THE UNIVERSITY OF HULL

Electoral Economic Cycles and the Role of Political Institutions

Do Political Institutions influence the Political Budget Cycle?

Being a Thesis submitted for the Degree of Doctor of Philosophy
In the University of Hull

by

Pascal Hans Ruedi Halbeisen

MSc. University of Hull, UK
BSc. University of applied science Aargau, Switzerland

August, 2014

Under the supervision of

Dr. Raymond Swaray

University of Hull

Abstract

The Political Budget Cycle describes the repetitive change of fiscal policy by the office holder in order to improve their chances for re-election. This research investigates the connection between the *size* and *type* of the Political Budget Cycle and the institutional framework. The empirical analysis examines the influence of individual institutional variables as well as the resulting effect from the overall complexity of the institutional framework.

Analysing the fiscal policy in a panel of 68 developed countries over a period from 1975 until 2009, it is shown that the size of the Political Budget Cycle measured by the budget balance is largely determined by the *electoral competition* and the *concentration of political power*. In the absence of a tangible threat of being voted out of office, there is no incentive for the office holder to employ fiscal policy for the purpose of their re-election. In turn, the incumbent's opportunity to use fiscal policy for their advantage is heavily restricted that in case of dispersed political power. Results reveal further a correlation between the size of the Political Budget Cycle and the *political accountability* and the *mean district magnitude*. The significance of their effect, however, is conditional on the concentration of political power. Analysing the existence of electoral fiscal cycles within the budget composition, the research proves conclusively that the type of the Political Budget Cycle and the choice of fiscal instruments is effectively determined by the interaction between the concentration of institutional power and the average district magnitude. The former accounts for the size of the individual electoral cycle whereas the district magnitude determines which fiscal instruments are being utilised. Examining the Political Budget Cycle in a panel of 34 developing countries, the effect of the institutional framework proves to be mostly identical except for the electoral completion. Essentially, the concentration of political power exhibits large explanatory power in justifying for the difference between developed and developing countries. The restricting effect of dispersed political power proves robust when testing in interaction with the age of democracy and the access to free media.

Acknowledgment

First and foremost, I wish to express my gratitude to my supervisor, Dr. Raymond Swaray from the University of Hull, for his constant support, advice and encouragement during the entire time of this research. I was very fortunate to conduct my research under his supervision, having received the freedom to explore my own ideas and at the same time the guidance I needed to stay on course. Furthermore, I am deeply grateful to Prof. Andrew Abbott for his interest in my subject and his ideas during the progress of my research. Special thanks go to Prof. Antony Dnes' for this encouragement to conduct my research at the University of Hull. I further would like to thank Dr. Keshab Bhattarai, Dr. Carlyn Dobson, Dr. Gabriele Amorosi and Prof. Fidel Perez for their much appreciated input.

A special thank goes to my wife Maheshika for making this research possible. Thank you for your patience, support and encouragement during this challenging time. I also like to thank Agnieszka, Claudia, Dawid, Delphine, Gheeta, Kevin, Melanie and Susan for all their moral support, their friendship and all the nice evening we had together. A final thank goes to my parents, siblings and in-laws for being there for me when needed.

Table of Content

List of Tables

List of Figures

List of Graphs

Acronyms and Abbreviations

ADB	African Development Bank Group
ADF	Augmented Dickey-Fuller
ADM	Asian Development Bank
AIC	Akaike Information Criterion
ALMP	Active Labour Market Policies
BBS	Bangladesh Bureau of Statistics
ESCAP	Economic and Social Commission for Asia and the Pacific
ESDS	Economic and Social Data Service
EU	European Union
FE	Fixed Effect
GDP	Gross Domestic Product
GFS	Government Financial Statistics
GFSM 2001	Government Finance Statistics Manual 2001
GMM	General Method of Moments
HP Filter	Hodrick Prescott Filter
i.i.d.	Independent and identically distributed
IICA	Inter-American Institute for Cooperation on Agriculture
ILO	International Labour Organisation
IMF	International Monetary Fund
IV	Instrument Variable(s)
LSDV	Least Square Dummy Variable
OECD	Organisation for Economic Cooperation and Development
OLS	Ordinary Least Squares
PBC(s)	Political Budget Cycle(s)
PT	Partisan Theory
RMSD	Root Mean Square Deviation
RPT	Rational Partisan Theory
US	United States
WDI	World Development Indicator
ZIMSTAT	Zimbabwe National Statistics Agency

1 Introduction

1.1 Background

> *"Governments are opportunistic. They choose policies that help them survive in office".* (Schneider, 2009)

In his famous "Wealth of Nations" that has become the doctrine of modern economics, Adam Smith declares competition and rational individuals acting in their own self-interests as the drivers of economic efficiency. Ever since the seminal work of Down (1957a, 1957b), it is understood that Smith's (1776) conclusion is not applicable to the process of economic policy making. The nature of the issue is summarised in the statement of Drazen (2008).

> *"Economic outcomes strongly depend on policy choices. However, policy decisions are not made by textbook social planners whose choices can be explained by social welfare maximization, but by governments with their own objectives."* (Drazen, 2008)

This research focuses on the economic issues related to the political election process first analysed by Nordhaus (1975) in his pioneering work about how the threat of being voted out of office prompts incumbents to use economic policy for the single purpose of increasing their chance of re-election at the expense of economic efficiency leading to cycles of boom and bust in the economy. Nordhaus's (1975) work attained great attention in the literature and has sparked the research on electoral or political economic cycles prompting numerous responses and amendments of the Nordhaus's (1975) model. His conjecture that incumbents have a valid motive to use economic instruments for their personal benefit has not been challenged *per se* but was immediately followed by a controversy of whether *opportunistic* or *ideological* motives are dominating and if repetitive changes in the economic policy as describe by Nordhaus (1975) are practicable. Accordingly, the questions of interest were: Do Political Business Cycles exist and are they caused by opportunistic or ideological motives? Attempts to answer those questions typically involved the development of a model based on economic laws while empirical research was focused on time series test for OECD (Organisation for

Economic Cooperation and Development) countries. As the research on electoral economic cycles has advanced further, those basic questions have been replaced by more specific enquiries such as: What *types* of electoral economic cycles do exist? Under which *conditions* do they emerge? Likewise, the methodological approach has changed from model building to hypothesis testing and from time series to panel data analysis, alternatively. Following the model of Rogoff (1990) and the empirical results of Drazen (2000a), electoral cycles are widely considered infeasible in the monetary policy and variables of the real economic outcome such as GDP, unemployment or inflation. Instead, focus has shifted towards fiscal policy and the therewith involved Political Budget Cycle (PBC). The most popular subject within the field of research has been how factors in the political-economic environment influence the significance of the PBC. Further common questions in the literature have been:

- Which fiscal instruments are utilised to create the PBC?
- Why is the PBC larger in developing countries?
- How is the PBC timed?
- What are the "costs" and success rate of the PBC?
- Is the PBC applicable for elections on local level?

Focus in this research has been on the first three questions as they have attracted the most attention in the literature; they are individually addressed in the third, fourth and fifth chapter. The other questions are not further examined except for a brief review of the existing literature.

1.2 Terminology

The literature on electoral economic cycle lacks of consistent terminology which can result in misleading descriptions and confusions regarding the type of cycle. In this research, the term "Electoral Economic Cycles" refers to general periodic changes within the economy with their peak around the election period. It is therefore not further specified whether cycles are taking place within economic outcome variables or fiscal and monetary policy. In contrast, the term "Political Business Cycles", is in this research only used in context with electoral cycles within economic outcome variables such as GDP, Inflation or unemployment whereas the "Political Budget Cycle" describes only electoral cycles within the fiscal policy such as total revenue, total

expenditures or the overall fiscal surplus (or deficit). Being a further source of confusion, Political Business and Budget Cycles are in the literature both shortened with "PBC". For the purpose of transparency, the abridgment is in this research only used in context with the fiscal policy and the Political Budget Cycle. A summary of all the terminology applicable to this research is provided in table 1.1.

Table 1:1: Terminology

Term	Description
Electoral Cycles	Cycles with their peak during the election period
Electoral (or political) Economic Cycles	General electoral cycles within the economy
Political Business Cycle	Electoral cycles in economic outcome variables
Monetary Cycles	Electoral cycles within the monetary instruments or monetary outcome variables
PBC / Political Budget Cycle	Electoral cycles in the fiscal policy
Balanced PBC	Electoral cycles within the composition of the fiscal policy without changing the fiscal balance
Budget Balance	Difference between total revenue and total expenditures; fiscal surplus or deficit
Unconditional PBC	Political Budget Cycle without specification regarding the political-economic environment
Conditional PBC	Political Budget Cycle under specific institutional or socio-economic criteria
Anti-PBC	Political Budget Cycle with reversed prefix

1.3 Motivation, Objective and Contribution to the Literature

Rules describing the process how political power is attained, retained and exercised have long been ignored in the research on electoral economic cycles. Early models are implicitly based on a single decision maker with absolute authority and unconditional discretion over fiscal policy. The relevance of the institutional framework was eventually pointed out by Shi and Svensson (2002a) who emphasised political institutions as the main field of future research in context of the conditional PBC and by Franzese (2002) who defined *electoral competition*, *concentration of power* and *political accountability* as the three forces emerging from political institutions that influence the PBC. However, it was essentially the analysis of Persson and Tabellini (2003a, 2003b) that has caused a large increase in the number of researches about the effect of political institutions on the economic outcome and drawn attention to the

possible connection between the PBC and the institutional framework in place. However, despite the vast volume of new literature over the last decade, there has been no established pattern how political institutions are to be measured or quantified (Efendic *et al.*, 2011). In the seminal work of Persson and Tabellini (2003b), focus is on the *voting formula* and the *government form* as the two principle variables determining how political power is retained and executed, alternatively. Their findings have attained a lot of attention in the literature prompting more research to test the validity of their results or to have government form and voting formula included as control variables when testing for the PBC – see Blume *et al*. (2009), Hansen (2011), Klomp and de Haan (2011), Nogare and Ricciuti (2011) or Efthyvoulou (2012), for instance. On the other hand, Brousserau (2011) or Voigt (2011a) express their doubts of whether the effect of a single institutional variable can be analysed in isolation or if it is rather the overall complexity of the institutional framework and the interaction among variables that is relevant. Voigt (2011a) suggests therefore that the significance of individual institutional variables is best interpreted in terms of their interaction with other institutional variables. Finally, Glaeser (2004) and Hyde and Marinov (2012) have criticised the lack of distinction between *formal institutional variables* and *formative indicators* in the analysis of political institutions. Whereas the former comprises formal constitutional rules with binding character and long-term persistence (Rhodes *et al.*, 2008), formative institutional indicators are rather "an outcome of the game" (Hyde and Marinov, 2012) that does not qualify as institutional variables *per se*. In essence, there is no consensus about how political institutions are to be measured and which part of the institutional framework affects the PBC. Furthermore, there has been no attempt to evaluate the relative significance of *electoral competition*, *accountability* and *political power* in comparison to each other. Aim of this research is therefore to provide an in-depth analysis on the impact of different institutional variables in isolation as well as in mutual interaction thereby filling significant gaps in the literature on the PBC. Formal research questions to be answered in chapter three are:

1.) Do political institutions influence the size of the PBC?
2.) How do the individual effects of formal institutional variables and formative indicators compare?
3.) Does the effect of individual institutional variables change in interaction with each other?

The comparability of existing studies is further limited as the form of the PBC is subject of an ongoing controversy. While electoral cycles in the budget balance have been widely accepted as the strongest evidence for the PBC, numerous empirical analyses have tested for electoral cycles in other fiscal instruments. With no consensus in the literature which expenditures (or revenues) are likely to exhibit electoral cycles, results are inevitably susceptible to misinterpretation. Factors that seemingly determine the size of the PBC may in reality only generate a change in the budget composition while the size of the budget balance is determined outside the model. In turn, factors that are found to have no impact on a tested fiscal variable may turn out to be significant when analysing a different fiscal instrument. Essentially, findings in different studies are only comparable to the extent that the examined fiscal instruments are identical. Chapter four analyses therefore the effect of political institutions on the *type* of the PBC. Formal research questions are:

1.) Which fiscal instruments exhibit electoral cycles?
2.) Is there evidence for a balanced PBC that takes place only within the budget composition?
3.) Is there a connection between the type of the PBC and the institutional framework in place?

Research within the field of political economics is inherently connected with the ongoing debate regarding the *exogeneity* of the institutional framework. One issue in this context is the *direction of causality*. Assessing the connection between political institutions and the economic development for instance, Glaeser *et al*. (2004) suggest that the quality of the institutional framework is no source of economic growth. Instead, they consider improvements on the quality of political institutions as the likely result of an economic upturn. Greater concern, however, has been the question regarding the origin of the institutional framework and the risk of an omitted variable bias. The literature on the PBC considers various determinants from the political economic environment such as the economic development, the corruption level or the status and the age of democracy, for instance. Like the institutional framework, they are influenced by local factors and historical events. In consequence, any apparent connection between the PBC and institutional variables could be due to a mere correlation with factors outside the model rather than the result of a *causal effect*. The issue is highlighted by

Acemoglu (2005) and Rockey (2010) as they assess the validity of the findings of Persson and Tabellini (2003b):

> *"…, there are reasons to question whether this research has successfully uncovered causal effects. The OLS and matching estimates ultimately rely on the exogeneity of political institutions. Nevertheless, political institutions are equilibrium outcomes, determined by various social factors that are not fully controlled for in the empirical models."* (Acemoglu, 2005)

Essentially, issues concerning the *exogeneity* of political institutions are a general concern within the field of political economics. Having analysed over 200 studies concerning the connection between political institutions and the economic outcome across countries, Efendic *et al.* (2011) emphasise the possible *endogeneity* as the most complex issue within the field. This circumstance is mainly due to the lack of established instrument variables (Eicher and Leukert, 2009) and the time invariance of the institutional framework. Nevertheless, this research aims to verify the robustness of the institutional effect by testing its significance in context with the broader socio-economic environment. The analysis addresses thereby also the critique expressed by Nordhaus *et al*. (1989) and Böhm and Markward (2011) regarding the common mono-causal models or two-dimensional approach that separates countries only into two categories such as "democratic" and "undemocratic", for instance. Instead, they reason that the pattern of the PBC ought to be considered in dependence of a multi-conditional framework. In consequence, chapter five examines the relative significance of the institutional framework in comparison to other determinants when testing for the PBC in different environments. Formal questions are:

1.) Is the effect of political institutions in developed countries identical with the effect in developing countries?
2.) How robust is the effect of political institutions against the influence of factors in the outer environment?

1.4 Methodological Issues: A Review

Originally, empirical investigations of electoral economic cycles typically included a time series analysis testing for a correlation between an economic outcome variable (for instance GDP, unemployment or inflation) or an economic instrument (for instance interest rate) and the election period. However, as Shi and Svensson (2003) point out in their review, with the acceptance of the conditional PBC as the dominant theory, dynamic panel data analysis has become the common approach for empirical investigations. Advantages of the panel data analysis are well documented in the literature – see Arellano (2003), Hsiao (2003, 2007) or Baltagi (2005) for instance. They include:

- Greater flexibility in the modelling of the behaviour of cross-section units compared to conventional time series analysis
- More information included than in a comparable analysis of individual time series leading to
    - more variability among explanatory variables
    - less collinearity among explanatory variables
    - more degrees of freedom and more efficient estimators
- Flexibility to study individual dynamics
- Better controlling of endogeneity
- Controlling for individual unobserved heterogeneity and smaller bias by missing explanatory variables.
- Identification of effects that time series or cross-sectional methods are less likely to detect

An inherent problem of panel data analysis the potential cross-sectional dependence and the possibility that the individual units in the panel are interdependent leading to cross correlations of the error and false inference potentially resulting in inconsistency of conventional panel estimators such as fixed effect (FE) or random effect estimator (Chudik and Hashem Pesaran, 2013). Cross-sectional dependence can be caused by unobserved common factors not included in the model, common shocks with impact on the dependent variable, pair wise dependence or the presence of spatial correlations, for instance. The level of distortion depends on the strength and on the cause of the cross sectional dependence (De Hoyos and Sarantides, 2006).

Empirical tests for the PBC involving panel data analyses are usually based on equation (1.1) as presented by Shi and Svensson (2003).

$$y_{i,t} = \sum_{j=1}^{k} \gamma_j y_{i,t-1} + \beta e_{i,t} + \chi w_{i,t} + \zeta_i + \varepsilon_{i,t} \qquad (1.1)$$

The dependent variable $y_{i,t}$ represents the fiscal outcome, $e_{i,t}$ is an election dummy variable, $w_{i,t}$ is a vector with control variables expected to affect $y_{i,t}$, ζ_i is an unobserved country-specific and time-constant effect whereas $\varepsilon_{i,t}$ is an independent and identically distributed error term (i.i.d.). The lagged dependent variable $y_{i,t-1}$ incorporated on the right-hand side accounts for its dynamic nature; it is to remove any autocorrelation and measuring the speed of adjustment. Based on the assumption that the heterogeneity across countries (or municipalities) is confined to unit-specific intercepts (cross-sectional independence), ζ_i can be removed by taking a within-transformation and applying the fixed effect (FE) estimator. The new equation (1.2) appears as:

$$\Delta y_{i,t} = \sum_{j=1}^{k} \gamma_j \Delta y_{i,t-1} + \beta \Delta e_{i,t} + \chi \Delta w_{i,t} + \Delta \varepsilon_{i,t} \qquad (1.2)$$

Since Nickel (1981), it has been well established that due to violation of the *exogeneity assumption* ($(y_{i,t-1} - y_{i,t-2})$ does correlate with the result from $(e_{i,t} - e_{i,t-1})$), the lagged dependent variable introduces a bias of $1 / T$ that only disappears as T moves towards infinite. Assessing the performance of different estimators for the analysis of dynamic panel data with regard of consistency, efficiency and bias, Kiviet (1995) and Judson and Owen (1999) stress in their research that (in finite samples) there is no technique with uniform superiority as the performance of the estimator is dependent on various factors such as the panel structure or the speed of the dynamic adjustment. However, they both identify the error corrected Least Square Dummy Variable (LSDV) as the estimator with the best average performance and the lowest root mean square deviation (RMSE) and therefore superior to the Arellano-Bond (1991) estimator and the Anderson-Hsiao Instrumental Variables (IV) estimator (especially in small sample size panels) whereas the uncorrected LSDV shows sizable bias even with T as large as 20. The application of

the corrected LSDV is though limited to balanced panels unless the strict exogenity assumption holds for all other regressors (Bruno, 2005). In consequence, it has been rarely applied in cross-country analyses of the PBC except if data availability does not present an issue. This typically includes studies with a small panel size focusing on countries within the European Union (EU) or countries that are members of the Organisation for Economic Co-operation and Development (OECD) as done by Chang (2008) or Potrafke (2012). On the other hand, since the bias introduced by the lagged dependent variables diminishes as the time period increases, the FE estimator using ordinary least squares (OLS) technique has still been popular in analyses of political economic cycles – see Schuknecht (1996), Streb *et al.* (2009) or Hyde and O'Mahony (2010) among others.

An alternative to the FE estimator and the corrected LSDV estimator is the Arellano-Bond (1991) estimator. Based on generalized method of moments (Hansen, 1982) and difference transformation of the regressors, it is often referred to in the literature as General Method of Moment estimator, GMM estimator or difference GMM. Arellano and Bond (1991) note that lagged values of the regressor by two or more periods fulfil the criteria of an instrument variable (being correlated with the regerssor but not with the error term) provided there is no serial correlation in the error term. The formal moment condition is defined as:

$$\mathrm{E}\left[y_{i,t-s}\left(\triangle \mathrm{y}_{\mathrm{i,t}} - \rho \Delta \mathrm{y}_{\mathrm{i,t-1}}\right)\right] = 0 \quad \text{for } s \geq 2, t = 3, \ldots T \tag{1.3}$$

Equation (1.3) can be further transformed into:

$$\mathrm{E}\left[y_{i,t-s} \triangle \varepsilon_{\mathrm{i,t}}\right] = 0 \quad \text{for } s \geq 2 \text{ and } t = 3, \ldots T \tag{1.4}$$

Imposed assumptions of the model are that for all i :

(1) $\varepsilon_{i,t}$ is for all t uncorrelated with y_{i0}

(2) $\varepsilon_{i,t}$ is for all t uncorrelated with ζ_i

(3) All values of $\varepsilon_{i,t}$ are uncorrelated with each other

In comparison to the FE estimator and the corrected LSDV estimator, the Arellano and Bond (1991) estimator offers more flexibility as it holds under very general conditions allowing the analysis with *endogenous* regressors (such as the lagged dependent variable) even in unbalanced panels. In consequence, it has grown very popular for dynamic panel data analysis. Empirical analysis of electoral economic cycles using the GMM estimator have been conducted by Block (2002a), Alt and Lassen (2006), Vergne (2009) and Böhm and Markward (2011) among others.

One issue of the Arellano and Bond (1991) estimator is loss of data in unbalanced panels. While the estimator remains valid as long as enough conditions can be specified for the GMM to hold, the loss of data is magnified by gaps in the data structure. Due to the difference transformation, missing data for $y_{i,t}$ cause a loss of $\triangle y_{i,t}$ as well as $\triangle y_{i,t+1}$. In response, Arellano and Bover (1995) introduced a modified version employing *orthogonal deviation* instead of difference transformation. Unlike the serial subtraction of the Arellano and Bond (1991) estimator, the orthogonal deviation employed in the Arellano and Bover (1995) estimator subtracts the average of all *available* future observations thereby minimising the loss of data in unbalanced panels. Arellano and Bover (1995) draw further attention to the poor precision of the Arellano-Bond (1991) estimator in small data samples. As they point out, the GMM is a function of fourth moments that requires a significant amount of data in order to obtain "reasonable" estimates. The problem is particularly severe if the variation in time is relatively small in comparison to the variation between different samples (panels with large N and short T) or if the explanatory variable is highly time-persistent in which case the lagged levels of the explanatory variable are only weakly correlated with the *variations* of the explanatory variable in the differenced (or orthogonal deviation) equation. The issue is addressed by Blundell and Bond (1998). Their approach builds up on the proposal of Arellano and Bover (1995) to use lagged differences as instruments for equation in levels. Thus, instead of transforming the regressors to cancel out ζ_i, Blundell and Bond (1998) transform the instruments (whether created by differencing or orthogonal deviation) to make them exogenous to the unit-specific effect (fixed effect). The essential assumption imposed by Blundell and Bond (1998) is that changes in the instrument variables ϖ are uncorrelated with the unit-specific effect. Under the validity of that condition, the lagged differences of the instrument variables can themselves be exploited as additional instruments thereby improving the efficiency of

the estimator. Formally, the additional moment condition proposed by Arellano and Bover (1995) and employed by Blundell and Bond (1998) is:

$$\mathrm{E}\left[\triangle y_{i,t-1}\left(\xi_i + \varepsilon_{i,t}\right)\right] = 0 \quad \text{for } t = 4,5,\ldots,\mathrm{T} \tag{1.5}$$

Imposed assumptions of the model are that for all i and for all t :

$$\mathrm{E}\left[(\triangle \varpi_{i,t}\, \xi_i\right] = 0 \tag{1.6}$$

If the condition in (1.6) is fulfilled, then $\triangle \varpi_{i,t-1}$ becomes a valid instrument for the variables in level. In order to take full advantage of the extra moment conditions, Blundell and Bond (1998) combine the moment conditions for the data in levels (1.5) with the original Arellano-Bond conditions (1.4) which involves stacking the data set with twice the observations. Because of the way the Blundell and Bond (1998) estimator is set up, it is also referred to in the literature as "System GMM" (Hayakawa, 2008). The superior performance of the Blundell and Bond (1998) estimator in panels with small sample size or time resistant regressors is confirmed by Soto (2009) having tested it against the FE estimator and the Arellano-Bond (1991) estimator. Conclusively, as the analysis of political institutions involves per definition highly time resistant variables, the empirical analyses in chapter three, chapter four and chapter five are all employing the Blundell and Bond (1998) estimator. Since the official command in STATA 11 does not allow for the orthogonal deviation, calculations are conducted with the updated version developed by Roodman (2009a).

As for the Arellano-Bond estimator (1991), the consistency of the Blundell and Bond (1998) estimator requires that enough valid instruments can be defined. The validity of the instruments is fulfilled if they are correlated with the endogenous regressor but uncorrelated with the error process (orthogonality condition) and there is no serial correlation in the error term. Verification of the latter condition is achieved by passing the Arellano-Bond (1991) test that checks for second-order serial correlation in the difference equation with the null hypothesis of no autocorrelation. The orthogonality condition is met if the used instruments are truly exogenous. This is tested *via* over-identifying restriction test with the null hypothesis of joint validity. A rejection of the null hypothesis indicates therefore a serious misspecification of the model as it implies

that the collective of instruments is correlated with the residuals. If the hypothesis holds, the statistic exhibits a χ^2 distribution; as test statistic is either the Sargan (1958) statistic or the Hansen J (1982) statistic employed (Roodman, 2009a). The test can also be used to examine the exogeneity of a chosen subgroup of regressors. In this case, it is referred to as "difference-in-Sargan", "distance difference" or "C" statistic (Baum and Schaffer, 2003). The statistic is calculated as the difference between two "J tests" (Hansen, 1982) (or Sargan tests): Testing with and without the subset of instruments in question, under the null hypothesis of joint validity of the full instrument set, the reported difference between the two test statistics is itself asymptotically χ^2 with degrees of freedom equal to the number of suspect instruments. Analogue to the evaluation of the entire set of over identifying restrictions, the null hypothesis states that the orthogonality condition is met. If the hypothesis is rejected, there is suspicion that evaluated set of variables are not truly exogenous. When testing for the orthogonality condition of the entire set of over identifying restrictions, the choice between the Sargan (1958) statistics or Hansen J (1982) statistics is critical as it entails significant implications for the empirical analysis. As Baum and Schaffer (2003) point out, the Sargan (1958) test, while being robust to the number of instruments, is only suitable if heteroskedasticity is not considered an issue as it relies on homoskedastic errors. In turn, the Hansen J (1982) test is unaffected by heteroskedasticity whereas a large number of instruments can lead to a distortion of the test statistic and therefore unreliable results. In consequence, while the efficiency of the Arellano and Bond (1991) estimator or the Blundell and Bond (1998) estimator improves with the number of employed instruments, an excessive number of instruments leads to "over fitted" results and a distortion of the Hansen J (1982) statistics. While it has been common practice that the number of used instruments must not exceed the number of groups in the panel, Roodman (2009b) stresses the lack of a formal guide line to determine the appropriate number of instruments and its implication on the validity of results – see also section 3.4. The number of instruments has also ramifications for the cross-sectional dependence. Using the Arellano-Bond (1991) estimator or the Blundell and Bond (1998) estimator, Sarafidis (2009) shows that strict cross section independence is not required, alternatively their interference is not impaired by the presence of weakly correlated errors. The distortion of cross sectional dependence is further weakened if only a subset of all available instruments is used (De Hoyos and Sarantides, 2006).

Equation (1.1) describes the empirical test for the PBC in "neutral" or unconditional form meaning there are no further test variables included other than a set of economic control variables. However, over the last decade, the aim of research has predominately been to test whether the size and significance of the PBC is conditional on factors in the political economic environment. One approach to adjust for environmental conditions is splitting data into subgroups and running individual regressions as conducted by Klomp and de Haan (2011), for instance. Data splitting is insofar convenient as all tests can be conducted with a single equation though Brambor *et al*. (2006) criticise the therewith implicitly accepted efficiency loss due to the smaller sample size. Alternatively, the effect of an independent variable (focal variable) in dependence of another independent variable (moderator) is analysed in interaction models with included multiplicative term(s). Friedrich (1982) highlights three central benefits for the use of multiplicative terms:

- A more detailed description of the relationship between a dependent variable and a set of independent variables
- If an interaction does exist, more variation of the dependent variable is captured
- Due to the higher explanatory power, there are better chances of obtaining statistical significance

A detailed summary on the application of interaction models is provided by Jaccard and Turrisi (2003), Brambor *et al*. (2006) and Franzese and Kam (2009). Testing for the electoral effect on condition of a single institutional variable, equation (1.1) is modified as following:

$$y_{i,t} = \sum_{j=1}^{k} \gamma_j y_{i,t-1} + \beta e_{i,t} + \delta z_{i,t} e_{i,t} + \varphi \mathrm{z}_{i,t} + \chi w_{i,t} + \phi z_{i,t-1} y_{i,t-1} + \varepsilon_{i,t} \quad (1.7)$$

Next to the set of control variables $w_{i,t}$ there is now the test variable $z_{i,t}$ as well as its interaction with the election variable $ze_{i,t}$ and with the lagged value of the dependent variable $zy_{i,t-1}$. The latter represents a feedback loop to account for the possibility that the fiscal policy may as well be influenced by the institutional framework. The compound of $z_{i,t}$ and $y_{i,t-1}$ is therefore to detangle the PBC from the general institutional effect. While in equation (1.1) β is interpreted in a standard manner measuring the marginal change of the fiscal outcome during the election period, *ceteris*

paribus, in equation (1.7) β measures the effect of the election period for the scenario z = 0. As a result, the marginal effect of the election variable becomes:

$$\frac{\partial y}{\partial e} = \beta + \delta z \tag{1.8}$$

Analogously, the standard error of β and δ cannot be interpreted in the traditional manner. Importantly, the total standard error of the effect in (1.8) is not simply the sum of the two individual standard errors but is calculated according to the equation (1.9).

$$\sqrt[2]{\frac{\partial y}{\partial e} = var(\beta) + z^2 var(\delta) + 2z\, cov\,(\beta, \delta)} \tag{1.9}$$

The model is extendable at will from two-way to triple and quadruple interaction. In principle, there is no limitation to number of imposed conditions. Friedrich (1982) points out that the inclusion of any multiplicative term that does not belong into the equation (meaning there is no significant interaction between the variables) does not cause any harm other than a slight increase in the standard error due to the decrease in degrees of freedom for the residuals whereas the omission of a significant interaction term presents a serious misspecification of the model leading to biased and possibly inconsistent results. On the other hand, every additional moderator variable entails an increase in the complexity of the model structure. The complication increases further if the moderator is a qualitative variable with more than two values. In an example of a model that contains one focal variable and two moderators with each three different values, Jaccard and Turrisi (2003) show that the number of regressors included in the model increases from three to 17 when testing for a possible interaction among them. While it is vital to have all possible combinations among the variables included in order to avoid biased (and inconsistent) estimates, a large number of multiplicative terms increase the risk of multicollinearity if there is not enough "information" in the data set *id est* if there are no valid data for one or several of the defined combinations (Brambor *et al.*, 2006). In this study, models are therefore restricted to two and three-way interactions with maximal two institutional variables included in the model.

Since Levin and Lin (1992) (LL) established the groundwork for panel unit root tests, there has been a substantial increase in the number of available tests that differ with regard to the null hypothesis, test parameters and the method used to remove serial correlation. A detailed overview of available tests and how they perform under different conditions is provided by Baltagi (2005), Hlouskova and Wagner (2006) or Hoang and Mcnown (2006) among others. As for the estimators used for dynamic panel data anlaysis, there is no single test with universal superiority. Popular tests have been Breitung (2000), Fisher-type (Maddala and Wu, 1999), (Choi 2001), Im-Pesaran-Shin (2003) or Harris–Tzavalis (1999). In this research, unit root tests are conducted with Fisher-type (Choi 2001) and Im-Pesaran-Shin (2003) because of the unbalanced structure of the panel data.

Analogue to the precision of the estimator, the unit root test benefits from the larger number of observations in panel data analysis compared to the univariate augmented Dickey-Fuller (ADF) test as demonstrated by Levin and Lin (1992). On the other hand, the formulation of the null and the alternative hypotheses is less restrictive than in time series analysis. Im-Pesaran-Shin (2003) and Fisher-type (Choi 2001) have both the null tests that all series have a unit root. Thus, rejecting the null hypothesis states only that at least one of the series in the panel is stationary. A further problem applying to panel unit root tests is the possible cross-sectional dependence in the data. As O'Connell (1998) and Maddala and Wu (1999) point out, the LL panel unit root test suffers from substantial distortion and low power in presence of cross-sectional dependence as indeed most of the popular tests rely on cross sectional independence. Following the approach of Im-Pesaran-Shin (2003), all unit root tests conducted in this research have the cross-sectional mean subtracted thereby mitigating the issue of cross-sectional dependence. Another essential factor for the validity of the test is the choice of lag length. If it is too short, the test will be biased by the remaining serial correlation in the errors whereas the power of the test will be impaired if the lag length is too long. Analysing the application of popular tests for the lag length, Liew (2004) affirms that in most common panel sizes Akaike's (1974) information criterion (AIC) and final prediction error (FPE) are superior to other criteria. In this research, the lag length is determined according to AIC following Osterholm's (2004) argument that Im-Pesaran-Shin (2003) and Fisher-type (Choi 2001) are both based on pooled univariate ADF tests and their lag length therefore reasonably determined using AIC. The null hypothesis for present unit roots is rejected for most series at the 99% level in Im-Pesaran-Shin (2003)

and the Fisher-type (Choi 2001). The validity of the results is subjected to the limitations described in this chapter. Test statistics and test details are presented in Appendix 2.

1.5 Structure

In order to ensure an accurate perception of the scope of this research and its contribution to the field, the study includes an extensive review of the existing literature on electoral economic cycles beyond the PBC in chapter two. The purpose is further to build up an understanding which developments have led to the research on electoral economic cycles to its current state and what are the points at issue. Chapter two is divided into four parts:

- Section 2.1 explains the origin of electoral economic cycles highlighting the difference among the first models, their flaws and how they influenced the future research.
- Section 2.2 is devoted to the rational revolution and subsequent theories that have lead to a major revision of the Nordhaus (1975) model.
- Section 2.3 reviews the key elements that have lead to the current version of the conditional PBC, specifically the change from the business cycle to fiscal cycles, the moral hazard approach and the role of the outer environment.
- Section 2.4 provides a summary of alternative models to the conditional PBC and research questions that are beyond the scope of this study.

Chapter three examines the effect of political institutions on the size of the PBC in developed countries. Following a review of the existing theory, there is further information on the set up of the model, the data selection criteria and the definition of selected test variables. Test series begin with a basic screening test followed by the evaluation of the effect of individual institutional variables and finally an examination concerning their interaction. Chapter four analyses the type of the PBC and pattern of the electoral cycles within the budget composition. In total, the chapter comprises test-series on the electoral cycle in 26 different budget components. Chapter five examines the effect of political institutions in different environments testing for the robustness of the results in chapter three. Using a different panel, section 5.1 focuses on the PBC in

developing countries. Results are analysed in direct comparison with the findings of chapter three assessing the consistency between both results and the extent political institutions can explain the difference between both groups. The main findings of chapter three are re-examined in interaction with other determinants of the conditional PBC in section 5.2. Chapter six summarises the findings of this research and highlights areas of further research.

2 Electoral Economic Cycles

The purpose of this chapter is to review the existing literature on electoral economic cycles highlighting the key developments and outstanding issues. The focus in section 2.1, 2.2 and 2.3 is on the settings and assumptions of the original models and how they have influenced later research. Section 2.4 outlines current research enquiries.

2.1 The Origin of Electoral Economic Cycles

2.1.1 The Political Business Cycle

> *"The single most important fact about politicians is that they are elected. The second is that they usually seek re-election."* (Tufte, 1978)

The term "Political Business Cycle" can be traced back to Kalecki's (1943) analysis on how business leaders exert their influence on the government to determine the level of unemployment and inflation. However, the literature refers usually to Nordhaus (1975) as the first to ascribe fluctuations in the economy as the result of politicians "opportunistic" interference in the business cycle. The model of Nordhaus (1975) builds up on the earlier work of Down (1957b) who identifies the aim to remain in power as the ultimate goal of political parties and the analysis of Kramer (1971) how fluctuations in the economy have influenced the outcome of previous US elections. At the core of the Nordhaus (1975) model is the suggestion that there is a trade off between present and future welfare which can be controlled by the incumbent to benefit from a booming economy before the election. The idea is based on the Phillips curve and the argument that there is an interdependence between the level of unemployment and the inflation rate (Phillips, 1958). In the year of election, monetary expansion is used to stimulate the economy in order to lower the rate of unemployment. In the year after the election, reversed monetary policy is used to cut back inflation. Nordhaus (1975) reasons that there are different possible cycling patterns but that the long term outcome is inevitably to entail a higher inflation rate and a lower level of unemployment than the levels associated with the optimal social welfare. The situation is illustrated in figure 2:1. "P_ideal" marks the point with the highest aggregated voter preference curve that is tangent to the long run Phillips curve. The point represents therefore the highest level of

social welfare that is sustainable in the long run. The point guarantees though only the support of 50% of all eligible voters. Because of the time lag in the connection between unemployment and inflation, the incumbent can take measurements to reach "P1" before the time of election. "P1" lies on a higher voter preference curve that guarantees the support of 52% of eligible voters. However, since the position at "P1" lies only on a short run Phillips curve, the level of unemployment and inflation cannot be sustained. Instead, the new equilibrium moves up to "P2" and "P3".

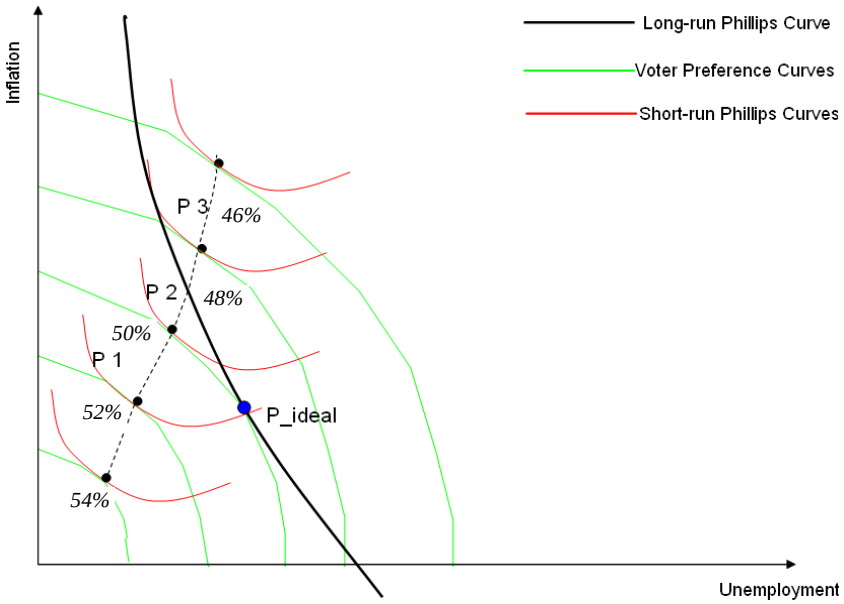


Figure 2:1: The short-run election outcome (Nordhaus, 1975)

The Norhaus (1975) model is based on several distinct assumptions regarding the behaviour and capabilities of voters and office holders.

