % |  -.0151846   .0050764    -2.99   0.003    -.0251342    -.005235
lag1_durable |  -.0239775   .0137567    -1.74   0.081    -.0509401     .002985
 lag1_regime |  -.3674804   .0736993    -4.99   0.000    -.5119284   -.2230324
       _cons |   7.613108   3.756729     2.03   0.043     .2500538    14.97616
-------------+----------------------------------------------------------------
2            |
     crisis |  -28.18656   1.446224   -19.49   0.000    -31.02111   -25.35201
   log(infl) |  -86.11742   27.65609    -3.11   0.002    -140.3224   -31.91249
 year*infl |   .0436954   .0142962     3.06   0.002     .0156755    .0717154
  lag2_gdppc |  -8.28e-12   1.06e-11    -0.78   0.435    -2.91e-11    1.25e-11
log(growth) |   3.674244   8.604812     0.43   0.669    -13.19088    20.53937
  rural % |  -.0737992   .0281564    -2.62   0.009    -.1289848   -.0186137
    aid as % |  -.0315444   .0952968    -0.33   0.741    -.2183227    .1552339
  trade % |  -.0498375   .0218591    -2.28   0.023    -.0926805   -.0069944
lag1_durable |  -.2566827   .1786503    -1.44   0.151    -.6068309    .0934655
 lag1_regime |   .2622395     .42504     0.62   0.537    -.5708236    1.095303
       _cons |  -13.90094   34.75457    -0.40   0.689    -82.01865    54.21677
-------------+----------------------------------------------------------------
3            |
     crisis |   .7166542   .2526333     2.84   0.005     .2215021    1.211806
   log(infl) |  -21.79096   5.625016    -3.87   0.000    -32.81579   -10.76613
 year*infl |   .0108641    .002822     3.85   0.000     .0053331     .016395
```

```
  lag2_gdppc |   1.61e-12   7.41e-13     2.17   0.030     1.53e-13    3.06e-12
log(growth) |  -.0558419   .7739045    -0.07   0.942    -1.572667    1.460983
  rural % |  -.0097066   .0054683    -1.78   0.076    -.0204243    .0010111
    aid as % |   .0347611    .011118     3.13   0.002     .0129701     .056552
  trade % |  -.0076024   .0040153    -1.89   0.058    -.0154723    .0002675
lag1_durable |    -.08422    .015151    -5.56   0.000    -.1139153   -.0545246
 lag1_regime |  -.2630159   .0495313    -5.31   0.000    -.3600955   -.1659363
       _cons |  -1.841127   3.059115    -0.60   0.547    -7.836882    4.154627
------------------------------------------------------------------------------
(regchange==0 is the base outcome)
```

1.e) Results for Regression 1 for democratic countries only.

```
Multinomial logistic regression                 Number of obs   =       1569
                                                Wald chi2(51)   =          .
                                                Prob > chi2     =          .
Log pseudolikelihood = -289.57005               Pseudo R2       =     0.2719

------------------------------------------------------------------------------
             |               Robust
   regchange |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
-3           |
     crisis |   4.510449   .8554471     5.27   0.000     2.833804    6.187095
   log(infl) |   31.23805   38.48458     0.81   0.417    -44.19033    106.6664
 year*infl |  -.0153991   .0191748    -0.80   0.422     -.052981    .0221828
  lag2_gdppc |  -3.58e-10   3.51e-10    -1.02   0.308    -1.05e-09    3.30e-10
log(growth) |   15.08161   6.326778     2.38   0.017     2.681357    27.48187
  rural % |   .0212302   .0308593     0.69   0.491    -.0392529    .0817133
```

```
    aid as % |   .0067447   .0418636     0.16   0.872    -.0753065    .0887958
  trade % |  -.0460309   .0316231    -1.46   0.146    -.1080111    .0159493
lag1_durable |   .0051975    .073001     0.07   0.943    -.1378818    .1482769
 lag1_regime |  -.2834248   .1664858    -1.70   0.089     -.609731    .0428815
       _cons |  -63.94163   24.52829    -2.61   0.009    -112.0162   -15.86706
-------------+----------------------------------------------------------------
-2           |
     crisis |   1.187397   .4778479     2.48   0.013     .2508318    2.123961
   log(infl) |   23.54952    8.49412     2.77   0.006      6.90135    40.19769
 year*infl |  -.0116393   .0042696    -2.73   0.006    -.0200076    -.003271
  lag2_gdppc |  -3.00e-12   1.92e-12    -1.56   0.119    -6.76e-12    7.66e-13
log(growth) |   2.142988   1.958025     1.09   0.274     -1.69467    5.980646
  rural % |   .0167673   .0100556     1.67   0.095    -.0029414     .036476
    aid as % |   -.012195    .025001    -0.49   0.626    -.0611962    .0368061
  trade % |  -.0116637   .0082002    -1.42   0.155    -.0277357    .0044084
lag1_durable |  -.0525688   .0201645    -2.61   0.009    -.0920904   -.0130472
 lag1_regime |  -.1527811   .0704387    -2.17   0.030    -.2908384   -.0147237
       _cons |  -12.35523   8.299469    -1.49   0.137    -28.62189    3.911433
-------------+----------------------------------------------------------------
-1           |
     crisis |   .6071864   1.680894     0.36   0.718    -2.687305    3.901678
   log(infl) |   11.30167   20.04004     0.56   0.573    -27.97609    50.57944
 year*infl |  -.0056047   .0100878    -0.56   0.578    -.0253765    .0141671
  lag2_gdppc |  -4.31e-12   7.57e-12    -0.57   0.569    -1.91e-11    1.05e-11
log(growth) |  -.6119097   7.950152    -0.08   0.939    -16.19392     14.9701
  rural % |  -.0057465   .0166156    -0.35   0.729    -.0383125    .0268195
    aid as % |   .0445355   .0373733     1.19   0.233    -.0287149    .1177859
  trade % |  -.0151448   .0114489    -1.32   0.186    -.0375843    .0072947
```

