

Elections and the exchange rate



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Student: Joost Huijbregts (930209379060)
Supervisor: dr. JG Klomp

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Joost Huijbregts

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Abstract

Incumbents manipulate economic policy during electoral periods. Until recently, it was widely believed that policy makers maintain an appreciated exchange rate which depreciates immediately after elections have taken place. Opposing evidence from East-Asian countries shows this cycle not always lasts and more research is required to understand the wider economic implications of electoral exchange rate cycles. This thesis examines the distributional effects of exchange rates by examining the trade position of a country. Moreover, it also takes the ability of policy makers to manipulate monetary policy into account. This is done by examining the level of Central Bank Independence, which means that monetary policy is delegated to an institute that is able to withstand political pressures to engage in political business cycles.

This thesis uses a fixed-effects panel data model in combination with Discroll-Kraay standard errors. The results show that electoral exchange rate cycles take place in semi-democratic importing countries. Election years are associated with more depreciating exchange rates. Exporting- and democratic countries do not show any signs of electoral exchange rate cycles. Furthermore, it is shown that CBI is an important factor for constraining these cycles. This is both for electoral cycles, as well as non-electoral cycles that are observed in democratic countries.

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Acronyms and abbreviations

CBI	Central Bank Independence
DPI	Database on Political Institutions
GDP	Gross Domestic Product
IMF	International Monetary Fund
IFS	International Financial Statistics
PBC	Political business cycle
TOT	Terms of trade
WDI	World Development Indicators
REER	Real exchange rate

1. Introduction

Politicians have strong incentives to manipulate economic policy and create a favourable economic setting to maximise their chances to become re-elected (Nordhaus, 1975; Lobo and Tufte, 1998; MacRae, 1977; Brender and Drazen, 2005; Klomp and De Haan, 2013; Block, 2002; Schuknecht, 1996; Persson and Tabellini, 2002; Shi and Svensson, 2002; Bernhard and Leblang, 1999). At no point than close before the elections, there is a higher incentive for the government to create short term economic benefits, at the expense of larger costs that will loom after the elections (Frieden, Ghezzi and Stein, 2000; Willet, 2007). This is because the negative effects from expansionary policies, such as an increase in the inflation rate, tend to show up with a lag after the elections (Alesina and Roubini, 1992; Alesina Cohen and Roubini, 1992; Bernhard and Leblang, 1999). Moreover, (rational) voters are constrained by information asymmetries between them and the policy makers. This forces them to judge policy makers on contemporary economic outcomes (Block, 2002; Stein and Streb, 2004). Engaging in pre-election expansionary policies increases the competency image of policy makers, providing them a clear-cut incentive to engage in pre-election expansionary policies (Rogoff and Sibert, 1988; Brender and Drazen, 2005).

For instance, monetary policy can be used to influence the economy during electoral periods (Schuknecht, 1996; Soh, 1986). Flexible exchange rate regimes provide policy makers room for manipulating monetary policy for electoral purposes (Bernhard and Leblang, 1999; Frieden, 1991). This is because an increase in money supply decreases domestic interest rates, inducing a capital flight and causing a depreciation of the exchange rate. This increases the demand for domestically produced goods, both national and international (Frieden, 1991).

Examples of electorally motivated monetary expansions come from Grier (1989) who examined quarterly data between 1961 and 1982 and shows that USA elections result in a four-year lasting cycle of money, which starts to increase 6 quarters in advance of elections. Also Berger and Woitek (1997) find for West-German elections that money supply increases six months before elections and decreases in the year afterwards. Block (2002) reports an increase of 5-9% in real money supply close before elections for a sample of 44 Sub Saharan African countries. For a sample of 18 OECD countries, Alesina and colleagues (1992) find that between 1958 and 1987 money growth increases significantly close before elections. Soh (1986) finds evidence for a number of industrialized countries that growth rates of money supply increases as elections approach. More conditional, Hallerberg, De Souza and Clark (2002) find for their pooled cross-sectional time series of OECD countries between 1973 and 1988 that when exchange rates are flexible and central banks dependent, monetary expansions before elections take place. The same conclusion appears for a number of Eastern European countries between 1990-1999 (Hallerberg et al., 2002).

Another tool to manipulate the economy before elections is by exploiting the exchange rate, which represents the price ratio between domestic and a foreign currency (Frieden, Broz, Weingast and Wittman., 2006; Steinberg and Walter, 2012). During the elections, politicians consider the electoral and distributive effects of the exchange rates on purchasing power and price levels (Frieden et al., 2006; Steinberg and Walter, 2012). If the primary objective of the policymaker is to maximize their vote share, it can be considered as an actor whose primary concern is to embody the preferences of the median voter (Bearce, 2003). On the other hand, policy makers may consider their own policy preferences as well the ones of influential interest groups regarding economic policy (Rodrik, 1996; Dur, 2008). The distribution of resources is therefore subjected to the trade-off of different goals (Broz and Frieden, 2001). A specific phenomenon is that politicians tend to abandon and devalue their currency after elections have taken place (Stein and Streb, 2004; Bird and Willet, 2008; Cermeño, Grier and Grier, 2010). As expansionary monetary policies result in exchange depreciations, policy makers

will undertake stabilizing measures in the run-up to an election to avoid the negative consequences of this depreciation (Bird and Willet, 2008). This is because a strong currency is favourable for a large proportional of the electorate, while a devaluation is favoured by the influential tradable sector (Bonomo and Terra, 2005b).

For instance, Gavin and Perotti (1997) find for a sample of Latin American countries between 1968-1995 that the probability of regime switches from a fixed to a flexible regime increases significantly after elections. This is because abandoning the peg is politically harmful for the policy maker as it signals the presence of unsustainable economic policies (Gavin and Perotti, 1997). Moreover, Klein and Marion (1997) find that executive transfers, regular and irregular, significantly affect the probability of a devaluation for a sample of 17 Latin American countries between 1956-1991. According to them, this is because credibility and reputation losses are tenable at the beginning of a new term. Especially if they can blame the previous administration. Edwards (1994), studies 39 devaluations in Latin America between 1962 and 1982 and concludes that in democratic regimes, devaluations tend to take place in the early period of a new administration when new governments are politically credible.

More recently, new evidence for this phenomenon was found for Brazil (Bonomo and Terra, 1999). They find that pre-electoral periods have a significant effect on probability switches from an undervalued to an overvalued real exchange rate (RER) regime. Moreover, post electoral periods are associated with negative significant impacts on remaining in the over-valued RER regime. This means that elections create an appreciation in the RER prior to elections and a depreciation of the RER afterwards. Also, they concluded that this electoral cycle is stronger during times of a democratic regime. These governments are more likely to adjust their policies towards the median voter to secure their re-election (Bearce, 2003; Bearce and Hallerberg, 2002; Bird and Willet, 2008). Moreover, autocratic regimes can manipulate election outcomes more easily which reduces their incentive to manipulate economic tools such as the exchange rate (Alpanda and Honig, 2010). Besides that, they are less sensitive for pressures that result from different interest groups (Haggard and Webb, 1993).

Subsequently, Pascó-Font and Ghezzi (2000) find an electoral RER cycle for Peru between 1950-1996. Based on six presidential elections, they find an appreciation RER before elections and an immediate depreciation afterwards. Also Frieden, Ghezzi and Stein (2000) find for a broader sample of Latin American countries that changes in the government are accompanied with significant devaluations in both the nominal and real exchange rate. More specifically, depreciation rates are on average 2% points higher in the second, third and fourth month after an election compared to other months.

However, contradictory empirical evidence was found by Huang and Terra (2016a) for East-Asian countries between 1980-2009. In their article, they found evidence that the RER depreciates close before elections, while it appreciates afterwards (figures 1.1 and 1.2). Reason for this opposite cycle is due to the differences in the trade position. Whereas Latin American countries are more import oriented and therefore favour a stronger currency, the opposite is true for their East-Asian counterparts. These countries are export oriented economics that benefit from a depreciation of the exchange rate. These authors conclude that policy makers will adjust their economic policies towards the median voter to improve their re-election chances (Huang and Terra, 2016b).

1.1 Problem Statement

To understand the effect of elections on the exchange rate and the direction it goes, one must identify the wider economic implications and considerations between competitiveness and purchasing power that result from this political business cycle (PBC) (Frieden et al., 2006; Brender and Drazen, 2005). This study aims to contribute to this area of research by exploring two strands of literature. First of all, it will examine the relationship between the trade position/intensity and exchange rate fluctuations during electoral periods. Reason for this is because it is considered as the channel which can explain

the opposing RER's between East-Asian and Latin American countries (Huang and Terra, 2016b). From a distributional point of view, a delayed depreciation creates beneficial effects on the purchasing power of voters in the pre-electoral period (Broz and Frieden, 2001; Bonomo and Terra, 2005a). The statement from Huang and Terra (2016b) that policy makers adjust their policies towards the median voter seems therefore ambiguous. Opposing exchange rate cycles indicate that it is more useful to consider the trade position of a country to obtain exchange rate preferences.

Even though the distributive effects on consumers, tradable and non-tradable sectors are well-known, little to no empirical evidence exists to explain exchange rate cycles based on this conditional context. The limited number of studies who did focus on this phenomenon have used a proxy variable such as a sector's share of exports to account for its political influence to affect exchange rate policy, which is considered as inaccurate (Pascó-Font and Ghezzi, 2000). Moreover, most studies have tried to explain the exchange rate regime of a country based on this interest group theory (Steinberg and Walter, 2012). It is therefore necessary to build a more elaborate and critical interest group theory which considers the wider dimensions of exchange rate policies (Steinberg and Walter, 2012; Walter, 2008).

The second issue that is addressed reflects the ability of politicians to impact the exchange rate. More specifically, it will examine how the degree of central bank independence (CBI) affects electoral exchange rate cycles. CBI is a factor which reduces the political effects of elections on exchange rates such as regime changes (Freeman, Hays and Stix, 2000), but also increasing price stability and constraining monetary policy manipulations (Hallerberg et al., 2002; Klomp and De Haan, 2009). This means that when countries have a flexible exchange rate and monetary policy is effective in affecting exchange rates, increased levels of CBI deprive the ability of politicians to undertake pre-election expansionary monetary policies (Hallerberg et al., 2002).

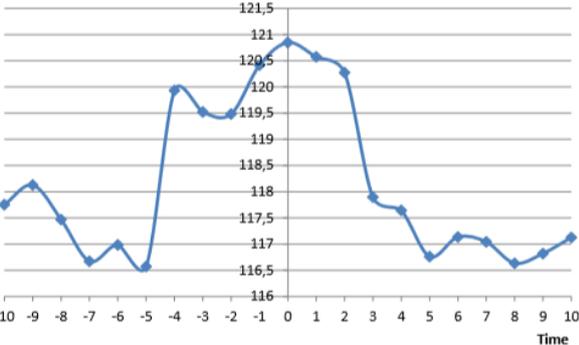


Figure 1.1: Average real effective exchange rates for Latin America during a 20-month period centred on elections between 1980-2006 (Huang and Terra, 2016a)

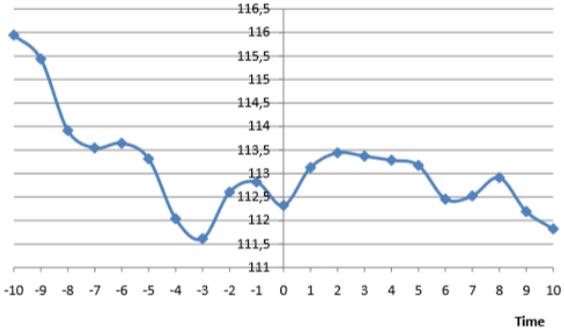


Figure 1.2: Average real effective exchange rates for East Asia during a 20-month period centred on elections between 1980-2006 (Huang and Terra, 2016a)

While research has been conducted on how CBI affects PBC's in terms of monetary manipulations (Hallerberg et al., 2002; Bodea and Hicks, 2015; Clark and Hallerberg, 2000) it's applicability to explain electoral exchange rate movements has barely been used. This is striking as it can alter the exchange rate by directly intervening in the foreign exchange market, but also by altering the money supply (Dreher and Vaubel, 2009).

This study offers some important insights by combining these two strands of literature to develop a more general, yet comprehensive, analysis of electoral exchange rate manipulations. The goal of this thesis is therefore to provide a better understanding on how CBI and the composition of interest groups affect the nominal exchange rate during electoral periods. This will be done by answering the following research question and subsequent sub-questions.

Research question:

- Do incumbents manipulate the nominal exchange rate prior to elections?

Sub-questions:

- How does the trade direction influence this relationship on electoral exchange rate manipulations?
- How does the degree of CBI influence this relationship on electoral exchange rate manipulations?

1.2 Thesis outline

This thesis will address the two sub-questions to answer the main research question. The purpose of the second chapter is to provide a theoretical framework around these sub-questions. It starts by providing a definition of the interest group theory, which is an important theory for the remainder of the thesis. After that, the chapter continues by discussing the distributive effects of exchange rate fluctuations for different interest groups based on Friedens sectoral interest group theory. This is necessary to obtain an understanding of why policy makers implement certain policies and why certain interest groups feel the urge to lobby in favor of/ against a certain policy. After describing the distributive effects, the chapter proceeds by discussing how CBI plays an important conditional role in electoral exchange rate cycles. This is done by examining the constraints that CBI poses on opportunistic monetary policy cycles. Chapter three discusses the data for this thesis. After that, chapter four explains the methodology of this thesis by means of an empirical model. The results of this methodology are presented in chapter five. Chapter six discusses the results and provides a conclusion to answer the main research question.