- Voters do not have the possibility to observe the incumbent's competence (and objective) directly. Instead, they evaluate the observed level of unemployment and the rate of inflation as indicators regarding the incumbent's economic expertise.
- Voters are rational in their preferences aiming for low unemployment and inflation. However, voters are mostly ignorant in terms of the economic policy
    - They are unaware of the long term consequences of the present economic policy. The inflation rate is therefore not influenced by expectations of future policies.

    - They are purely backward looking with regard to the economic performance.
    - The utility of previous periods are discounted at a high rate *id est* voters do not recognise the cycling pattern.
- In the absence of a convincing event that could explain the distortion, voters assign the responsibility for economic condition to the incumbent.
- The party ideology has no influence on the voters' decision.
- The incumbent has perfect knowledge about the voters' preferences.
- There is no constraint on the incumbent other than the general economic mechanisms; they can accurately determine the path along the short run Phillips curve.

Nordhaus (1975) describes his imposed assumptions as the features of a "stylised democracy" but insists that the basic conditions hold in reality. Rising unemployment or accelerating inflation, for instance, may not affect (all) voters directly but are associated with wage pressure, decreasing consumption and the threat of redundancies as a consequence of a pending economic downturn. Since the negative consequences of unemployment are more evident, it exhibits a higher marginal utility on the voter preference curve. While the government has no direct control over the national level of unemployment, the targeted level can be determined within small margin of error by employment of the fiscal and the monetary policy. Nordhaus (1975) further justifies the missing party ideology in the model with the households' lack of trust in the party platforms and the fact that monitoring the true political objective is costly. Consequently, voters consider before the election only if the status of the economy meets their expectations thereby judging the economic expertise of the existing government.

2.1.2 The Partisan Theory

A central aspect in the Nordhaus (1975) model is that voters have no party ideological preference. Alternatively, the model can be interpreted as the incumbents' strategy to influence only the decision of voters with weak party preference that are willing to support either political party (swing voters). In contrast, party ideology and economic

preference are at the core of Hibbs's (1977) Partisan Theory (PT). Different to the Political Business Cycle, the model assumes:

- Politicians are more driven by their party ideology than the motive for re-election. Alternatively, they concentrate on the economic preferences of their core voters rather than swing voters.
- Voters are aware of the politicians' objective or believe in their party platform.
- The preferences among voters are not homogenous. Instead, the progress of the voters' preference curve and the marginal ratio between unemployment and inflation depends on the respective level of education, level of income and on the possession of assets.

What economic policy is observed depends therefore on the ideology of the ruling party and the preference of their core voters, respectively. According to Hibbs (1977), left-wing parties canvass traditionally the support of weaker social groups which include voters with lower income and education. Inherently, those groups are more threatened by the risk of unemployment rather than the adverse effects of higher inflation. Conversely, even in times of rising unemployment, social hazards are smaller for well educated groups with a high income; in turn, they experience a larger loss of wealth in case of soaring inflation that affects their savings. Consequently, their support goes more likely to right-wing parties which traditionally pursue a more conservative economic policy curbing the rate of inflation. Under a left-wing government, the level of unemployment (inflation) is lower (higher) for their entire term in office. Thus, unlike in the Nordhaus (1975) model, the unemployment-inflation cycle is not triggered by the election but the result of a regime change.

2.1.3 The Satisficing Model

The model of Frey and Schneider (1978) represents an attempt to reconcile the key elements of the Political Business Cycle with those of the PT presented by Hibbs (1977). In their satisficing model, incumbents switch between partisan policy and economic policy designed to secure their re-election. In line with the Nordhaus (1975) model, Frey and Schneider (1978) argue that voters' support for the incumbent depends on the level of unemployment, the rate of inflation, the growth of their disposable income and credit given for non-economic reasons. Following a successful election

campaign, incumbents pursue an economic policy that is in strict accord with their party ideology. In the course of their reign, the overall approval rate may dwindle either due to a negative economic development or because initiated policies did not have the support of a large share of voters. If their popularity falls below a critical level indicating that the success of their next election campaign is at risk, incumbents will abandon their party ideology but take any measurements required to secure their re-election. In line with the PT, a conservative incumbent would therefore typically run a tight monetary policy after their election in order keep inflation low. If, due to a negative economic development, unemployment and the general disposable income rise and fall respectively, they will abandon their partisan policy and introduce an offensive economic strategy to decrease the rate of unemployment and increase the general disposable income. The intensity of the incumbents' reaction to a popularity shock indicated by a decline in the poll values depends on the remaining time until the date of the next election. The transition between partisan policy and economic policy to secure re-election follows therefore the interaction between the incumbent's popularity and their reaction function. In conclusion, type, size and frequency of the economic cycles do not follow a clear pattern as in the PT and in the Nordhaus (1975) model but are subjected to the incumbents partisan objective as well as the development of their overall popularity.

2.2 Critique and Rational Revolution

2.2.1 Assessment of the Political Business Cycle

The Nordhaus (1975) model attained a lot of attention evoking mixed reactions in the literature. Those in support have given credit to its conclusive reasoning: accepting the plausible suggestions that politicians derive utility from being in office (ego rent) and voters considering the state of the economy before the election, incumbents have a genuine motive to create a Political Business Cycle. Critics, on the other hand, have questioned the general settings of the model. At the centre of their critique has been the incumbents' apparent control over the outcome of the real economy, the public's ignorance of the long-term economic development and the lack of empirical evidence.

The alleged control over the outcome of the real economy, which is a central element of the Nordhaus (1975) model, requires total discretion over the monetary and fiscal policy. The monetary policy, however, is typically under the jurisdiction of a government independent institution such as the National or Central Bank. In all three models introduced in section 2.1, it is implicitly assumed that incumbents have a substantial control over the Central Bank's policy without providing according justification. While Tufte (1978) argues that there are always "informal channels" through which the government can influence the monetary policy, he agrees that the strength of the Political Budget Cycle is negatively correlated with the independence of the Central Bank. Other critics, in turn, have categorically rejected the idea of accurately timed business cycles all together. Keech (1980) for instance criticises the implied control over variables of the real economy as illusive and only justifiable in a centralised planned economy whereas the government can in a free market economy indeed only influence the economic frame conditions. Essentially, the structure of a national economy is too complex and comprises too many individual decision makers for that the magnitude and the timing of unemployment and inflation rate could be adjusted as in the Nordhaus (1975) model. Schultz (1995) and Drazen (2000b) argue further that the incumbents' discretion over the economic policy is hampered by the possible resistance of the agents responsible for its implementation (principle-agent problem). Schultz (1995) concludes that any policy that conflicts with the personal interest of the government's personal will be extremely difficult to implement.

Voters in the Nordhaus (1975) model are rational to the extent that they aim for the most competent leader as their agent. In that process, the current office holder has the advantage that they can demonstrate their expertise whereas the challenger's competency remains unknown and subject to speculation. Consequently, voters confirm the current office holder as long as the status of the economy meets their expectations with the level of unemployment and inflation serving as indicators. However, voters are unaware of the repercussion of the observed economic policy and evaluate therefore only the current status of the economy. As a result, the expected inflation in the model is only a function of the previous values without taking into consideration the consequences of future policies. As McCallum (1978) points out, the concept of the Political Business Cycle does not hold if the public starts to anticipate the incumbent's action. Likewise, Nordhaus (1975) presumes a high discount rate for the evaluation of the economy so the voters' decision is only affected by recent impressions. If voters

were to evaluate the economic development over a prolonged period of time, short-term peaks would not be associated with economic expertise and therefore have less impact on the voters' decision. Finally, Tufte (1978) raises the question whether the significance of the level of unemployment and inflation may be overestimated since the public's biggest concern is the effective change in their disposable income. Accordingly, Tufte (1978) suggests that the easiest way for politicians to attract voters would be simply to "write cheques" to every household.

Nordhaus's (1975) seminal theory was followed by a large number of empirical studies testing how well the Political Business Cycle or the subsequent PT match with empirical data. The common test has been to run an auto regression of an economic parameter on itself with a dummy variable to measure the impact of the election and a set of economic control variables in order to isolate the effect from other determinants such as the general economic trend. Most of the original studies were focused on OECD countries because of data availability and reliability, while it was not until the study of Schuknecht (1996) that more attention was given to the developing countries (see also chapter five). A comprehensive summary of past empirical research on the Political Business Cycle and the PT is provided by Alesina and Sachs (1988), Davidson *et al.* (1990), Alesina *et al.* (1991), Drazen (2000a), Franzese (2002) and Mueller (2003). Empirical analyses can broadly be divided in those measuring the change in the economic outcome such as the GDP, the level of unemployment or the rate of inflation and those testing for electoral cycles in fiscal and monetary instruments such as the interest rate, the government spending or the total amount of monetary assets, for instance. Overall, empirical results have not been conclusive providing little support for the Political Business Cycles or the PT. While evidence has generally been stronger for electoral cycles in fiscal and monetary instruments rather than in economic outcome measures, the robustness of the results depends strongly on the respective country and the analysed time period.

2.2.2 The Rational Political Business Cycle

Next to the much contested suggestion that incumbents can determine the economic outcome at a high accuracy, the main critique has been with regard to the voters' short term perception of the economic policy. Ironically, when Nordhaus (1975) published his model of the Political Business Cycle, the "Revolution of Rational Expectation" was already on its way. Advocating the existence of a rationale, forward looking majority, Lucas (1972) and Sargent and Wallace (1975) basically rejected the connection between the rate of unemployment and inflation that is a key setting in the Nordhaus (1975) model. Essentially, Sargent and Wallence (1975) conclude that an expansive monetary policy that has been expected by the economic agents causes merely an increase of inflation while leaving the rate of unemployment unchanged. The models that followed the work of Nordhaus (1975), Hibbs (1977), and Frey and Schneider (1978) were unmistakably influenced by the new approach of Lucas (1972) and Sargent and Wallace (1975). Frey and Schneider's (1978) satisficing theory received though little attention in later research as their model presupposes the capability to adjust economic policy instantly in case of a popularity shock. They therewith implicitly ignore the time lags in monetary and fiscal policy that make a constant switch between different economic policies impracticable (Mankiw, 2003). A more moderate version introduced by Schulz (1995) maintains poll thresholds as determinant for the strength of the incumbents response while Sieg (2006) proposes the pursue of an "opportunistic" economic policy during the election and partisan policy in the post-election period. Both of these later models though abandon the stop-and-go policy described by Frey and Schneider (1978). Hibbs's (1977) PT was followed by a new model developed by Alesina (1987, 1988) and Alesina and Sachs (1988) that has forward looking voters and economic agents incorporated. A summary of the Rational Partisan Theory (RPT) is provided in Appendix 1. However, out of all the new models, Rogoff's (1990) asymmetric information theory would receive the most attention marking a distinct milestone in the redevelopment of the original model of the Political Business Cycle.

Softening Down's (1957a) notion of purely career concerned politicians, Rogoff and Sibert (1988) advance the view that politicians derive utility from the income and prestige associated with their stay in office (ego rent) and, as members of their society, from the general social welfare. Their objective is thus to choose an economic policy that increases their chance for re-election without deteriorating future social welfare.

Incumbents and challengers differ in terms of their skills to provide public service at given cost as well as in their personal popularity. As in the Nordhaus (1975) model, there is no account for partisan differences among the candidates. Voters in the model are forward looking; in the absence of a major popularity difference they vote for the candidate from whom they expect maximal social welfare being delivered in the next period. Furthermore, they are aware that an overstimulation of the economy is not sustainable and associated with a future cut-back leading to a loss of social welfare in the next period. The model further defines the following conditions:

- Popularity and expertise are the result of a serially correlated stochastic process. Candidates who are highly competent in the current time period are likely to be so in the next period; however, some of the skills previously required providing an efficient government service will be obsolete while other skills may be more relevant in the next period. Consequently, politicians experience a random *competence shock* at the end of every period.
- Incumbent and challenger are aware of their current competence level and their popularity.
- The public derives the level of competence from the level of provided public service and the therewith connected costs such as income tax, poll tax and inflationary tax.
- Party promises are not credible.

In an off-election period, office holders are only concerned with the maintenance of the (future) social welfare. Consequently, they will present a balanced budget to avoid any long-term deterioration of the economy and allow the public to deduce their *true competence*. In an election period, incumbents are facing a utility maximisation problem: What economic policy maximises the total utility derived from the next term in office and the long-term social welfare (applying a higher discount rate to the social welfare in the long-term future)? Incumbents that are highly competent have no incentive to create an electoral economic cycle; they can signal their true expertise and still be confident of winning the election. In turn, politicians with very low competence may find it “too expensive” to deceive the public since the amount of the additional resources that is required to maintain their chance of re-election would lead to a large loss of future welfare. Essentially, Rogoff and Sibert (1988) conclude that only medium skilled incumbents have a valid incentive to send a *wrong signal* to the public. They can

achieve this by expanding the public service beyond the level they are able to provide at given cost. Alternatively, they can lower income tax without decreasing the level of public service. In either case, the provided service will be "too cheap" thereby letting the incumbents to appear more competent than they truly are. Since voters cannot observe the latest *competence shock* directly, they misinterpret the provided ratio between public service and tax level as indicator of high competence. Having set the tax level too low or the accumulated spending too high, there will be a demand to provide additional financial resources to the economy after the re-election. As a consequence, households are paying an "inflation tax" and suffer a loss in social welfare.

An essential innovation in the model of Rogoff and Sibert (1988) is that electoral economic cycles do not rely on naïve, backward looking voters but are driven by a temporary asymmetry in the available information. If voters could observe the true financial effort required to finance the provided level of public service in *real time*, it would for the incumbents be impossible to deceive the public. Furthermore, electoral economic cycles are not reiterated as in the Nordhaus (1975) model but depend on the incumbents' latest competence shock, on their time horizon and on how much they discount the value of future elections. Finally, politicians are in the new model more subtle in the way they signal their competence to the public. Rogoff and Sibert (1988) suggest that electoral cycles are only observed in economic instruments including tax revenue, public spending and the money supply but not in economic outcome variables such as GDP, inflation or unemployment. In the successor model, Rogoff (1990) goes one step further as he concludes that electoral cycles are only present in the fiscal policy. Rather imposing an inflation tax, a pre-electoral budget deficit is compensated by higher tax revenue or a decline in public spending in the post-election period. Furthermore, Rogoff (1990) reckons that politicians can send stronger signals by changing the spending composition in favour of expenditures with greater public perception (see chapter four for more details). With electoral cycles only taking place in fiscal instruments, Rogoff (1990) has effectively changed the Political Business Cycle to the PBC.

2.3 Development of the conditional PBC

As expected, the suggestion of forward looking voters was questioned by supporters of the original Political Business Cycle (Nordhaus *et al*., 1989). Nevertheless, the new models of Rogoff and Sibert (1988) and Rogoff (1990) received a lot of attention in the literature as they addressed several flaws in the Nordhaus (1975) model. Political economic cycles no longer rely on naive voters but are the result of a temporary information gap between voters and incumbents. The question whether the government has control over the Central Bank and how accurately the outcome of a national economic outcome can be determined is no longer applicable as the incumbent can signal their competence *via* fiscal policy that event represents a better indicator to voters than unemployment and inflation. Finally, the mixed empirical evidences are explained due to the fact that the incumbents' motive to create a PBC varies over time.

Rogoff (1990) was not the first to indicate that electoral cycles are more feasible in fiscal instruments than in economic outcome variables. Ben-Porath (1975) had already detected electoral cycles in Israel's tax income, Tufte (1978) had predicted electoral cycles to appear in tax breaks, public spending and the expenditures on direct benefits and Keech and Park (1989) had found electoral cycles in the US veteran benefit programme. Rogoff (1990), however, was the first to introduce a model under the term "Political Budget Cycle" and the idea that electoral cycles are concentrated on "targeted spending". Nevertheless, it was mainly the study of Drazen (2000a) that initiated a consequent shift in the research on electoral economic cycles. Reviewing the overall development since the publication of Political Business Cycle by Nordhaus (1975), Drazen (2000a) points out that next to their intuitive flaws, all models testing for electoral cycles in monetary instruments or in real economic outcome variables are in severe lack of empirical evidence. While the outcome of real economic variables is too complex and with too many individual parties involved to be accurately determined and timed, fiscal instruments are under the direct control of politicians and can easily be changed. Consequently, Drazen (2000a) concludes that electoral economic cycles are only feasible in the fiscal policy hence the idea of a Political Business Cycle ought to be replaced by a Political Budget Cycle.

One apparent issue in the approach of Rogoff and Sibert (1988) has been the inherent *randomness* of the electoral economic cycles. While it puts the previous lack of empirical evidence into perspective the model is difficult to substantiate as the absence of a tangible determinant makes empirical analysis impracticable. In this context, Shi and Svensson (2002a) argue that the random competence shock experienced by the office holder explains the mixed empirical results over time but does not justify for the variation across countries. Shi and Svensson (2003) have further rejected the suggestion that unpopular and incompetent office holders would not try to create electoral economic cycles for their benefits. They refer instead to the "moral hazard approach" of Persson and Tabellini (2000) that has two major differences to Rogoff and Sibert (1988). Next to the income and prestige related to their position, it is suggested that politicians use their influence during their stay in office to extract genuine rents and financial benefits which provides them with an even stronger motive to seek re-election. Furthermore, Persson and Tabellini (2000) advocate that in consideration of the complexity of policy making and the level of uncertainties, incumbents themselves are unable to anticipate how well they can handle future challenges. Particularly, politicians are not aware of their latest competence shock and therefore unable to predict the level of service they can provide for given resources. Since incumbents are unable to predict whether the level of service they will be able to provide is enough to win the next election, they have a definitive motive to increase their perceived competence in the election period. The underlying key assumption is that incumbents can temporarily disguise their true effort as the public has no accurate insight into the government's budget details. Essentially, the model of Persson and Tabellini (2000) implies a moral hazard. Due to voters' incapability to distinguish (instantly) between normal spending and deficit spending, incumbents have an apparent incentive simulate a high competence shock before the election by employing borrowed resources to exceed public spending. The resulting budget deficit requires later compensation which is though easier to disguise as they can be spread through the whole term of their stay in office. Empirical evidence that support this assumption has been provided in a recent study by Jong-A-Pin *et al.* (2012) who analyse fiscal data in 25 different OECD countries. Examining budget data at the time point of forecast, when being first released and after revision; they discover a tendency for governments to spend more than reported before the election.

The moral hazard approach of Persson and Tabellini (2000) abandons the idea that only office holders with average economic expertise engage in manipulative fiscal adjustments; in turn, the model provides no justification why the PBC is not detected before every election. In view of the mixed empirical evidence, Gärtner (1994) suggested that the size and form of electoral economic cycles may differ across countries and over time. Expanding on these thoughts, Franzese (2002) concluded that the observed inconsistency is not at random but conditional to the environment the whole system is embedded in. Questions like the rationality of voters are thus not a given but endogenous to the political-economic environment. Consolidating Drazen's (2000a) findings that electoral cycles are mostly detected in fiscal instruments, the idea of the moral hazard approach and Franzese's (2002) suggestion, Shi and Svensson (2002a) coined the term "context conditional cycle" or "conditional PBC". In a neutral situation, it is assumed that politicians have a motive and the opportunity to use fiscal policy for their purpose creating electoral cycles in the government budget. In reality, motivation and opportunity are influenced by factors in the outer environment leading to the observed variations of the PBC.

2.4 An Overview of current Research Subjects

2.4.1 General

The conditional PBC caused a major change in the research on electoral economic cycles both with regard to the objectives and the methodology. Above all, the question whether electoral economic cycles can exist has been replaced by a series of new and more specific enquires. Consistently, the vast amount of research has moved away from model building to empirical analysis. Both developments have lead to an extensive increase in the number of published studies in the field, as Shi and Svensson (2003) point out in their review.

The question that has received the most attention in the literature is which factors in the political economic environment account for the variations in the size and frequency of the PBC. The implication of the main theories is addressed in chapter three and chapter five. A summary of other suggested determinants that have received less attention in the literature and that are not addressed in this research is presented in table 2:1 below. The second enquiry that has caused a vast amount of research is the issue about the form of

the PBC. The question is addressed in full detail in chapter four. A summary of topics and open questions that are beyond the scope of this research is presented in the sections 2.4.2, 2.4.3 and 2.4.4.

Table 2:1: Determinants of the PBC

Factor / Determinant	Research
Exchange Rate and Capital Mobility	(Schuknecht, 1996) (Clark and Hallerberg, 2000) (O'Mahony, 2011)
Fiscal Decentralisation	(Gonzalez *et al*., 2006, 2013)
Fiscal Rules	(Rose, 2006) (Alt and Rose, 2009)
Interest and Lobbying Groups	(Gavious and Mizrahi, 2002) (Bonomo and Terra, 2010) (Horgos and Zimmermann, 2010)
International Organisations	(Schuknecht, 1996) (Hyde and O'Mahony, 2010)
Terms Limit	Aidt and Schvets (2011) Nogare and Ricciuti (2011)

2.4.2 The Timing of the PBC

The timing of the PBC can be divided into *pre-electoral* cycles and *post-electoral* cycles depending on whether the fiscal adjustment is taking place before or after the election, respectively. The vast amount of research in the literature has been focused on pre-electoral cycles based on the traditional notion that the overall level of public spending and tax revenue is increased and decreased, alternatively, to signal economic expertise to the public. Models that have tried to capture the approximate timing of the election cycle typically incorporate two election dummy variables to measure the effect in the year of the election and the year before. Tests in this pattern have been conducted by Guillamon *et al.* (2011), Sedmihradská *et al.* (2011) and Shelton (2012) among others. Only few studies have analysed the timing of the PBC in more detail trying to establish how close to the election date fiscal instruments have to be employed in order to be effective. Analysing the time pattern of different expenditure cycles in Mexico, Gonzalez (2002) finds that the government invests in "broad spending types" such as infrastructure projects and public investment around 6 quarters before the election. Those highly visible expenditures are meant to be observed by a large proportion of the public. In contrast, targeted fiscal instruments like tax cuts and transfers are being used

to convince a carefully selected group of voters only shortly before the election. An even more detailed analysis conducted by Akhmedov *et al.* (2004) examines the magnitude of economic and fiscal instruments in Russia one year before the local elections on a monthly basis. Their results reveal that the biggest increase in total expenditure occurs only one month before the election; a smaller though still significant increase is measured 9 months before the election. Electoral cycles are observed in expenditures on "Education", "Culture", "Healthcare" and "Social Expenditure" while no cycles are observed in economic growth, inflation, the level of industrial output and the average wage and price level. The timely pattern of "Education", "Culture" and "Healthcare" is in line with the general cycling pattern exhibiting two distinct peaks while "Social "Welfare" experiences a more gradual increase of received resources. Akhmedov *et al.* (2004) do not explain the reason for this cycling pattern; however, their results seem to support the basic idea of Frey and Schneider (1978) that the reaction incumbents' reaction to popularity shocks is more intense the closer they are to the election. Akhmedov *et al.* (2004) further point out that the short term peak in fiscal cycles just before the election may explain the weak empirical evidences in early studies as the effect gets "diluted" if the election dummy measures for a prolonged time period - see also section 3.2. Analyses of post-electoral cycles have argued that measurements that inflict pressure on the budget balance may sometimes not be an available option before the election. Instead, the existing level is maintained until the time point of the election after which fiscal adjustments take place in the form of a tax increase and spending cut-backs in order to rebalance the budget. Evidence for post-election cycles in at least some parts of the budget have been found by Persson and Tabellini (2003b), Streb *et al*. (2009) or Böhm and Markward (2011).

2.4.3 Cost and Success of Electoral Economic Cycles

In an early attempt to evaluate the "effectiveness" of the Political Business Cycle, Golden and Poterba (1980) calculate that office holders in the US must spend on average more than five billion dollars extra to gain one point of popularity (measured *via* quarterly approval rate). Based on their results, they conclude that macroeconomic variables are too *costly* to influence to be regularly employed as political instrument. A similar conclusion is reached by Schultz (1995) as he reasons that an economic expansion in the current time period potentially jeopardises a successful campaign in

the future since economic resources must eventually be rebalanced. He therefore suggests that office holders consider the proportion between expected additional votes to be gained and required resources using economic expansion only if the ratio seems favourable.

Evaluating the effectiveness of the PBC, the research has generally reported a better success rate though there are few empirical analyses on national level while reported findings for local elections show clear discrepancies. The research of Akhmedov *et al.* (2004) is in support of the success of the PBC. Analysing the data of local elections in Russia between 1996 and 2001, they find that a 10% increase in the magnitude of the cycle has lead to a 4% growth in the incumbents' popularity. Their findings are only partially supported by the results of Veiga and Veiga (2007a, 2007b) who analyse the PBC in Portuguese municipalities over the period of 1979 till 2001. Though their research detects electoral cycles in the budget balance, total revenue and total expenditure, they conclude that only an increase in "Capital Expenditure" entails a significant positive impact on the mayors' chance for re-election. Their outcome is consistent with the findings of Drazen and Eslava (2005) who find similar results in Colombian municipalities; again only electoral cycles in "Investment" and "Capital Expenditure" proof to be beneficial for the incumbent party with a 10% increase in spending resulting in a 1% increase of received votes. In contrast, results found by Sakurai and Menezes-Filho (2008) in Brazilian municipalities reveal that an increase in "Capital Expenditure" only supports the chance of re-election if spread over the whole period in office whereas an increase in "Current Expenditure" is more effective in the short run before the election. The results of Sedmihradská *et al.* (2011) are somewhat inconclusive as they find positive electoral cycles in total public spending and in "Capital Investment" with simultaneous savings being made in "Current "Expenditures" before the elections in Czech municipalities between 2001 and 2007. However, the success rate of re-election is lower in those municipalities that exhibit a large PBC. Sedmihradská *et al.* (2011) conclude therefore that an increase in public investment, though significant cycles are detected, are not approved by the public whereas an increase in "Current Expenditures" could actually increase the probability of re-election. Tests for PBCs on local levels cannot be directly compared nor are their reasoning directly applicable to the PBC on national level (see section 2.4.4). However, the majority of above findings are in line with Brender and Drazen (2008) who provide the

only analysis across countries using a panel data structure with 74 countries over the period from 1960 till 2003. Testing the impact of economic policies in developed and developing countries and new and old democracies, they do not detect a positive correlation between budget deficit and successful re-election for any of those groups. On contrary, the chance for re-election appears reduced in developed countries and established democracies.

In summary, the success of the PBC seems to rely heavily on the chosen spending type though there is no consistency across countries which expenditures are most successful. Interesting in this context are the results of Sedmihradská *et al.* (2011) which imply that office holders misjudged the voters' preferences. Conclusively, the effectiveness of the PBC may depend on how well voter preferences are understood and translated into action.

2.4.4 The PBC on local Level

While most of the research (theoretical and empirical) has been focused on the PBC on national level, there has been a rapid growth of studies concerning the PBC on local levels as show in section 2.4.3. An inherent advantage is the availability of detailed data that allows the analysis of more specific enquiries or rare events such as the connection between the PBC and the level of association between the mayor and the major party (Cioffi et al., 2012) or the impact from changing from indirect to direct elections (Sjahrir et al., 2013); a comprehensive summary of empirical findings for the PBC on local level is provided by Guillamon *et al.* (2011). Baleiras and da Silva Costa (2004) argue that the theory of the PBC is in fact more applicable to local governments. As the uncertainty concerning the political future is greater for non-re-elected politicians on local level, they have a stronger incentive to produce a PBC than incumbents on national government level. On the other hand, Katsimi and Sarantides (2012) warn that PBC on local level cannot be compared across countries in the same manner as findings in cross-country analyses since fiscal responsibilities and authorities of local governments differ across countries. Conclusions drawn from studies at the local level are therefore not necessarily applicable on national level. With regard to the discrepancies in section 2.4.3 and in chapter four, spending types classified as "visible" on local level may be classified as "invisible" on national level, for instance.

3 Do Political Institutions influence the Size of the PBC?

This chapter analyses the effect of political institutions on the PBC in developed countries. Examining the effect of different institutional settings, it explores the question whether the size of the PBC is determined by one or several institutional variables or by the interaction among them.

3.1 Introduction

3.1.1 Definition and Relevance

Following the definition in the "Oxford Handbook of Political Institution", political institutions are:

> *"a relatively enduring collection of rules and organized practices, embedded in structures of meaning and resources that are relatively invariant in the face of turnover of individuals and relatively resilient to the idiosyncratic preference and expectation of individuals an changing external circumstances".* (Rhodes *et al.*, 2008)

A more tangible interpretation by Wittman and Weingast (2008) describes political institutions as an explicit framework that determines:

- How political power is retained
- How political power is exerted
- How electoral preferences are transformed into policy

In the research of electoral economic cycles, political institutions were long treated as a "black box". Theories described in chapter two presume implicitly the presence of an all powerful single authority that determines the fiscal outcome. In reality, economic policy making is a process with different groups being involved. Accordingly, the outcome of the process and what economic policy is observed is dependent on the preference of the respective party and their leverage in the process determined by the institutional framework in place. Persson and Tabellin (2001) emphasise the circumstance:

> *"... policy choices entail conflicts among different groups of voters, between voters and politicians (agency problems) and among different politicians. The way these conflicts are resolved, and thus what fiscal policy we observe, hinges on the political institutions in place."* (Persson and Tabellini, 2001)

With growing awareness about their significance, the research on political economics has experienced a general popularity boost over the last decade resulting in a growing number of studies analysing the effect of political institution on the economic outcome. Despite the large increase of available research, Efedic *et al.* (2011) criticise in their review of over 200 publications in the field that there still exists no established pattern how political institutions are to be measured. As shown in section 3.1.2, the difficulty to quantify the institutional framework has also affected the research on the PBC. This research follows the methodological approach of Franzese (2002). Being one of the first to point out the relevance of political institutions as the field of future research, Franzese (2002) specifies *electoral competition*, *political accountability* and the *concentration of political power* as the three forces caused by the institutional framework that determine the significance of electoral economic cycles.

3.1.2 Institutional Determinants of the PBC

Concentration of Political Power and Fiscal Leeway

The institutional determinant that has received the most attention in the literature on the PBC is the concentration of political power. In broad terms, political power signifies the incumbents' level of discretion or rather the extent they can enforce their preferred economic policy without considering the preferences of other groups. Ultimately, it represents their leeway when changing the budgetary *status quo* (Tsebelis and Chang, 2004). As the PBC entails by definition a change of the current fiscal policy, the opportunity to generate electoral cycles in the fiscal policy diminishes as political power is diluted. Symptomatic of the difficulties faced when analysing political institutions, the level of institutional power is determined by a collective of institutional rules. Tsebelis (2002) and Saporiti and Streb (2008) identify in particular the following factors:

- Which party sets the agenda in the policy making process?
- What is the relative strength between the branches?
- Which parties in the process have veto power and the right to have a veto overruled, alternatively? If the legislative do have the right to impose a veto or to have the executive's veto overruled, what majority is required within the legislative chamber(s)?
- Does a rejection of the proposal represent the end of the process or does it initiate a new round of negotiations?
- What is the stipulated procedure for the scenario that no agreement is achieved?

Such detailed information on the institutional framework is neither available on a cross-country basis nor, as Tsebelis (2002) points out, is there a possibility to translate those institutional details in a direct scale of political power. In consequence, the literature provides different proxies to account for concentration or separation of political power, respectively. Persson and Tabellini (2003b) focus on the government form and the distinction between *presidential* and *parliamentary* regimes. The two regimes differ in how the main branches of the government, executive and assembly, are elected and how they interact in the policy making process. Presidential regimes require both branches to be elected in a popular vote and appointed for a fixed term. The elected executive (usually referred to as the president) is granted with constitutional authority that includes powers over the executive branch and the lawmaking process. While the assembly, *id est* the legislature or the parliament, may have the power to impede policies imposed by the president, the latter cannot be displaced by the assembly before the official end of the term. In parliamentary regimes, the executive is selected by the assembly and their stay in office is conditional on a majority support in the legislative. However, in most parliamentary systems the dependence between executive and legislative is mutual and the former may dissolve the assembly before the official election date making an early election necessary (Carey, 2008). Persson and Tabellini (2003b) reason that due to this mutual dependence, branches in parliamentarian governments are forced to cooperate thereby channelling their political power whereas the fragmentation between the government branches under presidential rule has institutional power diluted leaving less leeway for fiscal manoeuvres. Testing for the PBC in a panel with 60 democracies for the period from 1960 till 1998, their empirical results confirm that the electoral cycle in total revenue is almost double the size under

parliamentary rule than in presidential regimes (-0.45% and -0.26% of the GDP, respectively). However, the difference between both regime types does not pass for statistical significance and does not show in the budget balance (-0.21% and -0.18%). Their findings are supported by the results of Brender and Drazen (2005) who detect a modest difference in the size of the PBC between parliamentary (-0.97%) and presidential (-0.73%) regimes in the budget balance. The difference disappears though in old democracies (see chapter five for details).

The distinction between presidential and parliamentary regimes as applied by Persson and Tabellini (2003b) has been common in analyses of the institutional framework. Unlike the institutional rules identified by Tsebelis (2002) and Saporiti and Streb (2008), data on the classification of the government form is largely available across countries. However, the findings of Persson and Tabellini (2003b) have been challenged by Klomp and de Haan (2011) as they detect significantly larger electoral cycles in the budget balance under presidential rule (-1.29%) than in parliamentarian regimes (-0.78%). They conclude that incumbents have more power under presidential regimes since government leaders cannot be brought down by the legislative. The discrepancy between both findings is reflected in the study of Crisp *et al.* (2011). Analysing the specifications of the veto clause in South American presidential systems, they detect large variations in the way how veto power is executed and under which conditions it can be nullified. Their findings are in line with Voigt's (2011a) critique that the mere distinction between presidential and parliamentary regimes is "too coarse" to indicate the political constraint. Whether the executive authority surpasses under presidential rule or in a parliamentary systems may well depend on the institutional details, so Voigt (2011a).

A different indicator for the concentration of power is employed by Chang (2008). Rather considering the government form, he stresses the significance of the government *type* and the distinction between *one-party governments* and *coalition governments*. Testing for electoral cycles in *"Social Security"* and *"Economic Services"* in OECD countries, Chang (2008) finds the PBC in both spending types to be suppressed under coalition governments. His findings are confirmed by Klomp and de Haan (2011) as they detect a smaller PBC under coalition governments (-0.47%) than under one-party governments (-0.80%) across developed and developing countries. The proxy employed by Chang (2008) and Klomp and de Haan (2011) is in line with Tsebelis (2002)

suggestion that political institutions are best interpreted in terms of the number of *veto players, id est* the number of parties that have independent of the government form the authority to inhibit fiscal adjustments. Tsebelis (2002) approach is insofar superior to the classification of the government form as the number of veto players can genuinely be quantified. However, as Tsebelis (2002) points out, the government type is still a weak indicator for the concentration of power since the latter is not determined by the total number of coalition members but depends on the relative strength of the coalition members, their ideological preferences and their willingness to negotiate. Accordingly, a large number of coalition members do not inevitably implicate a heavy restraint on the incumbents. Consistently, the PBC measured by Klomp and de Haan (2011) does by no means disappear under coalition government still passing for statistical significance at 90% level. Consistently, Alt and Rose (2009) find even a marginal larger PBC under coalition governments than under one-party governments in American federal elections. Starker results are presented by Strep *et al.* (2009) who employ the alignment between the branches *id est* the effectiveness of the institution's checks and balances to account for the concentration of institutional power. As measurement for the alignment between the branches serves the government constraint index developed by Henisz (2004). Analysing the PBC across 67 developed and developing countries, Strep *et al.* (2009) find no signs of electoral cycles in the budget balance if checks and balances are *effective*. In comparison with the approach of Tsebelis (2002), the political constraint index is more detailed in terms of the institutional fragmentation as it considers the *relative* impact of additional veto players rather their absolute number. However, Henisz (2004) acknowledges that the index is based on several assumptions, the most important one is the uniformly distributed preferences of all involved parties. Tsebelis (2002), in turn, stresses the significance of the awareness of party ideological difference in order to determine the number of effective veto players. In addition, Strep *et al.* (2009) impose further restrictions that are beyond the context of political institutions. They argue in particular that the effectiveness of checks and balances is conditional on the general compliance with the law measured by the law and order index provided by the International Country Risk Guide (ICRG).

In conclusion, while it has been suggested that diluted political power exerts a curbing effect on the PBC, empirical evidence has been far from conclusive and appears to depend heavily on the method of measurement and made assumptions.

Political Accountability and Economic Voting

Despite being the subject of numerous studies, political accountability remains difficult to substantiate as it has been referred to in context with good governance, transparency, equity, democracy, efficiency, responsiveness, responsibility and integrity among others (Bovens, 2010). With different studies having focused on different aspects, the issue at hand is not merely the measurability but, as Boven (2010) emphasises, the general lack of a common understanding what accountability entails.

Following the description of the World Bank, accountability characterises the ability to refrain politicians from exploiting their power.

> *"Political accountability refers to the constraints placed on the behaviour of public officials by organizations and constituencies with the power to apply sanctions on them. As political accountability increases, the costs to public officials of taking decisions that benefit their private interests at the expense of the broader public interest also increase, thus working as a deterrent/disincentive to corrupt practices."* (The World Bank, 2000)

In accordance with the above description, accountability has been repeatedly highlighted as constraint on corruption and rent extraction – see Persson *et al.* (2003), Lederman *et al.* (2005) or Ferraz and Finan (2007) among others. Due to the positive correlation between both magnitudes and the size of the PBC (see section 5.1.2 for details), intuitively one would anticipate the PBC to diminish as accountability increases. In contrast, Persson and Tabellini (2003b) conclude that political accountability increases the likeliness of a PBC. To understand this seeming discrepancy, a more detailed examination is required about the source of restraint on public officials.