```
lag1_durable |   .0117303    .022793     0.51   0.607    -.0329432    .0564039
 lag1_regime |  -.4208909   .1892646    -2.22   0.026    -.7918427   -.0499391
       _cons |  -.2696545   32.84483    -0.01   0.993    -64.64433    64.10502
-------------+----------------------------------------------------------------
1            |
     crisis |  -51.38787          .        .       .            .           .
   log(infl) |   52.59934   60.38472     0.87   0.384    -65.75254    170.9512
 year*infl |    -.02541    .030037    -0.85   0.398    -.0842813    .0334614
  lag2_gdppc |   1.49e-11   1.09e-11     1.38   0.169    -6.36e-12    3.63e-11
log(growth) |   5.482368   8.556397     0.64   0.522    -11.28786     22.2526
  rural % |   -.032564   .0175302    -1.86   0.063    -.0669226    .0017947
    aid as % |   .1283322   .0811452     1.58   0.114    -.0307094    .2873738
  trade % |   .0283167   .0201524     1.41   0.160    -.0111812    .0678147
lag1_durable |   .0576208   .1268739     0.45   0.650    -.1910475    .3062892
 lag1_regime |  -2.617941   1.260041    -2.08   0.038    -5.087577   -.1483054
       _cons |  -29.74381   38.70764    -0.77   0.442    -105.6094    46.12177
-------------+----------------------------------------------------------------
2            |
     crisis |  -45.34177          .        .       .            .           .
   log(infl) |    7.05216   20.53624     0.34   0.731    -33.19813    47.30245
 year*infl |  -.0042312    .010956    -0.39   0.699    -.0257046    .0172423
  lag2_gdppc |  -3.34e-11   2.23e-11    -1.50   0.134    -7.70e-11    1.03e-11
log(growth) |  -7.663994   5.837983    -1.31   0.189    -19.10623    3.778242
  rural % |  -.0816507   .0368115    -2.22   0.027    -.1537999   -.0095015
    aid as % |  -.1592608   .1616069    -0.99   0.324    -.4760045    .1574828
  trade % |  -.0001599   .0099846    -0.02   0.987    -.0197294    .0194097
lag1_durable |  -.0214865   .0563182    -0.38   0.703    -.1318681    .0888951
 lag1_regime |  -.5966595   .2174972    -2.74   0.006    -1.022946   -.1703729
```

```
       _cons |   39.15679   28.45399     1.38   0.169      -16.612    94.92558
-------------+----------------------------------------------------------------
3            |
     crisis |  -45.34959          .        .       .            .           .
   log(infl) |  -117.0985   62.90301    -1.86   0.063    -240.3861    6.189175
 year*infl |   .0576596   .0319597     1.80   0.071    -.0049803    .1202996
  lag2_gdppc |   1.30e-11   7.84e-12     1.65   0.098    -2.41e-12    2.83e-11
log(growth) |  -14.83006   6.102535    -2.43   0.015    -26.79081   -2.869317
  rural % |  -.0432566   .0534748    -0.81   0.419    -.1480652     .061552
    aid as % |   .0488679   .0265845     1.84   0.066    -.0032368    .1009727
  trade % |  -.0145784   .0474061    -0.31   0.758    -.1074925    .0783358
lag1_durable |  -.9816445   .6402235    -1.53   0.125     -2.23646    .2731704
 lag1_regime |  -1.248845   .2533649    -4.93   0.000    -1.745431   -.7522587
       _cons |    68.5994   28.36007     2.42   0.016     13.01468    124.1841
------------------------------------------------------------------------------
(regchange==0 is the base outcome)
```

Regression 2: Results for each regression when each shock *i* is added separately

2.a) Terms of trade shock