2. Theoretical Framework

This second chapter discusses the theoretical rationale behind electoral exchange rate cycles. First, the chapter starts by giving a brief definition of the interest group theory which is central to the thesis. After that, it will explore the economic implications of a strong/weak currency for different interest groups. The chapter continues by discussing how these implications result in involvement and lobbying to affect exchange rate policy. After that, the chapter examines how independent central banks can influence the exchange rate through several monetary instruments, but also constrain policy makers in their effort to manipulate economic policy. It ends by giving a brief summary of the theoretical framework.

2.1 Definition of interest group theory

The definition of the interest group theory is very broad and general. Because this thesis will seek a very specific application of interest group theory, it is important to obtain a plain and clear idea of what this theory entails. This section will provide a definition of this theory which serves as a foundation for the theoretical framework.

Interest groups "*comprise any group that, on the bases of one or more shared attitudes, makes certain claims upon other groups in the society for the establishment, maintenance, or enhancement of forms of behaviour that are implied by the shared attitudes*" (Truman, 1971 p.246). This definition of interest groups provides a solid understanding of what an interest groups entails. Yet, several additions are necessary to obtain a better understanding.

Many of these interest groups, or special interest groups as they are sometimes called, are centred on economic interests. The addition of "*special*" is to indicate that the preferences of an interest groups is not shared by the average civilian (Grossman and Helpman, 2001). These preferences are translated towards the government, marking interest groups with a political nature (Truman, 1971). In addition to voters, which are disorganized and have very heterogeneous preferences, interest groups are organized and have a shared attitude (Bonomo and Terra, 2005a; Truman, 1971; Denzau and Munger, 1986). Moreover, the voters are assumed to be uninformed and have difficulties in monitoring the actions of policy makers (Denzau and Munger, 1986; Dür, 2008). According to Brender and Drazen (2005), this is especially true in young democracies where policy makers can manipulate the unexperienced voters more easily. Giving in to the preference of interest groups by the policy makers, which can have adverse impacts for the society, is therefore possible (Dür, 2008).

However, the interest group theory suffers from a major shortcoming. This is because it does not consider the different perspectives of economic entities within an economy (Haggard and Web, 1993). This can possibly result in preferences that conflict with each other regarding the level exchange rate. Only if people know in which situation they gain the most, one can derive exact preferences towards economic policy (Haggard and Webb, 1993).

The actual influence of interest groups to affect policy depends on four issues that are described by Dr (2008). These are the polity type, which in this case, is the level of the nominal exchange rate. The second and third issue are the characteristics of the interest groups and the strategy they will use. These will be discussed in section 2.3. The last determinants is the political institutions. In this thesis, specific attention will be given to the role of independent central banks in electoral exchange rate cycles.

2.2 Distributive Effects and Interest Groups

Financial globalization has made exchange rate politics more prominent due to the increased levels of international trade and investment (Cleeland Knight, 2010). It has created different policy preferences for different interest groups with respect to the exchange rate, making it a central point of attention on the political agenda. To understand these different preferences, one must consider the distributive effects that come along with exchange rate fluctuations for different interest groups. Figure 2.1 provides an overview of the different exchange rate preferences with respect to the level and degree of flexibility by different sectors (Frieden, 1991).

First, the level of the exchange rate has substantial implications for different economic sectors. By maintaining a depreciated currency, the value declines and the currency becomes cheaper for other countries, which increases the competitiveness of the tradable sector. The opposite happens in case of an appreciated currency. Foreign imports become relative cheap which is particularly popular for non-tradable producers and consumers (Kinderman, 2008; Frieden et al., 2006; Frieden, 1991; Broz and Frieden, 2001; Steinberg and Walter, 2012).

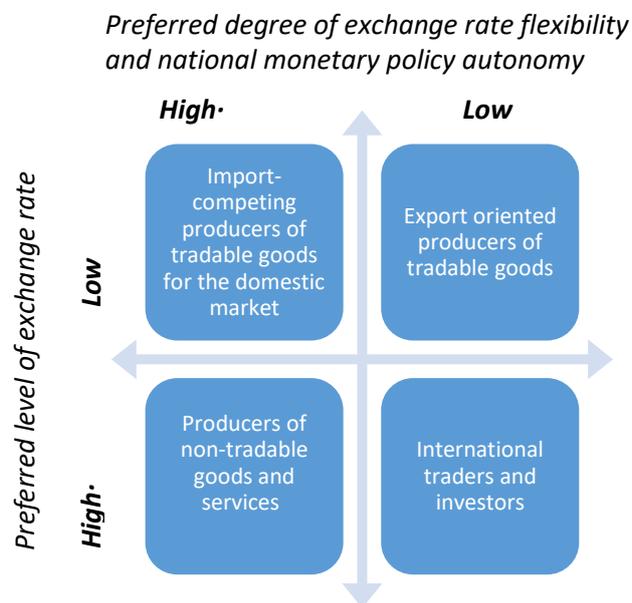


Figure 2.1: Exchange rate preference for different interest groups (Frieden, 1991)

Furthermore, the characteristics of the firms and industries determine how they respond to exchange rate fluctuations (Frieden et al., 2006; Kinderman, 2008; Broz and Frieden, 2001). This means that the distributive effects between different tradable producers can differ. As such, it is important to consider these characteristics to understand the attitudes of different interest groups towards the exchange rate. For example, companies who produce a highly specialized product with an inelastic demand, or who have international market power are affected less compared to companies who are forced to charge the consumers for the exchange rate appreciation (Frieden et al., 2006; Frieden et al., 2000). This is the case for homogeneous and standard products who compete based on the price of their products (Frieden et al., 2000). Products that have a relative high pass-through (Broz and Frieden, 2001).

Another argument is the reliance of tradable sectors and consumers on imported final goods and intermediate inputs. Those who rely more on these imported products will be less averse towards an appreciated exchange rates compared to those who rely more on domestic inputs (Steinberg and

Walter, 2012; Walter, 2008; Frieden et al., 2006). Also, firms with uneven balance sheets will prefer a stronger currency to ease their foreign debt burden (Steinberg and Walter, 2012).

Research carried out by Kinderman (2008) highlights another related feature, the degree of production internationalization. According to this study, production internationalization is the distinctive feature to understand the exchange rate preferences of a specific sector. Companies that have production facilities in multiple countries can compensate for exchange rate fluctuations. His study comprises 50 German firms from four German industries and states that the preference for a weak currency is the highest for the machine-tool industry. This is an industry characterized by a highly specialized production (which should reduce the effects of exchange rate fluctuations), but also with a low degree of internationalization compared to the other industries. The degree of production internationalization is represented in the underlying figures, showing that the machine tool industry has the lowest ratio of employees working in foreign plants. The same situation applies for the revenue that is obtained from foreign plants.

Cleland Knight (2010) uses a survey questionnaire to measure the importance of exchange rates and the activities taken to influence exchange rate policy. It draws on the sectoral preferences (figure 2.1) from Frieden (1991) as it distinguishes between exporters, importers, import competing, international investors and the non-tradable sector. The results show that exporters and international investors prefer a weak exchange rate, in contrast for the importing industries. While these results are in line with Friedens predictions, the study also finds significant evidence that import competing firms have a preference towards exchange rate stability.

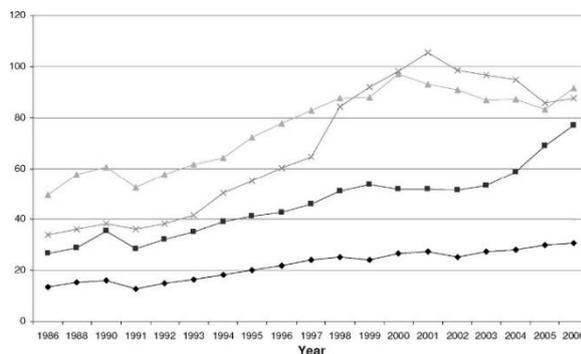


Figure 2.2: Ratio from employees outside Germany compared to employees inside Germany (Kinderman, 2008)

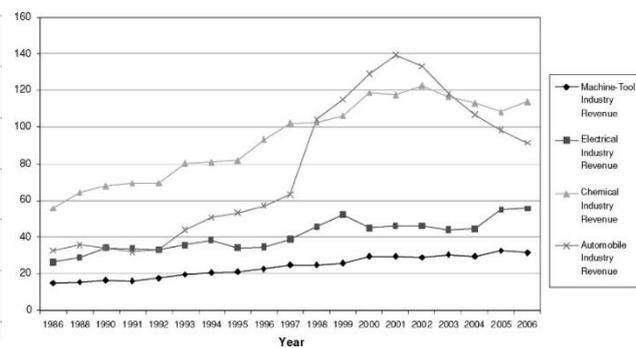


Figure 2.3: Ratio from revenue from plants outside Germany compared to plants inside Germany (Kinderman, 2008)

In addition to these findings, the paper of Cleland Knight (2010) also shows that firms can reduce the risks that come along with exchange rate fluctuations. An examples is operational hedging in which firms outsource their production process to foreign countries and/or diversify their sources of intermediates. Engaging in these risk reducing activities significantly reduces the amount of politically activism. This means that small exporters, but also import competing firms who can't engage in these strategies have to find alternatives to make their voice heard.

Another study from Broz, Frieden and Weymouth (2008) examines a detailed cross-national survey data from over 10.000 firms in 1999. They study the behaviour regarding the exchange rate by responses to the following question: "How problematic is the exchange rate for the operation and growth of your business?" (Broz et al., 2008). According to their results, tradable producers and manufactures are more likely express their concerns regarding the exchange rate under a floating regime, while the opposite claim can be made for the non-tradable sector. Moreover, these concerns increase significantly for the manufacturing and tradable sector in times of an appreciation of the RER.

Moreover, the degree of exchange rate flexibility is another point of consideration for the different interest groups. Especially international traders, as well as exporters of tradable goods prefer a more fixed exchange rate regime to reduce their business risks. On the other hand, non-tradable producers and import competing producers who are isolated from the foreign exchange market are relatively indifferent regarding exchange rate volatility, but will attach more importance to monetary autonomy and the benefits of a floating exchange rate regime on the domestic economic situation (Frieden, 1991; Bernhard, Broz and Clark, 2002). Important to consider is that choices towards the level as well as the exchange rate regime are never made separately. Countries that adopt a fixed exchange rate regime and thus provide a credible commitment mechanism, are also more likely to have a more misaligned currency. This means that these currencies are presumably more overvalued than flexible regimes (Steinberg and Walter, 2012).

In fact, many countries that have a “*de jure*” floating exchange rate regime conduct a “*de facto*” fixed regime policy. They suffer from the so called “fear of floating” and will use foreign exchange reserves as well as interest rates to limit volatility in their exchange rates (Calvo and Reinhart, 2002). This also means that exchange rate stability comes at a cost, such as an increase in the interest rate. Whereas the economic ramifications may be substantial, they may not weigh up against the political costs of a devaluation when elections occur (Leblang, 2003). More about this topic will be discussed later in the chapter.

2.1.1 Lobbying

Interest groups that suffer the most of a certain exchange rate policy can have the ability to resist against this situation (Bird and Willet, 2008). They can try to influence policy makers and translate (private) interest group preferences into actual policies through lobbying (Kinderman, 2008; Bearce and Hallerberg, 2011; Bonomo and Terra, 2005). According to Van Schendelen (as cited in Kinderman, 2008), lobbying can be defined as: “*the informal exchange of information with public authorities, as a minimal conception on the one hand, and as trying informally to influence public authorities, as a maximal conception on the other*” (Kinderman, 2008 p.856). This definition implies that lobbying goes beyond influencing government policy during electoral periods (Bonomo and Terra, 2010; Dür, 2008). It is an ongoing process trying to influence the distributive impacts of exchange rate fluctuations. Lobbying can take up several forms such as financing elections campaigns, pressuring policy makers and affecting the public opinion (Dür, 2008). If successful, the policy outcomes represent the underlying distributional implications in favour of the lobbying groups (Bonomo and Terra, 2010).

Especially the tradable sector is involved in this process, lobbying for a depreciation of the currency. This is in contrast to the proponents of a more appreciated currency such as consumers and non-tradable producers. This asymmetric pattern of lobbying means that the latter groups do not engage themselves in lobbying activities to resist the influence of the tradable sector. A specific reason cannot be given, but it has most likely to do with the fact the non-tradable sector and consumers are unable to set up an efficiently coordinated lobby (Bonomo and Terra, 2005a; Broz and Frieden, 2001).

Also, it is expected that larger firms are more involved in lobbying compared to smaller firms. This is because they have institutional characteristics, such as a large pool of employees and a high tax revenue, that are attractive for the opportunistic politicians in their challenge to become (re)elected (Weymouth, 2012; Alt, Carlsen, Heum and Johansen, 1999; Dür, 2008). Moreover, they simple have more financial resources to obtain political influence (Weymouth, 2012). When firms are too small to engage in lobby activities directly, they can choose to use trade association as their political representation (Cleeland Knight, 2010). As such, political pressure from the tradable sector on the exchange rate can therefore be substantial (Pascó-Font and Ghezzi, 2000).

Examples of exchange rate lobbying and interest group influence on the exchange rate are documented in the aforementioned paper of Kinderman (2008). His paper focusses on the shift in exchange rate lobbying in West-Germany from the 1960's onwards. The first period which lasted until the end of the 1970's is characterized by intensive exchange rate lobbying from a wide range of industries and firms such as the Federation of German Industries (BDI), as well as the association of machine-tool producers (VDMA). They opposed heavily against small revaluations, in contrast to other industries who were in favour of a revaluation.

From the 1970's onwards, lobbying became less prominent. For example, appreciations of 30% in the mid 1990's received less resistance compared to relative small revaluations of 5% during the early 1960's. This is due to operational hedging, which has reduced the economic consequences of an appreciation and therefore the significance of exchange rate preferences. Operational hedging implies that companies can defend themselves against exchange rate risks. They can choose to move part of their production to other countries or by creating multiple input flows from foreign countries (Cleeland Knight, 2010). This mitigates the losses of either domestic currency or foreign currency risks.