In order for the population to apply effective sanctions on the incumbent, Lassen (2001) Adserea *et al.* (2003) and Ledermann *et al.* (2005) emphasise the need of:

- The possibility to react upon performance and have bad politicians replaced
- A degree of transparency that allows the responsible authority to be identified

Evidently, the first criterion is strongly associated with the electoral competition. The easier it is to "punish" bad politicians, be it for insufficient performance or for excessive rent extraction, the more concerned they will be about their re-election. Thus, accountability does not entail a restrain on the incumbents' leeway *per se* though Persson and Tabellini (2003b) conclude that career concerned politicians who can be held accountable will avoid actions that jeopardise their re-election such as extensive rent extractions or wasteful spending. In turn, they have a greater motive to appear competent which makes a PBC more likely. Their explanation is in line with the anti-rent cycle presented by Drazen and Eslava (2005) (see section 4.1.2).

There is considerable variation in the way transparency is measured which reflects the different interpretations. In the analysis of Adsera *et al.* (2003) and Kaufmann *et al.* (2010), transparency strengthens the restrain on the incumbent as voters have a better insight into the political decision making process. Accordingly, transparency is measured in terms of the freedom of the media that, in turn, has been found to have a restricting effect on rent extraction as well as the PBC (see section 5.2). A different rationalisation is provided by Powell and Whitten (1993) as they analyse the connection among political institutions, accountability and economic voting. Since the office holder relies on the support of legislators in their own or even from other parties, they may be forced to deviate from their preferred policy and making compromises on the allocation of resource. Being aware of the conflict between different parties within the decision making process, Powell and Whitten (1993) conjecture that the public assigns only as much credit or blame for the observed economic policy as the incumbent can be held responsible for. In this context, political accountability does not signify the restraint on the incumbent but the degree they are held responsible which, in turn, determines how responsive voters are to economic performance, *id est* the level of economic voting. Rating the extent of political accountability, Powell and Whitten (1993) consider the strength of the political leader within the government. Accordingly, accountability is higher in a one-party government than in a coalition government and minimal in a minority government. Associated responsibility is further diffused in a bicameral system with two parliament chambers and in countries with low party cohesion as legislators within the own party may act in their own interests trying to allocate resources to their own district (Powell and Whitten, 1993).

Finally, Persson and Tabellini's (2003b) analyse transparency and allocated responsibility in terms of the relation between the law making branches and how they are elected. They conclude that political leaders are held more responsible under presidential rule since they are elected directly by the voters and with some granted lawmaking authority whereas in parliamentary regimes there is typically a strong mutual dependence between the executive and the legislative branch. Comparing their approach with Powell and Whitten (1993), it stands out that even though both assign accountability to political institutions, the latter have substantial weight allocated to the government *type* while the government *form* has not been taken into consideration. Comparing their results, Powell and Whitten (1993) find their conjecture confirmed. Incumbents are more likely to remain in office if the economy is prospering (measured by growth in GDP, unemployment and inflation) and also more likely to be voted off in case of an economic downturn in countries that exhibit a high calculated accountability index. Even though they do not test for the PBC, their findings can easily be extrapolated as the level of economic voting affects directly the incumbent's motive to create electoral economic cycles. Their findings have been confirmed by Becher and Donnelly (2013) and by Gélineau (2013) thereby affirming the connection between the government type and the level of economic voting. In contrast, the results of Persson and Tabellini (2003b) support their conjecture only in the post-election period as they detect substantial cut in expenditures under *presidential* regimes (-0.76% and -0.93% depending on the data sample). Persson and Tabellini (2003b) conclude that the results show the conflicting effect between accountability and the concentration (separation) of power: while an increase in expenditure before the election is likely to be blocked in presidential regimes because of the fragmented government structure, necessary spending cuts are postponed until after the election leading to the observed post-election cycle.

In summary, there exists no research on the effect of political accountability on the PBC other than seminal work of Persson and Tabellini (2003b). This circumstance is likely due to the inconsistent understanding and measurement of political accountability. Taking into consideration the findings of other studies in the field of political economics, there is, however, a valid reason to assume a positive correlation between political accountability and the PBC.

Electoral Competition

Electoral competition constitutes the threat to the incumbent of being voted out of office. Alt and Rose (2009) distinguish between *formal competition* that describes how easily the office holder can be challenged under the existing institutional settings and *strategic competition* that represents the real threat faced before the election. Theoretical support for the connection between strategic competition and electoral economic cycles was already indicated in the early models of Frey and Schneider (1978), Rogoff and Sibert (1988) and Schulz (1995). The latter, in particular suggests that the motive for the PBC is proportional to the amount of additional votes that can be gained which is indicated by the approval rate. Alt and Rose (2009) emphasise poll numbers and approval rate indeed as the most realistic indicators for strategic competition. Due to the limited availability of reliable data and the fluctuation over time, empirical analyses using poll values have remained scarce and restricted to single Western countries and local elections as conducted by Schulz (1995) and Alt and Rose (2009), alternatively. Cross-country research has instead applied alternative indicators to account for the threat presented by the election. Alt and Lassen (2006) conclude that the electoral competition and therewith associated motive for the PBC increases with growing partisan differences between the ruling party and the opposition. The study of Schuknecht (1996) and Block (2002a) implies though that according findings are only applicable to developed Western Democracies whereas the traditional classification in left and right wing ideologies is less significant in other parts of the world. Testing for the PBC across developed and developing countries, Klomp and de Haan (2013) thus employ instead the number of anti-government demonstrations and general strikes in pre-election years as indicator for the strategic competition.

While there is strong theoretical support for the correlation between the PBC and poll values, Hyde and Marinov (2012) criticise that strategic competition is not an exogenous variable but merely the outcome of the political environment. More precisely, while incumbents may experience it as driver for the PBC, strategic competition is the direct result of formal or institutional competition that describes the general difficulty for the opposition party to challenge the current office holder. Institutional competition is determined by the rules relating to the voting process, the voting rules (Cox, 2008). Golder (2005) identifies 261 variations of democratic election systems for the period between 1946 till 2000 making a comparison of all aspects of the voting rules impracticable. Instead, focus has been on the *voting formula* as the primary

determinant of institutional competition (Cox, 2008). The voting formula describes how received votes translate into political power. The basic distinction differs between the *plurality* or *majority* system and the *proportional* election system. Majority rule is based on a "the winner takes it all" principle that allocates the maximum weight of a constituency to the winning party however minor their winning margin; alternatively, candidates are elected in descending order of received votes in case of an election with more than one seat to be allocated. In contrast, proportional voting formula has political power allocated in the ratio of to the number of received votes (Rhodes *et al.*, 2008). The impact of the voting rule on the electoral competition is double-edged. Majority rule makes it more difficult for small and new parties to participate in the policy process thereby typically reducing the political competition down to two major parties whereas proportional rule facilitates the increase of competitors in the election (Jackman, 1987). On the other hand, Persson and Tabellini (2003b) argue that an election under majority rule entails the bigger risk for the ruling party as they are confronted with the scenario of losing their entire political power whereas even a small share of received votes under proportional rule may be sufficient to sustain political influence, for instance as part of a coalition. As a result, voters encounter fewer obstacles to vote the incumbent off under majority rule. Empirical results have not been conclusive in their investigation which effect dominates. Persson and Tabellini (2003b) find that the pre-electoral cut back in total revenue is almost double the size under majority rule than in proportional systems measuring -0.57% and -0.30% in percentage of the GDP, respectively. Brender and Drazen (2005) detect a modest difference in total revenue (-0.39% compared to -0.21%) while the results in the budget balance seem ambiguous; the coefficient is marginally higher under majority rule (-0.38%) but fails to pass for statistical significance whereas the PBC under proportional rule (-0.35%) is significant at 99% level. In turn, Klomp and de Haan (2011) find a larger electoral cycle in budget balance under proportional rule (-0.99%) than under majority rule (-0.76%).

3.2 Data and Methodology

3.2.1 Methodological Approach

The chosen approach is aimed to address specific shortcomings and critique of the existing research that were highlighted in section 3.1. In this context, the research expands on the existing literature by testing for the effect of institutional variables for which there exists little or no empirical evidence regarding their effect on the PBC. In order to address the critique expressed by Glaeser (2004) and Hyde and Marinov (2012), institutional variables have been divided into *formal institutional rules* and *formative indicators* depending on whether they fulfil the definition of political institutions in section 3.1.1 or if they are a compound of different institutional factors including "outcome dependent" variables.

In reference to Voigt's (2011a) critical assessment of the existing distinction between presidential and parliamentarian regimes, this research chooses a more precise classification of government forms testing for the first time for the effect of semi-presidential regimes. Further tests are conducted for the *ballot structure* and the *district magnitude*. The district magnitude indicates the fractionalisation of voting districts. Due to its correlation with the voting formula, the effect of the district magnitude has not been considered in context with the PBC except in the research of Chang (2008). According to Milesi-Ferretti *et al.* (2002), however, the district magnitude is the most informative indicator to assess the proportionality of a system. The ballot structure determines therefore if legislators are held accountable by the voters or rather to by their party leaders (Persson and Tabellini, 2003b). While its effect for the PBC has never been tested, Persson and Tabellini (2003b), reason that an open ballot structure increases institutional competition as candidates cannot rely on the general popularity of the party. In turn, a closed party list increases the competition within the party. Applied indicators for the measurements of electoral competition, political power and political accountability have been aimed to resolve specific deficits in previous studies. In particular the indicator created for political accountability is original as it combines both aspects of transparency and contestability.

Next to the evaluation different individual variables, the test series focuses strongly on the possible interactions among institutional factors and whether the individual effect is mitigated, reversed or amplified in combination with a different variable. The approach is motivated by the doubts expressed by Brousserau (2011) and Voigt (2011a) of whether the effect of a single institutional variable can be analysed in isolation or if it is rather the overall complexity of the institutional framework and the interaction among variables that is relevant. Finally, the tests include a series of robustness checks which address overlooked "technical issues" in the analysis of the PBC such as the compatibility of fiscal data across different time periods and the choice of instrument variables when applying GMM technique.

3.2.2 Data Selection

As explicated in section 1.3, issues concerning the pooling of data are inherent to panel data analysis. In context of the conditional PBC, the question that has been at the core of the debate is whether the data of *developed* and *developing countries* can be uniformly analysed of if they need splitting into separate panels (see also chapter five). While there has been no conclusive answer to this question, Klomp and de Haan (2011) draw attention to the potential bias when pooling data of highly heterogeneous countries. In consequence, empirical tests in this chapter are restricted to developed countries. It is worth emphasising there exists no consistent definition in the literature what qualifies as a developed country; in this research, the term comprises countries classified by the World Bank as "upper-middle-income economies" (annual income between $3,976 and $12,275 per capita) and "high-income economies" (annual income of $12,276 or more per capita). Research on the PBC has traditionally been restricted to democracies. Based on the argument that there is no motive for the PBC in undemocratic institutions (Brender and Drazen, 2005), countries that do not meet minimum democratic standards have typically been filtered out from cross-country analyses. However, there have been findings that contradict with that approach (see section 5.1 for details). In this research, electoral competition is instead employed as filter criterion. In consequence, the panel includes countries that have not been considered as democratic regimes for the entire period but has countries excluded if there have not been at least three competitive elections within the analysed time period (see section 3.2.4). In total, the panel contains data from 68 countries over the time

period from 1975 until 2009. Countries included are: Albania, Argentina, Australia, Austria, Azerbaijan, Bahamas, Barbados, Belarus, Belgium, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Canada, Chile, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Denmark, Ecuador, Estonia, Finland, France, Germany (before the reunion Federal German Republic), Greece, Grenada, Hungary, Iceland, Iran, Ireland, Israel, Italy, Jamaica, Japan, Korea Rep., Latvia, Lithuania, Luxembourg, Macedonia, Malaysia, Malta, Mauritius, Mexico, Namibia, Netherlands, New Zealand, Norway, Panama, Peru, Poland, Portugal, Romania, Russian Federation, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Turkey, United Kingdom, United States Uruguay and Venezuela.

3.2.3 Dependent Variable

The literature on the PBC has been inconclusive with regard to which fiscal instrument(s) are preferably used by the incumbents (see section 4.1 for details). In consequence, the most popular analysis of the PBC involves testing for changes in the budget balance which summarises the accumulated change of all fiscal instruments. The indicator specifies also the magnitude of the total distortion of the budget during the election period. In line with the literature, values for the budget balance are measured in percentage of the GDP.

Fiscal data for the central government are taken from the database of the Government Finance Statistics (GFS) published by the International Monetary Fund (IMF). The GFS changed their classification of fiscal instruments and how they were calculated during the analysed period. In the previous system (GFSM 1986), there are different values published for the budget balance depending on whether grants and lending and repay are being included or not. The comparison of empirical analyses using data according to the GFSM 1986 classification is therefore hampered by this inconsistency. In the new classification system (GFSM 2001), there is only one value published for the budget balance. In this research, all fiscal data are taken according to the GFS 2001 classification. Where required, old data have been converted following the instructions of the IMF (Wickens, 2002). The majority of data within the considered time period are published on *cash* basis; data in the more recent period, however, may be available on *accrual* or / and cash basis while some fiscal information is only available as *budgetary*

data. Fiscal data that are only available on accrual or budgetary basis are converted according to the method of Gemell *et al*. (2007) and Katsimi and Sarantides (2012). If the two time series overlap for at least one year, the former series is updated by calculating the percentage change of the new series. If there is a gap between both series, Katsimi and Sarantides (2012) recommend that accrual data are only included if the difference between both series does not exceed 1% of the GDP. There exists, however, considerable variation in the fiscal fluctuation across countries. Instead of a fixed threshold, the relative change within the time series is considered in this research. Accrual data are thus considered as compatible if the annual change of the missing data is smaller than the biggest annual change observed within the last five years before the gap.

3.2.4 Election Variable

The electoral dummy variable signifies the effect of the *election period* (see section 1.3). The term is of course ambiguous as there is no clear information regarding the time span of the election period. In the analysis of Persson and Tabellini (2003b) or Brender and Drazen (2005) for instance, the election dummy variable takes the value of 1 in an election year and 0 otherwise. However, an election held in early January is expected to exhibit a PBC towards the end of the previous year. Following the approach of Franzese (2002), the election dummy variable is therefore calculated as [*M / 12*] in the year of election and as [*(12 - M) / 12*] in the year before the election with "*M* " being the month of the election. In all other years, the election variable is *0* (post-election cycles are not considered). Consistent with the literature, legislative elections in a presidential system are not accounted for as they are not associated with a major shift of power (Persson and Tabellini, 2003b).

The data for the election dates are originally taken from the database of Political Institutions compiled by Beck *et al.* (2010) and published by the World Bank. The dates have then been crosschecked with the data published by the Institutional Foundation for Electoral Systems (IFES), the International Institute for Democracy and Electoral Assistance (IDEA), the Center on Democratic Performance (CDP), the European Data Center for Work and Welfare (EDAC), the Electoral Institute for Sustainable Democracy in Africa (EISA) and the African Election Database. Following the

verification with the above sources, several changes have been implemented as presented in table 3:1.

Table 3:1: Implemented changes on the Election Dates

Country	Implemented Changes
Albania	There was a parliamentary election in June 2009
Australia	There was an election held in December 1975
Belgium	There was a parliamentary election in April 1977
Bosnia Herzegovina	There was a parliamentary election in September 1996
Bulgaria	1.) Election held in 1990 is not included as it was a constitutional election 2.) There was a presidential election in October 2006
Chile	1.) Presidential election in December 1999 (first round), not January 2000 (second round) 2.) Presidential election in December 2005 (first round), not January 2006 (second round) 3.) There was as presidential election in December 2009 (first round)
Colombia	Presidential election took place in May 1998, not 1999
Croatia	There was an election in 1990; however, it is not included as it was a direct result of the election held in 1989.
Greece	1.) There was a parliamentary election in October 2009
Switzerland	There was a parliamentary election in October 1975
Venezuela	There was a presidential election in December 2006
Uruguay	There was a presidential election on October 2009
Thailand	1.) The election held in 1975 was not as "uncompetitive" as suggested, since different parties were winning seats in the election 2.) There was a parliamentary election in 1986 not 1987

3.2.5 Institutional Variables

All data for the institutional variables are taken from the database of Political Institutions (Beck *et al.*, 2010) published by the World Bank. As described in section 3.2.1, variables have been divided into *formal institutional rules* and *formative indicators*. Formal institutional rules fulfil the definition of political institutions expressed in section 3.1.1. Formative indicators, on the other hand, are "outcome dependent" (Glaeser *et al*., 2004) institutional variables that are less time resistant.

Formal Institutional Rules

As described in section 3.1.2, institutional variables commonly tested for are the government form and the voting formula. The government form describes how political power is being executed and has therefore been associated with the fragmentation of the government and the political accountability. Differing from the common distinction between presidential and parliamentary regimes, Beck *et al*. (2000, 2001) consider three different government forms. Following their definition, a political system is defined as presidential in case of a single executive elected by a popular vote who cannot be dismissed by the legislature while parliamentarian regimes have the executive (in most cases the prime minister) elected by the legislative. In countries where a single executive is elected by the legislature but who enjoys a similar degree of independence like a popularly elected president, the critical question is how difficult it is for the parliament to dismiss the office holder. If they can only do so by dissolving themselves or they require at least a two third majority, the country is coded as assembly-elected president or *semi-presidential* system, otherwise as parliamentarian regime. Finally, in countries with a president and a prime minister, the decisive question is who is more likely to prevail. Countries are therefore classified as presidential despite the presence of a prime minister if the president can appoint and dismiss all cabinet ministers (including the prime minister) and dissolve the assembly, or if the president can veto legislations that the parliament can only override with a supermajority (two third of all votes). In any other case, the regime is coded as parliamentary unless in the rare case it is consistently referred to the president in the literature as the maker of important decision. The variables for the government form are *pres*, *parl* and *semipres* taking the value 1 or 0. Consequently, if a system has been classified as presidential, it is *pres* = 1, *parl* = 0 and *semipres* = 0, for instance.

As described in section 3.1.2, the voting formula represents a key indicator for the institutional competition as it describes how electoral support is transferred into political power. The classification of the voting formula by Beck *et al*. (2000, 2001) is in line with the general approach in the literature distinguishing between majority (*maj*) and proportional systems (p*rop*). *Prop* takes the value of 1 if the majority of all relevant houses are elected according to the proportional rule, otherwise 0. Accordingly, *maj* is calculated as *1 – prop*. The district magnitude is defined in the database of Political Institution as the average number of representatives elected by each electoral district in a country (Beck *et al*., 2000, 2001). In accordance with the approach of Chang (2008),

institutions are either classified as single district magnitude (*sdm*) or as multiple or plural district magnitude (*pdm*). The former takes the value of 1 if there is maximum one pair of representatives per district otherwise 0; analogue *pdm* is calculated as1- *sdm*.

The *ballot structure* describes how citizens cast their votes. The scale varies from being allowed to choose freely among all available candidates in which case the system is classified as *open* till having to select one predetermined party list, referred to as *closed* ballot. Between those two extremes, there are several interim options that allow to have some candidates replaced on a pre-determined list (Norris, 2002). Beck *et al*. (2000, 2001) differ only between two types of ballots. It is classified as open (*open* = 1) if voters have the option to replace some of the candidates proposed by their party or at least change the order on the list. If the list of the candidates is predetermined allowing no changes, the ballot structure is coded as "closed" (*closed* = 1).

Formative Indicators

As described in section 3.1.2, there have been different indicators employed trying to qualify the electoral competition such as the differences between party ideologies (Alt and Lassen, 2006) or the number of protests and strikes (Klomp and de Haan, 2013), for instance. This research considers instead the question whether the election represents a genuine threat to the office holder thereby providing a valid motive for the PBC; if this condition is met, the election is classified as *competitive*. Accordingly, the election is classified as *uncompetitive* if one of the following scenarios applies:

1. There is only one available candidate
2. All available candidates are members of the same party
3. Only candidates from one party have won seats in the election

The above conditions include all elections in the institutional data base with a value of lower than six for electoral competition. If there is an Electoral College as in the United States, the score refers to the electoral competition of its members (Beck *et al*., 2000, 2001). In addition, Hyde and O'Mahony (2010) find that the threat of being voted off is mitigated if the election outcome can be manipulated by the ruling party. They conclude from their results that election fraud is a potential alternative to the PBC rendering the latter unnecessary. Thus, elections are also coded as uncompetitive if the Political

Database records allegations of an election fraud (even if they have not been verified). All in all, less than 9% of all elections in the panel are classified as uncompetitive. In summary, the variable measures if there is at least one oppositional group with the capability to challenge the ruling party making and therefore the institutional competition. In strict sense, however, it does not qualify as institutional rule since the third criterion is outcome dependent.

The meaning of accountability, as explicated, has varied throughout the literature depending on the interpretation of the individual study. Hence, there is no acknowledged measurement. Following the definition of Lassen (2001), political accountability refers in this research to the level of control that voters can exercise over elected leaders in terms of a principal-agent relationship. Consequently, the central aspects are *transparency* and political *contestability* that allow voters to assess the extent of responsibility and effectively impose sanctions, alternatively. Consistent with the approach of Powell and Whitten (1993), Norris (2002) and Kaufmann *et al.* (2009) suggest that accountability is rather the product of different determinants than the effect of a single variable.

> *"While there are many reasons to believe that the ballot structure is important for the chain of accountability…, nevertheless it is only one factor at work here."* (Norris, 2002)

In consequence, accountability has been quantified as the compound of different institutional factors all of which are associated with political contestability and transparency. The government type takes thereby the role of a key factor receiving the strongest weight. The connection between government type and political accountability respectively transparency is not only highlighted by Powell and Whitten (1993) but also by Whitten and Palmer (1999), Lassen (2001) or Kiss (2009). Further factors are the voting formula (Persson and Tabellini (2003b), (Lederman *et al*., 2005), the ballot structure (Persson and Tabellini (2003b), Norris (2002) and the number of government chambers (Powell and Whitten, 1993). The scoring of the factor is presented in table 3:2.

Table 3:2: Institutional Factors of Political Accountability

Factor.	Variable	Score
Government type and number of parties	Single Majority Government	4
	Coalition Government	3
	Coalition Government with 3 or more parties	2
	Minority Government	1
Number of Chambers	Single chamber with decision power	1
	Dual chamber with decision power	0
Voting Formula and Ballot Structure	Majority rule in all relevant chambers	2
	Proportional rule with open ballots	1
	Proportional rule with closed ballots	0

Next to the selection of the right institutional parameters there is the question about the scaling. Despite their informative character, Kaufmann *et al*. (1999) warn that aggregated indicators should not to be applied as continuous variables but recommend to employ them rather as distinction between major groups:

> *"Although these aggregate governance indicators are more informative about the level of governance than any single indicator, the standard errors associated with estimates of governance are still large relative to the units in which governance is measured. In light of these margins of error, it is misleading to offer a very precise ranking of countries according to their level of governance: small differences in country rankings are unlikely to be statistically - let alone practically significant. Nevertheless, these aggregate governance indicators are useful because they allow countries to be sorted into broad groupings according to levels of aggregate governance."* (Kaufmann *et al.*, 1999)

Countries are therefore separated only into two groups depending on whether accountability is considered to be low (*acl*) or high (*ach*) on a global comparison. Having scored 102 countries over the period from 1975 till 2009, *ach* takes the value of 1 in countries with a score of five or higher, otherwise 0. Contra wise, *acl* is calculated as 1 – *ach*. While the classification of *acl* and *ach* is relative and a minor change in the level of accountability would not inevitably lead to a modification, it is to consider that institutional variables are per definition relatively time invariant; formative indicators that are to represent aspects of the institutional framework are thus expected to show similar characteristics. As pointed out in section 1.3, the classification into two groups

also alleviates the risk of multicollinearity in multiple interactions (Jaccard and Turrisi, 2003). Possible drawbacks from this dual classification and a different coding system are considered in section 3.4.

Table 3:3: Accountability score across countries

Score	% share of all scores	Accumulated share of all scores	Classification
1	13	13	acl
2	13	26	acl
3	16	42	acl
4	14	56	acl
5	12	68	ach
6	20	88	ach
7	12	100	ach

The literature describes different methods to account for the concentration of political power; the index calculated by Beck *et al*. (2000, 2001) follows the approach of Tsebelis (2002) by focusing on the number of veto players. Tsebelis (2002) distinguishes in his analysis between *institutional veto players* and *partisan veto players id est* parties that can block or render policy decisions according to their constitutional rights and those that have the possibility and a valid motive to do so because of their ideological distance to the office holder, alternatively. The database of Political Institutions (Beck *et al.*, 2010) provides numbers to both groups. Tsebelis (2002) emphasises though that the restriction on the incumbents' leeway is mostly imposed by the partisan veto players. Accordingly, the value for the dispersion of political power is set to the minimum level of 1 if the institutional rules exhibit no binding character thereby leaving no genuine restriction on the ruling party; if institutional rules are binding, the index starts at "2". Under presidential rule, the value is increased by one point for every legislative chamber unless the president's party is the largest government party in the chamber and elections list are closed. As previously pointed out, the ballot structure is an indicator for the competition within the party and whether party members are likely to ignore orders from their leader. In a parliamentary system, the value is increased by one for every party in the government and decreased by one if the ballot structure is closed and the prime minister's party is the largest party in the coalition. The value is further increased in both regimes for every veto player whose party preference is closer to the largest party in the opposition than to the average rest of the government. Unlike the constraint index developed by Henisz (2004), Beck *et al*.

(2000, 2001) do not account for the marginal effect of additional veto player. In turn, the index does not rely on the assumption of uniformly distributed ideological preferences. Analogue to the approach for accountability, the index is used to separate countries into two main groups depending on if the number of partisan veto players is large (*cbh*) or low (*cbl*). Thus, *cbh* is classified as 1 if the index takes a value of four or higher, otherwise 0. Accordingly, *cbl* is calculated as 1 - *cbh*.

Table 3:4 and table 3:5 give an overview of all institutional variables and the abbreviation of the respective interaction among them. Numbers confirm that institutions classified as semi-presidential regimes are the clear minority in comparison to the more common presidential and parliamentarian regimes which is why the additional separation has traditionally been omitted. Table 3:6 reveals considerable correlation between voting formula and district magnitude. This is as expected as both variables are an indicator for the proportionality of the system (Milesi-Ferretti *et al.*, 2002). Further correlations are observed between accountability and the voting formula and accountability and concentration of power, alternatively. Again, this is not unexpected since following the definition in this research, political accountability comprises that political responsibility is clearly allocated moreover incumbents are easily replaced.

Table 3:4: Overview of Institutional Variables

Name	Institutional Variable	Numb. of Observ.
pres	Presidential Regime	640
parl	Parliamentary Regime	1376
semipres	Semi-presidential Regime	178
maj	Majority Voting Rule	849
prop	Proportional Voting Rule	1203
sdm	Single District Magnitude	611
pdm	Multiple District Magnitude	1230
open	Open Ballot Structure	479
closed	Closed Ballot Structure	969
acl	Low Accountability	1191
ach	High Accountability	769
cbl	Consolidated Political Power	1102
cbh	Diluted Political Power	1108

Table 3:5 Overview of Interaction between Institutional Variables

cbl-acl	Interaction: low accountability / consolidated political power
cbl-ach	Interaction: high accountability / consolidated political power
cbh-acl	Interaction: low accountability / diluted political power
cbh-ach	Interaction: high accountability / diluted political power
cbl-sdm	Interaction: single district magnitude / consolidated political power
cbl-pdm	Interaction: multiple district magnitude / consolidated political power
cbh-sdm	Interaction: single district magnitude / diluted political power
cbh-pdm	Interaction: multiple district magnitude / diluted political power
cbl-pres	Interaction: presidential regimes / consolidated political power
cbl-parl	Interaction: parliamentarian regimes / consolidated political power
cbh-pres	Interaction: presidential regimes / diluted political power
cbh-parl	Interaction: parliamentarian regimes / diluted political power
acl_sdm	Interaction: single district magnitude / low accountability
acl_pdm	Interaction: multiple district magnitude / low accountability
ach_sdm	Interaction: single district magnitude / high accountability
ach_pdm	Interaction: multiple district magnitude / high accountability
acl_press	Interaction: presidential regimes / low accountability
acl_parl	Interaction: parliamentary regimes / low accountability
ach_pres	Interaction: presidential regimes / high accountability
ach_parl	Interaction: parliamentary regimes / high accountability
pres-sdm	Interaction: presidential regimes / single district magnitude
pres-pdm	Interaction: presidential regimes / multiple district magnitude
parl-sdm	Interaction: parliamentarian regimes / single district magnitude
parl-pdm	Interaction: parliamentarian regimes / multiple district magnitude

Table 3:6: Correlation Matrix among Institutional Variables

	pres	*parl*	*semip.*	*maj*	*prop*	*sdm*	*pdm*	*closed*	*open*	*acl*	*ach*	*cbl*	*cbh*
pres	1												
parl	-0.83	1											
semipres	-0.19	-0.39	1										
maj	-0.67	0.06	0.00	1									
prop	0.67	-0.06	0.00	-1	1								
sdm	-0.01	0.04	-0.10	0.70	-0.70	1							
pdm	0.01	-0.04	0.10	-0.70	0.70	-1	1						
closed	0.23	-0.18	-0.08	0.16	-0.16	-0.09	0.09	1					
open	-0.23	0.18	0.08	-0.16	0.16	0.09	-0.09	-1	1				
acl	0.15	-0.09	-0.09	-0.56	-0.56	-0.51	0.51	0.26	-0.26	1			
ach	-0.15	0.09	0.09	0.56	-0.56	0.51	-0.51	-0.26	0.26	-1	1		
cbl	0.07	-0.23	0.72	0.11	-0.11	-0.04	0.04	0.05	-0.05	-0.33	0.33	1	
cbh	-0.07	0.23	-0.72	-0.11	0.11	0.04	-0.04	-0.05	0.05	0.33	-0.33	-1	1

3.2.6 Economic and Demographic Control Variables

Next to the election dummy variable and the institutional test variables, the model includes various control variables to account for external factors that are expected to impact the fiscal policy of the central government and by implication the overall budget balance. The choice of control variables is based on the findings of previous studies on the PBC and on principle economic theories.

Early evidence for the connection between the fiscal policy and the general economic trend is provided by Wagner (1893) as he finds that the share of public expenditures increases with growing GDP. Consequently, the share of public expenditures is larger in advanced industrial economies. Accordingly, the model includes the variable *lngdp_pc* to account for the economic development, calculated as the natural logarithm of the GDP per capita. A more serious issue for the analysis for the analysis of the PBC is the interconnection between the fiscal policy and the general economic fluctuations. Fedelino et al. (2009) confirm that most fiscal variables and in particular the budget balance are directly and almost immediately affected by deviations in the economy from its long-term trend. Even a temporary downturn of the GDP is to put a strain on the budget as the national income decreases while the government may try to stabilise the economy by public investments or tax cuts. In turn, the budget balance is likely to recover when the economy is growing. Next to this direct impact on the budget balance, fluctuations in the economy have been associated with the experienced level of economic voting (Hanusch, 2012) and the incumbents' opportunity for rent extraction (Vukovic, 2013) which both exert an indirect influence on the motive for the PBC. Consequently, empirical analyses are confronted with the challenge to disentangle electoral cycles in the fiscal policy from the general business cycle. In this context, Persson and Tabellini (2003b) highlight the need for a measurement of the output gap in the model. Following their approach, the variable *gdp_gap* is calculated as percentage deviation of the GDP from its natural trend (calculated by the Hodrick-Prescott filter (Hodrick and Prescott, 1997)) to account for the natural fluctuations in the economy.

Further economic factors with a direct influence on the fiscal policy and an indirect effect on the motive for the PBC are the openness of the economy and the unemployment rate. The former exhibits a significant correlation the general size of the government expenditures (Rodrik, 1998) as well as with the extent of experienced

economic voting. As an open economy is more likely to be affected by economic developments in the world market, voters hold incumbents less responsible for the observed economic policy (Hanusch, 2012). The variable accounting for the openness of the economy, *trade*, is calculated as the sum of total import and export divided by the GDP. A higher unemployment rate (*unemployment*) implies an increase in the budget deficit as result of lower tax income and higher expenditures on social security (Chang, 2008). Davidson *et al*. (1992) find further evidences that political economic cycles are more likely to occur if the election takes place subsequently to a recent increase in the unemployment rate. Finally, *infl_gap* measures the change of the average annual inflation rate which impacts on the government receipts through nominal progression in tax rates and the real value of government debt (Klomp and de Haan, 2011). In line with the literature, the model includes also two demographic variables measuring the percentage of the population between the age of 15 and 64 (*pop1564*) and of 65 and older (*pop65plus*). As consistently emphasised in empirical analyses on the PBC, the demographic structure of the population has significant ramifications on the available fiscal resources as well as on the spending preferences (Persson and Tabellini, 2003b). Most data are taken from the Word Bank's World Development Indicator database (WDI). Missing data on unemployment have been supplemented by figures from the International Labour Organisation (ILO) and from the respective national office for statistics for Iran, Luxembourg, Malaysia and Mauritius.

3.3 Results

3.3.1 The Effect of Electoral Competition

In order to examine the effect of the *constitutional competition*, the first test series (1) has *all* elections included while accounting for those elections that have been coded as uncompetitive. Results give strong evidence for the existence of the PBC, showing an average decrease in the budget balance of 0.52% of the GDP across countries during the election period; the hypothesis $El\_all = 0$ is rejected at 99% level. More importantly, results in table 3:7 emphasise the significance of constitutional competition as driver of the PBC in developed countries. Clearly visible in (2), the PBC has virtually disappeared in elections that were impaired by alleged electoral fraud or lack of genuine competition. Conclusively, there is no incentive to create electoral fiscal cycles without

facing the risk of being voted off. As a result, uncompetitive elections are filtered out from all further tests. Repeating the test for the unconditional PBC with only competitive elections included in the panel (3), the size of the PBC increases from -0.519% to -0.577%. Size and significance of the control variable remain unchanged. From the control variables, *lngdp_pc, pop65plus, trade, gdp_gap* and i*nfl_gap* enter the equation with 95% significance or higher. The highest coefficient is measured for *pop65plus* which, as anticipated, is associated with a significant decrease of the budget balance indicating a reduction of available fiscal resources as the share of older (and retired) people in the population rises. The seeming insignificance of *pop1564* and *unemployment* indicates a multicollinearity problem among the control variables. While *Pop1564* and *pop65plus* are clearly in inverse proportion, *gdp_gap* and *unemployment* are expected to correlate as changes in the economic output have a lagged impact on the required workforce and the rate of unemployment causing a distortion of the true measurement error of respective variables.

The 2^{nd} order test refers to Arellano-Bond test which tests for second-order serial correlation in the first difference residuals asymptotically distributed under the null hypothesis of no serial correlation. The Hansen test is a test identifying restriction, asymptotically distributed as $\chi 2$ under the null of instrument validity (see section 1.3 for details); both tests fail to reject the null hypothesis. The GMM regression includes lagged levels of the dependent variables (lagged by minimum two periods) and of *lngdp_pc* (lagged by minimum one period) as instruments.

Table 3:7: Electoral Competition

	Dependent variable: budget balance [% of the GDP]		
	(1)	(2)	(3)
El_all	-0.519*** (.171)		
El_unc		-0.021 (.747)	
El_adj			-0.577*** (.179)
Lagged dependent variable [t-1]			0.800*** (.160)
Lagged dependent variable [t-2]			-0.063 (.129)
lnGDP_PC			-0.001** (.000)
pop1564			0.005 (000)
pop65plus			-0.064*** (.018)
trade			0.006*** (.001)
gdp_gap			0.054** (.023)
infl_gap			-0.001** (.000)
unemployment			-0.014 (.013)
2nd Order test (Pr > z)			0.47
Hansen test (Prob > χ^2)			0.56
Numb. of Instruments			58
Numb. of Groups			68
Numb. of Observations			1425

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses

3.3.2 The Effect of Formal Institutional Variables

According to Persson and Tabellini (2003a), the effect of the government form on the PBC is twofold. They conclude that the motive for the PBC is stronger under presidential rule since political leaders are directly elected by the voters. In turn, considering the interdependence between executive and legislative (see section 3.2) fiscal adjustments are more likely to be passed through in parliamentary systems. The discrepancy between both effects is reflected in the results in table 3:8. While there is a clear difference in the measurement error of the PBC failing for statistical significance under presidential (1) regimes but passing for 99% significance under parliamentary (2) rule, the actual difference in size is negligible measuring merely 0.05%. In sharp contrast, the magnitude of the PBC is approximately double the size in *semi-presidential* (3) regimes measuring a decrease of 1.02% of the GDP during the election

period. There exists no justification in literature for this result. Since the distinction between presidential and semi-presidential regimes has never been considered in the research on the PBC, there exists no empirical comparison. While the explanatory power for the results of semi-presidential regimes has to be put into perspective considering its lack of significance and the small number of observations (less than 5% of all elections are held under semi-presidential rules), the outcome underlines Voigt's (2011a) critique with regard to the common classification in presidential and parliamentarian systems as "too coarse". Findings in empirical analyses will inevitably depend on how semi-presidential systems are classified which could explain for the differences between the results of Persson and Tabellini (2003b) and Klomp and de Haan (2011) pointed out in section 3.2.

While the F-test is not an available option to test for the conjoint significance using GMM technique, Jaccard and Turrisi (2003) show that the significance of the interaction between vocal variable and moderator can be directly derived from the results. However, standard errors reported in table 3:8 show no evidence for an interaction effect between the election variable and government form. Formally, none of the following hypothesis *El_pres = El_parl*, *El_pres = El_semipres*, *El_parl = El_semipres* is rejected giving no proof for the impact of the government form on the PBC.