```
Multinomial logistic regression                 Number of obs   =       1952
                                                Wald chi2(40)   =   13634.16
                                                Prob > chi2     =     0.0000
Log pseudolikelihood = -605.09051               Pseudo R2       =     0.1940

------------------------------------------------------------------------------
             |               Robust
  regchange2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
```

```
-2           |
     crisis |   1.020503   .5642719     1.81   0.071    -.0854492    2.126456
log(growth) |   -.516077   1.477446    -0.35   0.727    -3.411818    2.379664
lag1_durable |  -.0453777   .0199397    -2.28   0.023    -.0844588   -.0062967
  rural % |   .0339766   .0124733     2.72   0.006     .0095294    .0584237
  trade % |  -.0022805   .0073699    -0.31   0.757    -.0167253    .0121643
 lag1_regime |   .0824183   .0402453     2.05   0.041      .003539    .1612976
    aid as % |  -.0272792   .0310945    -0.88   0.380    -.0882233    .0336649
trms of trade |  -.4982869   1.085191    -0.46   0.646    -2.625223    1.628649
       _cons |  -3.938521    5.95065    -0.66   0.508    -15.60158    7.724539
-------------+----------------------------------------------------------------
-1           |
     crisis |   1.373064   .8693908     1.58   0.114    -.3309105    3.077039
log(growth) |  -.2051979   1.738613    -0.12   0.906    -3.612816     3.20242
lag1_durable |  -.0440722   .0426109    -1.03   0.301     -.127588    .0394436
  rural % |   .0121228   .0242013     0.50   0.616    -.0353108    .0595564
  trade % |   -.015487    .008228    -1.88   0.060    -.0316137    .0006396
 lag1_regime |   .0643583   .0585431     1.10   0.272     -.050384    .1791007
    aid as % |   .0297496   .0622887     0.48   0.633    -.0923339    .1518332
trms of trade |  -35.36515   .9516281   -37.16   0.000    -37.23031       -33.5
       _cons |  -4.894352   6.744559    -0.73   0.468    -18.11345    8.324742
-------------+----------------------------------------------------------------
1            |
     crisis |   .0454927   .4203374     0.11   0.914    -.7783535    .8693389
log(growth) |  -1.090352   .8393776    -1.30   0.194    -2.735502    .5547977
lag1_durable |   -.037691   .0172458    -2.19   0.029    -.0714922   -.0038898
  rural % |  -.0029255   .0085648    -0.34   0.733    -.0197122    .0138611
  trade % |  -.0032187   .0052849    -0.61   0.542    -.0135768    .0071394
```

```
 lag1_regime |  -.2674284   .0473961    -5.64   0.000     -.360323   -.1745339
    aid as % |    -.00435   .0148459    -0.29   0.770    -.0334474    .0247474
trms of trade |  -1.244478    1.09301    -1.14   0.255    -3.386739    .8977828
       _cons |   .4728561   3.294168     0.14   0.886    -5.983594    6.929306
-------------+----------------------------------------------------------------
2            |
     crisis |  -34.70869   .4855667   -71.48   0.000    -35.66039     -33.757
log(growth) |  -2.084996   1.824729    -1.14   0.253    -5.661398    1.491407
lag1_durable |  -.1000929   .0462545    -2.16   0.030    -.1907501   -.0094357
  rural % |  -.0159097   .0148165    -1.07   0.283    -.0449495      .01313
  trade % |  -.0075828   .0065866    -1.15   0.250    -.0204922    .0053266
 lag1_regime |  -.1227875   .0602059    -2.04   0.041     -.240789   -.0047861
    aid as % |  -.1620264   .1425915    -1.14   0.256    -.4415007    .1174478
trms of trade |  -.7158232   .3133761    -2.28   0.022    -1.330029   -.1016173
       _cons |   5.768364   7.607632     0.76   0.448    -9.142321    20.67905
-------------+----------------------------------------------------------------
3            |
     crisis |   .5117577   .3052195     1.68   0.094    -.0864615    1.109977
log(growth) |   .5077029   .7619946     0.67   0.505     -.985779    2.001185
lag1_durable |  -.0885631    .017542    -5.05   0.000    -.1229449   -.0541814
  rural % |  -.0190768   .0075066    -2.54   0.011    -.0337894   -.0043641
  trade % |  -.0095141   .0045608    -2.09   0.037    -.0184532    -.000575
 lag1_regime |   -.246677   .0285694    -8.63   0.000     -.302672    -.190682
    aid as % |   .0210538   .0107063     1.97   0.049     .0000699    .0420377
trms of trade |   .3570256   .4325126     0.83   0.409    -.4906837    1.204735
       _cons |  -3.472616   3.024506    -1.15   0.251     -9.40054    2.455308
------------------------------------------------------------------------------
(regchange2==0 is the base outcome)
```

2.b) Interest rate hike