Moreover, private lobbying is also clearly present in the US because of China's exchange rate policy to keep its currency undervalued. Several associations, which consisted mainly of domestic manufactures, have been established to lobby and pressure the Bush administration for an active and aggressive response regarding the undervalued renminbi. Pressure from this side drove a wedge between these domestic manufactures and international companies that opted for a milder approach (Henning, 2007).

The issue remains how much politicians are affected by pressures from interest groups during electoral times in which politicians put their short-term benefits over the long-term costs of their actions (Walter and Willet, 2012). Depending on the motivation of the policy makers and the contribution that an interest group can have in pursuing these motivations, is an important determinant to obtain influence. Especially if this contribution cannot be acquired from alternative providers. The motivation of the policy maker can either be driven by the median voter theorem in which a policy maker tries to secure his re-election or by specific policy objectives (Dür, 2008). Furthermore, it is expected that policy makers in democratic regimes are more influenced by the pressure of interest groups. This is because autocratic regimes can more easily overthrow the demands resulting from these interest groups (Haggard and Webb, 1993).

In case of electoral exchange rate cycles, a devaluation/depreciation is not the preferred option from a median voter point of view because the negative effects tend to show rather quickly while the beneficial trade effects will show up later (Bird and Willet, 2008; Walter and Willet, 2012). Giving in to the lobby of the tradable sector could give rise to political pressure and consequences by their voters, whose perceptions could endanger the politicians re-election chances (Stein and Streb, 2004; Bird and Willet, 2008). Especially if they express their support to certain policy makers (Dür, 2008). The observed pattern in East-Asia shows that policy makers base their decisions on policy objectives and the wider economic climate, instead of pinpointing a favourite exchange rate policy for the median voter. If the policy makers are pressured through lobbying is not clear. Especially because a lobby in exchange rate is very rare (Broz and Frieden, 2001). It could also be the case that interest groups have found other ways to influence economic policy. For example by have a vote in the selection of important decision-making positions. This reduces the need to engage in lobbying activities (Dür, 2008).

2.2 Central Bank Independence

Until now, it was assumed that incumbent governments (competent and incompetent) can manipulate the exchange rate for electoral purposes. Therefore, elections can be considered as an institute where short term preferences influence a biased choice towards the exchange rate (Walter, 2008). However,

there are two situations in which governments lose the ability to use the exchange rate for electoral purposes. The first situation is by adopting or engaging in a credible fixed exchange rate regime. The second situation is by delegating monetary policy to an independent central bank (Clark and Reichert, 1998; Alpanda and Honig, 2010). For example, Leblang (1999) shows that democratic countries, which have more incentives to manipulate economic policy prior to elections, are more likely to adopt a floating exchange rate. Note that these two monetary commitment mechanisms are not perfect substitutes as they differ in the credibility-flexibility trade-off and the level of transparency (Broz, 2002).

This section discusses how CBI can constrain electoral exchange rate cycles. The first one is by examining the relationship between CBI and monetary-politically induced business cycles. The second channel is the ability of central banks to intervene in foreign exchange markets which affects the nominal exchange rate directly (Huang and Terra, 2016b).

The CBI reform enables central banks to withstand pressure from politicians and prevent opportunistic business cycles if they have control over monetary policy (Clark and Hallerberg, 2000). Independent central banks are there to secure a long term and predictable monetary policy, separately from the PBC's like pre-election manipulation and partisan preferences (Alesina and Summers, 1993). For instance, to engage in money supply expansions to create favourable economic conditions (Clark and Reichert, 1999). This implies that central banks have a different time horizons and policy objectives compared to the government (Eiffinger and De Haan, 1996). Within-country variation in monetary cycles should reduce if independent central banks constrain policy makers in pursuing monetary PBC. In other words, the occurrence of electoral cycles in monetary instruments should reflect the presence or absence of CBI (Alpanda and Honig, 2010). Therefore, countries with independent central banks are less likely to experience monetary PBC's compared to countries where policy makers can exercise influence over the central bank (Clark and Reichert, 2003). Because capital is mobile, monetary policy works through exchange rates instead of interest rates to stimulate the economy (Frieden, 1991). As central banks are reluctant to engage in this activity, it is expected that increased levels of CBI result in lower probabilities of electoral exchange rate cycles as well (Frieden et al., 2006).

A number of researchers have reported the importance of CBI on constraining monetary PBC's. The most prominent paper supporting this theory is from Clark and Hallerberg (2000). They take the OECD countries between 1973-1995 and regress the interaction effect of CBI, elections and the exchange rate regime on changes in money supply. They find significant evidence that elections create a monetary expansion, but only when central banks have limited independence. Also, Hallerberg and colleagues (2002) find significant evidence that elections create a monetary expansion in Eastern European countries between 1990-1999, but that the interaction effect with independent central banks result in a decrease of the money supply. Furthermore, Alpanda and Honig (2010) stress the importance of CBI by providing evidence that political monetary cycles occur mostly in developing countries, which have lower levels of CBI. Yet, this does not mean that independence alone is enough to ensure a thriving monetary policy with low and stable prices, nor does it automatically lead to absence of electoral manipulations (Blinder, 1998; Posen, 1995).

For example, Posen (1998) does not find evidence for seventeen OECD countries between 1950-1989 that independent central banks prevent policy makers to manipulate monetary policy for electoral purposes. Furthermore, the aforementioned country-specific studies from Grier (1989), Soh (1986), Berger and Woitek (1997) all imply that industrialized countries with strong independent central banks can experience these cycles as well.

Several papers have examined under which conditions CBI becomes credible. They have found that the wider political institutions play an important role in determining credibility and thus the effectiveness of CBI (Bodea and Hicks, 2015; Acemoglu, Johnson, Querubin and Robinson, 2008;

Moser, 1999). Pressure from interest groups through lobbying to influence policy makers is conditional on the political institutions in that country (Broz et al., 2006). Societies where politicians are not held accountable for their actions, and where little to no constraints exist, are more likely to experience distortionary policies. Moreover, existing policy reforms are less effective as policy makers are able to manipulate these reforms for personal gain (Acemoglu et al., 2008). Acquiring the benefits from independent central banks, and thus preventing politicians to respond opportunistic by pursuing distortionary policies, will only be possible in association with a supporting institutional environment where policy makers are held accountable for their actions (Acemoglu, et al., 2008; Hielscher and Markwardt, 2012). Especially democratic regimes contain these characteristics, which implies that central banks are more effective compared to authoritarian regimes (Bodea and Hicks, 2015; Hielscher and Markwardt, 2012).

For example, Moser (1999) shows that countries with strong checks and balances are found to be a conditioning factor in which CBI can result in lower average inflation levels. Countries with strong checks and balances are those that contain at least two veto players with different preferences regarding monetary policy, which are required to make central banks credible. Also, Keefer and Stasavage (2003) conclude that societies with multiple veto players that contain different preferences regarding economic policy enables central banks to reduce average inflation levels.

Furthermore, recent research from Bodea and Hicks (2015) shows that the effect of CBI on money supply is significant, but only in democracies and it's features such as a free press and the constraints that policy makers face in the decision making process. They use a panel data study of 78 countries between 1973-2008 and interact a measure of CBI with the polity 2 score (which indicates the level of democracy), but also with the number of checks and balances, the number of executive constraints and a measure of press freedom. All of these variables enhance the credibility of independent central banks, when they reach their highest values.

The same conclusion can be drawn from Hielscher and Markwardt (2012) with respect to inflation. They use a panel data of 69 countries between 1980-2007 and interact the level of CBI with different measures of democratic accountability and political stability. Their results show that especially democratic accountability, government effectiveness, corruption and the freedom of press lead to an increase of CBI effectiveness in terms reducing average inflation levels.

2.3 Pre-electoral policies

Until now, we have seen that importing-countries maintain an appreciated exchange rate before elections, which depreciates almost immediately after the election has taken place. In order to stimulate the economy through expansionary monetary policy, while keeping devaluation levels low during electoral periods, it is necessary to stabilize the effects of expansionary monetary policies (Dreher and Vaubel, 2009; Streb, Lema and Garofalo, 2013). This is because policy makers are very reluctant to exchange rate depreciations in pre-electoral periods as it reveals the political motive to stimulate the economy. In order to maintain the desired level of the exchange rate, authorities sell their foreign reserves in order to avoid a pre-electoral depreciation (Dreher and Vaubel, 2009; Bird and Willet, 2008). This relates to the '*fear of floating*' argument from Calvo and Reinhart (2002) in which countries are very reluctant to let their currencies float. This is even more prominent during electoral periods when the policy maker's discount factor to defence the currency becomes even stronger (Walter and Willett, 2012). Electoral cycles in foreign reserves hint that policy makers manipulate the exchange rate prior to elections (Streb et al., 2013). Similarly like money supply, increased levels of CBI should block the electoral use of foreign reserves (Jager, 2016).

Supporting evidence for this phenomena comes from Dreher and Vaubel (2009) who find significant evidence for a large sample of 158 countries between 1975 and 2001 that foreign reserves fall in the

pre-election period. Another study from Jager (2016) makes a distinction between democratic and authoritarian regimes. This study finds evidence that democratic elections are associated with depleting reserves in pre-electoral periods, but that this effect disappears when the number of veto players increases, not due to a direct impact of CBI on foreign reserves. Moreover, authoritarian elections do not experience this cycle. As such, a wide gap exists regarding foreign exchange accumulation. Figure 2.8 shows the difference in foreign reserve contributions between authoritarian regimes and democracies.

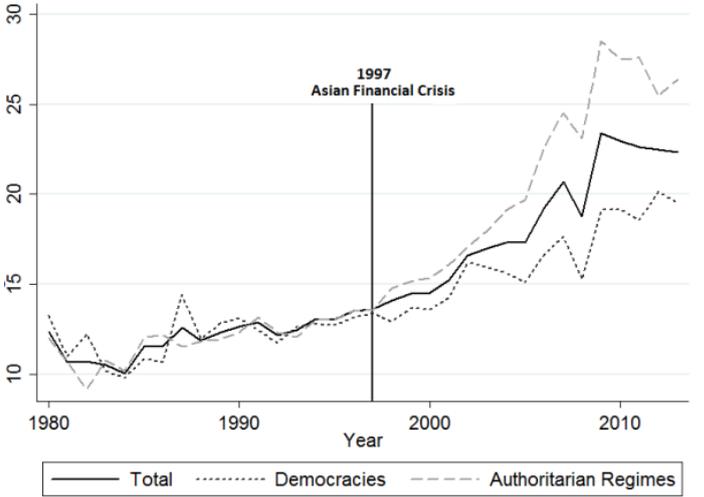


Figure 2.4: Trend in foreign reserves accumulation between 1980-2010 (Jager, 2016).

Streb and colleagues (2013) find significant evidence that democratic elections in Latin America reduce reserves when elections are approaching, in contrast to a sample of OECD countries. Reason for this difference can be assigned to the low level of effective checks and balances in Latin American countries. Somewhat contradictory evidence was provided by Huang and Terra (2016b). Just like Streb and colleagues (2013), they find evidence that in Latin America foreign reserves are depleted before elections. However, they show that in East Asia the opposite happens. Foreign reserves are accumulated close before elections which influences the RER significantly. These countries show a clear mercantilist pattern during elections and stress the importance of a county’s trade position to explain exchange rate cycles. The so-called monetary mentalist approach assumes that countries import foreign reserves to keep their currency undervalued and promote exports, such as China (Aizenman and Lee, 2007).

Furthermore, this article highlights the role of independent central banks. They find post-electoral periods are associated with a depreciation of the exchange rate in Latin American countries and an appreciation of the exchange rate in East-Asian countries, as expected. However, when central banks become more independent, exchange rates become less depreciated (Latin America) or appreciated (East-Asia). This is similar to the results of Cermeño and colleagues (2010) who find that central bank reforms reduce the average depreciation level of the RER. This shows that higher levels of CBI can result in smaller electoral cycles (Cermeño et al., 2010).

2.4 Post-electoral effects

The previous section has shown two ways to maintain the desired exchange rate during pre-electoral periods. Importing countries use foreign reserves to offset the effects of expansionary monetary policies in order to stimulate the economy while maintaining an appreciated exchange rate. Exporting

countries use foreign reserves directly to create a depreciated exchange rate for the improvement of the international competitiveness of the tradable sector.

So if importing countries benefit from an appreciated currency, why devalue/depreciate at all? The reason for this is because there is a clear constraint. The ability of importing countries to do so depends on the amount of reserves held by a country. When these are depleted, a depreciation can no longer be deferred (Bird and Willet, 2008). Exporting countries do not face this constraint, but experience another obstacle to maintain a depreciated exchange rate. When central banks have to print more money to purchase foreign reserves, it will decrease interest rates and increase inflation if the central bank does not sterilize this intervention (Mohanty and Turner, 2006). This is of course in conflict with the policy objectives of the central bank. Note that central banks can offset these effects by sterilizing the intervention through open market operations. Yet this process of sterilization also tends to have negative consequences (Moanty and Turner, 2006)¹.

2.5 Chapter summary

To conclude, this chapter has discussed two dimensions of exchange rate politics. First, it highlighted the distributive effects of exchange rate fluctuations for different interest groups. Roughly speaking, exporters and import competing industries prefer a depreciated currency for competitive reasons. On the other hand, non-tradable sectors and consumers will prefer a relative strong exchange rate because foreign products will become cheaper. Lobbying is an attractive tool to influence policy in favour of certain interest groups with concentrated interests.

Second, this chapter has illustrated how CBI is linked with the exchange rate through different channels. Increased levels of CBI should reduce electoral exchange rate fluctuations through the inability of policy makers to increase money supply in pre-electoral periods. However, democracies that provide room for electoral manipulations due to low checks and balances or a small number of veto players are still likely to experience monetary policy cycles. When this happens, the central bank can mitigate in the foreign reserve market to avoid a depreciation of the exchange rate during (pre) electoral periods. Devaluations will be postponed until after the election. On the other hand, foreign reserves can be used directly to influence the exchange rate for competitive reasons. As such, the interaction between a country's trade position and CBI determines the behaviour of exchange rates during electoral periods. If central banks are truly independent, they will block any attempts of pre-electoral stimulation. This should reflect in lower electoral exchange rate cycles.