Table 3:8: The Effect of the Government Form

	Dependent variable: budget balance [% of the GDP]		
	(1)	(2)	(3)
El_pres	-0.468 (.329)		
El_parl		-0.522*** (.171)	
El_semipres			-1.019 (.888)
pres = parl	(.468)		
pres = semipres	(.413)		
parl = semipres	(.405)		
2nd Order test (Pr > z)	0.54		
Hansen test (Prob > χ^2)	0.59		
Numb. of Instruments	58		
Numb. of Groups	68		
Numb. of Observations	1425		

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

Reviewing the effect of different voting rules, the biggest impact on the PBC is detected for the distinction between single (3) and multiple (4) district magnitude. The size of the PBC reaches 99% significance and double the magnitude under *pdm*; in contrast, *sdm* is the only institutional setting in table 3:9 that has statistical significance of the PBC rejected. The results conflict with Chang's (2008) argument that the *type* but not the *size* of the PBC is influenced by the district magnitude. However, they can be aligned with the conjecture of Persson and Tabellini (2001) that a fragmented district structure causes incumbents to focus fiscal resources entirely on key districts. Evidently, a large number of small districts mean that a smaller share of total votes is required in order to secure re-election. Thus, the average district magnitude can be associated with the *costs* for the PBC implying a reversed proportionality between the size of the district magnitude and resources required for the PBC. An explicit rejection of Chang's (2008) argument is not possible as the interaction effect between election and district magnitude does not pass for statistical significance hence the hypothesis *sdm* = *pdm* cannot be rejected.

Assessing the effect of the voting formula, it was explained in section 3.1.2 that the risk of losing the election is more tangible under majority (1) rule but that a proportional voting system (2) tends to increase the number of competitors participating in the election. Results show that the latter effect preponderates, measuring -0.79% at 99% significance under proportional rule and -0.44% and at 90% significance under majority and, alternatively. The outcome is close to the findings of Klomp and de Haan (2011) who detect a similar difference between proportional rule (-0.99%) majority rule (-0.76%). The hypothesis of indifference *maj* = *prop*, however, is not rejected. More importantly, the difference between majority and proportional rule is smaller than the distinction between single and multiple district magnitude that fails for statistical significance only by a margin. The results support therefore Milesi-Ferretti *et al.* (2002) and their conclusion that the average district magnitude is a better indicator for the institutional proportionality than the commonly used voting formula.

The effect of the ballot structure in legislative elections is in line with the argument of Persson and Tabellini (2001). Though never empirically tested, they conclude that an open ballot structure makes it easier for voters to have incumbents replaced thereby enhancing electoral competition and political accountability. In consequence, there is more pressure exerted on the incumbents than under a closed ballot structure. The difference between *closed* (0.65%) and *open* (0.75%) seems though trivial and far from

significant. The PBC passes statistical significance at the 95% level even under closed ballot structure.

Table 3:9: The Effect of the Election Rules

	Dependent variable: budget balance [% of the GDP]					
	(1)	(2)	(3)	(4)	(5)	(6)
El_maj	-0.436* (.245)					
El_prop		-0.791*** (.268)				
El_sdm			-0.393 (.282)			
El_pdm				-0.835*** (.253)		
El_open					-0.513* (.268)	
El_closed						-0.545** (.266)
maj = prop	(.330)					
sdm = pdm			(.284)			
closed = open					(.381)	
2nd Order test (Pr > z)	0.37		0.38		0.34	
Hansen test (Prob > χ^2)	0.60		0.67		0.58	
Numb. of Instr.	58		58		25	
Numb. of Groups	68		68		34	
Numb. of Observ.	1376		1249		702	

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses

3.3.3 The Effect of Formative Institutional Indicators

Empirical evidence for the effect of formal institutional variables has been rather mixed in the previous section. Strikingly, the strongest indication for an institutional effect has been observed for semi-presidential regimes and the average district magnitude which both have not been tested before in previous studies though there has been no statistical significance for the interaction between the election and any institutional variable. In contrast, results for the formative indicators clearly affirm political accountability as magnifying force of the PBC. In comparison to the size of the unconditional PBC in section 3.3.1, there is an increase of 0.87% of the GDP if incumbents can be held accountable (2). The clear results underline the twofold impact of political accountability on the incumbents' motive: while the possibility to apply sanctions increases the fear of being voted off, political transparency leads to stronger economic voting thereby increasing the incentive for fiscal manipulations. While the difference between *acl* and *ach* is significant at 95% level, it stands out that the PBC does not

disappear when accountability is low (1); the size of -0.46% is indeed only 0.1% below the unconditional PBC and remains significant at 95% level. Conclusively, as long the election does present a genuine threat, the motive for the PBC can only be amplified but not nullified. Comparing the effect of the composed indicator with the results for individual variables associated with political accountability, it stands out that only weak support was found for the effectiveness of political accountability in section 3.3.2. The results appear therefore in line with Norris's (2002) remark that accountability is only determined by the *accumulated* effect of individual variables. In a more general notion, the results support the conjecture of Brousserau (2011) and Voigt (2011a) that the institutional effect is only captured by the complexity of the overall institutional framework. In turn, results affirm that the effect of accountability does not rely on external factors such as fiscal transparency (Alt and Lassen, 2006) or the freedom of the media (Alt and Rose, 2009).

Table 3:10: The Effect of Political Accountability

	Dependent variable: budget balance [% of the GDP]	
	(1)	(2)
El_acl	-0.464**	
	(.224)	
El_ach		-1.448***
		(.455)
acl = ach	(0.484)**	
2nd Order test (Pr > z)	0.39	
Hansen test (Prob > χ^2)	0.56	
Numb. of Instruments	51	
Numb. of Groups	61	
Numb. of Observations	1015	

***/**/* denote significance at 99%, 95% level, and 90%, respectively. Robust standard errors in parentheses.

While there has been earlier reference in the literature regarding the restricting effect of diluted political power, results have not been conclusive and the validity of applied indicators open to question (see section 3.1.2). Testing for the effect of political power measured by the number of effective veto players, results in table 3:11 leave no doubts attesting a substantial impact on the PBC. In institutions where politicians face no credible opposition (1), the magnitude of the electoral cycle increases up to -1.13% which corresponds approximately to double the size of the unconditional PBC. Conversely, the electoral cycle in budget balance nearly disappears in institutions where political power is diluted (2); the hypothesis *El_cbh* = 0 is not rejected. Conclusively, whereas incumbents do not refrain from creating a PBC under weak accountability, the

electoral cycle is effectively prevented under dispersed political power and the involved restrain on the office holders' fiscal leeway. The interaction between the election and the institutional variable is strongly significant rejecting the hypothesis *cbh = cbl* at 99% level. The outcome is approximately in line with the results of Streb *et al.* (2009) who conclude that a misalignment between executive and legislative causes the PBC to diminish. In contrast to their findings, results in table 3:11 rely solely on institutional settings without further conditions regarding the compliance with the law and budget rules. On the other hand, the number of veto players that have the institutional power as well as the motive to deter fiscal adjustments proves to be much more relevant than the actual number of coalition members suggested by Alt and Rose (2009) or Klomp and de Haan (2011).

Table 3:11: The Effect of Concentration of Political Power

	Dependent variable: budget balance [% of the GDP]	
	(1)	(2)
El_cbl	-1.335*** (.340)	
El_cbh		-0.207 (.186)
cbl = cbh	(0.366)***	
2nd Order test (Pr > z)	0.43	
Hansen test (Prob > χ^2)	0.61	
Numb. of Instr.	57	
Numb. of Grp.	68	
Numb. of Observ.	1409	

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses

3.3.4 Interaction among Institutional Variables

Hitherto, conducted tests have been restricted to models with only one moderator. While consistent with the general approach in the research on the conditional PBC, Voigt (2011a, 2011b) and Brousseau *et al.* (2011) suggest in their review on the analysis of political institutions to consider that the resulting institutional effect may not be captured by the single variable but rather come from the *interaction* between institutional parameters. Addressing their concern, this section examines the resultant effect of the combination of different institutional variables therewith testing for the size of the PBC under more specific institutional settings. Due to the small number of semi-presidential regimes and the problem of multicollinearity (see section 1.3), only interactions with presidential and parliamentarian regimes are being analysed.

Importantly, while interactive models describe the effect of different variables in dependence of each other, they provide no insight regarding the causality between them. The purpose is rather to investigate how different institutional variables interact and if there exists an inherent order of precedence in the institutional framework. In this context, a question of great interest, for instance, is whether incongruent forces cancel each other out or if there is a priority among the individual effects.

The first test combines the two forces that have shown the most significant impact on the size of the PBC, concentration of power and political accountability. As expected from the previous results, the largest electoral cycle is detected for the combination of *ach* and *cbl* measuring a massive decrease in the budget balance of 2.3% (2) of the GDP. Comparing with the results in "neutral" environment, the size of the PBC reaches almost four times the normal size. In turn, in absence of either variable the hypothesis *Elect* = 0 is not rejected leaving *El_cbl_acl* as the only scenario where the PBC passes for statistical significance. It appears that both forces have the effect of cancelling each other out. The results are in strong support of Tufte's (1978) early conclusion that incumbents require a motive and the opportunity to create electoral economic cycles. Despite the apparent interdependence, the concentration of power appears to have more explanatory power. Though not passing for statistical significance, the size of the PBC measured under *cbl_acl* (1) remains larger than the average measured cycle across all institutional scenarios whereas the magnifying effect of *ach* disappears entirely in interaction with *cbh* (4). The difference between concentrated and weak political power, though not statistically significant, is clearly noticed in interaction with *acl* as the decrease in the budget balance of -0.61% (1) is reversed to an increase of 0.36% (3). Low accountability, in contrast, entails an increase of measurement errors and a loss of significance but does not inevitably lead to a smaller size of the PBC.

Table 3:12: Accountability and Concentration of Power

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_cbl_acl	-0.608 (.384)			
El_cbl_ach		-2.333*** (.553)		
El_cbh_acl			0.359 (.196)	
El_cbh_ach				-0.219 (.408)
acl: [cbl = cbh]	(0.548)			
ach: [cbl = cbh]	(0.653)***			
cbl: [acl = acl]	(0.818)**			
cbh: [acl = acl]	(0.449)			
2nd Order test (Pr > z)	0.41			
Hansen test (Prob > χ^2)	0.55			
Numb. of Instr.	50			
Numb. of Grp.	61			
Numb. of Observ.	1050			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

Examining the PBC in dependence of political power and the mean district magnitude, the results in table 3:13 show a much clearer pattern as the former is clearly revealed as the dominating force. On condition that office holders are granted with institutional power, clear evidence for the PBC is observed under single and multiple district magnitudes measuring -1.46% (1) and -1.90% (2) alternatively. Statistical significance is in both cases passed at 99% level. Likewise, the confining effect of dispersed constitutional power does not depend on the district magnitude. The difference between *cbl* and *cbh* accounts for both district magnitudes approximately *1.5%* of the GDP. While the magnifying effect of *pdm* is invalidated under *cbh*, it stands out that the previous finding that electoral economic cycles are less pronounced under single district magnitude is still applicable. In fact, the detected difference between *sdm* and *pdm* in section 3.3.2 remains unaffected by the extent of fiscal discretion so the increase or decrease of the PBC caused by the constitutional power is nearly identical for single and multiple district magnitude with a constant gap of approximately 0.4% of the GDP between them. An interpretation of the results in table 3:13 is that a successful re-election can under a highly fragmented district structure always be achieved with a lower share of total votes; hence, there are fewer resources required so an effective PBC becomes "cheaper". The magnitude of the effect is though clearly secondary and the level of political power remains the primary determinant of the size of the PBC. The difference between *cbl* and *cbh* is statistically significant for both district magnitudes

rejecting the thesis *El_cbl = El_cbh* at 99% and 95% in interaction with *pdm* and *smd*, alternatively.

Table 3:13: Concentration of Power and District Magnitude

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_cbl_sdm	-1.461*** (.488)			
El_cbl_pdm		-1.903*** (.693)		
El_cbh_sdm			-0.016 (.298)	
El_cbh_pdm				-0.383 (.317)
sdm: [cbl = cbh]	(0.526)***			
pdm: [cbl = cbh]	(0.565)***			
cbl: [sdm = pdm]	(0.701)			
cbh: [sdm = pdm]	(0.396)			
2^{nd} Order test (Pr > z)	0.34			
Hansen test (Prob > χ^2)	0.56			
Numb. of Instr.	58			
Numb. of Grp.	68			
Numb. of Observ.	1206			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

Following the argument of Persson and Tabellini (2003b), fiscal adjustments are more likely to be passed through under parliamentary rule due to the alignment and mutual dependence between executive and legislative branch of the government. Results in section 3.3.2 showed little support for their conclusion with merely a marginal difference in the sizes of the PBC under presidential and parliamentarian rule. Analysing the effect of the government form under different levels of institutional power, the difference between both regimes is magnified under *cbl* to an extent that *El_parl* (2) is almost double the size of *El_pres* (1). Under *cbh*, the difference is reduced to the previous level with even a slightly larger decrease of budget balance measured under presidential rule (3). Thus, results in table 3:14 partially confirm the argument of Persson and Tabellini (2003b) that fiscal adjustments are more difficult to implement under presidential rule leading to a smaller PBC. However, the effect is not applicable if political power is generally dispersed by the number of effective veto players. Consistent with the previous findings, concentration of power is evidently identified as the dominating force determining the overall size of the PBC. Conditional on *cbl*, strong signs of electoral economic cycles are observed for both government forms measuring a decrease in the budget balance of 0.86% and 1.62%. With

institutional power being dispersed, the size of the PBC is reduced down to -0.26% and -0.21%, alternatively. The results also put the large electoral cycles earlier detected under semi-presidential regimes into perspective as there exists only 1 election for the institutional setting cbh_semipres. The null hypothesis *El_cbl = El_cbh* is rejected at 99% level under parliamentary rule.

Table 3:14: Concentration of Power and Government Form

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_cbl_pres	-0.863 (.675)			
El_cbl_parl		-1.615*** (.443)		
El_cbh_pres			-0.260 (.486)	
El_cbh_parl				-0.206 (.133)
pres: [cbl = cbh]	(0.902)			
parl: [cbl = cbh]	(0.436)***			
cbl: [pres = parl]	(0.808)			
cbh: [pres = parl]	(0.520)			
2nd Order test (Pr > z)	0.45			
Hansen test (Prob > χ^2)	0.73			
Numb. of Grp.	62			
Numb. of Instr.	52			
Numb. of Observ.	1084			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

Table 3:15 shows the overall effect of the interaction between political accountability and the government form. The effect of enhanced accountability is observed for both government forms though the magnifying effect is less pronounced that for the interaction between government form and concentrated institutional power. The question if accountability affects presidential and parliamentary regimes differently is not completely evident. Clearly, the difference between *acl* and *ach* is more distinct and more accurate under parliamentary rule leading to the conjecture that political accountability is mostly relevant in legislative elections. The validity of the outcome, however, is impaired by the large measurement error inherent to all results in table 3:15. The conditional effect of political accountability *id est* the difference between *acl* and *ach* is insignificant for either government. Consistent with previous results in section 3.3.3, there is little evidence that weak accountability leads to a decrease of the PBC. Under parliamentary rule, the PBC loses its statistical significance yet the difference between *El_acl_parl* (2) and *El_parl* (2) in section 3.3.2 measures merely 0.02%.

Table 3:15: Accountability and Government Form

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_acl_pres	-0.617* (.374)			
El_acl_parl		-0.504 (.257)		
El_ach_ pres			-0.821 (.718)	
El_ach_ parl				-1.075*** (.358)
pres: [acl = ach]	(.776)			
parl: [acl = ach]	(.454)			
acl: [pres = parl]	(.447)			
ach: [pres = parl]	(.808)			
2nd Order test (Pr > z)	0.48			
Hansen test (Prob > χ^2)	0.74			
Numb. of Instr.	51			
Numb. of Grp..	61			
Numb. of Observ.	1015			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

Results for the combination between accountability and district magnitude are insofar consistent with previous findings that the PBC is consistently larger in institutions with multiple district magnitude or strong accountability that have been associated as "cost" and motive for the PBC, alternatively. In contrast to the previous multiple interaction analyses, there is no order of priority identified: the PBC passes for statistical significance in all scenarios with either *ach* (3) or *pdm* (2) and increases to up to -1.74% (4) in combination of both variables. Nevertheless, the district magnitude appears to bear more explanatory power as electoral cycles under multiple district magnitude unconditionally exceed in size and significance. The hypothesis *acl = ach* is not rejected for either district magnitude, *vice versa*, the effect of the district magnitude and the difference between *sdm* and *pdm* is significant under weak and strong accountability. Comparing the outcome with the results for the single interaction models, the scale of the PBC shrinks under *ach* from -1.44% ((2) in section 3.3.3) in combination with *sdm* down to -0.57% signifying the reducing effect of single district magnitude. By comparison, the PBC decreases under *pdm* from -0.83% ((2) in section 3.3.2) merely to -0.65% upon interaction with *acl*. Conclusively, the "cost factor" appears to outweigh the incentive in determining the size of the PBC.

Table 3:16: Accountability and District Magnitude

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_acl_sdm	0.221 (.481)			
El_acl_pdm		-0.646** (.270)		
El_ach_sdm			-0.573* (.339)	
El_ach_pdm				-1.743** (.737)
sdm: [acl = ach]	(.539)			
pdm: [acl = ach]	(.783)			
acl: [sdm = pdm]	(.442)**			
ach: [sdm = pdm]	(.661)*			
2nd Order test (Pr > z)	0.38			
Hansen test (Prob > χ^2)	0.53			
Numb. of Instr.	51			
Numb. of Grp.	61			
Numb. of Observ.	915			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

The outcome for the interaction between government form and district magnitude in table 3:17 reveals some unexpected results that conflict with earlier findings. In line with previous results, the electoral fiscal cycle is significant under multiple district magnitude but insignificant under *sdm*. Contradicting with earlier findings, the difference between *sdm* and *pdm* is only apparent under presidential rule measuring -0.30% (1) and -0.95% (2), alternatively. In turn, there is only a marginal difference detected under parliamentary rule. The outcome surprises as earlier results for the interaction between government form and accountability and concentration of power showed larger interaction between government form and accountability and concentration of power. However, interpretation of the results in table 3:17 is generally impaired by the large standard errors. Statistically, there is no evidence for any form of interaction between the election variable and the institutional variables.

Table 3:17: Government Form and District Magnitude

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_pres_sdm	-0.303 (.480)			
El_pres_pdm		-0.952** (.425)		
El_parl_sdm			-0.560 (.423)	
El_parl_pdm				-0.582*** (.225)
sdm: [pres = parl]	.675			
pdm: [Pres = Parl]	.496			
pres: [sdm = pdm]	.490			
parl: [sdm = pdm]	.461			
2nd Order test (Pr > z)	0.36			
Hansen test (Prob > χ^2)	0.55			
Numb. of Observ.	1252			
Numb. of Instr.	58			
Numb. of Groups	68			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

3.4 Robustness Tests

In order to verify the validity of the hitherto findings, this section addresses technical issues and methodological aspects inherent to the model, data, estimator and variables employed in chapter three.

Number of Instruments

As explicated in section 1.3, all estimators based on generalized method of moments (Hansen, 1982) rely on the condition that enough valid instruments can be defined; the validity of instruments respectively their exogeneity to the error process is examined with the Hansen J (1982) test. However, since the test statistics of the Hansen J (1982) test gets distorted as the number of instruments increases, its reliability is impaired in large panels especially when using the Blundell and Bond (1998) estimator that is prone to produce a disproportional large number of instruments. In addition, De Hoyos and Sarantides (2006) and Roodman (2009b) point out the risk of biased estimates and "over fitted" results if too many instruments are included as endogenous variables will fail to expunge their endogenous components. While there is no formal rule or method to determine the appropriate number of instruments, Roodman (2009b) points out that extremely large *p* values for the Hansen statistic close to 1.0 are a definite indicator of too many instrument. Furthermore, he stresses that the widely applied method "Number

of instruments ≤ Number of Groups" is misleading as it does not safeguard the Hansen J (1982) test. Instead, Roodman (2009b) suggests to conduct a series of tests with declining number of instruments and examine the impact on the Hansen J (1982) test and on the estimated coefficient. A robustness check with reduced number of instruments is also proposed by Katsimi and Sarantides (2012) particularly in large panels; where the number of groups is small to begin with, the effect is less significant. A reduction in the number of instruments is either achieved by limiting the number of lags used as instruments or combining instruments intro smaller blocks as certain subsets have the same coefficient – a technique referred to by Roodman (2009b) as "collapsing". Applying the combination of both techniques, tests in section 3.3 are repeated having the number of instruments reduced well below the number of groups. Evidently, the Hansen test still passed on all instances strengthening the validity of previous findings. Changes in the estimated coefficients and significance are mostly minor except for the unconditional PBC whose magnitude increases from -0.58% to -0.84% and for *El_pres* where the measured decrease in the budget balance grows double its former size but still does not pass for statistical significance (Appendix 3).

Data Compatibility

The compilation of fiscal data published in the GFS is complicated by their changes in the definition and measurement as well as the occasional lack of consolidated data. As described in section 3.2, different measurements have been taken in order to cleanse data provided by the GFS and avoid discrepancies within the time series. Nevertheless, the risk of comparability breaks cannot be fully excluded. Tests conducted in section 3.3 are therefore repeated using a reduced panel that has budgetary data and data on accrual basis excluded. The new results, however, exhibit only minor changes. The most noticeable variation is observed for the difference between *El_sdm* and *El_pdm* that increases from 0.44% up to 0.73% newly passing for statistical significance at 95% level. Analogously, the difference between single and multiple district magnitude is newly observable in interaction with both government forms but remains more pronounced in presidential regimes (Appendix 4).

Endogenous Elections

The model has been analysed under the tacit understanding that the timing of election is exogenous to the environment meaning the election date is pre-determined. This assumption is generally true for presidential system but may not hold for parliamentary systems where the government has often a certain degree of latitude when elections are held (Wittman and Weingast, 2008). This imposes not only an empirical conflict put puts the very principle of the theory on electoral economic cycles into question. As Heckelman and Berument (1998) point out, the model may suffer from an endogeneity problem if elections can be held at flexible dates. Concretely, elections and economic policy could both be affected by the same unobserved event not accounted for in the model or formally, the residuals in the model will correlate with the date of the election if the latter was determined by a shock in the environment that also influenced the economic outcome. In principle, the coefficient for the election variable might even be downwardly biased if the omitted variable correlates positively with election timing and negatively with the budget policy. Evidently, the opposite scenario has been of much more concern in the literature as it undermines the very logic of electoral economic cycles imposing a reversed causality. For obvious reasons, the concern about the potential endogeneity of the election date is more applicable to the Nordhaus (1975) model. As repeatedly pointed out in chapter two, the precise effect of macroeconomic measurements is difficult to anticipate and to time. Thus, rather trying to influence the economic development, incumbents may find it more convenient to exploit the natural progress of economic cycles by setting the election date in a time of a boom benefiting from the favourable economic trend; a process referred to in the literature as "*economic surfing*" (Ito and Park, 1988). According incidents have been detected by Ito and Park (1988) and by Heckelman and Berument (1998).

In contrast to the macroeconomic outcome variables, incumbents have a more direct control over fiscal policy that makes the theory less applicable to the PBC. Nevertheless, in principle it is conceivable that incumbents take advantage of a favourable budget year to call for an early election as argued by Vergne (2009). Most studies that have tested the economic surfing theory in context with the PBC, however, have rejected the thesis that electoral fiscal cycles are exclusive to countries with predetermined elections including Persson and Tabellini (2003a), Brender and Drazen (2005), Chang (2008) and Efthyvoulou (2012). Shi and Svensson (2002b) find the difference between developed and developing countries to be enhanced under

predetermined election but confirm that the PBC is significant under predetermined and flexible election regimes. Katsimi and Sarantides (2012) even find that the budget deficit is decreased under endogenous election while exogenous elections rather cause a balanced PBC. In view of these one-sided empirical results, the control test for economic serving is not repeated in this research.

Random Time Shock

The series of control variables included in the model are to isolate the electoral effect from general economic and demographic developments that influence the fiscal policy (see section 3.2). Not accounted for in the model are events such as natural disaster, war or sudden price shocks. While it is plausible to assume that the occurrence of those unforeseen events is infrequent and external to the model, they may have severe ramifications on government revenue and expenditure during or following the period of their occurrence leading to wrong findings, especially if their impact on fiscal policy is experienced across countries causing cross-sectional dependence (seep section 1.3). As there is no source of information providing data on those externalities across countries, Persson and Tabellini (2003b) propose to have annual time dummy variables included in the model. The effect of any unusual external event on the fiscal policy is captured by the dummy variable of the corresponding year(s). Following their approach, the tests for the unconditional PBC, concentration of power, district magnitude and accountability are repeated with annual time dummies included. The results show a slight increase of the PBC for *sdm* and *pdm* though without changing the size of the difference between them. Thus, there is no indication that that the results in section 3.3 have been distorted by random shocks in the series (Appendix 5).

Rescaling

As pointed out in section 1.3, the conditional effect in an interactive model cannot be interpreted in the same manner as the result of a standard regression model. Specifically, the estimated coefficients do not measure the general marginal effect but the effect of the focal variable for a specific value of the moderator variable(s). Evidently, this does not present an issue if the moderator is a dichotomous variable as the value of the opposite scenario can be directly derived from the model; however, it does potentially limit the validity of results if a continuous variable is employed as the moderator. In consequence, Jaccard and Turrisi (2003) recommend to have multiple

tests conducted for different values of the moderator in order to verify the robustness of the measured effect. In this context, they point out the risk of transforming a continuous variable *via* "median or mean splitting" into a categorical data. While Jaccard and Turrisi (2003) acknowledge that this transformation is common practice especially in social science (for reasons explained in section 3.2), they warn that the approach can lead to misleading findings if the effect comes to a stop or even reverses at a certain point of the scale. "Median splitting" has been applied in this research to divide institutions into categories with high and low concentration of power, respectively. Incidentally, the difference in the size of the PBC between those two groups has been the most evident and consistent finding in section 3.3. The aim of this section is therefore to examine if the observed distinction is coincidental or if the restraining effect continuous as the number of effective veto players is augmented and lessens for the reversed scenario. The variable *cbh* is recoded as *cbh+1* and *cbh-1* adding (subtracting) one additional veto player testing for the PBC in three different scenarios for what is considered low concentration of power. While the effect of an additional veto player seems to flatten out, clearly the restraining effect is not by accident but continuous indeed in both directions as the PBC gradually decreases from -0.5% to -0.207% to -0.075% eventually (Appendix 6). The fact that there is a bigger difference between *cbh-1* and *cbh* than between *cbh* and *cbh+1* is no surprise. The result coincides with spatial model of Henisz (2002) who attests a diminishing marginal effect on political power for the augmentation of an additional veto player.

3.5 Conclusion

This research has analysed the connection between political institutions and the size of the PBC in developed countries. At the core of the investigation have been the following questions: Do political institutions influence the size of the PBC? How does the effect of formal variables and formative indicators compare? Are the effects of individual institutional variables robust or do they change in interaction with other institutional variables?

Results have provided mixed evidence for the individual effect of formal institutional variables. In particular the often employed distinction between presidential and parliamentary regimes shows no explanatory power in justifying for variations in the

size of the PBC as the difference between both government forms is negligible. On the other hand, there is a substantially larger PBC detected under semi-presidential regimes. The significance of this additional distinction among government forms, that is unprecedented in analyses on the PBC, remains inconclusive due to the small number of observations for semi-presidential regimes. Nevertheless, the results rationalise discrepancies in the findings of previous research outcomes that have failed to consider semi-presidential regimes as separate government form. The strongest evidence for an effect on the PBC is observed for the average district magnitude. Distinguishing between single and multiple district magnitude, the respective size of the electoral cycle differs between 0.39% and 0.84%, respectively and between 0.27% and 0.99% for the reduced panel, alternatively. The results affirm the untested conjecture of Persson and Tabellini (2001) that single district magnitude causes incumbents to focus entirely on key districts hence there are fewer resources required to create an effective PBC. The district magnitude is the only formal institutional variable whose interaction with the election dummy passes for statistical significance (only in the reduced panel) thereby validating the different effect of single and multiple district magnitude on the size of the PBC. The outcome supports the argument of Milesi-Ferreti *et al.* (2002) that the average district magnitude is a more accurate indicator to measure the proportionality of an institution than the commonly applied voting formula. No evidence of any kind is found for a connection between the size of the PBC and the ballot structure.

While results for formal institutional variables have been rather mixed, there is strong evidence for the significance of electoral competition, concentration of power and political accountability on the size of the PBC when measured via informative indicators. Minimal electoral competition proves to be a necessary pre-requirement for the PBC to occur. If elections do not represent a credible threat or if their outcome has been tarnished by allegations of election fraud, results show no signs of fiscal adjustments during the election period. In turn, the incentive to cause a PBC is drastically enhanced in institutions where office holders are being held accountable for the observed economic policy. As a result, incumbents are to receive more votes for seemingly demonstrated economic expertise while facing stronger sanctions for insufficient performance. Political accountability is measured as the compound of clear-cut responsibility and contestability of the office holder. However, even stronger than the effect of accountability is the impact of the concentration of institutional power and therewith assigned fiscal discretion. Contrary to the findings of Streb *et al*. (2009) and

Klomp and de Haan (2011), results show that a large number of effective veto players causes the PBC almost completely to disappear without having to impose further conditions regarding the economic political environment. Requirements to qualify as effective veto player are the institutional power and the motive to block the executive's fiscal policy. The distinction between diluted and concentrated political power measures more than 1% of the GDP and passes for statistical significance at 99% level.

Testing the effect of institutional parameters in interaction with each other, the level of institutional power is evidently identified as the primary determinants of the PBC. Essentially, the size of the PBC remains consistently suppressed under weak concentration of political power; the according hypothesis Elect = 0 is not rejected in any of the tested scenarios. Conclusively, the influence of other institutional parameters is conditional upon the level of political power. The most robust effect under dispersed political power is detected for the average district magnitude substantiating the previous conclusion that a fragmented district structure requires fewer resources to create a PBC. No conclusive answer is revealed if the PBC is for any scenario influenced by the government form. Basically, there is no consistency in terms of whether the PBC exceeds under presidential or parliamentary rule. Large differences between both regimes are measured in interaction with multiple district magnitude and consolidated institutional power with the size of the PBC being higher in parliamentary and presidential regimes, alternatively. Their effect is though in both scenarios inferior to the other respective institutional moderator. Essentially, the difference between presidential and parliamentary regimes never reaches statistical significance.

In conclusion, tests for electoral cycles in the budget balance show strong evidence for a correlation between the institutional framework and the size of the PBC. Results affirm the validity of electoral competition, political accountability and concentration of power as determining forces. In particular the concentration of political power proves highly significant and robust in interaction with other institutional variables. Being the product of a collective of institutional rules and the election outcome, the formative indicators used for the classification of electoral competition, concentration of power and political accountability do not qualify as formal institutional variables *per se*. Instead, they rather represent aspects of the institutional framework than formally constituted rules. By comparison, the collective of formal institutional variables demonstrate lower significance causing considerable smaller variation in the size of the PBC.

4 Do Political Institutions influence the Type of the PBC?

4.1 Introduction

This chapter analyses the effect of political institutions on the form of the PBC. Examining the effect of different institutional settings on different fiscal instruments, it explores the questions which expenditures or sources of income are being utilised, whether the type of PBC determined by the institutional framework and if there is evidence for a balanced form of the PBC caused by shifts within the budget composition

4.1.1 Forms of Electoral Economic Cycles

While the vast majority of research has been focused on the PBC, the literature makes reference to various forms of electoral economic cycles. On the one hand, despite the critique described in section 2.2 research on the Political Business Cycle and monetary cycles has continued up to this point in time– see Sieg (2001, 2006), Dreher and Vaubel (2006), Klose (2012), Jindapon and Van Essen (2012), Köksal and Çalışkan (2012), Sakey and Compah-Keyeke (2012) or Potrafke (2012) for recent studies. At the same time, there have been a growing number of alternative electoral economic cycles as briefly outlined table 4.1.

Table 4:1: Different Forms of Electoral Economic Cycles

Description	Theory
International Political Budget Cycle	Electoral cycles in transfers from international organisations: The government presses for higher financial transfers from international organisations before the election or postpones international negotiations with a potentially bad outcome until after the election (Schneider, 2009).
Employment cycle	Electoral cycles in the hiring rate within the education sector: Local governments invoke an increase in the hiring rate of new teachers in the election years in order to reduce unemployment followed by a decrease in hiring rate of new staff in the other periods (Tepe and Vanhuysse, 2009).
Rent Cycle	Electoral cycles in tax rate, exchange rate, transfers and subsidies: The government tilts general economic policy in favour of organised interest groups in off election periods and towards the majority of voters during the election period (Bonomo and Terra, 2010).
Deregulations Cycle	Electoral cycles in the level of deregulation policies: The process of deregulation and privatisation is accelerated in the election period (Chortareas et al., 2011).
Public Employment Cycle	Electoral cycles in public employment: The government increases public employment in the election year (Dahlberg and Mörk, 2011).
General Unemployment Cycle	Electoral cycles in unemployment rate: Decrease in unemployment due to Active Labour Market Policies (ALMP) and promotions before the election (Mechtel and Potrafke, 2013).
Tuition Fees Cycle	Electoral cycles in tuition fees: Tuition fees are lowered in gubernatorial election years (Reynolds, 2013).

4.1.2 Different Forms of the PBC

The PBC in the Budget Balance

Despite the growing literature on alternative models, the PBC remains the most documented form of all electoral economic cycles. Based on the moral hazard approach and the suggestion that incumbents can disguise their true financial effort (see section 2.2), empirical analyses have typically tested for electoral cycles in the overall budget balance. Tests in this form have been conducted by Shi and Svensson (2002b, 2006), Persson and Tabellini (2003a), Mink and Haan (2006), Alt and Rose (2009), Guillamon *et al*. (2011), Klomp and de Haan (2011, 2013), Efthyvoulou (2012), Shelton (2012) or Hanusch (2012) among many others. Since all fiscal activities are being captured, significant electoral cycles in the budget balance have been regarded as the strongest evidence for the PBC. Investigations of whether the decrease in budget balance is caused by a cut back in government revenue or if it is rather the result of an increase in expenditure have not been conclusive. Testing for the PBC in developed and developing

countries, Persson and Tabellini (2003a) find that the PBC is predominantly revenue driven (-0.40% of the GDP) whereas increases in expenses are negligible (0.03% of the GDP). Those findings confirmed by Brender and Drazen (2005) analysing the PBC in a panel of 24 developed countries; however, they detect more pronounced expenditure cycles in developing countries. Further tests with various subgroups consisting of developed countries, developing countries, established and young democratic countries reveal no clear pattern of whether the PBC is caused by fiscal adjustments in the budget revenue or public spending.

The PBC in different Expenditures

Not all studies acknowledge the principle of the moral hazard approach and the suggestion that incumbents can disguise their true financial efforts. According to Drazen and Eslava (2005), voters have indeed full insight into the government's budget policy and can therefore not be deceived. Referring to the findings of Peltzman (1992) and Brender (2003) who did not detect large electoral cycle in the budget balance, Drazen and Eslava (2005) conclude that at least in Western democracies the majority of voters are "financial conservatives" which tend to punish an increase in the budget deficit. On the other hand, it has been widely accepted that the adverse effect of a budget deficit is mitigated if more financial resources are devoted to expenditures preferred by the public. Government expenditures have therefore often been divided into *visible* and *invisible*, *targeted* and *untargeted* or *capital* and *current* expenditures, alternatively. The terminology is not based on an official definition and depends very much on the criteria of the individual research. In consequence, a direct comparison among results is difficult. Nevertheless, there has been considerable debate in the literature which fiscal instruments are to gain the voters' support and therefore likely exhibit electoral cycles (see also section 2.4.3). Peltzman (1992) argues that a spending shift towards public investment projects such as road work, building projects or maintenance work are more likely to be rewarded by the community since they represent expenditures with long term benefit. Furthermore, the outcome of those expenditures is truly visible and therefore more tangible to the public. In addition, Drazen and Eslava (2006) point out that those projects are easier to target when aiming for the support in a particular area. Electoral cycles in public investment projects have been detected by Kneebone and McKenzie (2001), Brender (2003), Khemani (2004), Drazen and Eslava (2005), Veiga and Veiga (2007b) and Sedmihradská (2011).

Opponents of the public investment theory have criticised that there is no direct effect on voter's disposable income moreover public investments are more difficult to time. In order to be visible before the election, they have to be launched long in advance but cannot be easily stopped after the election (Katsimi and Sarantides, 2012). In contrast, expenditures such as higher spending on transfer payments, subsidies, social security payments or tax cuts generate a direct increase in the disposable income and become immediately effective. The theory is supported by Rogoff (1990), Saporiti and Streb (2008), Gonzalez *et al*. (2006), Vergne (2009), Efthyvoulou (2012) and Katsimi and Sarantides (2012).

The balanced PBC

In consideration of the notion that voters prefer some expenditures over others, Drazen and Eslava (2005, 2006) reason that the PBC can take place entirely without affecting the budget balance. Their first model (Drazen and Eslava, 2005) describes a competition for resources between politicians and the public. Having expenditures divided into "targeted spending" preferred by the public and "untargeted spending" from which the government derives their utility (rents), politicians can increase their support before the election by reducing the share of untargeted spending in favour of targeted spending while the budget balance remains unaffected. Importantly, while previous theories suggest that incumbents are trying to signal their economic expertise, Drazen and Eslava (2005) propose that incumbents' are only trying to signal their concordance with the voters' preferences. Consistently, they conclude that the *balanced* PBC affects only swing voters with weak personal preference. An obvious simplification is the assumption of completely homogeneous preferences among voters and the existence of only two possible spending types. The definition of "targeted" and "untargeted" spending is insofar ambiguous as expenditures can be targeted according to different criteria while no expenditures will be completely neutral but always benefit some groups more than others. Those flaws are considered in their subsequent model (Drazen and Eslava, 2006) where government expenditures are divided into "untargeted spending", "targeted spending" and "current spending". The first group includes expenditures necessary to maintain the general public service, targeted spending encompasses all expenditures that can be allocated to a specific group (also referred to as "Pork Barrel Projects") and current spending represents expenditures that mainly benefit the government. Conclusively, voters reward an increase in untargeted spending

if it is not associated with an increase in the budget deficit while any increase in current spending (an indicator for the government's rent extraction) is always punished. Targeted spending, finally, is rewarded by some groups in the society and potentially punished by others. As a result, electoral cycles may emerge in all budget components.