```
Multinomial logistic regression                 Number of obs   =       3979
                                                Wald chi2(40)   =   15038.42
                                                Prob > chi2     =     0.0000
Log pseudolikelihood = -1345.3597               Pseudo R2       =     0.1436

------------------------------------------------------------------------------
             |               Robust
  regchange2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
-2           |
     crisis |   .5811429   .3289147     1.77   0.077     -.063518    1.225804
log(growth) |  -.2014567   .7498204    -0.27   0.788    -1.671078    1.268164
lag1_durable |  -.1208507   .0259775    -4.65   0.000    -.1717656   -.0699358
  rural % |   .0252485   .0072744     3.47   0.001     .0109909     .039506
  trade % |  -.0068745    .004893    -1.40   0.160    -.0164646    .0027156
 lag1_regime |   .0775764   .0192385     4.03   0.000     .0398696    .1152833
    aid as % |  -.0606903   .0240887    -2.52   0.012    -.1079033   -.0134774
interest hike |   .0650329   .5694635     0.11   0.909    -1.051095    1.181161
       _cons |  -3.029997   2.929316    -1.03   0.301     -8.77135    2.711356
-------------+----------------------------------------------------------------
-1           |
     crisis |   .9364492   .8312302     1.13   0.260    -.6927321     2.56563
log(growth) |   1.219391   2.927678     0.42   0.677    -4.518752    6.957535
lag1_durable |  -.0936851   .0436087    -2.15   0.032    -.1791565   -.0082136
  rural % |   .0283906   .0146403     1.94   0.052    -.0003039     .057085
  trade % |  -.0157936    .004689    -3.37   0.001    -.0249839   -.0066032
```

```
 lag1_regime |   .0560874   .0210363     2.67   0.008     .0148571    .0973177
    aid as % |  -.0121396   .0628704    -0.19   0.847    -.1353633    .1110842
interest hike |   1.437972   .8273496     1.74   0.082    -.1836034    3.059547
       _cons |  -10.75043   11.97111    -0.90   0.369    -34.21337    12.71251
-------------+----------------------------------------------------------------
1            |
     crisis |  -.3228802    .423259    -0.76   0.446    -1.152453    .5066922
log(growth) |   -1.75573   .7048949    -2.49   0.013    -3.137299   -.3741618
lag1_durable |  -.0230409    .014923    -1.54   0.123    -.0522894    .0062075
  rural % |   .0006187   .0058595     0.11   0.916    -.0108657     .012103
  trade % |  -.0030262   .0049772    -0.61   0.543    -.0127814     .006729
 lag1_regime |  -.2036764   .0341028    -5.97   0.000    -.2705167    -.136836
    aid as % |  -.0000414   .0105634    -0.00   0.997    -.0207454    .0206626
interest hike |    .379504   .6162119     0.62   0.538    -.8282491    1.587257
       _cons |   2.419083   2.738516     0.88   0.377     -2.94831    7.786475
-------------+----------------------------------------------------------------
2            |
     crisis |  -37.12329    1.03445   -35.89   0.000    -39.15078   -35.09581
log(growth) |   -1.39535   2.378756    -0.59   0.557    -6.057625    3.266926
lag1_durable |  -.1058904   .0455163    -2.33   0.020    -.1951008     -.01668
  rural % |  -.0283987   .0071899    -3.95   0.000    -.0424907   -.0143068
  trade % |  -.0054554   .0053539    -1.02   0.308    -.0159489     .005038
 lag1_regime |   .0065428   .0316616     0.21   0.836    -.0555127    .0685984
    aid as % |  -.0525704   .0471882    -1.11   0.265    -.1450576    .0399167
interest hike |  -.1799144   .5466869    -0.33   0.742    -1.251401    .8915723
       _cons |   2.913343   9.417979     0.31   0.757    -15.54556    21.37224
-------------+----------------------------------------------------------------
3            |
```

```
     crisis |   .6457795   .2331823     2.77   0.006     .1887505    1.102809
log(growth) |  -.3041311   .6075132    -0.50   0.617    -1.494835    .8865729
lag1_durable |  -.0732757   .0164303    -4.46   0.000    -.1054784   -.0410729
  rural % |  -.0147141   .0038543    -3.82   0.000    -.0222684   -.0071598
  trade % |  -.0076788    .002863    -2.68   0.007    -.0132902   -.0020674
 lag1_regime |  -.1801136   .0183861    -9.80   0.000    -.2161497   -.1440774
    aid as % |   .0302286   .0060385     5.01   0.000     .0183933    .0420639
interest hike |  -.2362234   .3870067    -0.61   0.542    -.9947425    .5222957
       _cons |   -.994923   2.436192    -0.41   0.683    -5.769772    3.779926
------------------------------------------------------------------------------
(regchange2==0 is the base outcome)
```

2.c) Debt crisis