¹ For a detailed description of these negative consequences, I kindly refer to Moanty and Turner (2006) who provide a clear overview.

3 Data description

This chapter describes the data that is used for this research. First, I will discuss the dependent variable and the three explanatory variables. After that, I will provide an overview of the different control variables and the reason of their incorporation in the analysis.

3.1 Dependent Variable

For this thesis, we use changes in the annual levels of the nominal exchange rate for a sample of 165 countries between 1980 and 2012. This period earmarks the end of the Bretton Woods area, and therefore, the end of fixed exchange rates against the US dollar. Due to data availability of other important variables, we continue the time frame until 2012. Calculating the nominal exchange rate can be done through the following equation (Mankiw and Taylor, 2008).

$$1. \text{Nominal Exchange Rate} = e_r * \left(\frac{P^{(\text{foreign})}}{P}\right)$$

In which e_r is the RER, $P^{(\text{foreign})}$ is the foreign price level and P the domestic price level. This equation can also be re-written into equation two:

$$2. \% \text{change Nominal Exchange rate} = \% \text{change } e_r + (\% \text{change in } P^{(\text{foreign})} - \% \text{change in } P)$$

This equation tells us that the changes in the nominal exchange rates can be attributed to changes in the RER, domestic inflation and the foreign inflation (Mankiw and Taylor, 2008). If the foreign price level cannot be influenced, and domestic prices are fixed in the short run, we attribute changes in the nominal exchange due to changes in supply and demand in the foreign exchange market. These can be caused through interventions in the foreign exchange market, or by altering the national money supply (Suranovic, 2012; Dreher and Vaubel, 2009).

The data for the nominal exchange rate is retrieved from the IMF IFS database and is measured in local currency against the US dollar in log differences.

3.2 Explanatory Variables

3.2.1 Interest group (trade) composition

This thesis uses several methods to capture the effects of a country's trade position during electoral periods. First, I use is a country's annual proportion of exports over imports. To do so, this thesis uses the amount of annual exports and imports measured in constant 2010 US dollars. This enables to estimate true growth rates, independently from the price effect which can arise from exchange rate fluctuations. This contrasts with the Terms of Trade approach, proposed by Goldfajan and Valdes (1999). Reason for this is that the Terms of Trade do not capture the amount of goods traded. Therefore, it does not present the trade position of a country accordingly. Besides that, we use some additional measures to differentiate between importing, import competing and exporting countries. The first one assigns a dummy to exporting countries if annual exports exceed annual with at least 10%. The opposite happens in case of importing countries. Ratios that fall in between this range are marked as import competing countries. The last approach is based on percentiles. The 25% lowest export/import ratios are assigned as importing, the 25% highest ratios as exporting and all the observations in between are considered as import-competing. At last, we classify exporting countries if the ratio of exports over imports is larger than one, while the opposite is true for importing countries. Table 3.1 provides an overview.

Table 3.1: Overview of classification between exporting and importing countries

Method	Description
<i>Actual ratio</i>	Using the ratio of annual exports over imports in natural logarithms
<i>Quartiles</i>	Importing countries are classified as such if the export/import ratio is in the lowest quartile. Exporting countries classified as such if the export/import ration is in the highest quartile.
<i>Threshold value</i>	Importing countries are classified as such if the export/import ratio is lower than 0.9. Exporting countries are classified as such if the export/import ration is higher than 1.1. In the second situation, this threshold value is set at 1.

3.2.2 Central Bank Independence

Several methods have been developed to measure the degree of CBI, which has proven to be difficult. In general, there are two points that need to be considered. First, one needs to decide whether to use a “*de jure*” or a “*de facto*” measure of CBI. Secondly, it is important to notice that CBI variables are estimated at a specific point in time. This is troublesome since a panel data estimation is employed and within-country variation is important for this methodology (Acemoglu et al., 2008). Especially during electoral periods when central banks will be pressured to implement stimulating policies (Alpanda and Honig, 2010). To overcome this problem, Klomp and De Haan (2010) use a 10-year rolling average of the turnover rate as their CBI indicator. Acemoglu and colleagues (2008) use a dummy variable for every year a major reform has led to an increased level of CBI.

Moreover, the extensive datasets that have been developed over the years suffer from another problem as well. This refers to the limited number of countries included in the datasets, giving rise to possible biased results (Garriga, 2016). This thesis will rely on an extensive dataset from Garriga (2016) which contains 6764 observations from 182 countries between 1970-2012. Besides the extensive number of observations, it has dealt with the within country variation by including numerous reforms that could have affected the level of CBI over the years (Garriga, 2016).

3.2.3 Timing of elections

To account for changes in the nominal exchange rate during electoral periods, we use the methodology from Franzese (2000). Election years are coded as $M/12$ where M is the month in which the election is held. The pre-election years are coded as $(12-M)/12$. Data for the election variable has been downloaded from the DPI database from Beck, Clarke, Groff, Keefer and Walsh (2001). Moreover, we include only presidential elections in countries with presidential systems. In parliamentary systems, we include legislative elections which result in the appointment of the prime minister. Countries that have been coded with both legislative systems or in combination with an assembly elected president have received more attention. This is necessary to understand the dynamics of each individual country with respect to the division of the executive power (Julio and Yook, 2012). Furthermore, the two systems differ as presidential systems direct more accountability to the government. On the other hand, they cannot be toppled down by the parliament (Klomp and De Haan, 2013). Appendix 2 shows the legislative systems per country, as well as the included elections for the panel data analysis. Furthermore, we only include elections which are held at least two years after the previous election. This is to ensure that a cycle can occur, and policy makers have the time to manipulate the exchange rate. It would mean that policy makers can behave opportunistic and exploit monetary policy to affect the exchange rate. This is important, because the focus of this thesis how electoral periods affect exchange rate fluctuations. Capturing endogenous elections would not be desirable as these can be the result of macro-economic conditions (Julio and Yook, 2012; Heckelman and Berument, 1998). That

is the exact opposite reasoning of this thesis and would also result in biased estimates (Heckelman and Berument, 1998).

3.3 Control variables

In chapter two, various determinants of exchange rate manipulations have been discussed. Whereas the focus of this thesis is to examine how CBI and the trade direction of a country affects electoral exchange rate manipulations, it has become clear that underlying factors play an important conditioning role in establishing this relationship. Therefore, an additional set of control variables are included in the model. Table 3.1 provides an overview of the aforementioned explanatory variables and the several control variables. These are considered as important determinants of nominal exchange rates, but which have not been discussed in the theoretical framework. Moreover, the inclusion of these variables is also important to narrow down the potential omitted variable bias (Verbeek, 2017). The main databases for this thesis have been the IMF-IFS database, the WDI database and the DPI database regarding the political variables. Appendix 1 provides an overview of all the control variables and the sources they have been downloaded from.

Level of democracy: As stated in chapter one, democratic elections pressure policy makers to adjust economic policies in favour of the median voter, while also being pressured by interest groups. Autocratic regimes, on the other hand, can more easily manipulate election outcomes and will face smaller incentives to manipulate economic outcomes during electoral periods (Alpanda and Honig, 2010). To measure the level of democracy, we use the annual Polity2 index from the Polity IV dataset. This is a composite index to harmonize the polity score of countries for time series-analysis (Integrated Network for Societal Conflict Research & Center for Systemic Peace, 2018).

Table 3.2: Descriptive statistics of explanatory and control variables

VARIABLES	N	mean	sd	min	max
CBI	4,326	0.521	0.201	0.0766	0.974
Election	5412	0.158	0.289	0	1
Level of Democracy	5,008	1.899	7.156	-10	10
Checks and Balances	4,919	2.614	1.744	1	18
Export diversification	5,313	3.160	1.546	0	6.417
Trade globalisation	5,061	49.24	20.86	2.629	98.45
Currency Union	5,412	0.119	0.324	0	1
Exchange rate regime	5,083	2.171	1.254	1	5
Ln Inflation	4,208	1.977	1.378	-7.393	10.10
Ln Interest rate	2,547	1.862	0.988	-4.916	4.543
Ln GDP per capita (% growth)	4,668	0.1643	0.066	-1.05	0.878
Ln Government debt (% of GDP)	4,500	3.897	0.801	-0.596	7.646
Ln Trade ratio	3,821	-0.0911	0.641	-3.0898	3.993
Presidential system	5,412	0.602	0.489	0	1

Checks and balances: Chapter two showed that the levels of checks and balances is an important conditioning factor for the effectiveness of CBI to prevent PBC's. In the case of one veto player, a decision of the central bank can more easily be overruled (Keefer and Stasavage, 2003). Countries with a high level of checks and balances (multiple veto players) are therefore expected to have a negative effect on exchange rate cycles. This variable is a composite indicator for the number of veto players in

a country and the number of each of these veto players whose orientation is closer to the opposition than the government (Beck et al., 2001)².

Currency union: Becoming a member of a currency union like the Euro limits exchange rate volatility within the currency union as countries are giving up their exchange rate (Eichengreen, 1997). Countries give up their monetary independence to a central bank which is very inflation-averse and aiming to reduce this bias (Kriwoluzky, Muller and Wolf 2014). Furthermore, being a member of a currency union also puts a formal limit on a country's public debt and fiscal policies (Feldstein, 1997). The Stability and Growth Pact, for example, expects members of the EU to prevent a budget deficit of 3% of its GDP. Also, public debt should not exceed 60 of a country's GDP. As such, being a member of a currency union decreases the probability of high inflation rates and excessive debt levels which result in a depreciation of the exchange rate.

Inflation: Equation 3.1 shows that the nominal exchange rate is partially determined by changes in the domestic price level. Holding all factors equal, a rise in the domestic price level results in a fall of the exchange rate and vice versa (Mankiw and Taylor, 2008). This is clearly illustrated in the Dornbusch (1976) exchange rate overshooting model which shows that a monetary expansion results in an immediate depreciation of the exchange rate. During the adjustment process, increased demand for domestic products in combination with lower interest rates increases the domestic price level and an appreciation of the exchange rate.

Exchange rate regime: Politicians might favour a flexible regime to manipulate the exchange rate before elections (Bernhard and Leblang, 1999). Also, where a fixed exchange rate regime is a very transparent and easily observable tool for the constituents to monitor the government's commitment to the exchange rate, the contrast exists for a flexible regime (Broz, 2002). Therefore, the consequences of a devaluation will be blamed on the government. However, if a depreciation occurs, voters will not know if this is because of government actions or market forces (Collins, 1996; Shambaugh, 2004). Moreover, a flexible exchange rate regime makes monetary policy an effective tool to affect economic growth in the short run (Hallerberg et al., 2002). As stated before, it is most likely that democratic regimes will want to manipulate the economy for electoral purposes. It is therefore most likely that these regimes adopt a floating exchange rate. Supporting evidence for this theory is provided by Leblang (1999). Data for this variable has been retrieved from the Rogoff and Reinhart (2004) database. They have made a detailed database and found that many official exchange rate labels have been misclassified. Based on their classification, dummies have been assigned to differentiate between fixed, intermediate and floating regimes.

Trade globalisation: Foreign currency is needed to conduct in international trade. Countries that have more open economies and thus more involved in international trade are able to smooth consumption shocks that arise from output and/or money supply shocks. This reduces the volatility of the RER (Obstfeld and Rogoff, 2000; Hau, 2002). Hau (2002) finds a significant negative relationship between economic openness and RER volatility. The same conclusion appears from Kriljenko and Habermeier (2004) between the economic openness of a country and the volatility of nominal exchange rates.

Export diversification: If countries are more diversified in their exports, they are less exposed to external shocks (IMF, 2017b). However, the impact of export similarity on exchange rate fluctuations remains vague (Weber, 2017). Considering the interest group theory, a more diversified export sector

² This variable is not available from the original database. Therefore, we used the database from Graham and colleagues (2016) to retrieve this variable. They mention that they have used this variable from Beck and colleagues (2001), but it is unclear if they use the number of veto players or the number of veto players and the number of veto players whose orientation is closer to the opposition than the government. Either way, it measures the number of checks and balances from a country.

could mean that the economic dependence of dominant sector diminishes (Herzer and Nowak-Lehmann, 2005). Moreover, exporting firms may decide to expand their activities toward the non-tradable sector to anticipate on exchange rate fluctuations (Bebczuk and Berrettoni, 2006). Studies that have examined the impact of interest groups on exchange rate volatility, mostly used their share of national GDP to proxy for their influence. With a more diversified export sector, these shares are likely to decrease. Because of these reasons, it is expected that countries with a more diversified export sector are less likely to experience electoral exchange rate cycles.

Real interest rate: Interest rate differentials cause the exchange rate to move due to two reasons. First, an increase in the interest rate is expected to increase foreign capital which causes an appreciation of the exchange rate. Second, domestic demand for the currency decreases which causes a depreciation of the exchange rate (Frankel, 1979).

GDP per capita (growth rate): The quantity theory of money tells us that an increase in real income increases the demand for real money balances, leading to an increase in the interest rate. Foreign investors move their capital towards this country, while domestic residents retain themselves from investments. In order to keep interest rates at the original level, the central bank could increase real money balances (Mankiw and Taylor, 2008). This increases money supply, but also the price level which is an important determinant of the exchange rate. Either way, increase in income is likely to affect the exchange rate.

Government debt: Higher government debt can result in more volatile exchange rate due to multiple reasons. This is because financing this debt has explicit consequences for the exchange rate. First of all, governments can choose to print more money which has inflationary consequences. Second, governments can choose to use foreign reserves to finance the debt, as explained in the previous chapter. Moreover, the latter option risks the danger of capital flights as private actors suspect devaluations when the country runs out of foreign reserves (Fisher and Easterly, 1990).