The pork barrel cycle described by Drazen and Elsava (2006) differs distinctively from previous models as there is no information deficit required; incumbents simply exploit the competition for resources among groups in the society. The electoral cycle in targeted expenditures is therefore to signal "valuation" *id est* politicians signal selected groups they are favoured and therefore entitled to more funds. Essentially, a group is more likely they are to be targeted the more additional votes they will provide and the more responsive they are to fiscal transfers. In consequence, additional resources are rather transferred to swing voters with weak party preference than to core voters. Further aspects to consider are the group density, their strategic relevance or their amount of resources received in the past. Importantly, the pork barrel cycle does not disappear once a selected group becomes aware of their strategic relevance as they will expect fiscal transfers to continue. Hence, the purpose of the PBC may change from "buying votes" to avoid losing them. Another aspect that stands out is that politicians are confronted with the delicate decision whether aiming for the overall support in the population by expanding untargeted expenditures or if targeting a selected number of groups *via* targeted expenditures. In the second option, incumbents may have to abandon a much smaller share of their rents *id est* the PBC can become significantly "cheaper". On the other hand, since Drazen and Elsava (2006) expect voters to be fully aware of any change within the budget, targeting expenditures towards one group might entail the risk of alienating a different group. Drazen and Elsava (2006) provide no insight to this dilemma and what cycling pattern is to anticipate.

4.1.3 Determinants of the Type of the PBC

While there is no consensus in the literature which budget components exhibit electoral cycles, there have been few attempts to justify for the discrepancies in the research. According to Treisman and Gimpelson (2001), variations in the detected cycling pattern are the consequence of the incumbents' endeavour of a dynamic optimisation of different electoral economic cycles over time. Analysing electoral economic cycles in Russia and the former Soviet Union, they detect at different points in time pre-electoral cycles in public spending, tax cuts, minimum wages, pension contributions, transfers and interest rate and post-electoral cycles in money supply, sales of government property and tax increase. They infer from their results that politicians have different instruments available to promote their popularity and different methods to finance their activities. The efficiency of respective instruments varies over time depending on changes in the economic and socio-demographic environment; hence incumbents will utilise whichever instrument that is the most efficient or the cheapest at the very moment. The thesis that incumbents utilise different fiscal instruments at different points in time is supported by Gonzalez (2002) but with different ramifications. Analysing the pattern of government expenditures in Mexico, Gonzalez (2002) suggests that incumbents increase expenditures on infrastructure and public investment around 6 quarters before the election in order to reach a large proportion of the public with those "visible" expenditures. Shortly before the election, tax cuts and transfers are being used to target selected group of voters (see also section 2.4.2).

A different conclusion is reached by Böhm and Markward (2011) as they analyse electoral cycles in the budget composition of 27 OECD countries. While pooled data suggests an increase in government consumption and a cut back in household tax, Böhm and Markward (2011) detect striking differences in the cycling patterns of the individual countries. While some countries exhibit significant electoral cycles across several budget components, others do not show any signs of fiscal manipulations before the election. Based on their results, Böhm and Markward (2011) reject the idea of an universal PBC. Unlike Treisman and Gimpelson (2001), however, Böhm and Markward (2011) consider observed variations in the cycling pattern not as the result of exogenous changes *within* the country but as result of factors in the outer environment *across* countries.

4.1.4 The Influence of Political Institutions on Fiscal Policy

Building up on the legislator cohesion concept of Diermeier and Feddersen (1998), Persson *et al*. (2000) infer that the general fiscal policy is significantly influenced by the political institutions, more precise by the government form. In parliamentary regimes, there is a tendency towards a broad majority of legislators who have a motive to collaborate in order to pursue their overall interests. In consequence, *broad* expenditures such as social security and welfare spending are preferred as they translate into benefits for a large share of voters. In contrast, the low cohesion among legislators in presidential regimes leads to isolated fractions aiming for *targeted* expenditures.

In contrast, to the conjecture of Persson *et al*. (2000), Milesi-Ferretti *et al*. (2002) conclude that the general fiscal policy is determined by institutional variables related to the election rules. Deviating from the common notion of targeted / broad spending, they suggest that expenditures differ in terms of their target criterion. The distinction is thus between expenditures targeted according to social or demographic criteria referred to as "transfers" and expenditures targeted according to geographical criteria. As the voting system becomes more proportional, the number of totally received votes correlates directly with the attained political power. As a result, expenditures are aimed to benefit a large share of electors throughout the population causing the share of transfers (as well as total expenditures) to increase in comparison to public goods. In contrast, under a strong majority representation the focus is on local interests in the key constituencies triggering an increase in the relative size of geographically targetable goods and services. Those types of expenditures are often referred to as *pork barrel projects* as they feature benefits to influential (local) minorities at the cost of the majority (Weingast and Kenneth, 1981).

The connection between fiscal policy and institutional variables is affirmed by Iversen and Soskice (2006) and by Fumagalli and Narciso (2012), however, they both propose an *indirect causality* between the variables. Referring to the earlier findings of Powell (1982) and Lijphart (1997) that there is a higher voter turnout under parliamentary and proportional rule, Fumagalli and Narciso (2012) argue that a broader audience participating in the election process exerts more pressure for expenditures that meet the demand of a large share in the population. They conclude that this *indirect* effect actually outweighs the direct impact; institutional variables influence fiscal policy

therefore only *via* voter turnout. Iversen and Soskice (2006), in turn, identify party ideology as the driving force. As it is especially less privileged citizens who participate more frequently in the voting process under parliamentary and proportional rule, there is a higher chance for a centre-left government than under majority rule resulting in more redistributive fiscal transfers.

The research of Persson *et al*. (2000), Milesi-Ferretti *et al*. (2002), Iversen and Soskice (2006) and Fumagalli and Narciso (2012) are examples of the growing literature that considers economic policy as the result of the institutional framework in place – see de Haan and Sturm (1994), Glaeser *et al*. (2004), Tsebelis and Chang (2004), Persson *et al*. (2007) or Wehner (2010) among others. While none of those studies do consider the PBC, Chang's (2008) findings indicate that their ramifications could be extrapolated *id est* that variations of the PBC might merely reflect the general differences in the fiscal policy determined by the institutional framework. Testing for electoral cycles in *"Social Security and Welfare"* and in *"Economic Services"* in OECD countries, Chang (2008) discovers that the former correlates with multiple district magnitude and the latter with single district magnitude, respectively. Both electoral cycles are conditional on the presence of a one-party government. This research investigates therefore the effect of political institutions on the *type* of the PBC. It tests in particular whether the findings of Persson *et al*. (2000) and Milesi-Ferretti *et al*. (2002) are applicable to the PBC and if government form and voting rules justify for the composition of the PBC.

4.2 Data and Methodology

4.2.1 Methodological Approach

The test structure follows a top-down approach starting with *"Total Revenue"* and *"Total Expenditure"* as the two main fiscal variables, followed by the individual sub-components in both categories. In total, tests are conducted in 26 different fiscal variables representing the most comprehensive examination of the PBC across different types of revenue and expenditure. The approach is motivated by the analysis of Böhm and Markward (2011) and their suggestion that variations in the type of the PBC are caused by factors in the socio-economic environment. Their study, however, remains restricted to OECD countries and fails to provide any explanation which factors cause

the varioations. Using the same panel as in chapter three (though fiscal data are not always available for all 68 countries), this research tests for the conditional and unconditional PBC allowing for the first time a detailed examination of the effect of institutional variables across budget components and a conclusive answer to the question whether the composition of the PBC is in any way determined by the institutional framework. In addition, it allows examining the existence of a balanced PBC under the institutional settings for which no PBC was detected in chapter three. As in chapter three, the analysis is based on the model depicted in equation 1.1 and equation 1.7 in section 1.3 using the Blundell and Bond (1998) estimator. Institutional variables tested for are the concentration of power, political accountability, the government form (without semi-presidential regimes due to a lack of available date) and the district magnitude.

4.2.2 Fiscal Data

Following the approach of Böhm and Markward (2011), expenditures are not summarised in categories such as visible and invisible spending; instead, tests for electoral cycles are repeated for each individual fiscal variable in unconditional and conditional environment. As in chapter three, all electoral cycles are measured in percentage of the GDP. As illustrated in figure 4:1, total revenue consists of the total amount of received taxes, social contributions and miscellaneous income sources. The total amount of received taxes is further subdivided into six tax categories describing the object of taxation. Empirical investigations are conducted on both levels analysing the variations in the main income resources as well as in the tax composition.

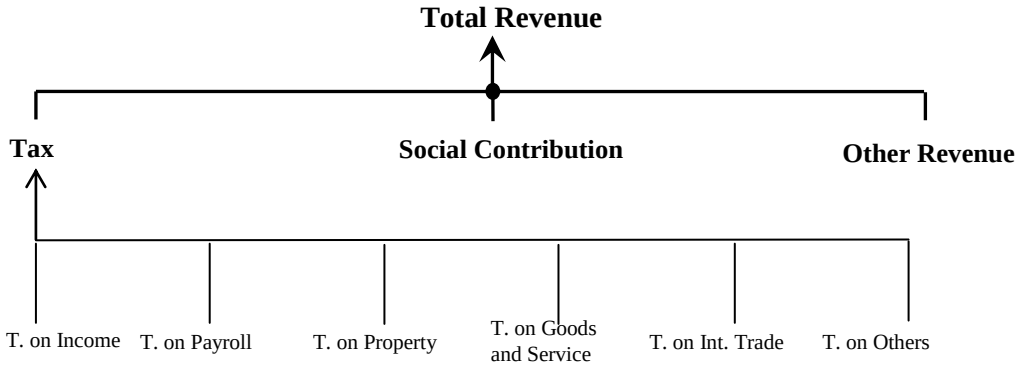


Figure 4:1: Revenue and Tax Structure

On spending side, there exist two different classification systems; the *"Functional Classification of Expenses"* and the *"Economic Classification of Expenses"*. As illustrated in figure 4.2, they represent two different methods to interpret fiscal expenditures

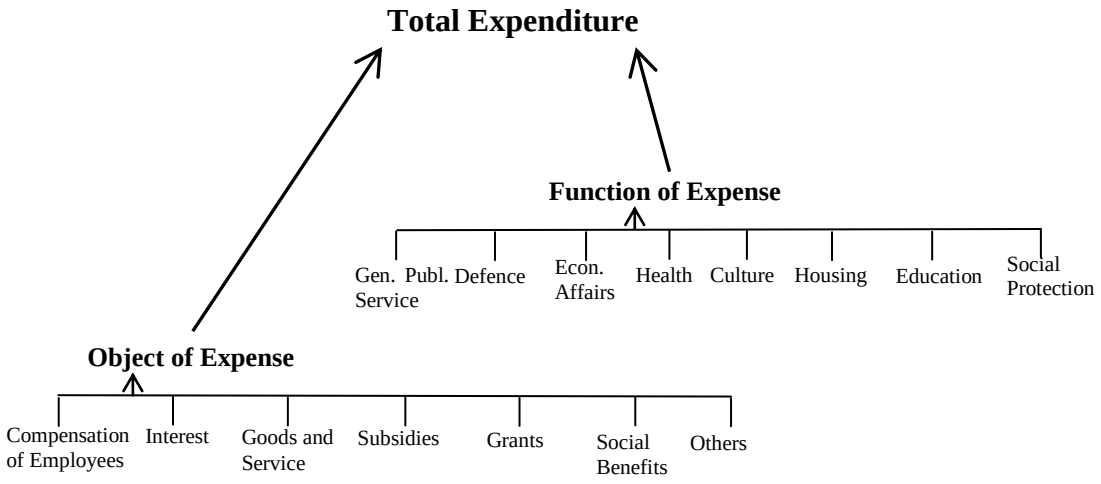


Figure 4:2: Expenditure Structure

Categories in the "*Functional Classification of Expenses*" describe the *type of service* provided by the central government. Accordingly, they can be interpreted as the *reason* or *purpose* of the expenditures. In contrast, categories in the *"Economic Classification of Expenses"* describe the spending *object*. Expenses summarised in expenditure functions as *"Defence"*, for example, might be allocated to *"Goods and Services"*, *"Grants"*, *"Compensation of Employees"* or *"Interests"* in expenditure objects accounting for material costs, capital transfers to a military ally, salaries, interest payments on outstanding debts, alternatively. Without further information, a cross-examination across categories of the two different classification systems is not possible. Instead, electoral cycles are analysed separately in both classification systems. As in chapter three, fiscal data are taken from GFS according to their new classification system (GFSM 2001). A brief description of all analysed fiscal components is provided in the tables 4:2 till 4:5; full details are available in the GFS manual (Wickens, 2002). Not included in the test series, either due to the mall number of available data or since categories represent only a insignificant share in the government budget, are *"Grants"* on the revenue side and *"Public Order and Safety"*, *"Environmental protection"*, *"Consumption of fixed capital"* and *"Miscellaneous other expense"* on expenditure side.

As in chapter three, fiscal data provided in the GFSM 1986 classification are recalculated according GFS instructions (Wickens, 2002). Where applicable, comparability breaks between old and new GFS data are addressed as outlined in section 3.2.2.

Table 4:2: Budget Components of Total Revenue

Category	Description
Total Tax	Compulsory transfers received by the general government sector. They include fees that are clearly out of all proportion to the costs of providing services, but exclude compulsory social contributions, fines and penalties
Social Contribution	Receipts from either employers on behalf from employees, self-employed, or non-employed person on their own behalf that secure entitlement to social benefits for the contributors, their dependents, or their survivors
Other Revenue	All revenue transactions not classified as taxes, social contributions, or grants. The major items are sales of goods and services, interest and other types of property income, voluntary transfers in cash or in kind other than grants, and fines and penalties

Table 4:3 Tax Categories

Category	Description
Income Tax	Taxes on income, profits and capital gains payable by individuals and enterprises
Payroll Tax	Tax on payroll and work force; taxes that are collected from employers or the self-employed that are not earmarked for social security schemes.
Property Tax	Taxes on immovable property, net wealth, inheritance, financial and capital transactions
Goods and Service	Taxes levied on the production, extraction, sale, transfer, leasing, or delivery of goods and rendering of services, furthermore taxes on profits of fiscal monopolies, taxes on use of goods and permissions and motor vehicle taxes
Trade tax	Taxes on import duties, customs, export, exchange profit, among others
Others	Revenues from unidentified taxes and interest and penalties collected for late payment or non-payment of taxes but not identifiable by tax category

Table 4:4: Expenditure Objects

Category	Description
Compensation of Employees	Total remuneration (wages, salaries and social contribution), in cash or in kind, payable to a government employee in return for work done during the accounting period
Goods and Service	Goods and services used for the production of market and nonmarket goods and services - except for own-account capital formation - plus goods purchased for resale less the net change in inventories of work in progress, finished goods, and goods held for resale
Interest	Expense that the general government unit (the debtor) incurs for the use of the outstanding principal
Subsidies	Current unrequited payments that government units make to enterprises on the basis of the levels of their production activities or the quantities or values of the goods or services they produce, sell, export or import
Grants	Non-compulsory current or capital transfers from one government unit to another government unit, a foreign government or international organisation
Social Benefits	Transfers in cash or in kind to protect the entire population or specific segments of it against certain social risks, for instance medical service or unemployment compensation (Social benefits produced by a general government unit and transferred to households are expense transactions but are not classified as social benefits. Instead, the expenses of producing them are part of compensation of employees, use of goods and services, and consumption of fixed capital)
Other Expenditures	Property expenses other than interests rate, insurance, dividends and miscellaneous

Table 4:5: Expenditure Function

Category	Description
General Public Service	Expenditures for administration, operation and support of executive and legislative organs, financial and fiscal affairs, external affairs, general service, transfers of a general character between different levels of government
Defence	Expenditures for military and civil defence, Foreign military aid, among others
Economic Affairs	Expenditures for general economic, commercial, and labour affairs, agriculture, forestry, fishing and hunting, fuel and energy, mining, manufacturing, construction, transport, communication, other industries and R&D
Housing	Expenditures for housing and development, water supply, street lightening etc.
Health	Expenditures for medical products, appliances, and equipment, hospital service, public health service
Culture	Expenditures for cultural, recreational and sporting, publishing, religious and other services
Education	Expenditures for primary, secondary and tertiary education, subsidiary services to education, R&D Education, among others
Social Protection	Expenditures for the protection against sickness and disability, old age, disability, unemployment, family and children, among others

While the research tests for electoral cycle in every individual budget component, table 4:6 presents a classification of the different fiscal instruments. As criterion for the classification serves the question who is being targeted *id est* who benefits mostly from the respective expenditures. There are four groups defined; the names of the spending types are in line with the terminology in the analysis of Milesi-Ferretti *et al*. (2002) and Drazen and Eslava (2006):

- Basic Services: Expenses that benefit a large majority of the population
- Transfers: Expenses that are targeted according to demographical / socio-economic criteria
- Pork Barrel Projects: Expenses that are targeted according to geographic criteria
- Rents Expenditures that primarily benefit the incumbent or public servants

Not all expenses match the above description and can therefore not be allocated to any of the categories (especially in the economic classification). Furthermore, the distinction between the categories is ambiguous. Expenses on *"Education"*, for instance, can be geographically or demographically targeted, while expenditures on *"Defence"* could qualify as basic service, as pork barrel project or as transfer. Table 4.6 presents the classification recognised in this research.

Table 4:6: Expenditure Targeting Criteria

Basic Service	**Pork Barrel Projects**	**Transfers**	**Rents**
General Public Service [Serv.]	Economic Affairs [Serv]	Education [Serv]	Compensation of Employees [Obj]
Culture [Serv]	Defence [Serv]	Social Protection [Serv]	
	Housing [Serv]	Social Benefits [Obj]	
	Health [Serv]		
	Subsidies [Obj]		

4.3 Results

4.3.1 Revenue and Expenditure Cycles

Examining whether the PBC is mainly the result of a spending increase or a revenue cutback, Brender and Drazen (2005) detect considerable variation across different groups of countries. On a global level, however, their results reveal little difference between the electoral revenue cycle (-0.15%) and the electoral expenditure cycle (0.22%) cycle. Persson and Tabellini (2003b), on the other hand, find that the unconditional PBC appeared predominately revenue driven while differences across countries are determined by the government form. The results in this research differ only marginally from the findings of Brender and Drazen (2005) revealing similar sized electoral cycles in *"Total Revenue"* (-0.19%) and in *"Total Expenditure"* (0.22%). Conclusively, results do not substantiate a principal preference in the composition of the PBC; it rather appears that both sides of the budget are simultaneously exploited to increase voters' utility. In line with the findings of Brender and Drazen (2005), statistical significance for the electoral expenditure cycle (significant at 90% level) and revenue cycle (hypothesis *Elect* = 0 is not rejected) is moderate in comparison to the starker evidence for the PBC in budget balance in section 3.3.1.

The hypothesis of a correlation between the institutional framework and the type of the PBC is not supported by the results in table 4:7. Evidently, institutional variables that have been identified in chapter three as a driver of the PBC are effective in both parts of the budget; the size of the expenditure cycle is in each case approximately double the magnitude of the revenue cycle. Large expenditure cycles are thus detected under concentrated institutional power (8) (0.85%), high accountability (7) (0.82%) and multiple district magnitude (5) (0.55%). The same variables exhibit also substantial electoral revenue cycles measuring -0.42%, -0.43% and -0.24%, respectively. With the exception of the revenue cycles under *ach*, all of the listed electoral cycles pass for 90% significance or higher. Conversely, there are only insignificant electoral cycles with a scale of less than 0.1% found in either part of the budget under dispersed institutional power (9), weak political accountability (6) and single district magnitude (4). The only outlier to this pattern is observed for the government form; while parliamentary regimes follow the general tendency measuring an electoral cycle of 0.30% and -0.18% on revenue side (3), the PBC under presidential systems (2) appears entirely revenue driven

showing pre-electoral decrease of 0.12% of the GDP but no signs of an electoral cycle. Consequently, whereas the difference between both regimes showed minimal effect on the scale of the accumulated PBC, there is support for inference of Persson and Tabellini (2003b) that the PBC is entirely revenue driven under presidential regimes. The finding, however, is not robust when testing for the interaction between government form and other institutional variables. Results show a large expenditure cycle for *cbl_pres* (18) and *pres_sdm* (22) while the combination *pres_pdm* (23) produces similar sized revenue and expenditure cycle. In fact, results for the interaction among institutional variables do not reveal any consistent pattern for the precedence of a revenue or expenditure cycle.

Though there is no evidence for a robust correlation between political institution and the choice between revenue or expenditure cycle, results are in support of a connection between the institutional framework and the *type* of observed PBC. Notably, institutional settings with dispersed political power that have shown weak or no signs of electoral cycles in budget balance in chapter three do exhibit a tendency of counteracting electoral cycles in both parts of the budget. The effect is best observed under presidential rule (20) as the pre-electoral cutback in revenue of 0.24% is counterbalanced by an almost identical simultaneous decrease in expenditures. A similar pattern with reversed prefix is observed for the interaction between restricted political power and parliamentary rule (21), single district magnitude (16) or high accountability (13); an increase in expenditure and the involved strain on the budget balance is at least partially compensated by a simultaneous increase on the income side, respectively. While Drazen and Eslava (2005, 2006) consider in their model only cyclical changes within the expenditure composition, the observed results match their description of a *balanced* PBC. Thus, the issue regarding the type of PBC and if fiscal adjustments are to affect the total budget balance seems directly related to the strength of the faced opposition during the term in office. In a position of weak institutional power, incumbents are forced to keep even temporary fiscal adjustments within limitation of a balanced budget. The phenomenon of a single electoral cycle compensated by an anti-PBC in the other part of the budget is, however, not exclusive to political institutions with dispersed political power. The effect is also observed for either government form in interaction with single district magnitude. A pre-electoral expenditure increase of 0.20% under presidential rule (22) and a decline of 0.23% in revenue in parliamentary regimes (24) are balanced out by a concurrent 0.30% revenue

increase and -0.09% cut in expenditure, alternatively. The only incident where there is neither a revenue nor expenditure cycle observed is under *cbh_acl* (12) in which case the incumbents face limited fiscal leeway and little incentive to create electoral fiscal cycles of any form. Details for the test results in table 4:7 are provided in Appendix 7.

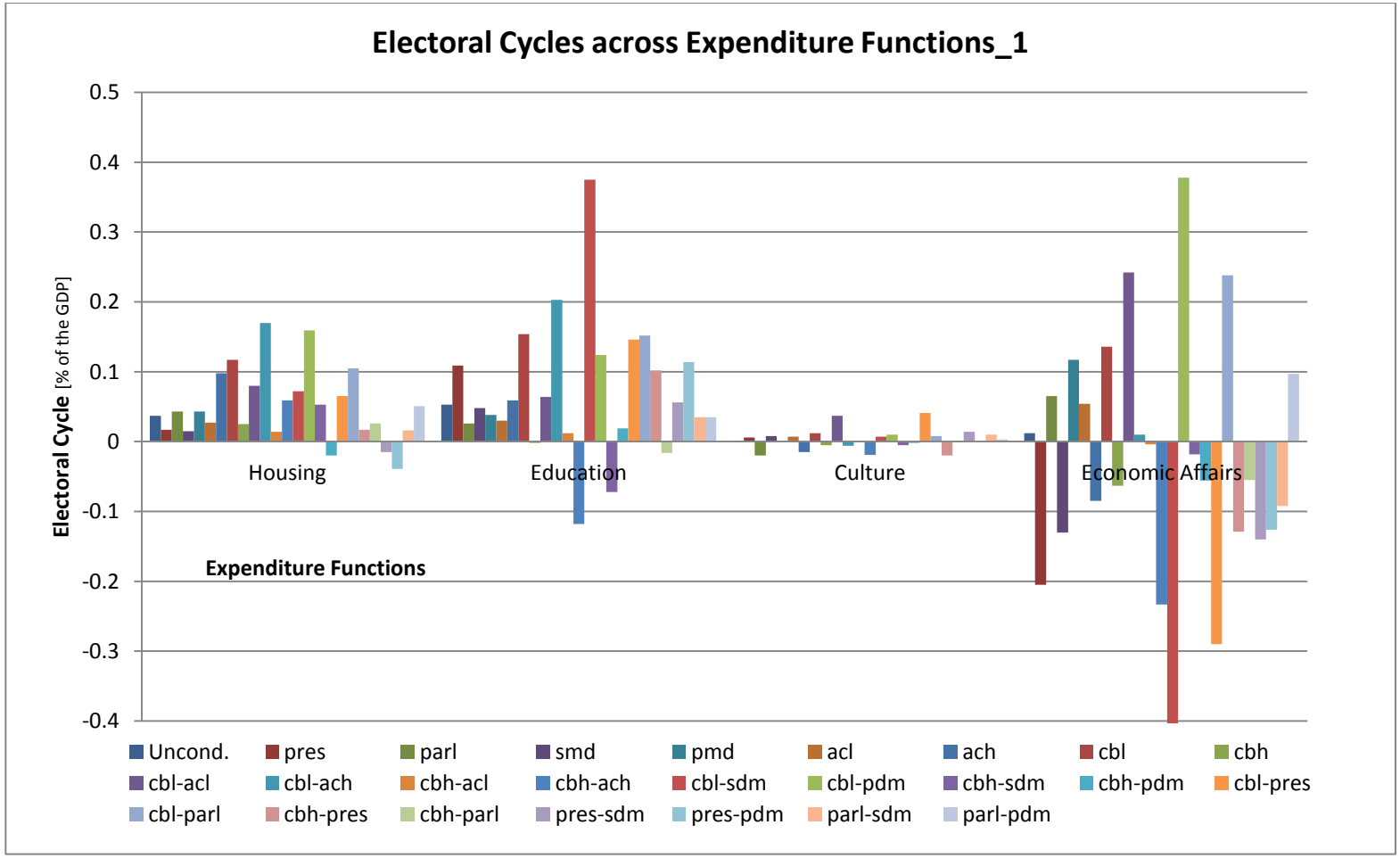
Table 4:7: The PBC in Total Revenue and in Total Expenditure

			Total Revenue	**Total Expenditure**
	(1)	*Elect*	-0.190	0.217*
Government Form	(2)	*El_pres*	-0.121	-0.027
	(3)	*El_parl*	-0.177	0.296**
District Magnitude	(4)	*El_smd*	-0.021	0.072
	(5)	*El_pmd*	-0.240*	0.553***
Accountability	(6)	*El_acl*	-0.031	0.085
	(7)	*El_ach*	-0.433	0.822**
Concentration of Power	(8)	*El_cbl*	-0.420*	0.848***
	(9)	*El_cbh*	0.021	0.089
Concentration of Power / Accountability	(10)	*El_cbl-acl*	-0.040	0.089
	(11)	*El_cbl-ach*	-1.042**	1.289**
	(12)	*El_cbh-acl*	0.023	-0.057
	(13)	*El_cbh-ach*	0.104	0.348
Concentration of Power / District Magnitude	(14)	*El_cbl-sdm*	-0.941*	0.203
	(15)	*El_cbl-pdm*	-0.612*	1.084***
	(16)	*El_cbh-sdm*	0.289	0.503
	(17)	*El_cbh-pdm*	-0.039	0.275
Concentration of Power / Government Form	(18)	*El_cbl-pres*	0.167	0.678*
	(19)	*El_cbl-parl*	-0.919***	0.666**
	(20)	*El_cbh-pres*	-0.247	-0.216
	(21)	*El_cbh-parl*	0.129	0.200
Government Form / District Magnitude	(22)	*El_pres-sdm*	0.297	0.201
	(23)	*El_pres-pdm*	-0.196	0.216
	(24)	*El_parl-sdm*	-0.233	-0.094
	(25)	*El_parl-pdm*	-0.207	0.317*

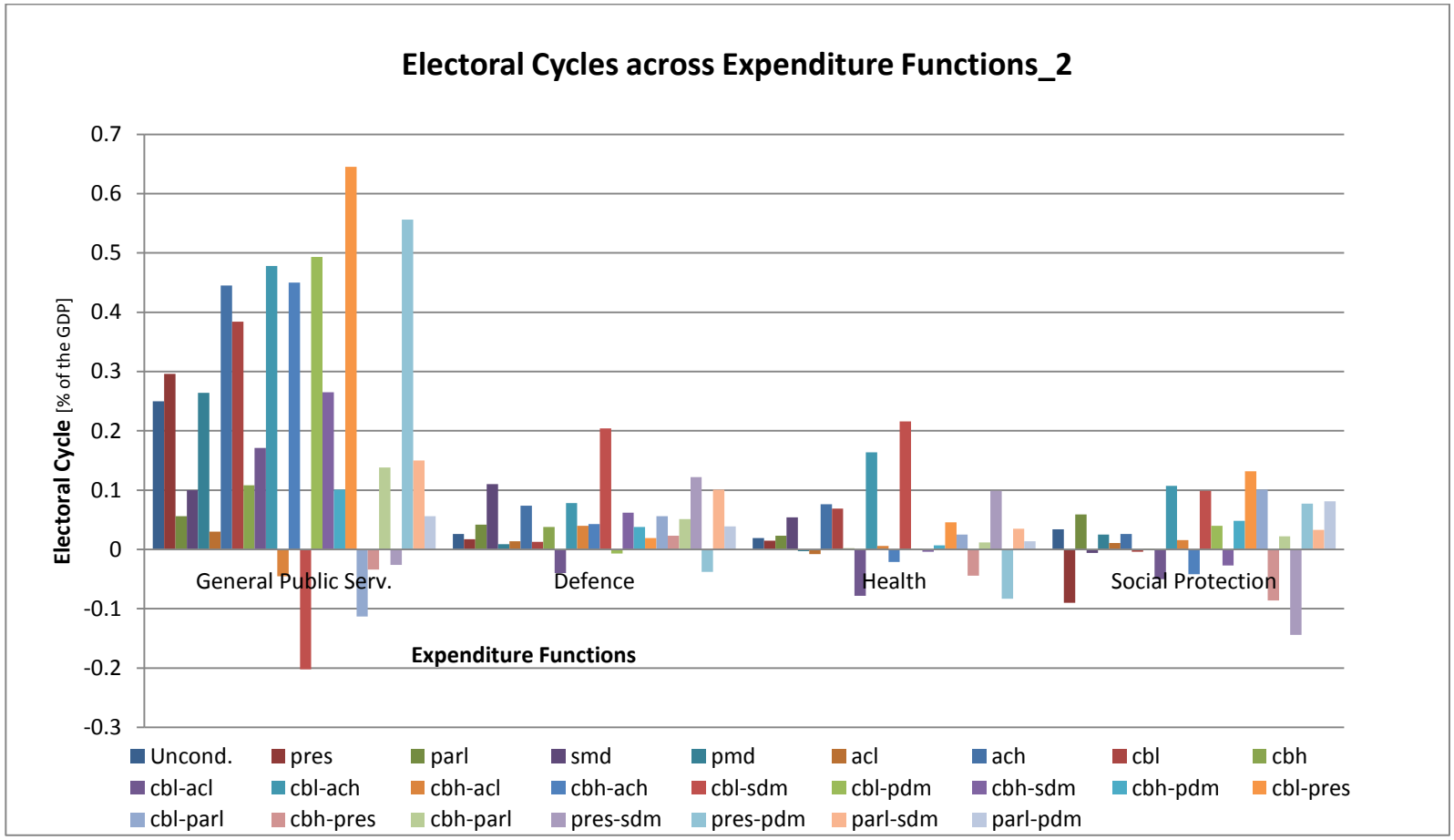
4.3.2 The PBC in Expenditure Functions

Unconditional Expenditure Cycles and General Patterns

Results for the unconditional PBC across government services show a large pre-electoral increase of 0.25% of the GDP in *"General Public Service"*; the null hypothesis *Elect* = 0 is rejected at 95% level. A considerably smaller but still significant electoral cycle is observed in *"Education"* measuring an increase of 0.053% of the GDP. In all other categories, the unconditional PBC is even smaller and does not pass for statistical significance (see (1) in table 4:8). Investigating the scale of the PBC on a visual basis in graph 4:1 and 4:2, *"General Public Service"* exhibits the largest electoral cycle across institutional settings. The biggest fluctuation in the size of the PBC is observed in *"Economic Affairs"* with a large number of substantial pre-electoral expenditure increases and decreases. In contrast, there exists no electoral cycles of any form in *"Culture"*.



Graph 4:1: The PBC under different Institutional Settings across Economic Functions_1



Graph 4:2: The PBC under different Institutional Settings across Economic Functions_2

Results for the conditional PBC in different government services ((2) till (29) in table 4:8) confirm largely the previous finding that the individual institutional variable bears limited explanatory power for the PBC within the budget composition. However, there are some universal patterns standing out. Most noticeably, presidential regimes are always associated with an anti-PBC in *"Economic Affairs"*. Depending on the district magnitude and the concentration of power, the size of the cutback varies between -0.13% and -0.29% of the GDP (see (2), (18), (19), (26) and (27)) therefore showing great robustness in comparison to the general observed fluctuation. There is no explicit justification in literature for those results. Persson and Tabellini (2003b), however, argue in their seminal work that incumbents are more likely to cut "wasteful" or "unnecessary" expenses under *presidential* regimes before the election though giving no rationalisation what qualifies as "unnecessary" expenses. The results can also be aligned with the model of the "anti-rent cycle" described by Bonomo and Terra (2010) (and in broader terms by Drazen and Eslava (2005)). In their model, incumbents stop the supply of subsidies and transfers to private enterprises before the election to express their alliance with the larger group of unorganised voters. The conclusion seems though contradictive as there do appear large positive electoral cycles in *"Economic Affairs*" under different institutional settings.

Another emerging pattern is the consistent PBC in "Education" under *cbl*. The size of the PBC varies from 0.39% (14) till 0.06% (10) though most measurements are around 0.15% passing for statistical significance at 95% level or higher. The consistent increase in funds dedicated for the purpose of education supports the conclusion of Tepe and Vanhuysse (2009) about the existence of an "Educational Business Cycle" and their conjecture that the net employment in public education facilities are increased in the period before the election. Finally, there emerges a consistent PBC in *"Defence"* under single district magnitude. Depending on the second moderator *id est* the other institutional variable, the magnitude of the electoral cycle varies between 0.2% and 0.06% of the GDP while most measurements are around 0.11%. On all other instances, the impact of the individual institutional variables is less clear exhibiting substantial variations in size and prefix of the PBC. Details for the test results in table 4:8 are provided in Appendix 7.

Table 4:8: The PBC across Expenditure Functions

		Expenditure Categories classified according to their Economic Function							
		Housing	Education	Culture	Economic Affairs	General Public Serv.	Defence	Health	Social Protection
(1)	Elect.	0.037	0.053**	0.001	0.012	0.250**	0.026	0.019	0.034
(2)	El_pres	0.017	0.109**	0.006	-0.205**	0.296	0.017	0.015	-0.090
(3)	El_parl	0.043	0.026	-0.020	0.065	0.056	0.042	0.023	0.059
(4)	El_smd	0.015	0.048	0.008	-0.130	0.100	0.110**	0.054	-0.006
(5)	El_pmd	0.043	0.038	0.001	0.117	0.264**	0.009	-0.003	0.025
(6)	El_acl	0.027	0.030	0.007	0.054	0.030	0.014	-0.008	0.011
(7)	El_ach	0.098*	0.059	-0.015	-0.085	0.445*	0.074*	0.076	0.026
(8)	El_cbl	0.117*	0.154***	0.012	0.136	0.384	0.013	0.069	-0.004
(9)	El_cbh	0.025	-0.002	-0.005	-0.063	0.108	0.038*	0.002	0.001
(10)	El_cbl-acl	0.080	0.064	0.037**	0.242	0.171	-0.040	-0.078	-0.050
(11)	El_cbl-ach	0.170*	0.203***	-0.002	0.010	0.478	0.078	0.164**	0.107
(12)	El_cbh-acl	0.014	0.012	-0.000	-0.004	-0.045	0.040	0.006	0.016
(13)	El_cbh-ach	0.059	-0.118**	-0.014	-0.233	0.450**	0.043	-0.021	-0.042
(14)	El_cbl-sdm	0.072	0.375***	0.007	-0.548	-0.202	0.204**	0.216**	0.099
(15)	El_cbl-pdm	0.159*	0.124***	0.010	0.378**	0.493*	-0.007	0.001	0.040
(16)	El_cbh-sdm	0.053**	-0.072	-0.005	-0.018	0.265*	0.062	-0.004	-0.027
(17)	El_cbh-pdm	-0.020	0.019	-0.002	-0.056	0.101	0.038	0.007	0.048
(18)	El_cbl-pres	0.065	0.146	0.041	-0.290	0.645	0.019	0.068	0.132
(19)	El_cbl-parl	0.105	0.152**	0.008	0.238	-0.113	0.056	0.046	0.101
(20)	El_cbh-pres	0.017	0.102	-0.020	-0.129	-0.034	0.023	-0.088	-0.086
(21)	El_cbh-parl	0.026	-0.016	-0.001	-0.055	0.138	0.051*	0.019	0.022
(26)	El_pres-sdm	-0.015	0.056	0.014	-0.140	-0.026	0.122	0.099	-0.114
(27)	El_pres-pdm	-0.039	0.114	0.001	-0.126	0.556**	-0.038	-0.083	0.077
(28)	El_parl-sdm	0.016	0.035	0.010	-0.092	0.150	0.101*	0.035	0.033
(29)	El_parl-pdm	0.051	0.035	0.003	0.097	0.056	0.039	0.014	0.081

Concentration of Power and Accountability

Having institutional power concentrated to a narrow number of veto players (4), additional fiscal resources are made available to various government services before the election thereby creating a very broad form of the PBC. The biggest electoral cycle takes place in *"General Public Service"* with a measured increase of 0.38% of the GDP. Further significant electoral cycles with a scale between 0.12% and 0.15% are detected in *"Housing"*, *"Education"* and *"Economic Affairs"*, respectively; a modest increase of 0.07% is detected in *"Health"* while the level of *"Culture"*, *"Social Protection"* and *"Defence"* remains unaffected. The difference between *cbl* and *cbh* is evident in all of the five listed expenditure functions but passes only in *"Education"* for statistical significance. Tests for the interaction with accountability underline the amplifying effect of the latter recognised in chapter three. Under *cbl_ach* (6), the size of

the PBC is increased even further throughout all functions other than *"Culture"* and *"Economic Service"*, reaching newly statistical significance in *"Health"* and showing signs of a PBC in *"Social Protection"* and *"Defence"* with a measured pre-electoral increase of 0.11% and 0.08%, respectively. Conversely, the size of most electoral cycles is cut back under *cbl_acl* (5) leaving *"General Public Service"* and *"Economic Affairs"* as the only two budget components with a positive PBC above the size of 0.1%, (0.17% and 0.24% respectively) while electoral cycles in *"Housing"* and *"Education"* no longer pass for statistical significance. For the reversed case under *cbh_ach* (8) that leaves incumbents with a strong incentive but little leeway for the PBC, incumbents concentrate resources entirely *"General Public Service"*. Noticeably, results show for the first time a distinct change in the *budget composition* seeing resources redirected from *"Education"* (-0.12%) and *"Economic Affairs"* (-0.12%) to *"General Public Service"* (0.45%) that was identified as the key government function. While the observed shift in the budget composition coincides with the model of the balanced PBC proposed by Drazen and Eslava (2005), results come at a surprise as they show a redirection of resources towards the broader public and away from narrowly targetable groups whereas the model of the Pork Barrel Cycle (Drazen and Eslava, 2006) predicts the opposite scenario. It appears that due to the high number of veto players, there is no possibility to favour a particular group so additional resources are only approved if they benefit everybody. In turn, it is possible to discriminate certain groups at the expense of the majority. As expected, there are no signs of the PBC observed at all under *cbh_acl* (7) leaving the incumbent with no opportunity or motive. Details for the test results in table 4:9 are provided in Appendix 7.