```
Multinomial logistic regression                 Number of obs   =       2526
                                                Wald chi2(40)   =   21021.07
                                                Prob > chi2     =     0.0000
Log pseudolikelihood = -785.68879               Pseudo R2       =     0.1978

------------------------------------------------------------------------------
             |               Robust
  regchange2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
-2           |
     crisis |   .9570284   .4585952     2.09   0.037     .0581984    1.855858
log(growth) |  -.9795173     1.0552    -0.93   0.353    -3.047672    1.088638
lag1_durable |   -.072905    .025447    -2.86   0.004    -.1227802   -.0230299
  rural % |   .0368246   .0120431     3.06   0.002     .0132205    .0604286
  trade % |   .0062629   .0043697     1.43   0.152    -.0023016    .0148274
```

```
 lag1_regime |   .0889563   .0328767     2.71   0.007     .0245193    .1533934
    aid as % |  -.0333817   .0257383    -1.30   0.195    -.0838278    .0170643
debt crisis |   1.503981   .8142907     1.85   0.065    -.0919993    3.099962
       _cons |  -2.561466   4.154271    -0.62   0.538    -10.70369    5.580756
-------------+----------------------------------------------------------------
-1           |
     crisis |   2.366733    1.32244     1.79   0.074     -.225202    4.958669
log(growth) |   5.410264   7.345857     0.74   0.461    -8.987352    19.80788
lag1_durable |  -.0728026   .0367264    -1.98   0.047     -.144785   -.0008203
  rural % |   .0513009    .019295     2.66   0.008     .0134833    .0891184
  trade % |  -.0112678   .0061061    -1.85   0.065    -.0232356    .0006999
 lag1_regime |   .0347928   .0367715     0.95   0.344    -.0372781    .1068637
    aid as % |  -.2764302   .1009166    -2.74   0.006    -.4742231   -.0786373
debt crisis |  -40.71163   .8022441   -50.75   0.000      -42.284   -39.13926
       _cons |  -28.26671   29.86879    -0.95   0.344    -86.80848    30.27505
-------------+----------------------------------------------------------------
1            |
     crisis |   -.117142   .3710085    -0.32   0.752    -.8443052    .6100213
log(growth) |  -1.807797   .9191626    -1.97   0.049    -3.609322   -.0062714
lag1_durable |   -.042072    .020142    -2.09   0.037    -.0815495   -.0025944
  rural % |  -.0028294   .0069283    -0.41   0.683    -.0164086    .0107498
  trade % |  -.0055361   .0047378    -1.17   0.243     -.014822    .0037498
 lag1_regime |   -.288946   .0533519    -5.42   0.000    -.3935138   -.1843783
    aid as % |  -.0133259   .0134797    -0.99   0.323    -.0397457    .0130939
debt crisis |   -40.6284   .6118241   -66.41   0.000    -41.82755   -39.42925
       _cons |   3.180544   3.659321     0.87   0.385    -3.991593    10.35268
-------------+----------------------------------------------------------------
2            |
```

```
     crisis |  -30.21399   .7684788   -39.32   0.000    -31.72018    -28.7078
log(growth) |  -1.255836   3.638472    -0.35   0.730    -8.387111    5.875439
lag1_durable |  -.0946726   .0500785    -1.89   0.059    -.1928246    .0034795
  rural % |  -.0140313   .0107774    -1.30   0.193    -.0351545     .007092
  trade % |  -.0027223   .0064372    -0.42   0.672    -.0153389    .0098943
 lag1_regime |  -.0025627    .029347    -0.09   0.930    -.0600817    .0549563
    aid as % |  -.0496893   .0421757    -1.18   0.239    -.1323522    .0329736
debt crisis |  -9.790108   .3473821   -28.18   0.000    -10.47096   -9.109252
       _cons |   1.520269   14.43033     0.11   0.916    -26.76265    29.80319
-------------+----------------------------------------------------------------
3            |
     crisis |   .7439755   .2606956     2.85   0.004     .2330215    1.254929
log(growth) |   -.194626   .8464985    -0.23   0.818    -1.853732    1.464481
lag1_durable |  -.0740053   .0154997    -4.77   0.000    -.1043841   -.0436265
  rural % |  -.0174106   .0056781    -3.07   0.002    -.0285395   -.0062817
  trade % |  -.0103183   .0035754    -2.89   0.004     -.017326   -.0033106
 lag1_regime |  -.2499711   .0250511    -9.98   0.000    -.2990704   -.2008718
    aid as % |   .0217128   .0083741     2.59   0.010     .0052999    .0381257
debt crisis |   .2424258   .7516814     0.32   0.747    -1.230843    1.715694
       _cons |  -1.172072   3.392542    -0.35   0.730    -7.821332    5.477188
------------------------------------------------------------------------------
(regchange2==0 is the base outcome)
```

2.d) Currency crisis