Besides these two options, governments can choose to borrow directly from foreign funds (Fisher and Easterly, 1990). In that case, governments have an incentive to maintain a strong currency as a depreciation would only worsen the debt position (Steinberg and Walter, 2012; Céspedes, Chang and Velasco, 2004).

4. Methodology

This chapter discusses the model and methodology for this thesis. To model the relationship between nominal exchange rate cycles and electoral periods, a panel data model is employed on the following equation.

$$\Delta LNe_{it} = \alpha_i + \beta_1^j X_{it-1}^j + \beta_2 LN(e_{it-1}) + \beta_3 E_{1t} + \beta_4 T_{it} + \beta_5 CBI_{it} + \beta_6 (E_{it} * T_{it}) + \beta_7 (E_{it} * CBI_{it}) + \beta_8 (E_{it} * T_{it} * CBI_{it}) + \beta_9 (CBI_{it} * T_{it}) + \varepsilon_{it}$$

Where ΔLNe_{it} is the log difference of the nominal exchange rate for country i at period t . X_{it-1}^j consists of a set of explanatory variables that have been discussed in the previous chapter. Moreover, e_{it} is the lagged value of the nominal exchange rate, T is a variable for the trade position of the country i in period t and CBI is a variable that measures the degree of Central Bank Independence of country i in period t . E is a variable for the occurrence of an election in country i at period t .

4.1 Interaction effects

In this model we interact the election dummy variable with the trade position and degree of CBI of country i at time j . This is because it is believed that the effect of elections on the exchange rate is conditional upon the level of CBI and the trade position of the specific country. As such, this thesis examines multiple interaction effects. Then, it becomes possible to examine the effects of CBI and the trade position separately during electoral periods. The trade position of a country will be examined by the different methods which have been discussed in the previous chapter. Making a distinction between importing, import competing and exporting countries sheds some light on how trade position could affect electoral exchange rate manipulations.

4.2 Data analysis

Before conducting the analysis, several checks have been performed to ensure that the appropriate statistical model is selected. First, I have checked the normality of the explanatory variables and taken the natural logarithms if this led to a normal distribution of the variable. This is the case for inflation, the real interest rate, % growth of GDP per capita, government debt of GDP and the export/import ratio. Furthermore, I check for a strong correlation between the several control variables by means of a correlation matrix (appendix 3). A correlation between variables that is higher than 0.8 is worrisome and indicates the presence of multicollinearity. This is not the case.

To choose between a fixed effects or random effects mode, I conduct a Hausman test. A chi-square statistic of 104.26 implies that a fixed effect model is chosen over a random model. This model contains an intercept of time invariant characteristics, α_i , for each individual unit of observation and estimates the underlying determinants of changes in the dependent variable within a unit of observation. Moreover, this model assumes that all the explanatory variables are exogenous which excludes the use of lagged dependent variables as independent variables (Verbeek, 2017). However, it is expected that the nominal exchange rate follows an Autoregressive (AR1) process, in which the value of the nominal exchange rate depends on its lagged value. Including the AR1 term in the equation results that the panel model described above.

Estimating a fixed effects model including a lagged dependent variable is subject to the well-known problem of producing inconsistent and biased estimates as the lagged dependent variable is correlated with the error term. This is especially if the time frame is short (Verbeek, 2017; Dreher and Vaubel, 2009). Using a panel data of 33 years partially removes this problem.

Furthermore, cross-sectional panel data in general suffers two major issues arise. First, there is the issue for unconditional heteroscedasticity which is often a problem in financial time series modelling

(Cermeño et al., 2010; Verbeek; 2017). However, methods are available to obtain standard errors that are heteroskedastic consistent (Hoechle, 2007). To test whether heteroscedasticity is present, a Wald-Test will be used. This test firmly rejects the null hypothesis of homoscedasticity. Furthermore, I test for the presence of serial correlation with the use of the Wooldridge test. This test indicates that autocorrelation is present, which is often the case with panels using macro-economic data (Reyna, 2007).

Another serious problem is the issue of cross-sectional dependence. This arises due to the correlation of time series data of different countries. (Cermeño et al., 2010). Therefore, the Pesaran CD test will be applied to show if the residuals of different entities are correlated (Reyna, 2007). This test indicates that residuals are correlated and cross-sectional dependence is present. Cermeño and colleagues (2010) overcome this issue by constructing a time varying variance covariance matrix. However, this method is only applicable if the units of observations is relatively small, putting a restrictive limitation on their method (Cermeño and Grier, 2006). Another option is to use the Driscoll and Kraay standard errors which consider the aforementioned problem of heteroscedasticity and autocorrelation as well as the cross-sectional dependence. Especially the latter application is distinctive compared to the Newey-West standard errors which have been used mostly in panel data analysis (Hoechle, 2007).

5. Results

This chapter presents and discusses the results of this thesis. All the regressions have been performed with a fixed effects model and Discroll-Kraay standard errors. First, I will use the ratio of exports over imports as a measure of a country's trade position to perform the regressions. After that, I will assign different criteria to distinguish between exporting and importing countries.

5.1 Splitting on the level of democracy

The focus of this thesis is to examine whether competitive elections create a cycle in the exchange rate. This is because authoritarian policy makers might not be attempted manipulate economic policies as they can control the central bank more easily or find other ways to intervene the election results (Alpanda and Honig, 2010). Therefore, I perform separate regressions for countries that have a Polity2 score of at least 6, which are officially considered as democracies (Center for Systematic Peace, 2016). Moreover, we also included regressions that takes a cut-off point of four and two like (Klomp and De Haan (2013) and Klomp and De Haan (2011)). Table 5.1 provides an overview of the mean values for the explanatory and control variables between democracies and non-democratic countries. As expected, democratic countries have more independent central banks and more checks and balances. Also, they are more export oriented and diversified (a lower value for export diversification means that countries are more diversified), more globally integrated with respect to trade and have a relative lower government debt.

Table 5.1: Mean comparison of explanatory and control variables between democracies and non-democratic countries.

Variable	Mean democratic countries	Mean non-democratic countries
<i>CBI</i>	0.5551435	0.4839809
<i>Election</i>	0.1872	0.1283
<i>Checks and Balances</i>	3.636171	1.670837
<i>Export diversification</i>	2.408533	3.843716
<i>Currency Union</i>	0.0933966	0.1456383
<i>Exchange rate regime</i>	2.093942	2.252525
<i>Trade globalisation</i>	50.25553	48.27668
<i>Ln Inflation</i>	1.822096	2.151906
<i>Ln Interest rate</i>	1.79814	1.972194
<i>Ln % growth GDP per capita</i>	0.0206802	0.012146
<i>Ln government debt of GDP</i>	3.846588	3.948758
<i>Ln Export/Import Ratio</i>	-0.0603024	-0.1321049
<i>Presidential/legislative system</i>	0.3841664	0.8262823

5.2 Export-import ratios

The results of using the actual ratio of exports over imports can be found in table 5.2. The first includes all the country-observations, while the second, third and fourth column only include observations for which a country has at least a polity score of six, four or two.

For the full sample of countries, the results show that the export/import ratio has a significant negative effect on the growth rate. This means that as the ratio increases and countries become more export oriented, they will experience a more appreciated exchange rate which is not in line with the expectations from the interest group theory. Export oriented countries benefit from a depreciated currency as it increases their international competitiveness. It is therefore expected that this coefficient would contain a positive coefficient. This would mean that more export oriented countries experience a more depreciated currency. The same negative coefficient also shows up for the democratic

countries, as well as the sample of countries with a Polity score of at least two and four. This means that policy makers in general tend to keep exchange rates strong, which increases the purchasing power of consumers. So in general, policy makers tend to give a higher value to the average citizen and not the specific interest groups outside electoral periods.

The second aspect that comes to attention is the fact that the interaction between CBI and a country's export/import ratio is positive significant for the full sample of countries, as well as the democratic sample and semi-democratic sample. This means that in (semi)democratic countries, increased levels of CBI create a depreciation of the exchange rate and counteract the fact that policy makers tend to maintain a relative appreciated exchange rate. Moreover, the coefficient for the central bank itself is negative and significant for democratic and semi-democratic countries as well. This means that independent central banks in general are associated with a more appreciated currency in democratic countries. However, as the country becomes more export oriented, the central bank puts a hold on the appreciating currency which is caused by the policy maker.

Furthermore, we see a negative significant effect at the 10% level for the interaction between election years and the export/import ratio of a country for the democratic sample. This means that electoral years are associated with more depreciating exchange rates. The coefficient becomes even more significant for the semi-democratic samples. When including only strong democracy with a Polity score of at least seven we see that the interaction coefficient that indicates the presence of an electoral exchange rate disappears (appendix four). This shows that especially semi-democratic countries face electoral exchange rates. Moreover, using this ratio as a continuous variable does not provide insights by which countries these results are driven. These are most likely export import countries as they will experience a sharp depreciation after the election. To examine this further, the next section will provide additional results. These are based on multiple splits which makes it possible to determine which countries are subjected to electoral exchange rate cycles.

Table 5.2: Regression results using the trade ratio of a country.

VARIABLES	(1) All countries	(2) Democratic Countries	(3) Semi-Democratic Countries (Polity>=4)	(4) Semi- Democratic Countries (Polity>=2)
Ln exchange rate (lagged)	-0.133** (0.0497)	-0.134* (0.0778)	-0.122 (0.0720)	-0.122* (0.0714)
CBI*ratio	0.637** (0.282)	0.784** (0.346)	0.646** (0.294)	0.652** (0.299)
Election*ratio	0.144 (0.102)	0.214* (0.119)	0.214** (0.0965)	0.202** (0.0928)
Election*CBI*ratio	-0.374* (0.209)	-0.477 (0.287)	-0.459* (0.252)	-0.470* (0.253)
Election*CBI	-0.0160 (0.102)	0.00175 (0.119)	0.0271 (0.126)	0.0199 (0.123)
Polity2 (lagged)	0.00854* (0.00420)	-0.00797 (0.0286)	0.00113 (0.0123)	0.000493 (0.0110)
CBI (lagged)	-0.524 (0.349)	-0.622* (0.357)	-0.605* (0.348)	-0.616* (0.354)
Election (lagged)	-0.00872 (0.0381)	-0.0230 (0.0422)	-0.0439 (0.0489)	-0.0392 (0.0452)
Ln ratio (lagged)	-0.298** (0.143)	-0.328** (0.138)	-0.299** (0.133)	-0.288** (0.128)
presidential system (lagged)	0.0485 (0.0286)	0.173* (0.0869)	0.172* (0.0848)	0.173** (0.0839)
Checks and Balances (lagged)	-0.00668	-0.000881	-0.00266	-0.00248

	(0.00464)	(0.00730)	(0.00624)	(0.00608)
Ln inflation (lagged)	0.0400**	0.0256**	0.0303***	0.0296***
	(0.0157)	(0.00974)	(0.00824)	(0.00778)
GDP growth (lagged)	0.0780	0.525	0.385	0.350
	(0.171)	(0.546)	(0.459)	(0.381)
Export diversification (lagged)	-0.00888	0.0147	0.00336	0.00641
	(0.0135)	(0.0185)	(0.0158)	(0.0145)
Trade globalisation(lagged)	-0.00312**	-0.00434	-0.00310	-0.00269
	(0.00147)	(0.00259)	(0.00244)	(0.00226)
Ln interest rate (lagged)	0.00970	0.0165	0.0161	0.0151
	(0.0158)	(0.0227)	(0.0211)	(0.0200)
Ln government debt (lagged)	-0.00502	-0.0640	-0.0483	-0.0499
	(0.0251)	(0.0585)	(0.0392)	(0.0407)
Currency Union (lagged)	0.0851	0.164	0.173	0.164
	(0.274)	(0.186)	(0.188)	(0.189)
Fixed regime (lagged)	-0.212**	-0.325**	-0.288**	-0.275**
	(0.0936)	(0.153)	(0.135)	(0.127)
Floating regime (lagged)	-0.138	-0.270	-0.224	-0.220
	(0.158)	(0.241)	(0.211)	(0.195)
Constant	0.820**	1.146	0.924	0.916
	(0.362)	(0.760)	(0.560)	(0.548)
Observations	1,740	1,244	1,347	1,388
Number of groups	127	94	99	101
Country FE	YES	YES	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

5.3 Multiple splits

The previous section showed that for the democratic and semi-democratic samples, electoral exchange rates take place. Due to the positive sign of the coefficient, it is expected that importing countries are the drivers of this phenomena. To illustrate whether this is true, tables 5.3, 5.4 and 5.5 will perform six regressions. To differentiate between exporting and importing countries, we use the proposed methods from the previous chapter. Exporting countries are either classified if they fall in the highest quartile, if their volume of exports exceed the volume of imports with at least 10 % or if their volume of exports is larger than the volume of imports. The opposite is true for importing countries.

Table 5.3, which includes all the country observations with a Polity 2 score of at least six, shows a clear pattern. Column ten, which represents the importing countries that are classified if their volume of exports exceeds the volume of imports, shows a positive significant coefficient at the 5% level. Columns six and eight do not show any significant effects. This means that electoral periods are associated with more depreciating currencies. Therefore, this coefficient provides some evidence that electoral exchange rate cycles happen in import oriented countries in which the nominal exchange rate is depreciated after elections. Interpreting this coefficient is quite difficult. From Frieden and colleagues (2000) we know that depreciations in the nominal exchange rate occur mainly between months 2-4. On the other hand, an election year appreciates the nominal exchange rate with 1.67%³. This implies that electoral depreciations take place, but on average the election year will see a slightly more appreciated exchange rate. The multiplicative interaction effect with CBI shows a negative significant effect at the 5%. This means that independent central banks are able to combat this effect

³ By taking partial derivatives with respect to elections, we can estimate the effect of an election year on the exchange rate. By taking average values (marginal effects at the mean), this would mean that the nominal exchange rate changes with $0.0361+(0.760*-0.350)+(-0.0639*0.581)+(-1.368*-0.183)=-0.0167$

and result in more appreciated exchange rates during electoral periods. They withhold policy makers to manipulate the exchange rate for electoral purposes.