Table 4:9: The PBC across Expenditure Functions for Accountability and Institutional Power

		Economic Function							
		Housing	Education	Culture	Economic Affairs	General Public Serv.	Defence	Health	Social Protection
(1)	*El_acl*	0.027	0.030	0.007	0.054	0.030	0.014	-0.008	0.011
(2)	*El_ach*	0.098*	0.059	-0.015	-0.085	0.445*	0.074*	0.076	0.026
(3)	*El_cbl*	0.117*	0.154***	0.012	0.136	0.384	0.013	0.069	-0.004
(4)	*El_cbh*	0.025	-0.002	-0.005	-0.063	0.108	0.038*	0.002	0.001
(5)	*El_cbl-acl*	0.080	0.064	0.037**	0.242	0.171	-0.040	-0.078	-0.050
(6)	*El_cbl-ach*	0.170*	0.203***	-0.002	0.010	0.478	0.078	0.164**	0.107
(7)	*El_cbh-acl*	0.014	0.012	-0.000	-0.004	-0.045	0.040	0.006	0.016
(8)	*El_cbh-ach*	0.059	-0.118**	-0.014	-0.233	0.450**	0.043	-0.021	-0.042

District Magnitude and Concentration of Power

In the absence of further institutional specifications, there is only partial support for the argument of Milesi-Feretti *et al*. (2002) that fiscal expenditures are directly related to the average district magnitude as only three out of eight spending types exhibit signs of the PBC under either district magnitude. Particularly remarkable, there are substantial spending increases observed under single district magnitude (1) in "*Defence*", measuring 0.11% and passing for statistical significance at 95% level, as well as in "*General Public Service*" (0.1%). Those results are in clear conflict with the outcome in section 4.3.1 that showed no indication for an electoral spending cycle under single district magnitude. However, results in table 4:10 show that electoral cycles do take place but that they are balanced out by an anti-PBC "*Economic Service*" measuring a decrease of -0.13%. Under multiple district magnitude (2), electoral cycles emerge in "*Economic Service*" and "*General Public Service*" measuring 0.12% and 0.26%; the latter passes for 95% significance. The connection between district magnitude and the observed fiscal policy is clearly enhanced in interaction with consolidated institutional power. In contrast to above results, electoral cycles are taking place in all budget components (other than *"Culture"*) with size and significance being highly correlated with either district magnitude. Concretely, under *cbl_pdm* (4) there are large PBCs in "*Housing*" (0.16%), "*Economic Affairs*" (0.38%), "*General Public Service*" (0.49%) and "*Education*" (0.12%) all passing for statistical significance at 90% level or higher whereas no fiscal adjustments are observed in "*Defence*", "*Health*" and "*Social Protection*". Conversely, under *cbl_sdm* (3) electoral cycles appear in "*Education*" (0.38%), "*Defence*" (0.20%), "*Health*" (0.22%) and "*Social Protection*" (0.10%) with former two passing for 95% statistical significance. The results are in strong support of the findings of Chang (2008) who highlighted the connection among political power, district magnitude and the type of observed PBC in OECD countries. His research only emphasises the causality between single and multiple district magnitude and the resulting PBC in *"Social Security and Welfare"* and in *"Economic Services"*, alternatively. Results in table 4:10, however, imply that with the exception of "*Education*" indeed all expenditure functions correlate either with single or multiple district magnitude. In addition, there are large anti-PBCs detected under c*bl_sdm* in "*Economic Affairs*" (-0.55%) and "*General Public Service*" (-0.20%). Thus, even when equipped with full fiscal discretion, a fragmented district structure prompts incumbents to at least partially balance out the increase in expenditures with a coincident cutback in other budget components.

In conclusion, results reveal a strong correlation between district magnitude and the electoral cycles within the budget composition. Less evident is the decision which government services are to receive additional resources before the election. With regard to the classification in section 4.2, the observed pattern does not support an extrapolation of the findings of Milesi-Feretti *et al*. (2002) that electoral cycles in geographically and demographically targetable expenditures are caused by single and multiple district magnitude, alternatively. Instead, results show for both variables more significant electoral cycles (positive or negative) in all three defined expenditure categories. In addition, results for *cbh-sdm* and *cbh-pdm* confirm that the revealed correlation is conditional on the incumbents' fiscal leeway. With growing opposition in the budget process, the scales of electoral cycles are suppressed, disappear or are even reversed. Details for the test results in table 4:10 are provided in Appendix 7.

Table 4:10: The PBC across Expenditure Functions for District Magnitude and Institutional Power

		Economic Function							
		Housing	Education	Culture	Economic Affairs	General Public Serv.	Defence	Health	Social Protection
(1)	*El_sdm*	0.015	0.048	0.008	-0.130	0.100	0.110**	0.054	-0.006
(2)	*El_pdm*	0.043	0.038	0.001	0.117	0.264**	0.009	-0.003	0.025
(3)	*El_cbl-sdm*	0.072	0.375***	0.007	-0.548	-0.202	0.204**	0.216**	0.099
(4)	*El_cbl-pdm*	0.159*	0.124***	0.010	0.378**	0.493*	-0.007	0.001	0.040
(5)	*El_cbh-sdm*	0.053**	-0.072	-0.005	-0.018	0.265*	0.062	-0.004	-0.027
(6)	*El_cbh-pdm*	-0.020	0.019	-0.002	-0.056	0.101	0.038	0.007	0.048

Government Form and Concentration of Power

Extrapolating the argument of Persson *et al*. (2000), it is conjectured that presidential rule causes incumbents to focus on "targeted expenditures" when engineering the PBC whereas "broad expenditures" are utilised in parliamentary systems. While their expenditure classification differs from the one outlined in section 4.2, the former conjecture is definitely not sustained by the results in table 4:11. Under *pres* (1) and *cbl_pres* (3), the largest electoral cycle emerge in *"General Public Service"* that is rather classified as "broad" expenditures, for instance. Conversely, the largest PBC under *cbl_parl* (4) is measured in *"Economic Affairs"* which rather qualifies as "targeted" expenditure. The correlation between government form and budget composition is definitely weaker than for the district magnitude; only electoral cycles in "*General Public Service*" and "*Economic Affairs*" appear associated with either

government form. Furthermore, whereas the interaction with consolidated institutional power caused an increase in the distinction between single and multiple district magnitude, differences between the government forms are more apparent under restricted political power.

Interestingly, the results in table 4:11 differ largely from previous findings in section 4.3.1 which showed a significant expenditure cycle under parliamentarian systems (0.30%) while the PBC under presidential rule appeared entirely revenue driven. Seemingly contradictive, there is no evident electoral cycle observed under parliamentarian rule (2) in any of the budget components; instead, the measured increase in total expenditures is spread over all expenditure functions (other than *"Culture"*) causing insignificant electoral cycles varying from 0.02% in "*Health*" till 0.07% in "*Economic Service*". In sharp contrast, presidential regimes (1) exhibit two large electoral cycles in "*General Public Service*" (0.30%) and "*Education*" (0.11%), respectively that are counterbalanced by a simultaneous decrease in "*Economic service*" and "*Social Protection*" measuring 0.21% and 0.09%, alternatively. The hypothesis *Elect = 0* is rejected at 95% level in "*Education*" and "*Economic Affairs*". Conclusively, the two patterns seem to represent two different strategies of disguising the electoral spending cycle with allocating a significant spending increase over several government services or engineering a distinct increase in few selected budget components but leaving total outlay unchanged being the two options.

Under parliamentary systems, the effect of institutional power on the PBC is clearly visible in "*Housing*", "*Education*", "*Economic Affairs*", "*Social Protection*" and *"General Public Service*". With the exception of *"General Public Service*", the effect is in the expected manner. Coherently, there are distinct signs of the PBC under *cbl_parl* (4) in the listed expenditure functions measuring 0.11%, 0.15%, 0.24% and 0.1%, alternatively, which, in turn, disappear under *cbh_parl* (6). In presidential systems, fiscal adjustments caused by the changes in institutional power are more volatile but remain concentrated on "*General Public Service*" and "*Social Protection*". The size of those PBCs (or anti-PBCs) varies under *cbl_pres* (3) and *cbh_pres* (5) between 0.65% till -0.03% and 0.13% till -0.09%, alternatively. As pointed out earlier in this chapter, presidential systems are always associated with an anti-PBC in *"Economic Affairs"*, varying between -0.29% till -0.13%. On the other hand, the PBC in "*Education*" remains relatively robust to the level of fiscal discretion varying between 0.15% till

0.1%. In "*Culture*", "*Defence*", and "*Heath*", the difference between concentrated and diluted institutional power causes minimal variation in size for either government form.

In conclusion, the government form appears to affect the form of the PBC but not the decision which fiscal instruments are being utilised. In presidential regimes, the form of the PBC coincides with the model of Drazen and Eslava (2006) and the implied competition for resources resulting in large PBCs and anti-PBCs within expenditure functions. Under parliamentary rule, the PBC takes a more widespread from with electoral cycles being distributed across government functions. In comparison to previous tests, the reported errors are large impairing the significance of the results. Details for the test results in table 4:11 are provided in Appendix 7.

Table 4:11: The PBC across Expenditure Functions under Government Form and Institutional Power

		Economic Function							
		Housing	Education	Culture	Economic Affairs	General Public Serv.	Defence	Health	Social Protection
(1)	*El*_pres	0.017	0.109**	0.006	-0.205**	0.296	0.017	0.015	-0.090
(2)	*El*_parl	0.043	0.026	-0.020	0.065	0.056	0.042	0.023	0.059
(3)	*El*_cbl-pres	0.065	0.146	0.041	-0.290	0.645	0.019	0.068	0.132
(4)	*El*_cbl-parl	0.105	0.152**	0.008	0.238	-0.113	0.056	0.046	0.101
(5)	*El*_cbh-pres	0.017	0.102	-0.020	-0.129	-0.034	0.023	-0.088	-0.086
(6)	*El*_cbh-parl	0.026	-0.016	-0.001	-0.055	0.138	0.051*	0.019	0.022

Government Form and District Magnitude

Conflicting with previous findings, results in table 4:12 fail to provide a distinct answer to how the combination between government form and district magnitude affects size and composition of the PBC(s) within government expenditures. The pattern of observed electoral cycles does not entail a consistent conclusion what expenditure functions are being influenced and how both institutional variables interact with each other *id est* what is the conditional effect. Indicatively, the accuracy of the model in general appears problematic with most results being rendered insignificant by the size of standard errors. Noticeably, only two out of 32 tested electoral cycles pass for statistical significance. Moreover the hypothesis of indifference between government forms and district magnitudes is never rejected (see Appendix 7). Overall, the differences in the size of the PBC between single and multiple district magnitude are reduced under parliamentary rules and, with the exception of *"Economic Affairs"*, magnified under

presidential regimes. Exemplifying, while *sdm* and *pdm* were both measured with a large electoral cycle in *"General Public Service"* (0.1% and 0.26%), the size of the PBC grows under *pres_pdm* (3) up to 0.56% seemingly accumulating the magnitude of their individual effect. In turn, interaction between *pres* and *sdm*, has the size of the PBC turned insignificant measuring (1) -0.03%. Similar dynamic is observed in *"Social Protection", "Health"* and *"Defence"*, whereupon the cumulative effect takes place in *pres_sdm* and the outcome for *pres_pdm* does not relate to the individual result of either variable. In consequence, signs of the PBC are detected in *"Defence"* (0.12%) and *"Health"* (0.10%), *"Social Protection"* (-0.11%) under *pres_sdm* and in *"General Public Service"* (0.56%), *"Education"* (0.11%), *"Social Protection"* (0.08%), and *"Health"* (-0.08%) under *pres_pdm* and for both scenarios in *"Economic Services"* (-0.14% and -0.13%). In conclusion, there is little support for causality between the combination of government form and district magnitude and the type PBC in expenditure function. Under *parl_pmd* (4) and *parl_sdm* (3), electoral cycles seem mostly driven by the individual effect of parliamentarian rule and single district magnitude, respectively, whereas the resultant effect in presidential regimes appears arbitrary. The validity of the model is further impaired by the general inaccuracy and lack of statistical significance despite the presence of large electoral cycles. Details for the test results in table 4:12 are provided in Appendix 7

Table 4:12: The PBC across Expenditure Functions with Government Form and District Magnitude

		Economic Function							
		Housing	Education	Culture	Economic Affairs	General Public Serv.	Defence	Health	Social Protection
(1)	*El*_pres-sdm	-0.015	0.056	0.014	-0.140	-0.026	0.122	0.099	-0.114
(2)	*El*_pres-pdm	-0.039	0.114	0.001	-0.126	0.556**	-0.038	-0.083	0.077
(3)	*El*_parl-sdm	0.016	0.035	0.010	-0.092	0.150	0.101*	0.035	0.033
(4)	*El*_parl-pdm	0.051	0.035	0.003	0.097	0.056	0.039	0.014	0.081

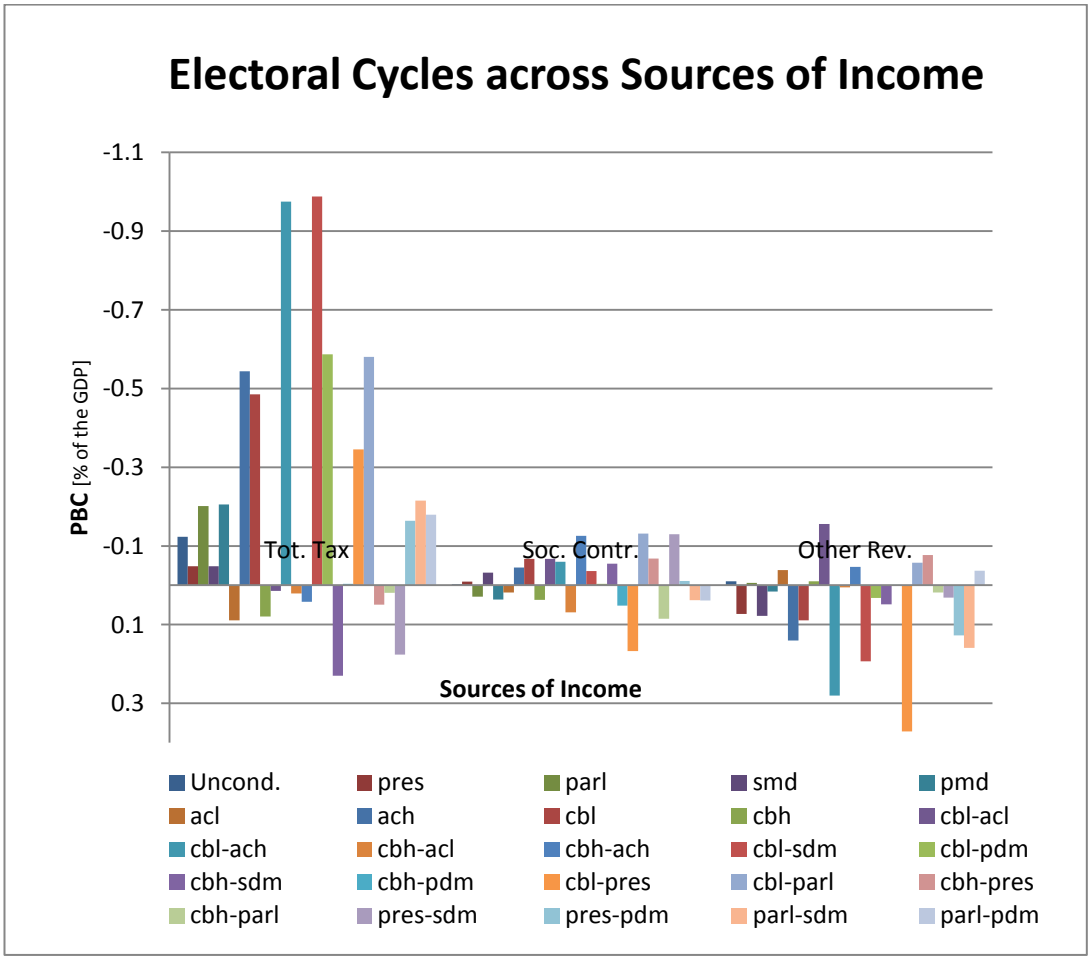
4.3.3 Sources of Income

Tax Revenue, Social Contribution and Others

Graph 4:3 illustrates the scales of the electoral cycles in government revenue and across institutional settings. Rather evidently, large electoral cycles are almost exclusively found in *"Tax Revenue"*; electoral cycles in *"Social Contribution"* and *"Other Revenue"* rarely exceed -0.1% and never passes for statistical significance (see table 4:13). The graph also clearly illustrates that there is a reversed electoral cycle taking place in *"Other Revenue"* that consists mainly of the sales of government property and service (see section 4.2). The observed anti-PBC in the sales of government services is in line with the deregulation cycle described by Chortareas *et al*. (2011) and their finding that incumbents slow down the deregulation process before the period of election. A different interpretation is that unlike the general tax level, the sale of government property barely affects households' disposable income therefore being of minor concern to voters. In consequence, office holders have the opportunity to partially mitigate the inflicted strain on the budget which allows for smoother budget reconciliation after the election. Coherently, the increase in *"Other Revenue"* would have to be in reversed proportion to the PBC in *"Tax Revenue"*. The results in table 4:13 show that the two largest pre-electoral tax cuts take place under *cbl-sdm* (14) and *cbl-acl* (11) with -0.99% and -0.98%, alternatively. Both scenarios exhibit indeed also some of the largest anti-PBC in *"Other Revenue"* measuring 0.19% and 0.28% thereby supporting the thesis.

Examining the variations in the amplitude of electoral cycles in *"Tax Revenue"*, there emerge large differences across political institutions. However, the scale of the PBC appears approximately proportional to the size of the overall revenue cycle measured in section 4.3.1. In fact, the difference between the PBC in *"Total Revenue"* and *"Tax Revenue"* is marginal for most institutional settings. Consequently, institutional settings identified with large revenue cycles exhibit also a large PBC in *"Tax Revenue"* mitigated by an anti-PBC in *"Other Revenue"* while there are almost no fluctuations in *"Social Contribution"*. Conversely, small electoral cycles in *"Total Revenue"* are the result of a small or reversed PBC in *"Tax Revenue"*. The only significant exception to this pattern is observed in *presidential* regimes in interaction with consolidated political power (18). While previous findings in section 4.3.1 indicate a PBC being entirely expenditure driven (see table 4:7), results show a decrease in *"Tax Revenue"* of -0.35%

of the GDP which is approximately three times the size of the average unconditional electoral tax cycle. The loss in taxes, however, is compensated by large anti-PBCs in *"Other Revenue"* and *"Social Contribution"* that add up to the previously observed 0.17% increase in revenue. Details for the test results in table 4:13 are provided in Appendix 7



Graph 4:3: The PBC within in Tax Revenue, Social Contribution and Other Revenue

Table 4:13: The PBC across and within Sources of Income

		Sources of Revenue		
		Total Tax	Social Contribution	Other Revenue
(1)	*Elect.*	-0.123	-0.003	-0.010
(2)	*El_pres*	-0.048	-0.009	0.073
(3)	*El_parl*	-0.201	0.029	-0.006
(4)	*El_smd*	-0.048	-0.032	0.078
(5)	*El_pmd*	-0.205*	0.036	0.016
(6)	*El_acl*	0.089	0.018	-0.039
(7)	*El_ach*	-0.544**	-0.045	0.140
(8)	*El_cbl*	-0.485**	-0.067	0.089
(9)	*El_cbh*	0.079	0.037	-0.010
(10)	*El_cbl-acl*	0.014	-0.067	-0.156
(11)	*El_cbl-ach*	-0.975***	-0.060	0.280
(12)	*El_cbh-acl*	0.021	0.069	0.005
(13)	*El_cbh-ach*	0.042	-0.126	-0.047
(14)	*El_cbl-sdm*	-0.988*	-0.036	0.193
(15)	*El_cbl-pdm*	-0.587***	-0.004	0.032
(16)	*El_cbh-sdm*	0.230	-0.055	0.048
(17)	*El_cbh-pdm*	-0.004	0.052	-0.001
(18)	*El_cbl-pres*	-0.345	0.167	0.371
(19)	*El_cbl-parl*	-0.580*	-0.131	-0.057
(20)	*El_cbh-pres*	0.049	-0.068	-0.077
(21)	*El_cbh-parl*	0.019	0.085	0.018
(22)	*El_pres-sdm*	0.176	-0.130	0.031
(22)	*El_pres-pdm*	-0.237	-0.011	0.127
(24)	*El_parl-sdm*	-0.215	0.038	0.159
(25)	*El_parl-pdm*	-0.179*	0.039	-0.037

Types of Taxation: An Overview

In unconditional environment, the only significant PBC is measured in *"Tax on Goods and Service"* accounting for -0.12%. Considerable smaller cycles are further detected in *"Property Tax"* and *"Trade Tax"* measuring -0.06%. Examining the scale of the PBC across political institutions, there is considerable fluctuation observed in all tax objects other *"Property Tax"* though with large differences in terms of the scale of the PBC and anti-PBC. *"Property Tax"* shows across institutional settings a constant decrease in revenue which, however, does not exceed -0.07% of the GDP and never passes for statistical significance. Unlike in section 4.3.2, there is no robust institutional effect discerned *id est* the impact of any institutional variable is conditional on the setting of another variable.

Table 4:14: The PBC within all Sources of Revenue and Tax Objects

		Sources of Revenue			**Tax Objects**					
		Tot. Tax	Soc. Contr.	Other Rev.	Income	Property	Payroll	Goods & Service	Internat. Trade	Others
(1)	*Elect.*	-0.123	-0.003	-0.010	0.023	-0.064	-0.021	-0.120*	-0.062	-0.033
(2)	*El_pres*	-0.048	-0.009	0.073	-0.016	0.007	-0.092**	-0.133	-0.111	-0.065
(3)	*El_parl*	-0.201	0.029	-0.006	-0.008	-0.057	0.005	-0.074	0.007	-0.017
(4)	*El_smd*	-0.048	-0.032	0.078	-0.069	-0.016	0.073	0.001	0.077	-0.091
(5)	*El_pmd*	-0.205*	0.036	0.016	0.037	-0.042	-0.074**	-0.176*	-0.069	0.006
(6)	*El_acl*	0.089	0.018	-0.039	-0.090	-0.012	-0.070	0.009	-0.090	0.019
(7)	*El_ach*	-0.544**	-0.045	0.140	0.072	-0.068	0.037	-0.342***	0.072	-0.069
(8)	*El_cbl*	-0.485**	-0.067	0.089	-0.162	-0.052	0.005	-0.257*	-0.162	-0.043
(9)	*El_cbh*	0.079	0.037	-0.010	0.064	-0.024	-0.045	-0.018	0.064	0.014
(10)	*El_cbl-acl*	0.014	-0.067	-0.156	-0.031	-0.048	-0.046	-0.025	-0.245	0.095
(11)	*El_cbl-ach*	-0.975***	-0.060	0.280	-0.197	-0.063	0.008	-0.537***	-0.040	-0.139**
(12)	*El_cbh-acl*	0.021	0.069	0.005	0.069	0.004	-0.077*	-0.006	-0.015	-0.013
(13)	*El_cbh-ach*	0.042	-0.126	-0.047	-0.049	-0.018	0.073	-0.035	0.060	0.151
(14)	*El_cbl-sdm*	-0.988*	-0.036	0.193	-0.367	0.038	0.073	-0.141	0.027	-0.272*
(15)	*El_cbl-pdm*	-0.587***	-0.004	0.032	-0.014	-0.059	-0.078*	-0.418**	-0.264	0.002
(16)	*El_cbh-sdm*	0.230	-0.055	0.048	0.123	-0.033	0.061	0.066	0.053	0.058
(17)	*El_cbh-pdm*	-0.004	0.052	-0.001	0.075	-0.023	-0.080	-0.042	0.006	-0.001
(18)	*El_cbl-pres*	-0.345	0.167	0.371	0.114	-0.007	0.007	-0.504***	-0.239	-0.021
(19)	*El_cbl-parl*	-0.580*	-0.131	-0.057	-0.292	-0.040	-0.027	-0.090	-0.027	-0.076
(20)	*El_cbh-pres*	0.049	-0.068	-0.077	-0.100	-0.002	-0.140**	0.043	0.110	-0.037
(21)	*El_cbh-parl*	0.019	0.085	0.018	0.056	-0.033	0.002	-0.038	0.038	0.030
(22)	*El_pres-sdm*	0.176	-0.130	0.031	0.412	-0.009	-0.011	-0.043	0.010	-0.131*
(23)	*El_pres-pdm*	-0.237	-0.011	0.127	-0.122	0.021	-0.135**	-0.239	-0.204	0.045
(24)	*El_parl-sdm*	-0.215	0.038	0.159	-0.235	-0.025	0.104	0.048	-0.030	-0.071
(25)	*El_parl-pdm*	-0.179*	0.039	-0.037	0.039	-0.035	-0.040	-0.133	0.036	0.004

Accountability and Concentration of Power

Assessing the PBC within tax objects in dependence of political accountability and concentration of institutional power, results show parallels with the according outcome in expenditure function in section 4.3.2. Consistent with previous findings, signs of the PBC are observed across several budget components under *cbl* (3), most noticeably in *"Tax on Goods and Service"* (-0.26%), *"Trade Tax"* (-0.16%) and *"Income Tax"* (-0.16%). If political power is dispersed (4), according electoral cycles all disappear. Under *ach* (2), the PBC is mostly concentrated on *"Tax on Goods and Service"* as the primary tax object analogue to the large expenditure cycle in *"General Public Service"*. The similarities continue further for the interaction between both determinants. Thus, the general peak of the PBC emerges under *cbl_ach* (6) measuring -0.54%, -0.20% and -0.14% in *"Tax on Goods and Service"*, *"Income Tax"* and *"Other Taxes"*, alternatively. Differing from the outcome in expenditure functions, there are no signs of

a balanced PBC detected under *cbh_ach* (8). In conclusion, results in table 4:15 affirm concentration of power and political accountability as the primary determining forces for the size of the PBC in most individual tax objects. In turn, there is no correlation discerned between the composition of the PBC across taxes and either force. Details for the test results in table 4:15 are provided in Appendix 7

Table 4:15: The PBC within Tax Objects under Political Accountability and Institutional Power

		Tax Objects					
		Tax on Income	Tax on Property	Tax on Payroll	T. on Goods & Service	Tax on Int. Trade	Tax on Others
(1)	*El_acl*	-0.090	-0.012	-0.070	0.009	-0.090	0.019
(2)	*El_ach*	0.072	-0.068	0.037	-0.342***	0.072	-0.069
(3)	*El_cbl*	-0.162	-0.052	0.005	-0.257*	-0.162	-0.043
(4)	*El_cbh*	0.064	-0.024	-0.045	-0.018	0.064	0.014
(5)	*El_cbl-acl*	-0.031	-0.048	-0.046	-0.025	-0.245	0.095
(6)	*El_cbl-ach*	-0.197	-0.063	0.008	-0.537***	-0.040	-0.139**
(7)	*El_cbh-acl*	0.069	0.004	-0.077*	-0.006	-0.015	-0.013
(8)	*El_cbh-ach*	-0.049	-0.018	0.073	-0.035	0.060	0.151

District Magnitude and Concentration of Power

Analysing the resulting effect from the interaction between institutional power and district magnitude, there is striking similarity with the outcome in section 4.3.2. However, unlike for the PBC in public spending, detected shifts within the tax composition are neither indicated by Chang (2008) nor in connection to the findings of Milesi-Ferretti *et al.* (2002). All the more, it stands out how the electoral cycles detected in tax objects are related with the average district magnitude. Contrary to the results in public spending, the correlation is not conditional upon consolidated institutional power and noticed in all tax objects other than *"Property Tax"*. In the absence of further institutional specifications, results in table 4:16 show under single district magnitude (1) modest tax cuts in *"Income Tax" (*-0.09%) and *"Other Taxes"* (-0.07%) and pre-electoral tax increases in *"Tax on Payroll"* (0.07%) and *"Trade Tax"* (0.08%). Conversely, under *pdm* (2) electoral cycles are observed in *"Tax on Goods and Service"* (-0.18%), *"Tax on Payroll"* (-0.07%) and in *"Trade Tax"* (-0.07%). Conclusively, though the null hypothesis *smd = pmd* is only rejected in *"Tax on Payroll"* at 90% significance, results imply a fundamental causality between the district magnitude and individual tax cycles; a tax object that experiences a cutback under *pdm*

exhibits an anti-PBC or the complete absence of an electoral cycle under *sdm* and vice versa.

Consistent with previous findings, the size of most electoral cycles increase substantially in interaction with concentrated political power though without eliminating the observed distinction. It rather appears there is a mutual dependence between both variables, *id est* the effect of consolidated institutional power on the individual tax object is conditional on the district magnitude. Consequently, the size of the electoral cycles in *"Income Tax"* and *"Tax on Others"* hardly differ between *pdm* and *cbl_pdm* (4) but rise up to -0.37% and -0.27% under *cbl_sdm* (3), respectively. In turn, the PBC in *"Trade Tax"* increases up to -0.26% under *cbl_pdm* but remains unaffected in *cbl_sdm*. The only tax object that exhibits a PBC under either district magnitude in case of concentrated political power is *"Tax on Goods and Service"* though the effect is still more pronounced under *pdm* as the size of the PBC increases up to -0.42%. While the correlation between the district magnitude and the composition of the PBC is evident, there is no apparent answer regarding the causality. In particular, even though the classification of different expenditures has not been without ambiguity, the literature does not provide any indication about the classification of tax objects hindering an interpretation of the results. The appearance of the PBC in *"Tax on Goods and Service"* under both district magnitudes is presumably attributed to its far reaching effect that benefits a majority of the society. *"Income Tax"* includes tax on profits and capital gains of enterprises that can be considered as a *geographically* targetable fiscal instrument therefore, in accordance with Milesi-Ferretti *et al*. (2002), justifying for the PBC under single district magnitude.

The mutual dependence between the effectiveness of political power and district magnitude does not sustain for the reversed scenario. As in section 4.3.2, weak political power causes most electoral cycles to disappear disregarding of the district magnitude. Finally, results confirm the earlier findings that shifts in the budget composition caused by anti-PBCs are disregarding of other intuitional settings more pronounced under single district magnitude. Details for the test results in table 4:16 are provided in Appendix 7.

Table 4:16: The PBC within Tax Objects under District Magnitude and Institutional Power

		Tax Objects					
		Tax on Income	Tax on Property	Tax on Payroll	T. on Goods & Service	Tax on Int. Trade	Tax on Others
(1)	*El_smd*	-0.069	-0.016	0.073	0.001	0.077	-0.091
(2)	*El_pmd*	0.037	-0.042	-0.074**	-0.176*	-0.069	0.006
(3)	*El_cbl-sdm*	-0.367	0.038	0.073	-0.141	0.027	-0.272*
(4)	*El_cbl-pdm*	-0.014	-0.059	-0.078*	-0.418**	-0.264	0.002
(5)	*El_cbh-sdm*	0.123	-0.033	0.061	0.066	0.053	0.058
(6)	*El_cbh-pdm*	0.075	-0.023	-0.080	-0.042	0.006	-0.001

Government Form and Concentration of Power

Analogue to findings above, the resulting effect from the interaction between government form and institutional power is consistent with the findings in public spending. As in section 4.3.2, the PBC takes a different form under presidential and parliamentary rule without revealing a consistent pattern regarding the tax composition. In presidential regimes, the pattern of the tax composition matches the description of Drazen and Eslave (2006) showing distinct shifts in the tax composition. Independent from the fiscal leeway, there are large cutbacks in two different tax categories that are counterbalanced by one anti-PBC. Concretely, under *cbl_pres* (3) the PBC is concentrated on *"Tax on Goods and Service"* (-0.50%) and *"Tax on International Trade"* (-0.23%) while a tax increase is measured in *"Income Tax"* (0.11%). In turn, *cbh_pres* (5) shows signs of the PBC in *"Income Tax"* (-0.10%) and "Tax on Payroll" (-0.14%) and a balancing anti-PBC in *"Tax on International Trade"* (0.11%). No shifts in the tax composition are discerned under *parliamentarian* rules. Instead, if political power is concentrated (4) there are (modest) electoral cycles detected in all tax objects (the highest in *"Income Tax"* (-0.29%)) that collectively diminish under *cbh* (6). Comparing the results with the outcome in the previous section where the effect of the institutional power was effectively channelled by the district magnitude, in this instance the scale of the PBC clearly depends on the fiscal leeway while the selection of the fiscal instruments seems especially in presidential regimes arbitrary. Details for the test results in table 4:17 are provided in Appendix 7.

Table 4:17: The PBC within Tax Objects under Government Form and Institutional Power

		Tax Objects					
		Tax on Income	Tax on Property	Tax on Payroll	T. on Goods & Service	Tax on Int. Trade	Tax on Others
(1)	*El_pres*	-0.016	0.007	-0.092**	-0.133	-0.111	-0.065
(2)	*El_parl*	-0.008	-0.057	0.005	-0.074	0.007	-0.017
(3)	*El_cbl-pres*	0.114	-0.007	0.007	-0.504***	-0.239	-0.021
(4)	*El_cbl-parl*	-0.292	-0.040	-0.027	-0.090	-0.027	-0.076
(5)	*El_cbh-pres*	-0.100	-0.002	-0.140**	0.043	0.110	-0.037
(6)	*El_cbh-parl*	0.056	-0.033	0.002	-0.038	0.038	0.030

Government Form and District Magnitude

The interpretation of the outcome under the interaction between government form and district magnitude is not straight forward; neither correlation with the selected tax instruments nor the general form of appearance follows the pattern of the individual variables. Similar to the findings in public spending, differences between single and multiple district magnitude are enhanced under presidential rule showing large differences in the size of the PBC in every individual tax object. However, the tax composition does not follow a concise pattern as under the interaction between district magnitude and institutional power. On the other hand, the observation in the previous section, that the PBC takes in presidential regimes a form as described by Drazen and Eslava (2006) exhibiting a distinct shift within the budget composition, is not confirmed but appears rather as the result of the institutional fractionalisation. Anti-PBCs are thus observed under *pres_sdm* (1) in *"Income Tax"* (0.41%) and under *parl_sdm* (3) in *"Tax on Payroll*" (0.10%) but not under *pres_pdm* (2) or *parl_pdm* (4). Conversely, the conditional effect under multiple district magnitude is observed in the form of a general increase in the size of all tax cycles. Consequently, electoral cycles are found under *pres_pdm* in *"Trade Tax"* (-0.20%), *"Income Tax"* (-0.12%), *"Taxes on Goods and Services"* (-0.24%) and *"Tax on Payroll"* (-0.13%) and under parl_pdm in *"Taxes on Goods and Services"* (-0.13%). Noticeably, the hypothesis *elect* = 0 is among those cycles only rejected in *"Tax on Payroll"* with statistical significance signifying the weak accuracy of the model. Details for the test results in table 4:18 are provided in Appendix 7.

Table 4:18: The PBC within Tax Objects under on Government Form and District Magnitude

		Tax Objects					
		Tax on Income	Tax on Property	Tax on Payroll	T. on Goods & Service	Tax on Int. Trade	Tax on Others
(1)	*El_pres_sdm*	0.412	-0.009	-0.011	-0.043	0.010	-0.131*
(2)	*El_pres_pdm*	-0.122	0.021	-0.135**	-0.239	-0.204	0.045
(3)	*El_parl_sdm*	-0.235	-0.025	0.104	0.048	-0.030	-0.071
(4)	*El_parl_pdm*	0.039	-0.035	-0.040	-0.133	0.036	0.004

4.3.4 The PBC in Economic Objects

Unconditional PBC

Testing for the unconditional PBC across expenditure objects, the only significant electoral cycle takes place in *"Grants"* measuring 0.14% and passing for statistical significance at 90% level. Small spending increases between 0.05% and 0.06% of the GDP are detected in *"Interests"*, *"Goods and Service"*, *"Subsidies"* and *"Compensation of Employees"* whereas *"Other Expenditures"* is measured with a spending decrease of -0.06%. While the outcome does not indicate a major shift in the budget composition as spending increase appears equally spread among several budget components, some of the results are in conflict with inferences and conjectures of previous studies on the PBC. The significant increase in *"Grants"*, for instance, conflicts with Schneider's (2009) conjecture of an "International PBC" and the suggestions that incumbents decrease the net payments to international organisations before the election (see section 4.1). An explicit rejection of Schneider's (2009) theory is though not possible since *"Grants"* encompasses also transfers to other government units such as local administrations that are in line with the conception of the PBC. Another unexpected result is the increase in *"Compensation of Employees"* that contradicts with the anti-rent cycle of Drazen and Eslava (2005, 2006). Following their argumentation, incumbents will before the election cut back the supply of all resources that give primarily utility to incumbents and their associates (rents) in order to provide resources that benefit the broad public instead. While their definition of rents is in a very general context, wages and salaries paid to public officials (including themselves) certainly match the description. On the other hand, the outcome does support Schultz's (1995) suggestion that it is difficult for incumbents to introduce any policy that involves cutbacks for their staff and the prediction by Drazen (2000b) that the incumbents' long term survival depends heavily on their staffs' support. Finally, the increase in paid interests before the election somewhat objects with the notion of the moral hazard

approach. Since the general aim is to disguise the true financial efforts, implicitly one would rather expect an increase in outstanding debts and involved interest payments to take place after the election. Details for the test results in table 4:19 are provided in Appendix 7.