```
Multinomial logistic regression                 Number of obs   =       3900
                                                Wald chi2(40)   =   10904.93
                                                Prob > chi2     =     0.0000
```

Log pseudolikelihood = -1299.2153 Pseudo R2 = 0.1515

	Robust				
regchange2	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]
-2					
crisis	.5759442	.3491712	1.65	0.099	-.1084188 1.260307
log(growth)	-.8501638	1.458522	-0.58	0.560	-3.708815 2.008487
lag1_durable	-.1193201	.0255603	-4.67	0.000	-.1694175 -.0692228
rural %	.0254235	.0072729	3.50	0.000	.0111689 .0396782
trade %	-.0088438	.0051541	-1.72	0.086	-.0189456 .001258
lag1_regime	.0800572	.0192274	4.16	0.000	.0423722 .1177422
aid as %	-.0601103	.0242385	-2.48	0.013	-.1076168 -.0126037
currency cr.	-.1189497	.6611077	-0.18	0.857	-1.414697 1.176798
_cons	-.3753745	5.703143	-0.07	0.948	-11.55333 10.80258
-1					
crisis	1.382331	.7424228	1.86	0.063	-.0727914 2.837453
log(growth)	1.059524	3.325536	0.32	0.750	-5.458406 7.577454
lag1_durable	-.0921723	.0418729	-2.20	0.028	-.1742417 -.0101029
rural %	.0281718	.0135904	2.07	0.038	.0015351 .0548084
trade %	-.0155467	.0047771	-3.25	0.001	-.0249097 -.0061837
lag1_regime	.0542172	.0211749	2.56	0.010	.0127151 .0957193
aid as %	-.010839	.0597184	-0.18	0.856	-.1278849 .106207
currency cr.	.3392555	1.115572	0.30	0.761	-1.847226 2.525737
_cons	-10.11722	13.55757	-0.75	0.456	-36.68957 16.45513

```
1            |
     crisis |  -.1433218   .3721702    -0.39   0.700    -.8727619    .5861183
log(growth) |  -1.910248   .8626034    -2.21   0.027     -3.60092   -.2195762
lag1_durable |  -.0236704     .01522    -1.56   0.120    -.0535011    .0061602
  rural % |   .0006278   .0057801     0.11   0.914    -.0107011    .0119566
  trade % |  -.0025402   .0049618    -0.51   0.609    -.0122653    .0071848
 lag1_regime |  -.2016499   .0344007    -5.86   0.000    -.2690741   -.1342258
    aid as % |  -.0025119    .011469    -0.22   0.827    -.0249906    .0199669
currency cr. |  -.4301364   1.034186    -0.42   0.677    -2.457104    1.596831
       _cons |   3.053158   3.380939     0.90   0.366     -3.57336    9.679677
-------------+----------------------------------------------------------------
2            |
     crisis |  -30.76474   .5125006   -60.03   0.000    -31.76922   -29.76025
log(growth) |  -1.462824   2.390253    -0.61   0.541    -6.147633    3.221985
lag1_durable |  -.1072706   .0458456    -2.34   0.019    -.1971265   -.0174148
  rural % |  -.0284403   .0071723    -3.97   0.000    -.0424977   -.0143829
  trade % |  -.0050806   .0053779    -0.94   0.345    -.0156211    .0054599
 lag1_regime |   .0066854   .0314696     0.21   0.832    -.0549938    .0683646
    aid as % |  -.0531993   .0474988    -1.12   0.263    -.1462952    .0398967
currency cr. |  -.6634087   .2151447    -3.08   0.002    -1.085084   -.2417328
       _cons |   3.187259   9.461732     0.34   0.736     -15.3574    21.73191
-------------+----------------------------------------------------------------
3            |
     crisis |    .607835   .2361744     2.57   0.010     .1449416    1.070728
log(growth) |  -.2092922   .7000618    -0.30   0.765    -1.581388    1.162804
lag1_durable |  -.0883345   .0167588    -5.27   0.000    -.1211811   -.0554879
  rural % |   -.014664   .0040557    -3.62   0.000     -.022613   -.0067149
  trade % |  -.0075649   .0030527    -2.48   0.013    -.0135481   -.0015817
```

```
 lag1_regime |   -.189715   .0198903    -9.54   0.000    -.2286992   -.1507307
    aid as % |   .0311145   .0062747     4.96   0.000     .0188163    .0434128
currency cr. |  -.1143221   .5255428    -0.22   0.828    -1.144367    .9157229
       _cons |  -1.380601   2.808309    -0.49   0.623    -6.884786    4.123585
------------------------------------------------------------------------------
(regchange2==0 is the base outcome)
```

2.e) Sudden stop in capital flows