Tables 5.4 and 5.5 presents the results by including the countries that have a Polity2 score of at least for and two. The results are quite similar to table 5.2. Again, importing countries that are classified by a smaller volume of imports than exports show a significant negative effect for the interaction between elections and the export/import ratio. The multiplicative interaction with CBI is again positive significant.

Table 5.3: Regressions for the semi-democratic countries (Polity 2 score of at least 6) using splits on export/import ratio.

VARIABLES	(5) Exporting countries (highest quartile)	(6) Importing countries (lowest quartile)	(7) Exporting countries (Ratio>=10%)	(8) Importing Countries (Ratio<=10%)	(9) Exporting countries Ratio>=1	(10) Importing countries Ratio<=1
Ln exchange rate (lagged)	-0.193 (0.156)	-0.160 (0.130)	-0.169 (0.132)	-0.101 (0.0701)	-0.116 (0.0795)	-0.124 (0.0829)
CBI*ratio	1.382 (1.454)	1.616 (2.076)	0.634 (1.035)	1.766** (0.830)	0.0502 (0.510)	0.885 (0.802)
Election*ratio	-0.296 (0.497)	0.390 (0.671)	-0.236 (0.284)	0.394 (0.241)	-0.305 (0.368)	0.760** (0.311)
Election*CBI*ratio	1.045 (1.793)	-0.605 (1.065)	1.045 (1.102)	-0.474 (0.363)	1.299 (1.356)	-1.368** (0.540)
Election*CBI	-0.0836 (0.657)	-0.0586 (0.718)	-0.236 (0.171)	0.523 (0.309)	-0.349 (0.295)	-0.0639 (0.177)
Polity2 (lagged)	-0.0578 (0.0496)	0.0171 (0.0242)	-0.0200 (0.0471)	0.0765* (0.0435)	-0.0827 (0.0625)	0.0986** (0.0421)
CBI (lagged)	-0.671 (0.698)	-0.242 (0.994)	-0.394 (0.537)	-0.669 (0.424)	-0.341 (0.309)	-1.127* (0.569)
Election (lagged)	0.0590 (0.231)	0.0782 (0.469)	0.0605 (0.0779)	-0.198 (0.141)	0.0806 (0.0958)	0.0361 (0.0792)
lnratio (lagged)	-0.652 (0.569)	-1.224 (1.420)	-0.345 (0.358)	-1.224** (0.545)	-0.158 (0.178)	-0.731* (0.430)
presidential system (lagged)	0 (0)	0.0146 (0.108)	0 (0)	0.211 (0.154)	-0.0923 (0.0759)	0.296* (0.165)
Checks and Balances (lagged)	-0.00179 (0.00460)	-0.0407 (0.0263)	-0.000590 (0.00466)	0.00676 (0.00870)	0.00692 (0.00570)	0.00368 (0.0198)
Ln inflation (lagged)	-0.0156 (0.0395)	-0.00438 (0.0163)	8.18e-06 (0.0205)	0.0445 (0.0320)	0.00565 (0.0138)	0.0513** (0.0196)
GDP growth (lagged)	5.019 (3.393)	0.411 (0.424)	2.753 (1.985)	-0.350 (0.411)	1.883 (1.435)	-0.533* (0.269)
Export diversifiacion (lagged)	0.00823 (0.0227)	-0.0900 (0.0535)	0.0184 (0.0207)	0.0126 (0.0500)	0.0396 (0.0324)	0.0158 (0.0387)
Trade globalisation(lagged)	-0.0159 (0.00952)	-0.00100 (0.00358)	-0.0102* (0.00589)	-0.00780 (0.00783)	-0.00815** (0.00333)	-0.00545 (0.00451)
Ln interestrate (lagged)	-0.0536 (0.0511)	-0.0117 (0.0132)	0.00859 (0.0152)	0.0214 (0.0249)	-0.00764 (0.0190)	0.0399 (0.0245)
Ln government debt (lagged)	-0.184 (0.154)	-0.00535 (0.0205)	-0.0921 (0.0869)	-0.0975 (0.0813)	-0.0467 (0.0440)	-0.114* (0.0588)
Currency Union (lagged)	0 (0)	-0.907 (0.770)	0.282 (0.185)	0.158 (0.571)	0.133 (0.176)	0.842 (0.496)

Fixed regime (lagged)	-0.210** (0.100)	0.0679 (0.0623)	-0.208** (0.0820)	-0.182 (0.165)	-0.190 (0.115)	-0.528* (0.261)
Floating regime (lagged)	-0.256 (0.473)	0.315*** (0.0933)	-0.292 (0.415)	0.219 (0.144)	-0.225 (0.280)	-0.482** (0.187)
Constant	2.709* (1.578)	1.059 (1.040)	1.521* (0.868)	0.492 (0.455)	1.717 (1.055)	0.603 (0.410)
Observations	270	179	395	431	572	672
Number of groups	35	34	42	70	55	80
Country FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 5.4: Regressions for the semi-democratic countries (Polity 2 score of at least 4) using splits on export/import ratio.

VARIABLES	(11) Exporting countries (highest quartile)	(12) Importing countries (lowest quartile)	(13) Exporting countries (Ratio>=10%)	(14) Importing Countries (Ratio<=10%)	(15) Exporting countries (Ratio>=1)	(16) Importing countries (Ratio<=1)
Ln exchange rate (lagged)	-0.176 (0.131)	-0.133 (0.0787)	-0.161 (0.121)	-0.0374 (0.0634)	-0.121 (0.0813)	-0.0922 (0.0757)
CBI*ratio	0.965 (1.162)	0.0922 (0.418)	0.668 (0.910)	0.829* (0.488)	0.241 (0.466)	0.754 (0.535)
Election*ratio	-0.156 (0.322)	0.0187 (0.372)	-0.192 (0.217)	0.139 (0.271)	-0.267 (0.307)	0.695** (0.285)
Election*CBI*ratio	0.693 (1.217)	0.103 (0.675)	0.916 (0.880)	-0.125 (0.507)	1.182 (1.150)	-1.311** (0.596)
Election*CBI	0.0341 (0.556)	0.326 (0.386)	-0.195 (0.142)	0.548** (0.261)	-0.327 (0.247)	-0.0841 (0.161)
Polity2 (lagged)	0.00718 (0.0276)	-0.0287* (0.0140)	0.00646 (0.0248)	0.0280* (0.0148)	-0.0205 (0.0170)	0.0559** (0.0233)
CBI (lagged)	-0.429 (0.581)	-0.965*** (0.153)	-0.354 (0.464)	-0.905** (0.391)	-0.305 (0.288)	-1.168* (0.580)
Election (lagged)	0.00220 (0.204)	-0.135 (0.245)	0.0478 (0.0825)	-0.247* (0.129)	0.0772 (0.0889)	0.0307 (0.0762)
lnratio (lagged)	-0.442 (0.412)	-0.181 (0.280)	-0.312 (0.313)	-0.586* (0.317)	-0.189 (0.189)	-0.671** (0.301)
presidential system (lagged)	0 (0)	0.0728 (0.0901)	0 (0)	0.191 (0.127)	-0.0120 (0.0308)	0.242 (0.143)
Checks and Balances (lagged)	-0.00416 (0.00415)	-0.01000 (0.0230)	-0.00205 (0.00318)	0.00778 (0.00824)	0.00381 (0.00490)	0.00373 (0.0179)
Ln inflation (lagged)	-0.00922 (0.0319)	-0.00381 (0.0135)	-0.00310 (0.0201)	0.0454 (0.0293)	0.00509 (0.0136)	0.0570*** (0.0181)
GDP growth (lagged)	3.084 (2.163)	-0.0145 (0.219)	2.059 (1.517)	-0.623 (0.520)	1.509 (1.138)	-0.537* (0.269)
Export diversification (lagged)	0.000909 (0.0162)	-0.102* (0.0585)	0.0123 (0.0156)	-0.0129 (0.0346)	0.0228 (0.0257)	-0.00535 (0.0299)
Trade globalisation(lagged)	-0.00998* (0.00532)	0.000968 (0.00177)	-0.00782* (0.00405)	-0.00515 (0.00588)	-0.00634** (0.00248)	-0.00342 (0.00383)
Ln interestrate (lagged)	-0.0142 (0.0185)	-0.00801 (0.0114)	0.0123 (0.00873)	0.0138 (0.0228)	0.000109 (0.0129)	0.0348 (0.0229)
Ln government debt (lagged)	-0.120	-0.00679	-0.0732	-0.0592	-0.0518	-0.0703*

	(0.100)	(0.0184)	(0.0647)	(0.0560)	(0.0370)	(0.0386)
Currency Union (lagged)	0	-0.781	0.251	0.433	0.0911	0.910*
	(0)	(0.479)	(0.177)	(0.656)	(0.175)	(0.535)
Fixed regime (lagged)	-0.150**	-0.00274	-0.175***	-0.137	-0.169*	-0.421*
	(0.0718)	(0.0478)	(0.0592)	(0.107)	(0.0954)	(0.211)
Floating regime (lagged)	-0.339	0.00534	-0.313	-0.0367	-0.242	-0.254*
	(0.454)	(0.104)	(0.388)	(0.0676)	(0.284)	(0.147)
Constant	1.480*	1.668***	1.085*	0.694	1.083*	0.666
	(0.757)	(0.376)	(0.534)	(0.503)	(0.547)	(0.522)
Observations	301	219	431	491	612	735
Number of groups	38	37	46	73	58	83
Country FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 5.5: Regressions for the semi-democratic (Polity 2 score of at least 2) countries using splits on export/import ratio).

VARIABLES	(17)	(18)	(19)	(20)	(21)	(22)
	Exporting countries (highest quartile)	Importing countries (lowest quartile)	Exporting countries (Ratio>=10%)	Importing Countries (Ratio<=10%)	Exporting countries (Ratio>=1)	Importing countries (Ratio<=1)
Ln exchange rate (lagged)	-0.179 (0.136)	-0.170** (0.0743)	-0.159 (0.124)	-0.0542 (0.0635)	-0.122 (0.0813)	-0.0956 (0.0775)
CBI*ratio	1.050 (1.173)	0.162 (0.484)	0.738 (0.916)	0.775* (0.421)	0.283 (0.464)	0.594 (0.531)
Election*ratio	-0.119 (0.239)	-0.0579 (0.402)	-0.169 (0.202)	-0.0727 (0.276)	-0.224 (0.289)	0.487** (0.238)
Election*CBI*ratio	0.526 (0.855)	0.192 (0.751)	0.788 (0.778)	0.127 (0.500)	1.016 (1.039)	-1.079** (0.514)
Election*CBI	0.0747 (0.488)	0.360 (0.459)	-0.181 (0.143)	0.618** (0.296)	-0.292 (0.247)	-0.0472 (0.157)
Polity2 (lagged)	-0.00177 (0.0235)	-0.0199* (0.0114)	-0.000484 (0.0218)	0.0156 (0.0124)	-0.0204 (0.0175)	0.0305** (0.0136)
CBI (lagged)	-0.464 (0.584)	-0.885*** (0.177)	-0.389 (0.453)	-0.873** (0.393)	-0.318 (0.291)	-1.170* (0.578)
Election (lagged)	0.000998 (0.193)	-0.160 (0.287)	0.0528 (0.0820)	-0.307* (0.152)	0.0646 (0.0969)	-0.00695 (0.0735)
Ln ratio (lagged)	-0.444 (0.412)	-0.224 (0.331)	-0.313 (0.316)	-0.544* (0.269)	-0.179 (0.183)	-0.541* (0.284)
Presidential system (lagged)	0 (0)	0.0883 (0.0835)	0 (0)	0.179 (0.122)	-0.00480 (0.0270)	0.221 (0.131)
Checks and Balances (lagged)	0.000583 (0.00412)	-0.00640 (0.0197)	0.00113 (0.00327)	0.00413 (0.00741)	0.00549 (0.00459)	0.000811 (0.0176)
Ln inflation (lagged)	-0.0132 (0.0276)	-0.00119 (0.0141)	-0.00452 (0.0179)	0.0466 (0.0289)	0.00530 (0.0127)	0.0577*** (0.0186)
GDP growth (lagged)	2.829 (1.795)	0.0955 (0.182)	1.875 (1.259)	-0.511 (0.487)	1.371 (0.937)	-0.476* (0.268)
Export diversification (lagged)	0.00149 (0.0159)	-0.0361 (0.0332)	0.0136 (0.0159)	0.00627 (0.0196)	0.0224 (0.0259)	0.00646 (0.0219)
Trade globalisation(lagged)	-0.00934* (0.00460)	0.000712 (0.00186)	-0.00715* (0.00355)	-0.00467 (0.00550)	-0.00529** (0.00223)	-0.00322 (0.00378)
ln_interestrates (lagged)	-0.00234 (0.0148)	-0.00517 (0.0103)	0.0146 (0.0104)	0.0148 (0.0222)	0.00202 (0.0121)	0.0341 (0.0217)
Ln government debt (lagged)	-0.126 (0.111)	-0.00939 (0.0210)	-0.0815 (0.0736)	-0.0620 (0.0530)	-0.0607 (0.0442)	-0.0685* (0.0392)
Currency Union (lagged)	0 (0)	-0.964** (0.461)	0.241 (0.173)	0.330 (0.639)	0.0783 (0.175)	0.871 (0.536)
Fixed regime (lagged)	-0.105 (0.0721)	-0.0151 (0.0488)	-0.132** (0.0520)	-0.130 (0.104)	-0.158* (0.0809)	-0.405* (0.205)
Floating regime (lagged)	-0.284 (0.320)	-0.0100 (0.0965)	-0.282 (0.298)	-0.0197 (0.0766)	-0.233 (0.239)	-0.218 (0.160)
Constant	1.526* (0.812)	1.473*** (0.333)	1.129* (0.575)	0.775 (0.478)	1.057* (0.549)	0.866* (0.483)
Observations	316	232	448	509	630	758
Number of groups	39	40	47	74	59	84
Country FE	YES	YES	YES	YES	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

5.4 Summary of the results

The regression tables show that policy makers do not necessarily manipulate the exchange rate in favour of the trade position of a country. The negative coefficient for the export/import hint that the more export oriented a country is, the more the nominal exchange rate experiences a depreciation. This means that policy makers tend to favour the larger non-tradable sector/electorate outside electoral periods.