Table 4:19: The unconditional PBC within Expenditure Objects

Expenditure Categories classified as Economic Objects	
Goods and Service	0.049%
Compensation of Employees	0.057%
Social Benefits	0.007%
Subsidies	0.053%
Grants	0.141%*
Interests	0.056%
Other Expenditures	-0.064%

Concentration of Power and Accountability

Results in table 4:20 confirm the significant impact of institutional power and political accountability on the size of the PBC. Under *cbl_ach* (6), the magnitude of the individual electoral cycles reaches for most economic objects a multiple of the unconditional PBC. The largest electoral cycles are measured in *"Subsidies"* (0.60%), *"Compensation of Employees"* (0.38%) and *"Interests"* (0.32%). The only exception is observed in *"Other Expenditures"* that exhibits a decrease of 0.45% of the GDP. It stands out that under the same institutional settings there was a substantial an anti-PBC observed in *"Other Revenue"*. Results could be interpreted that even in case of full fiscal discretion incumbents are reducing the emerging budget deficit *via* cutbacks on "miscellaneous" fiscal components that are not noticed by a majority of the society. Under *cbl_acl* (5) that indicates fiscal leeway but less of a incentive, significant electoral spending cycles are still observed in *"Grants"* (0.39%) and *"Goods and Service"* (0.15%). The similarity between previous results in section 4.3.2 implies a large share of overlapping between expenditures under *"Goods and Service"* and those categorised as *"General Public Service"*. Unlike for the results for expenditure functions, there are no signs of a balanced PBC under *cbh_ach* (8). Details for the test results in table 4:20 are provided in Appendix 7.

Table 4:20: The PBC in Expenditure Objects under Institutional Power and Accountability

		Economic Objects						
		Goods and Service	Comp.. of Empl.	Social Benefits	Subsidies	Grants	Interests	Other Expenditures
(1)	*El_acl*	0.132**	0.005	-0.033	0.030	0.118	-0.011	0.010
(2)	*El_ach*	0.046	0.207*	0.107	0.352	0.161	0.174	-0.248
(3)	*El_cbl*	0.005	0.148	0.054	0.269	0.272*	0.148	-0.206
(4)	*El_cbh*	0.123***	0.029	-0.078	-0.011	0.070	-0.001	0.048
(5)	*El_cbl-acl*	0.149	-0.099	0.054	-0.028	0.394*	-0.039	0.026
(6)	*El_cbl-ach*	0.018	0.384***	0.148	0.602	0.198	0.321	-0.450
(7)	*El_cbh-acl*	0.111*	0.045	-0.082	-0.004	0.050	-0.001	0.011
(8)	*El_cbh-ach*	0.163	-0.032	0.029	-0.045	0.093	-0.008	0.034

Concentration of Power and District Magnitude

Results in table 4:21 are in accordance with the previous findings in section 4.3.2 and 4.2.3. The composition of the PBC within expenditure objects can clearly be derived from the district magnitude. Electoral cycles are detected under multiple district magnitude (2) in *"Subsidies"* (0.11%) and under single district magnitude (1) in *"Goods and Service"* (0.23%) and *"Compensation of Employees"* (0.17%) and furthermore with reversed prefix in *"Social Benefits"* (-0.12%), *"Subsidies"* (-0.15%) and *"Other Expenditures"* (-0.30%). Furthermore, signs of the PBC appear for both variables in *"Grants"* though statistical significance is only passed under *sdm*. Also consistent with previous results, the differences between *sdm* and *pdm* are magnified in interaction with consolidated institutional power as most electoral cycles increase in size, yet *"Grants"* remains the only spending object that reveals a PBC under both district magnitudes. Concretely, the size of the PBC increases under *cbl_sdm* (3) in *"Grants"* and *"Compensation of Employees"* up to 0.43% and 0.46% respectively, while the anti-PBCs in *"Social Benefits"*, *"Subsidies" "Other Expenditures"* and *"Interests"* remain or become even more pronounced. Analogue, the size of the PBC is amplified under *cbl_pdm* (4) in *"Subsidies"* (0.28%), *"Social Benefits"* (0.14%) and *"Interests"* (0.33%) and on a lesser scale in *"Grants"* (0.20%), while there is no impact on *"Compensation of Employees"* or *"Goods and Services"*. There emerge no anti-PBCs under *pdm* and *cbl_pdm*; On the other hand, restricted political power has the PBC rendered insignificant under *pdm* whereas significant electoral cycles remain to appear under *cbh_sdm* thus confirming findings in section 4.3.2. Details for the test results in table 4:21 are provided in Appendix 7.

Table 4:21: The PBC in Economic Objects under Institutional Power and District Magnitude

		Economic Objects						
		Goods and Service	Compens. of Empl.	Social Benefits	Subsidies	Grants	Interests	Other Expenditures
(1)	*El_smd*	0.225	0.166	-0.122	-0.151	0.240*	-0.120	-0.299
(2)	*El_pmd*	0.054	0.055	-0.019	0.109	0.099	0.161*	0.018
(3)	*El_cbl-sdm*	0.200	0.457*	-0.150	-0.357***	0.435	-0.173	-1.002**
(4)	*El_cbl-pdm*	0.014	0.082	0.142	0.279	0.200	0.330	0.009
(5)	*El_cbh-sdm*	0.282*	0.080	-0.105	-0.056	0.120	-0.053	0.183
(6)	*El_cbh-pdm*	0.081	0.037	-0.088	0.017	0.013	0.056	0.003

Concentration of Power and Government Form

Ignoring the extent of fiscal discretion, electoral cycles are detected in *"Grants"* (0.23%) and *"Compensation of Employees"* (0.14%) under presidential rule (1) and in *"Goods and Service"* (0.11%) in parliamentary regimes (2). Despite seeing the PBC taking place in different fiscal components, results in table 4:22 do not entail a distinction between presidential and parliamentary systems as suggested by the outcome in expenditure functions where large electoral cycles where exclusively found in presidential regimes counterbalanced by significant spending cutbacks (see section 4.3.2). More significantly, the size of the individual electoral cycle appears primarily determined by the extent of institutional power. Indications of a conditional effect as revealed for the interaction between institutional power and district magnitude are only found in *"Other Expenditures"* and *"Subsidies"* whose dependence on the government form was not evident in the single interaction model. Furthermore, differences between both regimes are more evident when combined with restricted political power which conflicts with the conjecture of a connection with the spending composition; the same observation was made in section 4.3.2. Thus, the PBC (or anti-PBC) measures 0.26% in *"Other Expenditures"* and -0.38% in *"Subsidies* under *cbl_pres* (3) and -0.38% and 0.11% under *cbl_parl* (4), respectively. Furthermore there are significant electoral cycles in *"Grants"*, *"Compensation of Employees"* and *"Social Benefits"* in *presidential* as well as *parliamentarian* regimes. While the latter two do show considerable difference in size, the hypothesis *pres = parl* is only rejected in *"Other Expenditures"* and *"Subsidies"* thereby being in line with the previous finding that the size of the electoral spending cycle is identical in *cbl_pres* and *cbl_parl* (see section 4.3.1). Details for the test results in table 4:22 are provided in Appendix 7.

Table 4:22: The PBC in Economic Objects under Institutional Power and Government Form

		Economic Objects						
		Goods and Service	Compens. of Empl.	Social Benefits	Subsidies	Grants	Interests	Other Expenditures
(1)	*El_pres*	-0.016	0.143*	-0.042	-0.054	0.230	0.038	0.031
(2)	*El_parl*	0.108**	0.042	0.037	-0.018	0.053	-0.011	-0.084
(3)	*El_cbl_pres*	0.066	0.399**	0.443	-0.384***	0.315*	-0.026	0.258
(4)	*El_cbl_parl*	0.014	0.131	0.148	0.108	0.245*	0.029	-0.384
(5)	*El_cbh_pres*	0.062	0.034	-0.227	0.084	0.222	0.037	-0.074
(6)	*El_cbh_parl*	0.133*	0.004	0.023	-0.051	-0.039	-0.027	0.018

Government Form and District Magnitude

Results in table 4:23 vastly support the previous findings concerning the interaction between government form and district magnitude as the pattern of the PBC coincides mostly with the outcome for the expenditure functions. As in section 4.3.2, the significant increase in total expenditures under *parl_pdm* (4) is not reflected in any of the expenditure components. Instead, it appears evenly allocated among all expenditure objects. Conversely, the absence of an electoral cycle in *parl_sdm* (3) is misleading as significant electoral cycles do take place in *"Goods and Service"* (0.33% passing for 99% significance), *"Compensation of Employees"* (0.13%) and *"Grants"* (0.09%) though concealed by large cutbacks, most notably in *"Social Benefits"* (-0.13%) and *"Other Expenditures"* (0.50%) therewith presenting another example for a "balanced PBC" achieved by shifts within the budget composition. The selective cutback of expenditures, however, is also observed under *pres_sdm* (1) though the effect is outweighed by the larger PBC in *"Compensation of Employees"* (0.25%) and *"Grants"* (0.43%). The expenditure composition coincides under both settings largely with the outcome for *sdm* and *cbl_sdm* respectively, thus leading to the conclusion that form and composition of the PBC are predetermined under single district magnitude whereas the impact of the government form merely accounts for fluctuation in the size of respective expenditure cycles. There are no distinct cutbacks observed under multiple district magnitude that is consistent with previous findings. Nevertheless, results for *pres_pdm* (2) and *parl_pdm* do not match the above principle and are, in fact, difficult to interpret by the previous findings for either institutional variable. In particular results for *pres_pdm* seem contradictive as the accumulated increase in *"Grants"*, *"Interests"*, *"Goods and Services"* and *"Compensation of Employees"* clearly exceeds the size of the PBC in total expenditure measured in section 4.3.1 though none of the electoral

cycles pass for statistical significance. Incidentally, the result' accuracy is of general concern in table 4:23; an issue that was already encountered when analysing the interaction between government form and district magnitude in expenditure functions. Details for the test results in table 4:23 are provided in Appendix 7.

Table 4:23: The PBC in Economic Objects under Government Form and District Magnitude

		Economic Objects						
		Goods and Service	Compens. of Empl.	Social Benefits	Subsidies	Grants	Interests	Other Expenditures
(1)	*El_pres-sdm*	0.028	0.246	-0.154	-0.187	0.429	-0.115	0.039
(2)	*El_pres-pdm*	0.104	0.120	-0.022	0.006	0.172	0.208	-0.030
(3)	*El_parl-sdm*	0.328***	0.127	-0.125	-0.067	0.088	-0.081	-0.503
(4)	*El_parl-pdm*	0.056	0.024	0.054	0.025	0.045	0.075	0.029

4.3.5 Robustness Test

As Katsimi and Sarantides (2012) point out, the literature has been far from conclusive regarding the connection between party ideology and fiscal policy. A reason for the observed inconsistency is that the traditional left-right wing approach is not appropriate on a global level but applies primarily to the Western political culture (Block, 2002b). However, even tests within smaller country sample have provided mixed evidences. Perotti and Kontopoulos (2002) for instance identify party ideology as a key determinant of fiscal policy in OECD countries whereas Bräuniger's (2005) research concludes for the same countries that left or right ideology has no significant effect on the expenditure level or the expenditure composition. In consequence, the vast majority of research on electoral economic cycles does not account for the ideological position of the incumbents except when in connection with the PT – exceptions are the studies of Chang (2008) or Klomp and de Haan (2011) while Sedmihradská *et al*. (2011) consider the partisan bias in their model but find it to be insignificant for the PBC in Czech municipalities. Testing for a possible impact of the party ideology, the model presented in section 1.3 is modified having two partisan dummies included, *lwi* and *rwi*. The former is classified as "1" if the chief executive party's economic preference is considered left-wing oriented and "0" otherwise. Analogue, *rwi* is classified "1" if the chief executive party's economic preference is considered right-wing oriented. In case of middle parties with no distinct partisan bias, both variables are classified as "0". Data

for the political orientation are taken from the database of political institutions published by the World Bank (Beck *et al*., 2010).

The results presented in table 4:24 show for most fiscal components a slight increase in size and significance of the PBC when accounting for the partisan bias. Surprisingly, the coefficients of *lwi* arn *rwi* are in most instances in a positive correlation to each other (see Appendix 8). A significant left – right difference is only observed in "*Economic Affairs*" where results imply that the large fluctuation of PBC observed in section 4.3.2 is influenced by the partisan bias of the ruling party. In "*Social Protection*", the coefficients for party ideology differ in size but not in the prefix whereas common theory would suggest a strong cut back under a right-wing government. The result can be interpreted that that even a right-wing government fears the risk of alienating a large share of voters if cutting back on "*Social Protection*" during the election period; alternatively that the level or provided resources is largely demand driven and therefore relatively inelastic to the preferences of party policy.

Table 4:24: The PBC with Partisan Bias

Fiscal Instrument		**PBC**	**PBC with Partisan Bias**
Source of Revenue	Total Tax	-0.123	-0.150
	Social Contribution	-0.003	-0.036
	Other Revenue	-0.010	0.015
Tax Object	Income Tax	0.023	0.039
	Property Tax	-0.064	-0.084
	Payroll Tax	-0.021	-0.022
	Tax on Goods and Service	-0.120*	-0.135**
	Tax on International Trade	-0.062	-0.138
	Other Taxes	-0.033	-0.029
Economic Function	Housing	0.037	0.038
	Education	0.053**	0.078***
	Culture	0.001	0.008
	Economic Affairs	0.012	0.039
	General Public Service	0.250**	0.280***
	Defence	0.026	0.044
	Health	0.019	0.0.32
	Social Protection	0.034	0.104
Economic Object	Goods and Services	0.049	0.069
	Compensation of Employees	0.057	0.069
	Social Benefits	0.007	0.029
	Subsidies	0.053	0.052
	Grants	0.141*	0.095
	Interests	0.047	0.037
	Other Expenditures	-0.064	-0.062

4.4 Conclusion

This chapter has provided an in-depth analysis regarding the type of the PBC and its dependence on the institutional framework. Questions examined have been in particular which fiscal instruments are being utilised in creating the PBC. The research has further tested for evidence for shifts in the budget composition and signs of a balanced PBC.

The results for the unconditional PBC show electoral cycles in both parts of the budget; evidently, types of public spending as well as fiscal revenue are employed for the purpose of gaining additional public support. Depending on whether they are measured with regard to their purpose or the type of outlay, fiscal expenditures are either classified as expenditure object or expenditure function. Results for the expenditure functions are generally measured with higher accuracy reaching more often statistical significance. The biggest expenditure increase is measured in *"General Public Service"*. Further significant electoral cycles in expenditure functions are observed in *"Education"*, alternatively in *"Grants"* in expenditure objects. The observed electoral cycle in total revenue is entirely caused by a cutback in *"Total Tax"*. Within the tax composition, the only significant electoral cycle for the unconditional PBC is detected *"Tax on Goods and Service"*. Conclusively, under general conditions incumbents employ spending and tax instruments that are targeted towards a vast majority in the public.

Examining electoral cycles in total revenue and total expenditure, results do not substantiate a connection between the institutional framework and the budget composition. Particularly, there is no evidence for one-sided PBC as the result of the institutional framework. Institutional variables that have been identified as drivers of the PBC in the budget balance prove equally effective in both parts of the budget. Consequently, there are simultaneous revenue and expenditure cycles discerned under concentrated institutional power, pronounced political accountability and multiple district magnitude. The size of the expenditure cycle accounts generally for approximately two third of the total PBC measuring double the size of the revenue cutback. Analogously, there appear no significant electoral cycles in either part of the budget under single district magnitude, dispersed political power and weak accountability. The only exception emerges under presidential rule whose small-sized PBC seems entirely revenue driven as suggested by Persson and Tabellini (2003b).

However, the effect proves inconsistent in interaction with district magnitude and the level of institutional power. Tests for the interaction among district magnitude, institutional power, government form and accountability do indeed not reveal an apparent connection between the institutional framework and the choice between income or expenditure instruments. On the other hand, results do support the suggestion that PBCs can take place within the budget composition without considerable deterioration of the budget balance. According signs are indeed consistently detected under constrained political power leading to the conclusion that the balanced version of the PBC represents a second best alternative to the incumbents when an expansive fiscal policy is not an available option. Shifts within the budget composition are, however, not only detected under restricted political power; anti-PBCs are also induced by single district magnitude. The effect is only secondary to the concentration of power but emerges in interaction with either government form.

A more detailed analysis of the revenue composition still provides little evidence for a connection between the institutional framework and the type of PBC. Essentially, the institutional effect on *"Total Tax"* is largely congruent with the respective effect in total *"Total Revenue"*. In turn, *"Other Revenue"* exhibits a general increase in government income before the election. The magnitude of the anti-PBC is approximately in inverse proportion to the PBC in *"Total Tax"*; hence, its size is largest under consolidated institutional power and full fiscal discretion. Conclusively, minor shifts in the budget are being utilised to lessen the induced strain on the budget balance. No significant electoral cycles are detected in *"Social Contribution"*. In turn, the connection between the institutional framework and the composition of the PBC becomes apparent in the analysis of expenditure types and tax objects. While in neutral environment only three out of 24 tested fiscal components pass for statistical significance, tests for the conditional PBC reveal significant electoral cycles in all fiscal instruments other than *"Property tax"* and *"Culture"*. The impact of the institutional framework is most evident in *"Economic Services"*, *"Subsidies"*, *"Social Benefits"* and *"Other Expenditures"*, *"Income Tax"* and *"Tax on Payroll"* causing significant fluctuations in term of size and prefix. Substantial variations in the size of the PBC across institutional settings are further detected in "*Housing"*, *"Defence"*, "*Grants"*, *"Goods and Service"* and *"Compensation of Employees"* and *"Tax on Goods and Services"* though without showing any signs of a anti-PBC.

Analysing the composition of the electoral spending cycle across institutional settings, the research has tested for a possible extrapolation of the theory of Milesi-Ferretti *et al.* (2002). They have argued that the general spending composition is directly related to the proportionally of the institution best measured by the average district magnitude. On condition of concentrated political power, results show conclusively that the principle is also applicable to the PBC in public spending. The size of the electoral cycle in the individual fiscal instrument is therefore the result from the distinction between single and multiple district magnitude respectively their interaction with the concentration of power. The latter determinant represents the driving force of the PBC while the district magnitude determines which spending types experience an increase before the election. Thus, within expenditure functions, the interaction between consolidated institutional power and multiple district magnitude causes significant electoral cycles in *"General Public Service"*, *"Economic Affairs"* and *"Housing"* whereas *"Defence"*, *"Health"* and *"Social Protection"* remain unaffected. Conversely, large electoral cycles do emerge in *"Defence"*, *"Health"* and *"Social Protection"* under single district magnitude while *"General Public Service"* and *"Economic Affairs"* exhibit substantial spending cuts and *"Housing"* remains unaffected. The same causality is observed within expenditure objects. Under multiple district magnitude, the PBC is concentrated on *"Interests"*, *"Subsidies"* and *"Social Benefits"*. In turn, single district magnitude causes significant spending increases in *"Compensation of Employees"* and *"Goods and Service"* and large anti-PBCs in *"Interests"*, *"Subsidies"*, *"Social Benefits"* and *"Other Expenditures"*. The only fiscal expenditures that exhibit electoral cycles under single and multiple district magnitudes are *"Education"* and *"Grants"*. Even though the theory of Milesi-Ferretti *et al.* (2002) refers only to the public spending, the interaction between institutional power and district magnitude proves equally effective in explaining the composition of the PBC across tax objects. As on the expenditure side, institutional power accounts thereby for the size of the individual electoral cycle whereas the district magnitude determines which tax objects are being utilised. Electoral cycles emerge therefore under multiple district magnitude in *"Tax on Payroll"* and *"Trade Tax"* and under single district magnitude in *"Income Tax"* and *"Other Taxes"* while modest signs of an anti-PBC are detected in *"Tax on Payroll"*. The only tax object that exhibits (under concentrated political power) an electoral cycle under both district magnitudes is *"Tax on Goods and Services"* but its size is three time higher under multiple district magnitude. All electoral cycles disappear if political power is restricted.

Despite the vast support that the findings of Milesi-Ferretti *et al.* (2002) are adaptable to the PBC, the outcome does only partially comply with their reasoning that single and multiple district magnitude causes an increase in geographically and socio-demographically targetable expenditures, alternatively. While the classification of respective fiscal instruments is not without ambiguity, the detected electoral cycles in *"Housing"*, *"Economic Affairs"* and *"Subsidies"* should according to their conjectures rather appear under single district magnitude. Especially *"Economic Affairs"* and *"Subsidies"* exhibit significant anti-PBCs providing ground to the supposition that geographically targetable expenditures are employed under single district magnitude to selectively free resources. The theory does support the electoral cycles in "Defence" and "Health" under single and in "Social Benefits" under multiple district magnitude, alternatively. Furthermore, there is clear evidence that fiscal instruments with benefit for the general public such *"General Public Service"* and *"Tax on Goods and Service"* are more pronounced under multiple district magnitude. The results in chapter four explain also some of the previous findings in chapter three. In particular, it stands out that shifts within the budget composition caused by significant anti-PBCs are only detected under single district magnitude even if incumbents have full fiscal discretion. Evidently, there is a smaller distortion on the budget justifying for the less significant electoral cycle in the accumulated budget balance measured in chapter three. In turn, the PBC disappears under multiple district magnitude completely if political power is dispersed whereas large electoral cycles remain under multiple district magnitude in individual budget components. Conclusively, the PBC takes always a more balanced form under a fragmented district structure.

No evidence has been found for a correlation between the spending composition and the government form. The conjecture expressed by Persson *et al*. (2000) in context with the general fiscal policy is therefore not sustained for the PBC. There are some indications for an effect on the "form" of the PBC. Under parliamentary rule, the PBC encompasses minor spending increase in all available expenditures whereas in presidential regimes spending increases are concentrated on few selected fiscal instruments such as *"Education"* and *"General Public Service"*. The effect, however, is neither robust in interaction with the concentration of power nor with the district magnitude. As on expenditure side, there exists no correlation between tax composition and government form. Inconsistent with what results for the PBC in total tax income indicate, there are more significant tax reductions under presidential rule which, however, are balanced out

by simultaneous revenue increase in other tax objects. In contrast, the larger tax cycle that takes place under parliamentary rule appears in a less concentrated form without shifts in the tax composition thus having minor tax cuts applied throughout all tax objects. The effect proves robust in interaction with the concentration of power but is not sustained in combination with the district magnitude.

In conclusion, testing for individual electoral fiscal cycles in 68 developed countries, there is strong evidence that the type of the PBC is determined by the political institution in place. The determinants for the electoral cycles in total revenue and total expenditure are mostly consistent with those of the accumulated PBC. There is strong evidence that the size of the individual electoral cycles within tax objects and spending types is determined by the interaction between the concentration of political power and the district magnitude. The causality behind the selected fiscal instruments is not conclusively answered. Shifts within the budget composition and signs of a balanced PBC are only found under single district magnitude.

5 The Effect of Political Institutions in different Environments

The purpose of chapter five is to examine the validity of the findings in chapter three under consideration of external factors from the socio-economic environment. The research analyses in particular the effect of political institutions in developing countries. The chapter further tests for the robustness of institutional power as determinant for the PBC in dependence of the freedom of the media and the age of the democracy.

5.1 Introduction

5.1.1 Developing Countries and Context Conditional PBC

In consequence of better data availability, early research on electoral economic cycles was exclusively focused on Western Democracies. The empirical support for electoral cycles in the economic outcome was however rather weak (see section 2.2.1) leading Peltzman (1992) to the conclusion that the model of the Political Business Cycle is inapplicable in advanced economies but rather a phenomenon of developing countries. Following the change from the Nordhaus (1975) model to the PBC, the strength of empirical evidence has generally improved (see section 2.3.2) with numerous studies confirming the existence of electoral cycles in one or several fiscal components in OECD countries or members of the European Union (EU) including Tujula and Wolswijk (2004) , Alt and Lassen (2006), Mink and de Haan (2006), Chang (2008), Böhm and Markward (2011), O'Mahony (2011), Efthyvoulou (2012), Katsimi and Sarantides (2012) and Potrafke (2012). On the other hand, the results of Shi and Svensson (2002b) affirm that Peltzman's (1992) argument is not without substance. Testing for the overall PBC in developed and developing countries, they find the latter to be almost double the size measuring -0.61% and -1.39%, alternatively. Their findings were confirmed by the results of Klomp and de Haan (2011) who detect a similar difference in size between both groups measuring 0.9% and 0.2%.

As a result of this apparent difference, the question has risen if it is appropriate to pool the data from developed and developing countries or whether the PBC is rather subjected to different conditions in the respective group, alternatively (see also section 1.3 and section 3.2.2). Determinants that have been considered exclusively in context with less developed regions are the influence of international organisations ((Schuknecht, 1996); (Hyde and O'Mahony, 2010)) or credit agencies (Hanusch and Vaaler, 2013) for instance. However, since the availability of data still represents a problem, the number of analyses investigating the PBC specifically in developing countries has remained scarce – exceptions are the studies of Schuknecht (1996), Block (2002a, 2003), Vaaler et al (2005), Vergne (2009), Hyde and O'Mahony (2010) or Hanusch and Vaaler (2013). Other studies, in turn, have followed the approach of Shi and Svensson (2002b) ascribing the difference to factors in the political economic environment that correlate with the general development of a country such as the access to unrestricted media, for instance (see section 5.2).

No matter which approach is considered, it potentially limits the validity of the previous findings in chapter three. Insisting on an explicit distinction between developed and developing countries raises the question whether political institutions in general fulfil the same function in both groups, alternatively whether common empirical tests need extra modification. While Drazen (2008) concludes in his review that the principles of retaining, executing and restraining political power are equally applicable in developing countries, the issue has not yet been tested in context of the PBC. The second approach, on the other hand, relates to the issue of the multi-conditional PBC and the immanent question whether the explanatory power of tested variables is unconditional or dependent on other aspects in the political economic environment. There exist several studies that examine the effect of different environmental factors in terms of a context conditional PBC such as Schuknecht (1996), Brender and Drazen (2005), Alt and Rose (2009), Vergne (2009) or Klomp and de Haan (2011) among others; however; only few like Brender and Drazen (2005) consider the form of a multi-conditional PBC analysing the effectiveness of factors in dependence of each other.

In conclusion, at the core of chapter five is the question if the effect of political institutions on the PBC is transferable or whether results are only valid to the extent that the environment is comparable suggesting that political institutions may be relevant in some countries but not in others.

5.1.2 Factors in the Political Economic Environment

Democracy, Democratic Transformation and Party Credibility

Since the motive for a PBC is the threat of being voted out of office, intuitively, the need for fiscal manipulation appears invalidated in the absence of democratic elections. Brender and Drazen (2005) conclude therefore that the existence of electoral cycles in countries where political leaders do not depend on a genuine public approval would contradict the very principle of the PBC. As a result, tests for the PBC in cross-country analyses typically focus only on democracies or have undemocratic countries filtered out – see Shi and Svensson (2002b, 2006), Brender and Drazen (2005), Hyde and O'Mahony (2010) or Klomp and de Haan (2011). In contrast to this common approach, the results of Persson and Tabellini (2003b) show only minor differences in the size of the PBC if undemocratic elections are being included. Their results are in line with the findings of Wright (2011) whose research explicitly focuses on the PBC in non-democracies. Contrary to expectations, he finds that electoral fiscal cycles do occur in authoritarian regimes and dictatorships provided that regular elections are being conducted in some form. Wright (2011) concludes that even office holders who cannot be voted off directly by the public have still a motive to appear competent to their society. Even though they may not be voted off *per se*, they have an incentive to send a signal to the population demonstrating their popularity in order to deter opposition building and avoid violent riots thereby counter the threat of being overthrown. Recent events relating to the "Arabian Spring" support Wright's (2011) thesis that even long-term rulers face a tangible risk of being overthrown as their unpopularity increases.

More attention than to the level of democracy has been devoted to the ramifications that follow the democratic transformation with different studies coming to very different conclusions and interpretations of their results. Testing for the PBC in a panel of 68 developed and developing countries over a period of 40 years, Brender and Drazen (2005, 2008) detect in their analysis that nations with a more democratic institution show lower signs of the PBC. More importantly, electoral cycles in the budget balance and public spending disappear completely in countries with a long established democratic institution. Brender and Drazen (2005, 2008) conclude from their results that voters in new democracies go through a learning process during which they gradually gain experience with the voting process. As voters become increasingly aware of the incumbents' motive, they begin to see through politically motivated fiscal cycles.

The question about the current level of democracy is therefore not as relevant as the length of which the democratic institution has been in place. In *old democracies* where voters are completely familiar with the voting process, general credit financed expenditures are no longer rewarded. In those countries, the PBC can only occur in a form as described by Drazen and Eslava (2005, 2006). Empirical support for the findings of Brender and Drazen (2005, 2008) is provided by Klomp and de Haan (2011, 2013) who discover that the PBC is significantly smaller in countries with a democratic institution in place for more than 20 years. Theoretical support for the conjecture that the PBC is more pronounced in new democracies is also given by Hanusch and Keefer (2011) though they argue for a different causality. Their model has most of Drazen and Eslava's (2006) settings adopted: politicians are aiming for ego rents and pecuniary rents and they are confronted with fully informed voters who cannot be deceived with increased credit-financed expenditures but who are susceptible to personal transfers. If, however, incumbents could credibly commit to a continuous transfer for resources after a successful election, no shift in the budget composition would be required before the election. Voters in doubt are therefore persuaded by indicating the post-election policy through pre-electoral transfers. Consequently, the scale of the PBC depends on the incumbent's credibility and their capability to persuade voters with regard of their spending program, respectively. In an environment where party announcements can be easily enforced, there is no demand at all for a spending increase or tax cut *before* the election while shifts in the budget composition can be implemented over the whole period in office thus allowing for a smooth adjustment of the budget. A situation where election promises have little credibility, in turn, prompts incumbents to use targeted expenditures to establish credibility or to demonstrate their support for the targeted groups. The additional condition is that the transfer of resources gains more swing voters than it alienates core voters. Addressing the issue of what determines party credibility, Hanusch and Keefer (2011) highlight that in a single cycle, the election winner has always an incentive to renege on their promises and to increase their pecuniary rents. In a repeated scenario, however, concerned groups may decide to turn unanimously away from the deceitful candidate in the next election; the incumbent's motive to adhere to the announced program is therefore linked to the threat of collective rejection. In consequence, Hanusch and Keefer (2011) link party credibility to the enforceability of election promises which, in turn, results from the voters' capability to act united or to perform collective actions, respectively. Hanusch and Keefer (2011) identify three obstacles that hinder voters to discipline politicians. The first problem is

due to politicians' inability to commit to a common policy. If politicians act not cohesively as a group in the process of policy making ignoring the party platform, the implemented policy will most certainly deviate from pre-election announcements; voters are not able to punish deviationists since they do not recognise who within the party caused the failure of honouring the party promise. The second issue is of informational nature: voters are not sure about the actual policy preference of politicians. The third obstacle concerns the coordination problem among voters themselves and their inability to collectively evaluate the incumbents' performance. In countries where parties are "*institutionalised*", political parties can mitigate above issues by providing accurate information about the party platform and targets of their individual candidates or by sanctioning party members who fail to adhere to the party principals. In young or poorly developed democracies, individual candidates are not willing to delegate collective power to party leaders as they do not rely on the party's resources and network while at the same time political leaders do not accept the supervision through party members. Hanusch and Keefer (2011) conclude therefore that the lack of transparent relationships and clear jurisdictions between party members hinders political party to fulfil their function as driver of collective actions (and thereby fostering their own credibility). As a result, spending "promises" are not creditable in young democracies leaving politicians only the option of genuine transfers before the election.

The empirical results of Brender and Drazen (2005, 2008) and Klomp and de Haan (2011, 2013) and the thesis of Hanusch and Keefer (2011) are in conflict with the findings of Gonzalez (2002). Examining the progress of the fiscal policy in Mexico over a period of forty years subsequent to the introduction of a democratic institution, Gonzalez (2002) concludes that the size of the PBC increases as the country's democracy became more advanced. Her results coincide with those of Veiga and Veiga (2007a) who find that the size of the PBC as well as its success rate has in Portuguese municipal increased only after democracy became well established during the nineties. Barberia and Avelino (2011) even discover anti-PBCs (government spending are cut back in the year of election) taking place in South American countries following the incorporation of a democratic institution. After the early stage of democratisation has passed, those anti-PBCs disappear.

A possible explanation for those seemingly contradicting findings is provided in the reasoning of Gonzalez (2002). According to her conclusion, the consequences from the process of democratisation are double edged. Specifically, Gonzalez (2002) distinguishes between the *direct* and the *indirect* effect of democratisation. Since it becomes easier to replace bad incumbents in a more advanced democracy, more pressure is put on them to demonstrate their economic competence typically leading to an increase in the size of the PBC. On the other hand, the incorporation of a democratic framework is often followed by a more transparent fiscal policy and better access to information by the population making it harder to disguise the true financial effort. At which pace either influence becomes effective varies across countries and depending on factors in their environment and history. Barberia and Avelino (2011) for instance explain their unexpected results with the fact that the new democratic governments in South America were initially forced to cut back expenses in their attempt to reorganise the government budget before they would obtain a stronger fiscal discretion. In conclusion, while adopting a democratic institution evidently increases the incumbents' motive to create a PBC, indirect effects like better access of independent information, fiscal transparency and fiscal discretion are more difficult to anticipate. As a result, there appear different patterns in the development of the PBC in young democracies.

The Effect of Corruption

Examining the PBC in developed and developing countries, Shi and Svesson (2002b, 2006) conclude that much of the difference between both groups can be attributed to the higher level of corruption in developing countries. In their model, the level of (perceived) corruption is associated with the amount of rents incumbents are able to extract during their term in office. In line with the notion of Persson and Tabellini (2000) that available rents are an essential incentive for the incumbent to seek re-election, Shi and Svesson (2002b, 2006) infer that the PBC is more pronounced in developing countries since incumbents have a stronger motive to stay in power. While they are in prospect of substantial personal financial benefits, the only motives for politicians in developed countries are ego rents and / or partisan bias. Other studies have confirmed the correlation between corruption and the size of the PBC; however, there has been large deviation in terms of causality and prefix. Vergne (2009) confirms that even within developed countries, nations with higher corruption are more prone to the PBC. Unlike Shi and Svesson (2002b), Vergne (2009) associates corruption not with the

incumbents' motive but with their opportunity to induce a PBC. Higher corruption thus represents more discretion over policy instruments entailing larger scope for action. Bonomo and Terra (2010), in turn, suggest a retroactive effect between corruption and voters' expectations. Consequently, politicians are less likely to be sanctioned for creating PBCs (pressured by organised interest groups) in countries with high level of corruption because of the public's low expectation concerning the incumbents' alignment with their preferences. In contrast to those findings, Sjahrir *et al*. (2013) detect a negative connection between the size of the PBC and the level of corruption in Indonesian district elections. They conjecture that high corruption induces a more direct process of "vote buying" thereupon invalidating the demand for the PBC.

The discrepancies among the results and the different interpretations are characteristic of the ambiguous findings regarding the effect of corruption on the economic policy. Since there are rarely official data on corruption available, results among studies on corruption are difficult to compare as a variety of different measurements are being used which in turn relates to the definition in respective research (Drury *et al*., 2006). A comprehensive summary of the different indicators for corruption available in the literature is provided by Jain (2001), Lederman (2005) and Ferraz and Finan (2007). Jain (2001) distinguishes in particular between "*Grand Corruption*", "*Bureaucratic Corruption*" and "*Legislative Corruption*". The first describes an act of the political elite by which they exploit their power to make economic policies. It entails an extent of discretionary power over the allocation of resources as well as received rents for those powers. Bureaucratic corruption encompasses the corrupt act of officials in their dealing with the public. Legislative corruption, in turn, involves buying of votes by the office holders. Evidently, the interpretation of Shi and Svesson (2002b, 2006) and Vergne (2009) are in reference with the two different aspects of *Grand Corruption* whereas the findings of Sjahrir *et al*. (2013) are clearly based on *Legislative Corruption*. The model of Bonomo and Terra (2010) finally appears to incorporates a combination of *Grand* and *Bureaucratic Corruption*.

The Role of the Media and the Access to Information

Providing information to a large share of the public, Strömberg (2001) concludes that the media strengthen the position of the general public and weaken the information advantage of "insiders" such as organised interest groups or the ruling politicians. In consequence, a strong media presence curtails activities that benefit a small group of insiders at the expense of a majority such as rent extraction, for instance. The essence of Strömberg 's (2001) conclusion is directly applicable to the theory of electoral economic cycles. Essentially, apart from the pork barrel cycle described by Drazen and Eslava (2006) all models introduced in chapter two and chapter four rely on some form of (temporary) information deficit by the public. In the Nordhaus (1975) model, voters' are ignorant about long-term consequences of economic policies, in Rogoff's (1990) PBC voters are unaware of the incumbent's latest competence shock and in the moral hazard approach it is the missing insight into the budget policy.