```
Multinomial logistic regression                 Number of obs   =       2667
                                                Wald chi2(40)   =   13091.18
                                                Prob > chi2     =     0.0000
Log pseudolikelihood = -768.44774               Pseudo R2       =     0.2019

------------------------------------------------------------------------------
             |               Robust
  regchange2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
-2           |
     crisis |    1.41315   .4604741     3.07   0.002     .5106369    2.315662
log(growth) |  -1.765496   1.231119    -1.43   0.152    -4.178444    .6474527
lag1_durable |  -.0828372   .0309551    -2.68   0.007    -.1435081   -.0221663
  rural % |   .0287431    .011688     2.46   0.014     .0058351    .0516511
  trade % |   .0042893   .0062512     0.69   0.493    -.0079629    .0165414
 lag1_regime |   .0902972   .0370495     2.44   0.015     .0176815    .1629128
    aid as % |  -.0125709   .0223127    -0.56   0.573    -.0563029    .0311612
sudden stop |  -.9098499   1.139836    -0.80   0.425    -3.143887    1.324187
       _cons |   .7398817   4.826064     0.15   0.878    -8.719031    10.19879
-------------+----------------------------------------------------------------
```

```
-1           |
     crisis |   2.165648   1.565468     1.38   0.167    -.9026133    5.233909
log(growth) |   4.061026   9.370315     0.43   0.665    -14.30445    22.42651
lag1_durable |  -.0804142   .0457887    -1.76   0.079    -.1701584    .0093299
  rural % |   .0387472   .0191825     2.02   0.043     .0011501    .0763442
  trade % |  -.0136429    .006874    -1.98   0.047    -.0271157   -.0001701
 lag1_regime |   .0375923   .0408455     0.92   0.357    -.0424634     .117648
    aid as % |  -.2037319   .0911259    -2.24   0.025    -.3823353   -.0251284
sudden stop |  -30.78639   .7046186   -43.69   0.000    -32.16741   -29.40536
       _cons |  -22.36821   38.07956    -0.59   0.557    -97.00278    52.26636
-------------+----------------------------------------------------------------
1            |
     crisis |  -.1459475   .4132913    -0.35   0.724    -.9559835    .6640885
log(growth) |  -1.868908   .9629925    -1.94   0.052    -3.756339    .0185225
lag1_durable |  -.0554785    .018139    -3.06   0.002    -.0910303   -.0199267
  rural % |   .0008591   .0067268     0.13   0.898    -.0123253    .0140434
  trade % |  -.0047533   .0048949    -0.97   0.332    -.0143471    .0048405
 lag1_regime |  -.2814393   .0501027    -5.62   0.000    -.3796387   -.1832399
    aid as % |  -.0146593   .0143762    -1.02   0.308    -.0428361    .0135174
sudden stop |  -.0839518   .7667398    -0.11   0.913    -1.586734    1.418831
       _cons |   3.289763   3.820672     0.86   0.389    -4.198618    10.77814
-------------+----------------------------------------------------------------
2            |
     crisis |  -30.33948   .5165062   -58.74   0.000    -31.35181   -29.32715
log(growth) |  -2.085012   2.574628    -0.81   0.418    -7.131191    2.961166
lag1_durable |  -.1167033   .0556761    -2.10   0.036    -.2258265   -.0075801
  rural % |  -.0154606    .010032    -1.54   0.123     -.035123    .0042018
  trade % |  -.0050554   .0063286    -0.80   0.424    -.0174592    .0073485
```

```
 lag1_regime |  -.0424935   .0412998    -1.03   0.304    -.1234395    .0384525
    aid as % |  -.0606697   .0488545    -1.24   0.214    -.1564227    .0350832
sudden stop |  -.3564953   .2338984    -1.52   0.127    -.8149278    .1019371
       _cons |   5.323642   10.25586     0.52   0.604    -14.77747    25.42475
-------------+----------------------------------------------------------------
3            |
     crisis |   .6176782   .2807502     2.20   0.028     .0674179    1.167938
log(growth) |   -.350662   .8663414    -0.40   0.686     -2.04866    1.347336
lag1_durable |  -.0742813   .0154914    -4.80   0.000    -.1046439   -.0439188
  rural % |   -.016149   .0055096    -2.93   0.003    -.0269476   -.0053504
  trade % |  -.0110625   .0036362    -3.04   0.002    -.0181893   -.0039357
 lag1_regime |  -.2322824   .0230994   -10.06   0.000    -.2775564   -.1870084
    aid as % |    .017762   .0091117     1.95   0.051    -.0000967    .0356206
sudden stop |    .654614   .4037598     1.62   0.105    -.1367406    1.445969
       _cons |  -.4249271   3.456723    -0.12   0.902     -7.19998    6.350126
------------------------------------------------------------------------------
(regchange2==0 is the base outcome)
```

2.f) Oil crisis