Moreover, the results do not show strong evidence that electoral cycles in the nominal exchange rate exist. Defining the trade position of a country based on its export/import ratio does provide some significant results, but only for semi-democratic countries that are import oriented.

Because the export/import ratio does not provide insights about which countries drive this effect, an extra split has been made. Export oriented countries are defined if they are situated in the highest quartile, if their amount of export exceeds their amount of imports with at least 10% or if the volume of exports is larger than the volume of imports. The opposite is true for importing countries. The interaction effect between electoral years and the export/import ratio shows that import oriented countries experience a more depreciated exchange rate during elections. This could hint at a delayed depreciation which has been found in the literature for South American countries. If elections are held, this will result in a depreciation of the exchange rate after the elections has taken place.

Results also show that the interaction effects with CBI result in opposing cycles. This is true for non-electoral periods, as well as electoral periods when importing countries experience electoral exchange rate cycles. This shows that independent central banks oppose the effects that set-up by the policy maker to influence the exchange rate.

6. Discussion and conclusion

The last chapter contains several elements that wrap up this thesis. First, it will discuss the limitations of this research. After that, the chapter provides conclusions based on the results of the previous chapter. At last, suggestion for further research will be provided as well as the theoretical implications of the results.

6.1 Limitations

During this research, some aspects have created limitations regarding the data analysis and interpretation of the results. Before I form a conclusion based on these results, it is important to highlight the limitations that could bias the results.

First, there is the issue of defining the election year. The question is if defining the election year through this methodology captures the phenomena of electoral exchange rate cycles fully. For example, Streb and colleagues (2013) find that quarterly data is the best option to capture exchange rate cycles in foreign reserves. If exchange rate fluctuations happen immediately after the election, monthly or quarterly data would be more effective in capturing the cycle, but also to examine how long this cycle lasts.

Second, the model suffers from biased and inconsistent estimators due to the inclusion of the lagged dependent variable in a static fixed model. Performing the analysis with a dynamic panel data model by using the Arellano and Bond estimator, which uses the full history of the data as instruments to obtain valid moment conditions (Verbeek, 2017), would be more appropriate.

Furthermore, there is the problem of endogeneity bias due to the nature of electoral timing. If elections are called because of the economic conditions, it would violate the whole assumption of PBC's. Including only exogenous elections would lead to unbiased results. I have attempted to overcome this problem by using a cut-off point, leaving room for a business cycle to occur. However, more detailed analysis is required. For example, Klomp and De Haan (2013) use a cut-off point of one year, but also examine if an election is held at the agreed time or in the last year of the legislature.

6.2 Conclusions

The goal of this thesis was to examine the presence of electoral exchange rate cycles, conditional on the level of CBI and the trade position of the specific country. This has been done through a panel data study with fixed effects to examine the effect of electoral periods, CBI and the trade position on annual nominal exchange rate changes. Discroll-Kraay standard errors have been used to deal with serial-correlation, heteroscedasticity and cross-sectional dependence.

The results show that electoral exchange rates take place for a very limited sample of country observations. Only importing countries that are semi-democratic experience an exchange rate cycle. The effect is positive which means that these countries have a more depreciated exchange rate during electoral years. Exporting countries do not experience any electoral motivated exchange rate cycles.

The presence of CBI shows that exchange rate cycles are mitigated. Strong democratic countries that do not experience an electoral exchange rate cycle, but a non-electoral effect of the exchange rate, experience a counteracting effect of CBI. While policy makers attempt to maintain an appreciated currency, the interaction effect of CBI with the export/import ratio shows that independent central banks reverse this situation. The same is true for semi-democratic countries. Moreover, the semi-democratic countries that experience this cycle during electoral periods also face strong opposition from the central bank. It can therefore be concluded that CBI has an effect in withholding policy

makers to use the exchange rate for opportunistic motives. This can be during electoral or non-electoral periods.

6.3 Discussion of the results

The results of this thesis show that the export/import ratio is negatively linked with the changes in the exchange rate in non-electoral periods. This is in contrast with Jeffrey Friedens (1991) sectoral exchange rate model which shows that export-oriented countries benefit the most from a weak currency while import-oriented countries benefit the most from a weak currency. This means that the interest group theory are unable to translate their exchange preferences towards the policy maker in non-electoral periods. Instead, the policy makers chooses to favour their more numerous non-tradable sector and consumers by maintaining an appreciated exchange rate. This can arise from two possibilities. First, it can show the dominance of the median voter theory over the interest group theory in non-electoral periods. Second, it could also mean that interest groups in import oriented countries are effectively lobbying for a more appreciated exchange rate. This contradicts the statement of Broz and Frieden (2001) who state that only tradable sectors that favour a depreciation of the exchange rate are involved in this process.

Furthermore, it was expected that especially democratic countries experience electoral exchange rate cycles as stated by Bonomo and Terra (1999) and Alpanda and Honig (2010). This is because autocratic regimes provide smaller incentives to manipulate economic policy in general because they are less concerned about re-election probabilities (Alpanda and Honig, 2010), but also able to resist interest group pressures (Haggard and Webb, 1993). The results indicate that this is not necessarily the case. Democratic countries, which have at least a Polity score of six, show weak evidence of electoral exchange rate cycles. When including semi-democratic countries with a Polity score of 4 and 2, evidence hints that electoral exchange rate cycles are much more likely to exist. This implies that especially semi-democratic regimes, policy makers face pressures to manipulate economic policy and respond to this situation.

Perhaps these countries are in the early process of becoming democratic, which would support the findings of Brender and Drazen (2005). They find that electoral exchange rate cycles in fiscal policies take place in new/young democracies. These are countries in which the settings are optimal for policy makers to engage in political business cycles.

When facing these pressures, it is expected that import oriented countries will demand a strong currency which will depreciate immediately after the election (Frieden et al., 2000). Export oriented countries, on the other hand, will pressure policy makers to maintain a weak currency which will appreciate after elections (Huang and Terra, 2016a&b). Evidence suggests that this cycle only occurs for a set of importing countries, supporting partially the idea of Frieden and colleagues (2000) who find this cycle for Latin American countries which are import oriented. I say partially because indeed importing countries are found to have an electoral exchange rate cycle that depreciates. However, it is shown that only after the inclusion of semi-democratic countries this effect exists, while many of the Latin American countries are on average more democratic. This means that the effect can be driven by other countries. Furthermore, the results have been unable to demonstrate that export oriented countries experience an opposite cycle as stated by Huang and Terra (2016a&b).

The results also show that independent central banks are able to combat the effects of the trade position on the nominal exchange rate. Whereas the export/import ratio shows a negative impact on the exchange rate, the interaction with CBI results in a positive significant coefficient. This implies that central banks are independent enough to not be captured by the political influence of the policy maker outside electoral periods. On the other hand, the countries that experience an electoral exchange rate cycle also face opposition from the central bank. This means that during electoral periods, independent

central banks will counteract the decision of the policy maker to create an electoral exchange rate cycle. This makes the behaviour of independent central banks more complex. In strong democratic countries, they counteract the actions of policy makers during non-electoral periods, while in semi-democratic countries they block non-electoral and electoral attempts of policy makers to manipulate the exchange rate. This is partially in line with the theoretical rationale of CBI. It shows that CBI is not only credible in democratic cycles. This is in contrast with Bodea and Hicks (2015). Difference is that policy makers in strong democratic regimes tend to encourage an appreciated exchange rate outside electoral periods, while a sample of importing countries pursue this during electoral periods.

6.4 Suggestions for further research

Further research should be undertaken to deal with the possible biased results that arise from the inclusion of a lagged dependent variable in a static model. This can be done by a more advanced methodology such as a dynamic panel data in combination with the Arellano and Bond estimator. Furthermore, more attention must be given to the endogeneity of elections. Most of the studies that have dealt with electoral exchange rate cycles do not mention anything about this phenomena while it could seriously bias the results. Klomp and De Haan (2013) provide a good methodology how to overcome this issue.

Furthermore, monthly data is preferred as it can capture the exchange rate cycle more precisely. This should uncover the possibility of electoral exchange rate cycles in exporting countries, which this thesis has failed to do so. Also, one must think about alternatives of measuring the influence of

6.5 Theoretical implications of results

The purpose of this thesis was to examine the presence of electoral exchange rate cycles, conditional on the level of CBI and the trade position of the specific country. This thesis has attempted to contribute to the scientific debate by using a relatively new⁴, but improved update of a CBI measure. This measure captures the within variation of a country as discussed earlier, but also provides a much more extensive country range compared to other popular measures of CBI such as the ones of Cukierman, Web and Neyapti (1992), Crowe and Meade (2008) or Bodea and Hicks (2015). With respect to the trade position of a country, this thesis deviates from popular measures such as sectoral export and/or employment shares.

Keeping the limitations in mind, evidence from this thesis hints that electoral exchange rates occur in import oriented countries that are semi-democratic. Moreover, the interaction effect with CBI results in opposing coefficients which hints that they block these cycles. In contrast, no evidence was found for electoral exchange rate cycles in export-oriented countries as suggested by Huang and Terra (2016a&b). It is therefore doubtful if electoral exchange rate cycles occur in these countries.

Furthermore, democratic countries in general do not experience exchange rate cycles which can be attributed to the independence of central banks. Import oriented countries that experience these cycles also underline the importance of CBI as an important institutional factor to abstain policy makers from engaging in electoral exchange rate cycles.

⁴ Garriga (2016) has only been cited 44 times according to Google Scholar (23rd of July, 2018).

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Appendix 1

Table 1: Description of explanatory and control variables

Control variable	Description	Data source
<i>CBI</i>	Level of Central Bank Independence	Garriga (2016)
<i>Country regime (democracy/autocracy)</i>	Polity IV index	Center for Systematic Peace (2017)
<i>Trade globalisation</i>	KOF Trade Globalisation Index	Dreher, 2006
<i>Export/import ratio</i>	Annual exports over imports in constant 2010\$	World Bank (2018)
<i>Election date</i>	See section 3.2	DPI (Beck et al., 2001)
<i>Exchange rate regime</i>	Dummy variables to distinguish between fixed, intermediate and flexible regimes.	Rogoff and Reinhart (2002)
<i>Checks and balances</i>	Number of veto players in a country and the number of each of these veto players whose orientation is closer to the opposition than the government.	DPI (Beck et al., 2001)
<i>Export diversification</i>	IMF Export Diversification Index	IMF (2017)
<i>Currency union</i>	Dummy variable 1 if country-year observation is part of a currency union.	IMF (2018a)
<i>Interest rate</i>	Real interest rate	World Bank (2018), Index Mundi (2018), Trading Economics (2018)
<i>Inflation</i>	% change in CPI	World Bank (2018)
<i>GDP per Capita % growth</i>	Log difference in GDP per Capita measured in constant 2010\$	World Bank (2018)
<i>Government debt</i>	Government debt as % of GDP	IMF (2018b)
<i>Presidential vs Parliamentary</i>	Dummy variable is 1 if county observation has a presidential system.	DPI (Beck et al., 2001)

Appendix 2

Table 2: Overview of legislative system and elections per country

Country	Legislative system	Type of elections	Election years
Afghanistan	Presidential	President	2004, 2009
Albania	Assembly, parliamentary	Legislative	1991,1996,2001,2005,2009
Algeria	Presidential	President	1984,1988,1995,1998,2004,2009
Angola	Assembly, presidential	President	1980,1986,1992,2009
Argentina	Presidential	President	1982,1989,1995,1999,2007,2011
Armenia	Presidential	President	1991,1996,1998,2003,2008,2012
Australia	Parliamentary	Legislative	1980,1983,1987,1990,1993,1996,2001,2004,2007,2010
Austria	Parliamentary	Legislative	1983,1986,1990,1994,1999,2002,2006,2013
Azerbaijan	Presidential	President	1992,1998,2003,2008,2012
Bahrain	Presidential	President	2002,2006,2010
Bangladesh	Parliamentary	Legislative	1981,1986,1991,1996,2001,2008
Belarus	Presidential	President	1994,2001,2006
Belgium	Parliamentary	Legislative	1981,1985,1991,2000,2003,2007,2010
Benin	Assembly, Presidential	President	1991,1996,2001,2006,2011
Bhutan	Presidential	President	2008
Bolivia	Presidential	President	1985,1989,1993,1997,2002,2005,2010
Bosnia Herzegovina	Parliamentary	Legislative	1998,2002,2006,2010
Botswana	Parliamentary	Legislative	1984,1989,1994,1999,2004,2009
Brazil	Assembly, presidential	President	1985,1989,1994,1998,2002,2006,2010
Burundi	Presidential	President	1984,1993,2005,2010
Burkina Faso	Presidential	President	1991,1998,2005,2010
Bulgaria	Assembly, parliamentary	Legislative	1991,2001,2005,2009
Canada	Parliamentary	Legislative	1980,1984,1988,1993,1997,2000,2004,2008,2011
Cambodia	Assembly, parliament	Legislative	1981,1993,1998,2003,2008,2013
Cameroon	Presidential	President	1980,1984,1988,1992,1997,2011
Cape Verde	Presidential	President	1991,1996,2001,2006,2011
Central African Republic	Presidential	President	1986,1993,1999,2005,2011
Chad	Presidential	President	1996,2001,2006,2011