```
Multinomial logistic regression                 Number of obs   =       3979
                                                Wald chi2(40)   =   48784.08
                                                Prob > chi2     =     0.0000
Log pseudolikelihood = -1345.6765               Pseudo R2       =     0.1434

------------------------------------------------------------------------------
             |               Robust
  regchange2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
```

```
-2           |
     crisis |    .632697   .3129739     2.02   0.043     .0192796    1.246115
log(growth) |  -.1725935   .7520542    -0.23   0.818    -1.646593    1.301406
lag1_durable |  -.1204463   .0258859    -4.65   0.000    -.1711817    -.069711
  rural % |   .0252804   .0072705     3.48   0.001     .0110304    .0395304
  trade % |  -.0068756   .0049149    -1.40   0.162    -.0165085    .0027574
 lag1_regime |   .0774422   .0191945     4.03   0.000     .0398217    .1150626
    aid as % |  -.0604059   .0240095    -2.52   0.012    -.1074637   -.0133481
int.oil crisis |  -.5658516   1.070725    -0.53   0.597    -2.664433     1.53273
       _cons |  -3.149924    2.93921    -1.07   0.284    -8.910669    2.610821
-------------+----------------------------------------------------------------
-1           |
     crisis |   1.347057   .7536263     1.79   0.074     -.130024    2.824137
log(growth) |   1.350204   2.857054     0.47   0.637     -4.24952    6.949928
lag1_durable |  -.0907799   .0415206    -2.19   0.029    -.1721588    -.009401
  rural % |   .0279996   .0138885     2.02   0.044     .0007787    .0552206
  trade % |  -.0162572   .0047451    -3.43   0.001    -.0255574    -.006957
 lag1_regime |   .0550084     .02107     2.61   0.009      .013712    .0963048
    aid as % |  -.0106915   .0596108    -0.18   0.858    -.1275265    .1061435
int.oil crisis |   .7067389   1.104927     0.64   0.522    -1.458879    2.872357
       _cons |  -11.24664   11.65908    -0.96   0.335    -34.09802    11.60473
-------------+----------------------------------------------------------------
1            |
     crisis |  -.1180026   .3624736    -0.33   0.745    -.8284378    .5924325
log(growth) |  -1.742657   .6983493    -2.50   0.013    -3.111396   -.3739172
lag1_durable |  -.0228595   .0147116    -1.55   0.120    -.0516937    .0059747
  rural % |   .0006109   .0058311     0.10   0.917    -.0108178    .0120396
  trade % |   -.002928   .0049458    -0.59   0.554    -.0126217    .0067656
```

```
 lag1_regime |  -.2045172   .0341833    -5.98   0.000    -.2715153   -.1375191
    aid as % |   .0003472   .0105382     0.03   0.974    -.0203073    .0210017
int. oil crisis |  -39.03078   .3482239  -112.09   0.000    -39.71328   -38.34827
       _cons |   2.351794   2.707323     0.87   0.385    -2.954462    7.658051
-------------+----------------------------------------------------------------
2            |
     crisis |  -39.09695   .9789338   -39.94   0.000    -41.01563   -37.17828
log(growth) |  -1.393934   2.378856    -0.59   0.558    -6.056405    3.268538
lag1_durable |  -.1058796   .0455138    -2.33   0.020     -.195085   -.0166742
  rural % |  -.0284004   .0071897    -3.95   0.000    -.0424919   -.0143089
  trade % |  -.0054567   .0053543    -1.02   0.308    -.0159509    .0050374
 lag1_regime |   .0065427   .0316603     0.21   0.836    -.0555102    .0685957
    aid as % |   -.052553   .0471841    -1.11   0.265    -.1450322    .0399262
int. oil crisis |   .2073615   .5410959     0.38   0.702     -.853167     1.26789
       _cons |   2.907672   9.418334     0.31   0.758    -15.55192    21.36727
-------------+----------------------------------------------------------------
3            |
     crisis |   .5857041   .2248875     2.60   0.009     .1449328    1.026475
log(growth) |  -.3043651   .6089434    -0.50   0.617    -1.497872     .889142
lag1_durable |  -.0734999   .0165325    -4.45   0.000     -.105903   -.0410968
  rural % |  -.0146876    .003856    -3.81   0.000    -.0222452   -.0071299
  trade % |  -.0077358   .0028695    -2.70   0.007      -.01336   -.0021117
 lag1_regime |  -.1794345   .0183536    -9.78   0.000    -.2154068   -.1434622
    aid as % |   .0301828   .0060383     5.00   0.000     .0183479    .0420176
int. oil crisis |   .0979986   .5338139     0.18   0.854    -.9482574    1.144254
       _cons |  -.9866229   2.443199    -0.40   0.686    -5.775204    3.801959
------------------------------------------------------------------------------
(regchange2==0 is the base outcome)
```