China	Assembly		
Chile	Presidential	President	1989,1993,2000,2005,2009
Colombia	Presidential	President	1982,1986,1990,1994,1999,2002,2006,2010
Comoros	Presidential	President	1996,2002,2006
Costa Rica	Presidential	President	1982,1986,1990,1994,1998,2002,2006,2010
Congo Brazeville	Assembly, presidential	Legislative, president	1984, 1989,1992,2002,2009
Croatia	Presidential (1993-2000), parliamentary (2000-2012)	President and Legislative	1997,2000,2005,2009
Cuba	Assembly	President	1981,1986,1993,2003,2008,2013
Cyprus	Presidential	President	1983,1988,1993,1998,2003,2008
Czech Republic	Parliamentary	Legislative	1996,2002,2006,2010
Democratic Republic Congo	Presidential	President	1984,2006
Denmark	Parliamentary	Legislative	1981,1984,1987,1990,1994,1998,2001,2005,2011
Djibouti	Parliamentary, presidential	Legislative, president	1993,1999,2005,2011
Dominican Republic	Presidential	President	1982,1986,1990,1994,2000,2004,2008,2012
East Timor			
Ecuador	Presidential	President	1984,1988,1992,1996,2002,2006,2010
Egypt	Assembly	President	1981,1987,1993,2005,2012
Estonia	Assembly	Legislative	1996,1999,2003,2007,2011
East Timor	Presidential	President	2002,2007,2012
Equatorial Guinea	Presidential	President	1989,1996,2002,2009
Eritrea	Assembly	Legislative	1994
Ethiopia	Presidential, Parliamentary	President, legislative	1995,2000,2005,2011
Finland	Parliamentary	Legislative	1982,1988,1994,2000,2006,2012
Fiji	Parliamentary	Legislative	1982,1987,1992,1999,2006
France	Parliamentary	Legislative	1981,1988,1995,2002,2007
Gabon	Presidential	President	1986,1993,1998,2005,2009
Gambia	Assembly, Presidential	President	1982,1987,1992,1996,2001,2006,2011
Ghana	Presidential	President	1992,1996,2000,2004,2008,2012
Germany	Parliamentary	Legislative	1980,1983,1987,1990,1994,1998,2002,2005,2009 ,2013
Guinea	Presidential	President	1993,1998,2003,2010
Guinea- Bissau	Presidential	President	1994,2000,2005,2009,2012
Greece	Assembly, parliamentary	Legislative	1981,1985,1989,1993,1996,2000,2004,2007,2012
Georgia	Presidential	President	1995,2000,2004,2008,2013
Guatemala	Assembly, presidential	President	1982,1985,1990,1995,2000,2003,2007,2011

Guyana	Assembly	Legislative	1980,1985,1992,2001,2006,2011
Haiti	Presidential	President	1990,1995,2000,2006,2011
Honduras	Presidential	President	1989,1993,1997,2001,2005,2009
Hungary	Assembly, parliamentary	Legislative	1985,1990,1994,1998,2002,2006,2010
India	Parliamentary	Legislative	1980,1984,1989,1996,1999,2004,2009
Indonesia	Assembly, presidential	President	2004,2009
Iran	Presidential	President	1989,1993,1997,2001,2005,2009,2013
Iraq	Presidential, parliamentary	Legislative	1984,1989,1996,2005,2010
Ireland	Parliamentary	Legislative	1981,1987,1992,1997,2002,2007,2011
Israel	Parliamentary, presidential	Legislative	1981,1984,1988,1992,1996,1999,2003,2006,2009
Italy	Parliamentary	Legislative	1983,1987,1992,1996,2001,2006,2013
Ivory Coast	Presidential	President	1985,1990,1995,2000,2010
Jamaica	Parliamentary	Legislative	1983,1989,1993,1997,2002,2007,2011
Japan	Parliamentary	Legislative	1980,1983,1986,1990,1993,1996,2000,2003,2009
Jordan	Presidential	President	1997,2004,2007,2010,2013
Kazakhstan	Presidential	President	1995,1999,2011
Kenya	Presidential	President	1983,1987,1992,1997,2002,2007
Kyrgyzstan	Presidential	President	1995,2000,2005,2009
Kuwait	Presidential	President	1982,1992,1996,1999,2003,2006,2009,2012
Laos	Assembly	President	2006,2011
Latvia	Parliamentary	Legislative	1993,1998,2002,2006,2010
Liberia	Assembly, Presidential	President	1985,1997,2005,2011
Libya	Presidential	President	2012
Lebanon	Assembly, presidential	President (1980-1992), Legislative (1993-2012)	1996,2000,2005,2009
Lesotho	Presidential, parliamentary	Legislative	1993,1998,2002,2007,2012
Lithuania	Presidential	President	1993,1998,2002,2009
Luxembourg	Parliamentary	Legislative	1984,1989,1994,1999,2004,2009,2013
Macedonia	Parliamentary	Legislative	1994,1999,2004,2009
Madagascar	Presidential	President	1982,1989,1993,1996,2001,2006,2011
Malaysia	Parliamentary	Legislative	1982,1986,1990,1995,1999,2004,2008
Mauritania	Presidential	President	1992,2003,2007
Mauritius	Parliamentary	Legislative	1982,1987,1991,1995,2000,2005,2010
Malawi	Presidential	President	1994,1999,2004,2009
Mexico	Presidential	President	1982,1988,1994,1997,2000,2006,2012
Moldova	Presidential, Assembly,	President (1994-2000), Legislative (2001-2012)	1996,2001,2005,2009
Mali	Presidential	President	1984,1992,1997,2002,2007,2013
Mongolia	Assembly, Presidential	President	1993,1997,2001,2005,2009,2013

Montenegro	-	-	
Morocco	Presidential	President	1984,1993,1997,2002,2007,2011
Mozambique	Assembly, presidential	President	1994,1999,2004,2009
Myanmar	Assembly, presidential	Legislative	1985,1990,2010
Namibia	Assembly, presidential	President	1994,1999,2004,2009
Nepal	Parliamentary	Legislative	1981,1986,1991,1994,1999,2008,2012
New Zealand	Parliamentary	Legislative	1981,1984,1987,1990,1993,1996,1999,2002,2005, 2008,2011
Nicaragua	Presidential	President	1984,1990,1996,2001,2006,2011
Niger	Assembly, presidential	President	1989,1993,1996,1999,2004,2011
Nigeria	Presidential	President	1983,1999,2003,2007,2011
Norway	Parliamentary	Legislative	1981,1985,1989,1993,1997,2001,2005,2009
Netherlands	Parliamentary	Legislative	1981,1986,1989,1994,1998,2002,2006,2010
Oman	Presidential	President	2007,2011
Pakistan	Assembly, Parliamentary, presidential	Legislative	1985,1988,1993,1997,2002,2008,2013
Panama	Presidential	President	1984,1989,1994,1999,2004,2009
Papua new Guinea	Parliamentary	Legislative	1982,1987,1992,1997,2002,2007,2012
Paraguay	Presidential	President	1983,1988,1993,1998,2003,2008
Peru	Presidential	President	1980,1985,1989,1995,2000,2006,2011
Philippines	Presidential	President	1981,1992,1998,2004,2010
Poland	Presidential	Legislative	1990,1995,2000,2005,2010
Portugal	Presidential	Legislative	1980,1996,2001,2011
Qatar	Presidential	President	
South Korea	Presidential	President	1987,1992,1997,2002,2007,2012
Romania	Assembly, Parliamentary	Legislative	2000,2004
Russia	Assembly, Presidential	President	1991,1996,2000,2004,2008,2012
Rwanda	Presidential	President	1981,1983,1988,2003,2010
Saudi-Arabia	Presidential	President	
South Africa	Assembly	Legislative	1980,1984,1987,1994,1999,2004,2009
El Salvador	Presidential	President	1984,1989,1994,1999,2004,2009
Senegal	Presidential	President	1983,1988,1993,2000,2007,2012
Serbia	-	-	
Sierra Leone	Presidential	President	1985,1996,2002,2007,2012
Singapore	Parliamentary	Legislative	1980,1984,1988,1991,1997,2001,2006,2011
Slovakia	Parliamentary	Legislative	1994,1998,2002,2006,2010
Slovenia	Parliamentary	Legislative	1992,1996,2000,2004,2008,2011
Solomon Islands	Parliamentary	Legislative	1980,1984,1989,1993,1997,2001,2006,2010
Somalia	Presidential	President	2009,2013
Spain	Parliamentary	Legislative	1982,1986,1989,1993,1996,2000,2003,2007,2010
Sri Lanka	Presidential	President	1982,1988,1994,1999,2005,2010

Sudan	Assembly, Presidential	President	1996
Suriname	Presidential, parliamentary	President	1991,1996,2005,2010
Swaziland	Presidential	President	2013
Sweden	Parliamentary	Legislative	1982,1985,1988,1991,1994,1997,2000,2003,2006 ,2009,2012
Switzerland	Parliamentary	Legislative	1983,1987,1991,1995,1999,2003,2007,2011
Syria	Presidential	President	1985,1991,2000
Taiwan	Assembly, Presidential	President	1996,2000,2004,2008,2012
Tajikistan	Presidential	President	1994,1999,2013
Tanzania	Presidential	President	1985,1990,1995,2000,2005,2010
Thailand	Parliamentary	Legislative	1983,1987,1992,1995,2001,2005,2012
Togo	Assembly, presidential, parliamentary	Presidential	1986,1993,1998,2005,2010
Trinidad and Tobago	Parliamentary	Legislative	1981,1986,1991,1995,2000,2007,2010
Tunisia	Presidential	President	1989,1994,1999,2004,2009
Turkey	Parliamentary	Legislative	1983,1987,1991,1995,1999,2002,2007,2011
Turkmenista n	Presidential	President	1994
UAE	Presidential	President	
Uganda	Presidential, parliamentary	President	1996,2001,2006,2011
UK	Parliamentary	Legislative	1983,1987,1992,1997,2001,2005,2010
Ukraine	Presidential	President	1994,1998,2013
Uruguay	Presidential	President	1984,1989,1994,1999,2004,2009
USA	Presidential	President	1984,1988,1992,1996,2000,2004,2008,2012
Uzbekistan	Presidential	President	2000
Venezuela	Presidential	President	1983,1988,1993,1998,2006,2012
Vietnam	Assembly	President	1997,2002,2006
Yemen	Assembly, presidential	President	1999,2006,2012
Zambia	Presidential	President	1983,1988,1991,1996,2001,2006,2011
Zimbabwe	Presidential	President	1996,2002,2008,2013

Appendix 3

Table 3: Correlation matrix

	Election	CBI	Polity2	Checks and balances	Presidential system	Ln inflation	Ln interest rate	GDP per capita growth rate	Ln government debt	Ln ratio	Currency union	Exchange rate regime	Trade globalisation	Export diversification
Election	1													
CBI	0.0082	1												
Polity2	0.0714	0.1388	1											
Checks and Balances	0.039	-0.035	0.5092	1										
presidential	-0.0373	0.1189	-0.4536	-0.354	1									
ln inflation	-0.0444	-0.0277	-0.1141	-0.0851	0.264	1								
ln interest rate	-0.0012	-0.0098	-0.0906	-0.0278	0.2305	0.1025	1							
GDP per capita growth rate	-0.012	-0.0098	-0.0778	-0.0084	0.0102	-0.052	-0.0313	1						
ln government debt	-0.0049	-0.0898	-0.1297	-0.0702	0.0749	-0.0016	0.1277	-0.1645	1					
ln ratio	-0.0008	-0.1372	0.0856	0.1712	-0.1937	-0.0725	-0.0315	-0.022	-0.1064	1				
Currency union	0.0041	0.328	-0.1505	-0.0573	-0.0171	-0.2296	-0.126	-0.003	0.1029	0.1479	1			
Exchange rate regime	0.001	-0.2085	0.039	0.008	0.0552	0.2201	0.0921	-0.1589	0.1405	0.0904	-0.3226	1		
Trade globalisation	0.0054	0.1724	-0.0784	-0.0661	-0.2126	-0.1476	-0.1928	0.1728	-0.0596	-0.0796	0.123	-0.3027	1	
Export diversification	-0.0527	0.0879	-0.4675	-0.367	0.5039	0.1999	0.1698	0.0482	0.0523	-0.1367	0.1322	0.0367	-0.034	1

Appendix 4

Table 4: Regression results for countries with a Polity score of at least 7.

VARIABLES	(1) Polity score ≥ 7
Ln exchange rate (lagged)	-0.148* (0.0755)
CBI*ratio	1.274** (0.581)
Election*ratio	0.172 (0.130)
Election*CBI*ratio	-0.426 (0.315)
Election*CBI	-0.0291 (0.137)
Polity2 (lagged)	-0.0442 (0.0424)
CBI (lagged)	-0.731 (0.434)
Election (lagged)	-0.00220 (0.0497)
Ln ratio (lagged)	-0.490** (0.220)
presidential system (lagged)	0.270** (0.128)
Checks and Balances (lagged)	-0.00157 (0.00860)
Ln inflation (lagged)	0.0166 (0.0137)
GDP growth (lagged)	0.511 (0.619)
Export diversification (lagged)	0.0105 (0.0190)
Trade globalisation(lagged)	-0.00543* (0.00301)
Ln interest rate (lagged)	0.0223 (0.0279)
Ln government debt (lagged)	-0.0950 (0.0691)
Currency Union (lagged)	0.176 (0.201)
Fixed regime (lagged)	-0.346* (0.180)
Floating regime (lagged)	-0.334 (0.249)
Constant	1.738 (1.069)
Observations	1,116
Number of groups	79
Country FE	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