Analysing political cycles in local Russian elections, Akhmedov *et al*. (2004) find that the strengthening of the media after the breakdown of the Soviet Union had indeed a mitigating effect on the PBC. Khemani (2004) considers the worse surveillance of politicians in developing countries as the major reason for the difference developed and developing countries. His thesis has been tested by Shi and Svensson (2006) as they analyse the influence of access to uncensored media on the PBC and its significance in explaining the difference in developed and developing countries. They conclude that a higher share of "informed voters" confines the incumbent's leeway for budget manoeuvres but that the access to uncensored media is often limited in developing countries. Thus, Peltzman's (1992) conjecture that voters in developed countries are "financially more conservative" could alternatively be interpreted that voters in developed countries are better informed. The findings of Shi and Svensson (2006) are confirmed by Vergne (2009) and Hansen (2011) while Alt and Rose (2009) find no evidence that stronger mass media reduces the PBC. The comparability between the studies is hampered as Shi and Svensson (2006), Vergne (2009) and Hansen (2011) use a country panel data while the analysis of Alt and Rose (2009) tests the media effect on local elections in the USA. More importantly, trying to account for level of information being made available, the three studies apply three different indicators with completely different criteria for what qualifies as a "strong media" presence. Alt and Rose's (2009) use the circulation of newspapers as proxy while Shi and Svensson (2006) combine the ratio of radio per capita with the freedom to broadcast (the same indicator is used by

Vergne (2009)). Conclusively, whether the presence of mass media confines the PBC appears to depend on the media channel and which other conditions are met. At this point in time, there exists no research that has compared the effect of different media types and whether the share of informed voters hinges with presence of a particular communication channel. Furthermore, there exists no research that has analysed the impact for "modern" communication channels such as the internet and social online platforms. Hansen's (2011) proxy for the access to accurate information finally is a compound of the indicator used by Shi and Svensson (2006), the level of fiscal transparency and the average level of education, therefore implicitly suggesting that role of the media is conditional on other external factors that have traditionally been analysed as individual factor. Concretely, the mitigating effect of fiscal transparency on the PBC has been confirmed by Alt and Lowry (2004), Alt and Lassen (2006) and Alt and Rose (2009); latter test separately for the effect of the media and fiscal transparency. Hansen's conjecture (2011) that the distinction between inform and uninformed voters is dependent on the capability to interpret information correctly, in turn, is not confirmed by Vogelaar (2011) who finds no evidence for the role of education on the existence of the PBC.

Essentially, while there is considerable support that strength of the media is in inverse proportion to the size of the PBC, the underlying causality has been subject of debate. The analysis of Shi and Svensson (2006), Alt and Rose's (2009) and Hansen's (2011) are all in connection with the role of the media as provider of information thereby strengthening the position of the majority as against that of informed insiders (Strömberg, 2001). The media, however, are also a tool of communication preferred by politicians for their interaction with the public as it allows them to influence how their image and performance is perceived (Tullock, 1993). In fact, Feld and Kirchgässner (2000) conclude that the political competition for control and legal ownership over the media is intensified as the voters' demand for information increases. Though Shi and Svensson (2006) and Hansen's (2011) test for the freedom to broadcast, none of the above studies control for the *independence* of chosen media channel. Even if popular media channels are not under the direct control of politicians, Hopmann (2012) argues that big parties are able to influence how they are portrayed in the media while latter themselves may not be objective in their coverage favouring one candidate over the other (Cox, 2012). Eventually, it all adds up to the implication in Bohn's (2011) model that the media can also be used as publisher of misleading information. He concludes

that incumbents can attract voters either by targeted fiscal transfers or by deliberate misinformation regarding their skills that will reduce the need for the PBC. Hence, while the role of the media as crucial factor during the election is not in dispute, the manner of their impact is not conclusive.

5.2 Data and Methodology

5.2.1 Methodological Approach

The methodological approach in chapter five addresses the issues highlighted in section 5.1.1 that compromise the validity of the earlier results in chapter three. Section 5.3.1 analyses the effect of political institutions in developing countries. The approach to analyse developed and developing countries in separate panels is motivated by the controversy of whether there is a principle difference between the PBC in developed and developing countries (see section 5.1.1). While accepting a reduction in the number of data with adverse effect for the accuracy of the estimated results, the approach reduces the risk of cross cross-sectional dependence and wrong interferences (see section 1.4). The test structure follows largely the approach in chapter three. Accordingly, the analysis entails test series for the unconditional PBC, the effect of formal institutional variables, the impact formative indicators and the overall effect for the interaction among institutional variables.

Section 5.3.2 considers the idea of the multi-conditional PBC with different potential determinants simultaneously affecting the size of the electoral cycle. Having identified the concentration of power as the key determinant of the institutional framework (see chapter three), section 5.3.2 analyses its relative significance within the political-economic environment. Using the same panel data as in chapter three, it is in particular tested whether the restraining effect remains robust in interaction with the free access to unrestricted media and the age of the democracy, alternatively whether its impact on the PBC diminishes. Tests for the multi-conditional PBC are conducted in two separate approaches. The first one applies an interactive hypothesis model in the form outlined in section 1.3 combining with concentration of power and freedom of the media or age of the democracy as moderators for the election variable. The second approach has the panel split testing for the effect of institutional power in countries with restricted and

unrestricted media and new and old democracies, alternatively. Essentially, both approaches reduce the endogeneity problem and the risk of an omitted variable bias that has been a major concern in the analysis of political institutions and their impact on the economy in general (see section 1.3).

5.2.2 Data Selection for developing Countries

The panel includes data from 34 countries over the time period from 1975 until 2009. As mentioned in section 3.2, there is no consistent definition in the literature what qualifies as a "developing country"; in this research, the term comprises all countries classified by the World Bank as "lower-middle-income economies" (annual income between $1,006 and $3,975 per capita) and "low-income economies" (annual income of less than $1,006 per capita). Like in chapter three, countries are not excluded if they do not meet democratic standards provided there have at least three competitive elections been reported during the analysed period. Countries in the panel are Armenia, Bangladesh, Belize, Bolivia, Cambodia, the Comoro Island, El Salvador, Fiji, Gambia, Georgia, Ghana, Guatemala, Guyana, Honduras, Indonesia, India, Lesotho, Madagascar, Mali, Moldova, Mongolia, Nepal, Pakistan, Philippines, P. N. Guinea, Paraguay, Senegal, the Solomon Island, Sri Lanka, Togo, Uganda, Vanuatu, Yemen (North Yemen before Unification) and Zimbabwe.

As in chapter three, fiscal data for the central government are taken from the Government Finance Statistic (GFS) published by the International Monetary Fund (IMF). Data for institutional variables and the election dummy variable are taken from the database of Political Institutions (Beck *et al*., 2010) published by the World Bank, alternatively. Data for the election variable have been crosschecked with the data published by the Institutional Foundation for Electoral Systems (IFES), the International Institute for Democracy and Electoral Assistance (IDEA), The Center on Democratic Performance (CDP), the Electoral Institute for the Sustainability of Democracy in Africa (EISA) and the African Election Database, the Data Handbook for Elections in Asia and the Pacific (Nohlen *et al*., 2002) and the Political Handbook of the World (various years) for verification. Table 5.1 summarises implemented changes data source.

Table 5:1: Implemented Changes within Developing Countries

Country	Implemented Changes
Belize	An election was held in August 1998.
Bolivia	1.) Elections were held in 1978 and 1980. Though they were annulated afterwards, a pre-election cycle was still potentially possible. 2.) There was a presidential election in December 2009.
Fiji	Election in 2001 was competitive with different parties winning seats.
Guatemala	1.) Elections between 1978 and 1982 were held under majority rule. 2.) There was a parliamentarian election in July 1984.
Honduras	1.) There was a presidential election in 1981. 2.) There was an election in November 2009.
Lesotho	Election 1993 is included because it was the first competitive election even though the constitution changed subsequently form presidential to parliamentarian rule
Togo	There was a presidential election held in June 2005
Zimbabwe	1.) First election was held under proportional rule 2.) Institution was changed to presidential system after 1987, hence executive elections are being considered 3.) The election in 1996 was altered to an uncompetitive election since there was only one candidate remaining after other candidates had withdrawn their candidacy

Data for the control variables are mostly taken from the database for the World Development Indicators (WDI) published by the Word Bank. Missing data for inflation have been provided by the International Monetary Fund (IWF). Missing data for the unemployment rate have been taken from the International Labour Organisation (ILO) as well sources listed below:

- Economic and Social Commission for Asia and the Pacific (ESCAP)
- National Statistical Office of Papa New Guinea
- Bureau of Statistics Guyana
- Asian Development Bank (ADB)
- Bangladesh Bureau of Statistics (BBS)
- Inter-American Institute for Cooperation on Agriculture (IICA)
- African Development Bank Group (ADB)
- Central Bureau of Statistics Nepal
- Uganda Bureau of Statistics
- Ecobank: The Pan African Bank
- Zimbabwe National Statistics Agency (ZIMSTAT)

5.2.3 Freedom of the Media and Age of Democracy

Data for the measurement of the access to uncensored the media are taken from "Freedom House". They report the level of restrictions on the press *id est* their freedom to broadcast and freedom to print, respectively. Media channels are classified as either "Free", "Partially Free" or "Not Free". In this research, media access is considered as unrestricted (*medfree* = 1, *medrst* = 0) if the right to broadcast and the right to print have both been reported as "Free", otherwise as restricted (*medfree* = 0, *medrst* = 1). Approximately two third of all available data in the panel have been classified as unrestricted media access. Data for the classification of the age of the democracy are taken from the POLITY IV as their data base gives information about the timely development of the level of democracy or aristocracy across nations with fully democratic institutions being scored as 10. In this research, countries have thus been classified as "Old Democracy" (*oldDm* = 1, *newDm* = 0) if their democracy score has been "10" from the first year of the analysis and has remained so for the entire considered period, otherwise as "New Democracy" (*oldDm* = 0, *newDm* = 1). As shown in table 5.2 there is no critical correlation between the concentration of political power and either test variable.

Table 5:2: Correlation among Concentration of Power, Access to Free Media and Age of Democracy

	cbl	*cbh*	*oldDm*	*oldDm*	*medfree*	*medrst*
cbl	1					
cbh	-1	1				
newDm	0.2044	-0.2044	1			
oldDm	-0.2044	0.2044	-1	1		
medfree	0.297	-0.297	-0.4184	0.4184	1	
medrst	-0.297	0.297	0.4184	-0.4184	-1	1

5.3 Results

5.3.1 The Effect of Political Institutions in developing Countries

Electoral Competition

Comparing the outcome for the unconditional PBC in developed and developing countries, results in table 5:3 consolidate the findings of previous studies and the general notion that the PBC is considerably larger in developing countries. Measuring a decrease of approximately -1.10% (1) of the GDP in the budget balance, the electoral cycle is approximately double the size of the PBC in developed countries in section 3.3.1. The size of the difference between both groups is marginally below the outcome of Shi and Svensson (2002b) and Klomp and de Haan (2011). The null hypothesis *elect* = 0 is rejected at 99% level; statistical significance of the control variables is slightly worse than in section 3.3.1 though statistical significance is reached for *lngdp_pc*, *pop1564*, *pop65pu*s and in *infl_gap*. Contrary to the conclusion in section 3.3.1, electoral competition does not prove as a mandatory precondition for the PBC. Having uncompetitive elections excluded from the panel does actually result in a decrease in the average size of the PBC. It appears that within developing countries, circumstances that seemingly vitiate the demand for the PBC do not impact on the incumbents' motive in the expected manner. The results conflict with the those of Block (2002a) and Vergne (2009) who detect a positive correlation between electoral competition and the size of electoral fiscal cycles within developing countries. Their analyses, however, test for the marginal effect of different level of competitiveness in elections that are principally competitive rather than applying a general distinction between competitive and uncompetitive elections. On the other hand, results are in line with the findings of Wright (2011) that incumbents in undemocratic institutions still aim for public approval during the election in order to demonstrate their support within the population (see section 5.1.2).

While Wright's (2011) research rationalises the results in table 5.3, it raises the question why the same effect is not observed among developed countries. In this context, it stands out that only 9% of all originally included elections in chapter three were classified as *uncompetitive*. In comparison, their share is significantly higher among developing countries where over 30% of all elections in the panel are impaired by (acclaimed) election fraud or lack of credible competition. Consequently, the fact that research has unanimously reported larger electoral economic cycles within developing countries implies *per se* a different effect of the election. The discrepancy was indicated by Block (2002b, 2003) as he points out that while the theory of political economic cycles has been developed for industrialised Western democracies, empirical support has been stronger in developing countries with weak or new democratic institution in place. Block (2002b, 2003) refers to this circumstance as the *mystery of democracy*. A possible alignment between the two seemingly contradicting results could be that the risk of a violent reaction by the public as described by Wright (2011) is not considered in an environment where election fraud and the absence of an opposition remain the rare exception. In contrast, incumbents are afraid of riots and the build-up of violent opposition in countries where the public is aware that office holder cannot necessarily be conventionally dismissed *via* elections; hence, the motive for the PBC remains despite the lack of an immediate competition. In consequence, further tests in section 5.4.1 have all major elections included disregarding of their competitiveness.

Table 5:3: Electoral Competition in Developing Countries

	Dependent variable: budget balance [% of the GDP]	
	(1)	(2)
El_All	-1.099*** (.355)	
El_Comp		-0.677*** (.179)
Lagged dependent variable [t-1]	0.384** (.163)	
lngdp_pc	-0.089* (.053)	
pop1564	-0.024* (.014)	
pop65plus	0.128* (.074)	
trade	0.003 (0.009)	
gdp_gap	-0.00 (.000)	
infl_gap	0.008*** (.002)	
unemployment	-0.012 (.019)	
2nd Order test (Pr > z)	0.38	
Hansen test (Prob > χ^2)	0.51	
Numb. of Instr.	34	
Numb. of Grp.	34	
Numb. of Observ	556	

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

Formal Institutional Variables

Results for the effect of the government form bears resemblance with previous findings in section 3.3.2. While the size of the electoral cycle is generally magnified newly passing for statistical significance in all regimes, the size of the respective PBC is in similar proportion to each other as in developed countries. Accordingly, the PBC is more pronounced in *parliamentary* (2) regimes (*-1.25%*) that under *presidential* (1) rule (*-0.81%*) whereas a much larger PBC is measured under *semi-presidential* (3) rule (*-2.10%*). Even though the differences do not pass for statistical significance *id est* the hypotheses *pres* = p*arl*, *parl* = s*emipres* and *pres* = s*emipres* is not rejected, it stands out that the rare, usually disregarded semi-presidential institution exhibits by far the largest PBC in both panels. As pointed out in chapter three, the literature does not provide any explanation for this circumstance. Noticeably, there is no valid observation for *cbh_sp* meaning all elections held under semi-presidential rule entailed concentrated political power. This raises the question if there exists a causality between semi-presidential rule and the level of experienced institutional power or if results are merely the cause of a distribution bias. Latter option cannot be ruled out as semi-presidential systems account

for only 12% of all observations (and only 5% in chapter three). In conclusion, results in table 5:4 give no indication that the effect of the government form differs in developing countries. Other than a general increase in the size of the PBC, results coincide largely with the findings in chapter three.

Table 5:4: The Effect of the Government Form in Developing Countries

	Dependent variable: budget balance [% of the GDP]		
	(1)	(2)	(3)
El_Pres	-0.813** (.380)		
El_Parl		-1.254* (.675)	
El_SP			-2.104** (.904)
pres = parl	(.689)		
pres = semipres	(.918)		
parl = semipres	(.976)		
2nd Order test (Pr > z)	0.35		
Hansen test (Prob > χ^2)	0.54		
Numb. of Instr.	34		
Numb. of Grp.	34		
Numb. of Observ.	556		

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

The difference between the effect of the voting formula in developed and developing countries is consistent with the outcome for the government form. Thus, the size of the PBC increases under *majority* (1) and *proportional* (2) rule by almost the same amount up to *-0.96%* and *-1.44%*, alternatively, while changing the size of the difference between *maj* and *prop* by less than 0.1%. Noticeably, the magnitude of the increase coincides approximately with general difference between developed and developing countries measured for the unconditional PBC. Results in table 5:5 verify the distinction between *single* (3) and *multiple* (4) *district magnitude*. As in chapter three, the average district magnitude is the only formal institutional variable whose interaction with the election variable passes for statistical significance with the hypothesis *El_sdm = El_pdm* being rejected at 90% level. The observed reduction of the PBC under single district magnitude is even more apparent than in developed countries as the electoral cycle literally disappears for *sdm*. With the difference between single and multiple district magnitude clearly succeeding the distinction between majority and proportional voting formula both in size and significance, results also substantiate the previous conclusion in chapter three that the average district magnitude is a more accurate indicator for the

fragmentation or proportionality of an institution than the more frequently applied voting formula, as proposed by Milesi-Ferretti *et al*. (2002). The only outcome that differs from previous results is the effect for the ballot structure showing a PBC of double the size under closed (6) lists. The result is also in complete contradiction to the reasoning of Persson and Tabellinli (2003b); however, the large measurement error observed for *open* and *closed* causes the PBC in both cases to fail for statistical significance.

Table 5:5: The Effect of Election Rules in Developing Countries

	Dependent variable: budget balance [% of the GDP]					
	(1)	(2)	(3)	(4)	(5)	(6)
El_maj	-0.957*** (.339)					
El_prop		-1.440*** (.522)				
El_sdm			0.010 (.424)			
El_pdm				-0.846** (.351)		
El_open					-0.323 (.846)	
El_closed						-0.635 (.583)
maj = prop	(.480)					
sdm = pdm			(.435)*			
closed = open					(.888)	
2nd Order test (Pr > z)	0.32		0.34		0.28	
Hansen test (Prob > χ^2)	0.46		0.44		0.53	
Numb. of Instr.	34		32		19	
Numb. of Grp.	34		32		20	
Numb. of Observ.	556		434		291	

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

Formative Indicators

The effect of the formative institutional indicators for political accountability and concentration of power is consistent with the findings in chapter three. The general amplification of the PBC in developed countries is best observed for *ach* (*2*) whose size increases from -1.45% in section 3.3.3 up to -1.9% in table 5:6. Consistent with previous findings, the size of the PBC is limited but does not disappear as a result of low political accountability still measuring -0.56% (*1*). The most striking result is that the lack of political power is found to be an equally effective restraint as in developed countries as there is no sign of the PBC detected for *cbh* (4) in table 5:6. Conversely, the size of the electoral cycle under *cbl* (3) is only 0.22% above the corresponding result in

developing countries. Evidently, the often pointed out difference between developed and developing countries disappears mostly after accounting for the institutional power and the involved fiscal leeway. Taking into consideration that the number of institutions whose level of political power has been classified as "high" is 64% higher in developing countries (77% of all observations) than in developed countries (47% of all observations), the difference between both groups may be mainly derived from that institutional variable. The difference between *cbl* (3) and *cbh* (4) and between *acl* (1) and *ach* (2) is significant at 99% and 95%, alternatively.

Table 5:6: The Effect of Political Accountability or Institutional Power in Developing Countries

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_acl	-0.557 (.385)			
El_ach		-1.905*** (.518)		
El_cbl			-1.559*** (.438)	
El_cbh				0.089 (.360)
acl = ach	(.686)**			
cbl = cbh			(.476)***	
2nd Order test (Pr > z)	0.23		0.33	
Hansen test (Prob > χ^2)	0.60		0.52	
Numb. of Instr.	32		34	
Numb. of Grp.	32		34	
Numb. of Observ.	428		538	

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

Interaction Effect

Results for the interaction among institutional variables are mostly consistent with the findings in chapter three. In particular, tests in table 5:7 till 5:9 confirm that under dispersed political power, incumbents in developing countries are equally confronted with a lack of fiscal discretion that allows no decrease of the budget balance before the election period. Accordingly, the pre-electoral decline in budget balance never exceeds -0.2% (measured under *cbh_pdm*) and consistently fails to pass for statistical significance. The according interaction effect with the concentration of political power reaches statistical significance under presidential rule, parliamentary regimes, multiple district magnitude and high accountability. Unlike in chapter three, the interaction between consolidated institutional power and government form does not cause an

amplification of the difference between presidential (-1.01%) and parliamentary (-1.24%) regimes. The most evident discrepancy is though observed for the interaction between consolidated institutional power and single district magnitude. While it was previously concluded that less fiscal resources are required under single district magnitude resulting in a smaller PBC, the effect was clearly secondary to the concentration of power. In contrast, results in table 5:8 imply that even with consolidated political power, no noticeable electoral cycle takes place in the accumulated budget balance. A definite conclusion, however, is hampered due to the large measurement error that does not report statistical significance for *pdm* ≠ *smd* under *cbl* despite the large difference of the overall effect.

Table 5:7: Interaction between Political Accountability and Institutional Power

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_cbl_acl	-0.561 (.299)			
El_cbl_ach		-2.114*** (.598)		
El_cbh_acl			-0.118 (.488)	
El_cbh_ach				-0.148 (.523)
acl: [cbl = cbh]	(.656)			
ach: [cbl = cbh]	(.926)**			
cbl: [acl = acl]	(.800)**			
cbh: [acl = acl]	(.998)			
2nd Order test (Pr > z)	0.39			
Hansen test (Prob > χ^2)	0.54			
Numb. of Instr.	32			
Numb. of Grp.	32			
Numb. of Observ.	426			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

Table 5:8: Interaction between Institutional Power and District Magnitude

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_cbl_sdm	-0.156 (.631)			
El_cbl_pdm		-1.002*** (.367)		
El_cbh_sdm			0.247 (.580)	
El_cbh_pdm				-0.197 (.665)
sdm: [cbl = cbh]	(.391)			
pdm: [cbl = cbh]	(.447)*			
cbl: [sdm = pdm]	(.551)			
cbh: [sdm = pdm]	(.749)			
2nd Order test (Pr > z)	0.44			
Hansen test (Prob > χ^2)	0.54			
Numb. of Instr.	32			
Numb. of Grp.	32			
Numb. of Observ.	418			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

Table 5:9: Interaction between Institutional Power and Government Form

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_cbl_pres	-1.010** (.446)			
El_cbl_parl		-1.239*** (.455)		
El_cbh_pres			0.294 (.682)	
El_cbh_parl				0.390 (.445)
pres: [cbl = cbh]	(.482)***			
parl: [cbl = cbh]	(.501)***			
cbl: [pres = parl]	(.291)			
cbh: [pres = parl]	(.533)			
2nd Order test (Pr > z)	0.37			
Hansen test (Prob > χ^2)	0.56			
Numb. of Instr.	34			
Numb. of Grp.	34			
Numb. of Observ.	538			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

Table 5:10: Interaction between Government Form and District Magnitude

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_pres_sdm	0.440 (.576)			
El_pres_pdm		-0.553* (.322)		
El_parl_ sdm			0.088 (.423)	
El_parl_ pdm				-1.197*** (.447)
sdm: [pres = parl]	(.772)			
pdm: [Pres = Parl]	(.587)			
pres: [sdm = pdm]	(.684)			
parl: [sdm = pdm]	(.499)**			
2nd Order test	0.34			
Hansen test	0.45			
Numb. of Instr.	32			
Numb. of Grp.	32			
Numb. of Observ.	434			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

5.3.2 Concentration of Power and Environmental Factors

Freedom of the Media

The results in table 5:11 affirm the basic conjecture that the media has a pivotal role in the voting process. The size of the PBC decreases from -0.73% in developed countries with limited freedom to broadcast and /or print down to -0.43% in elections the press faces no censorship. The findings provide no indication regarding the causality: The reduction may be the result of detailed, unfiltered information provided to the public thereby removing the incumbents' insider advantage and their possibility to disguise budget manipulations as argued by Shi and Svensson (2006) or rather the influence of the media on the public's perception about the incumbent's performance as reasoned by Bohn (2011).

Table 5:11: The PBC under Free and Restricted Media Access

	Dependent variable: budget balance [% of the GDP]	
	(1)	(2)
El_medfr	-0.426** .213	
El_medrest		-0.725* .414
2nd Order test	0.58	
Hansen test	0.50	
Numb. of Groups	53	
Numb. of Instr.	68	
Numb. of Observ.	1378	

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

Examining the significance of the institutional power under the consideration of the media censorship, there is little indication that its effectiveness is biased or predetermined by the freedom of the media. In particular, the restriction of the PBC under *cbh* that has been observed throughout this research is evident even if the media imposes no constraint on the incumbent; the size of the according electoral cycle under *rstm_cbh* (-0.33%) is only slightly above the result for *cbh* in chapter three (-0.21%) still failing to reach statistical significance. In contrast, the hypothesis *cbl = cbh* is rejected at 99% and 95% significance under free and restricted press, alternatively. The supposition that the institutional effect is purely due to a correlation with the freedom of the media proves therefore unsubstantiated. Contrary to expectations, the moderating effect of the media is only observed within environments incumbents already face limited fiscal discretion causing a slight decrease of the PBC from -0.33% (4) to -0.15% under *frm_cbh* (2). Conversely, there is almost no variation in the size of the electoral cycle under consolidated institutional power measuring -1.34% and -1.29% under *rstm_cbl* and *frm_cbl*, alternatively. A possible rationalisation of the results is the fact that the indicator only accounts for the freedom of the media whereas the research of Shi and Svensson (2006), for instance, consider the freedom of the media as well as their national coverage. This could also justify for the generally stronger effect by the media in their research measuring a difference of 0.8% of the GDP compared to 0.3% in table 5:11. However, the larger difference could also be since Shi and Svensson (2006) have developed and developing countries included in their panel which causes inevitably a larger variation of the size of the PBC.

In conclusion, results for the interaction between institutional power and the freedom of the media verify previous findings in chapter three. The significance of institutional power regarding the size of the PBC is largely unconditional to the freedom of the media. The difference between the interactive model and tests conducted and separate panel is minimal.

Table 5:12: Interaction between Institutional Power and Free Media

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_frm_cbl	-1.343*** (.429)			
El_frm_cbh		-0.145 (.257)		
El_rstm_cbl			-1.286** (.588)	
El_rstm_cbh				-0.334 (.282)
frm: [cbl = cbh]	(0.433)***			
rstm: [cbl = cbh]	(0.551)*			
2nd Order test (Pr > z)	0.43			
Hansen test (Prob > χ^2)	0.50			
Numb. of Instr.	58			
Numb. of Grp.	68			
Numb. of Observ.	1378			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

Table 5:13: The Effect of Institutional Power and Free Media with split Panel

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_frm_cbl	-1.349*** (.440)			
El_frm_cbh		-0.148 (.177)		
El_rstm_cbl			-1.184** (.552)	
El_rstm_cbh				-0.284 (.214)
frm: [cbl = cbh]	(.423***)			
rstm: [cbl = cbh]	(.539)*		.717	
2nd Order test (Pr > z)	0.22		0.19	
Hansen test (Prob > χ^2)	0.42		0.53	
Numb. of Instr.	47		43	
Numb. of Grp.	56		53	
Numb. of Observ.	931		447	

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

The Age of Democracy

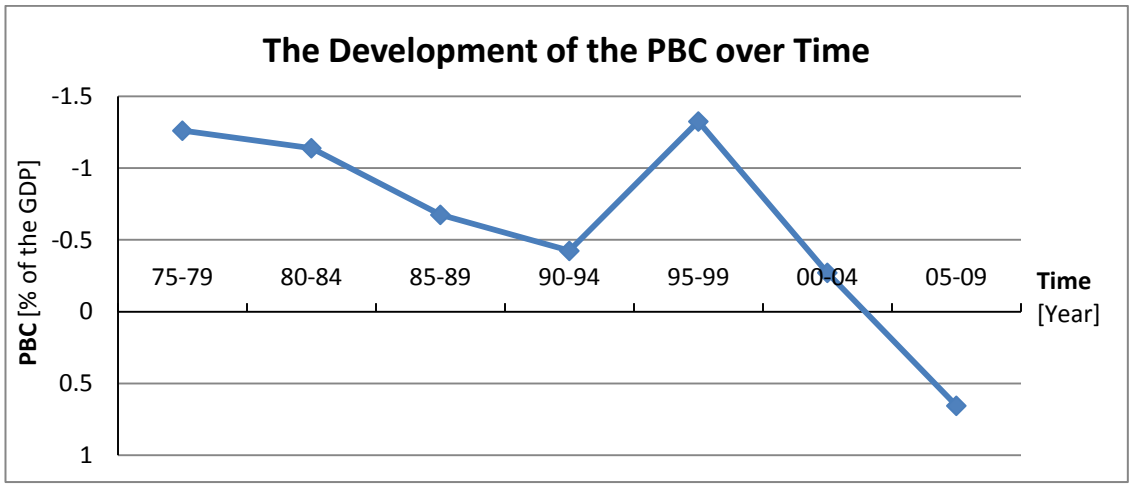
Brender and Drazen (2003, 2005, 2008) have repeatedly argued that at least the electoral cycle in the budget balance occurs predominately in new democracies. As described in section 5.1.2, they reason that with growing experience of the election process the public can no longer be deceived which negates the motive for the PBC. Testing for electoral cycles in budget balance across 68 developed and developing countries from 1960–2001, they detect a PBC of -0.8% and 99% significance in countries that had only in recent years adapted a fully democratic institution whereas long established democracies exhibit a PBC of only -0.18%. In addition, they find that other environment factors such as the level of democracy or the distinction between developed and developing countries lose most of their explanatory power in established democracies since the PBC is consistently suppressed. The results in table 5:14 clearly support the difference between new and old democracies. In fact, the results are almost identical with those of Brender and Drazen (2005) measuring a PBC of -0.71% and -0.20%, respectively, verifying that the distinction is equally significant within developed countries and not merely correlates with the economic development.

Table 5:14: The PBC in New and Old Democracies

	Dependent variable: budget balance [% of the GDP]	
	(1)	(2)
El_oldDm	-0.199 .209	
El_newDm		-0.711** .324
2nd Order test	0.57	
Hansen test	0.33	
Numb. of Instr.	53	
Numb. of Grp..	68	
Numb. of Observ.	1428	

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

For further examinations regarding the timely development of the PBC across countries, the model of the unconditional PBC in section 1.3 is modified adding 7 time dummy variables each accounting for five years of the analysed period. As depicted in graph 5.1, the trend of the PBC shows indeed a general decline over time. Starting with -1.26% of the GDP in the time period between 1975 till 1979, the average size of the PBC across developed countries has declined down to -0.27% by the sixth time interval and turns even into a reversed PBC between 2005 and 2009. The interim drop that takes place during the nineties is explained by the large number of new countries entering the panel (Slovak Republic, Slovenia, Bosnia and Herzegovina, Croatia, Estonia, Russian Federation, for instance) while other countries such as Bulgaria, Czech Republic, Albania or Belarus only started publishing fiscal data during that period.



Graph 5:1: The Development of the PBC within Developed Countries over Time

The progress of the curve in graph 5.1 clearly supports the findings of Brender and Drazen (2005) and their argument that the size of PBC declines as voters grow more experienced with the election process. Alternatively, the general decline of the PBC across countries could also be the result of exogenous events during the analysed period that have put a general restriction on national fiscal deficits such as the Washington Consensus or the Maastricht Treaty. Nevertheless, it would appear logically consistent to observe a mutual dependence between the effectiveness of the institutional determinant and the age of democracy. Contrary to expectation, however, results indicate no such interaction. Instead, concentration of political power maintains its significance in explaining the size of the PBC in new and established democracies; the hypothesis *cbl* = *cbh* is rejected in both scenarios at 95% level. Even more unexpectedly, the size of the PBC measures in established democracies still 1.22%

passing for 99% significance in case of consolidated institutional power; the difference between *newDm_cbl* (1) and *oldDm_cbl* (3) accounts only for 0.24% of the GDP (table 5:15). This outcome is in direct contradiction to the conclusion of Brender and Drazen (2005) that the restriction of the PBC in old democracies is unconditional on any other factors. Testing for the effect of institutional power in separate panels, the size of the electoral cycle under *cbl* decreases in old democracies (3) down to -0.83% (table 5:16). While the coefficient is still larger than the results for the unconditional PBC, the outcome is more in line with the findings of Brender and Drazen (2005) as neither the null hypothesis *El_oldDm_cbl* = 0 nor the hypothesis *cbl* = *cbh* is rejected. The other three results show only minimal change.

In conclusion, there is strong support for the conjecture that the size of the PBC decreases as voters become more experienced with the voting process. The effect, however does not take precedence over the implication of institutional power as the previously observed restriction of the PBC under dispersed political power is detected in new and old democracies. If there is no restriction on institutional power, the presence of experienced voters does represent a restraint on the incumbents but it does not cause the PBC to disappear.

Table 5:15: Interaction between Concentration of Power and Age of Democracy

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_nwDm_cbl	-1.456*** (.488)			
El_nwDm_cbh		-0.210 (.422)		
El_oldDm_cbl			-1.220*** (.450)	
El_oldDm_cbh				-0.223 (.185)
nwDm: [cbl = cbh]	(0.507)**			
oldDm: [cbl = cbh]	(0.524)**			
2nd Order test (Pr > z)	0.55			
Hansen test (Prob > χ^2)	0.42			
Numb. of Instr.	58			
Numb. of Grp.	68			
Numb. of Observ.	1444			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

Table 5:16: Combination between Concentration of Power and Age of Democracy with split Panel

	Dependent variable: budget balance [% of the GDP]			
	(1)	(2)	(3)	(4)
El_nwDm_cbl	-1.399*** (.492)			
El_nwDm_cbh		-0.163 (.449)		
El_oldDm_cbl			-0.831 (.632)	
El_oldDm_cbh				-0.240 (.536)
nwDm: [cbl = cbh]	.674**			
oldDm: [cbl = cbh]			.536	
2nd Order test (Pr > z)	0.32		0.31	
Hansen test (Prob > χ^2)	0.43		0.45	
Numb. of Instr.	34		34	
Numb. of Grp.	34		34	
Numb. of Observ.	619		825	

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors in parentheses.

5.4 Conclusion

Assessing the validity and robustness of the effect of political institutions, two questions have been at the core of this investigation: Is the effect of political institutions identical in developing countries? Is the effect of political power, which has been identified as the key institutional determinant in chapter three, robust in interaction with other factors from the political economic environment?

Results for the PBC in a panel of 34 developing countries show that the effect of political institutions coincides largely with the earlier findings in developed countries. While most institutional variables exhibit larger electoral cycles, the increase is in approximate proportion to the size of the unconditional PBC that exceed the respective electoral cycle in developed countries by approximately 0.52% of the GDP. Conclusively, results confirm the findings of previous studies that reported a significantly larger PBC in developing countries while vastly supporting Drazen's (2008) rationale that political institutions can be analysed in the same manner since the institutional dynamics is coherent. Excluded from this finding is the electoral competition. Whereas the threat of being voted out of the office was identified as an unconditional requirement for the PBC in developed countries, the causality does not apply in developing countries that exhibit a much larger share of uncompetitive elections. The result reflects Wright's (2011) findings that the PBC is also used as an

instrument to demonstrate the public's backing in autocratic environments in order to prevent riots and the opposition building. On the other hand, the distinction between consolidated and dispersed political power proves equally effective as in developed countries. Correspondingly, if incumbents do not have the discretion over the fiscal policy to implement electoral cycles, there are even in developing countries no signs of the PBC detected. As in chapter three, the result proves robust in interaction with government form, district magnitude and accountability.

Tests for the multi-conditional PBC reveal further that effect of institutional power is largely unaffected by the influence of other determinants of the PBC. While results affirm the findings of previous research which emphasised the moderating impact of free media on the PBC, the effect turns out comparatively low after accounting for the institutional power. Consequently, the distinction between concentrated and diluted institutional power proves significant in countries with free and censored media. Analogously, results substantiate the continuous decrease of the PBC over time and with voters growing more experienced as suggested by Brender and Drazen (2005) while clearly disproving the conclusion that indicators of the political institution are insignificant in old democracies in terms of the PBC.

In conclusion, while the distinction among governments form and voting formula is robust and does not differ in developed and developing countries, their explanatory power for the total size of the PBC across countries is only secondary. On the other hand, the fiscal constraint that derives from dispersed political power proves to be equally effective in developing countries and robust to influence of the freedom of the media and the age of democracy as other environment parameters. Considering the robustness of the effect in comparison to other environment factors and the fact that the number of observations with consolidated institutional power is significantly higher in developing countries than in developed countries, it stands to reason that the diversity in the level of institutional power accounts for most of the difference between both groups.

6 Conclusion

This research has provided an in-depth analysis about the effect of political institutions on the PBC. The main questions have been: Do political institutions influence the size of the PBC? Do political institutions determine the size of the PBC? Does the effect of political institutions change in different environments?

Analysing the size of the PBC in a panel of 68 middle and high income countries over a period from 1975 till 2009 via Blundell and Bond (1998) estimator, results affirm the correlation between the size of the PBC and the institutional framework and verify political accountability, electoral competition and concentration of political power as the determining forces. Testing the effect of individual institutional variables and the interaction among them, the research reveals that the effect of *formative indicators* that combine formal institutional rules with outcome based quantities vastly exceeds the explanatory power of *formal institutional variables*. The *average district magnitude* is identified as the only formal institutional variable whose effect on the PBC achieves statistical significance. As subsequent results for the type of the PBC confirm, the distinction between *single* and *multiple district magnitude* is that the former entails significant shifts in the budget composition represented by substantial PBCs and anti-PBCs that are balancing each other out. In consequence, there is a significantly larger electoral cycle detected in the budget balance under multiple district magnitude. The outcome also reinterprets the smaller differences between *majority* and *proportional* voting formula being rather the consequence of the correlation with the district magnitude than the result of their influence on the electoral competition. The often quoted distinction between *presidential* and *parliamentarian* regimes proves insignificant unless in explicit combination with consolidated institutional power. Results, however, do indicate a considerable difference between the former two government forms and *semi-presidential* regimes that have been measured with a substantially larger size of the PBC. While the causality is not verified due to the small number of observations of semi-presidential regimes, results underline the critique in the literature on the popular dual classification. Finally, despite being associated with the political accountability, there is no sign for the impact of the *ballot structure* on the PBC as the difference between *open* and *closed* form is marginal. In contrast, there is compelling evidence for the correlation between the size of the PBC and the formative indicators measuring *electoral competition*, *political accountability* and *concentration*

of political power. Electoral competition proves to be a compulsory requirement as there is no PBC detected in elections that were characterised by the inexistence of a genuine opposition or that were impaired by alleged election frauds. Results therewith confirm the common perception that the lack of a threat of dismissal invalidates the demand for the PBC. The reverse effect is observed for accountability that combines the aspect of political transparency and contestability. In institutions where political accountability is comparatively low, there is merely a small decline measured from the average scale of the PBC whereas high accountability enhances the effect of economic voting as well the risk of dismissal leading to a intensification of the incumbents' incentive and therewith a magnification of the PBC. Finally, the effect of the concentration of institutional power measured by the number of effective veto players is observed on either end of the scale. With political power being dispersed, there is limited fiscal leeway for the incumbent having the size of the PBC rendered insignificant. Conversely, consolidated institutional power prompts incumbents to utilise their fiscal discretion leading to a large decrease of the budget balance before the election; the difference between the sizes of the PBC under high and low political power passes for statistical significance at 99% level. Accountability and concentration of power can be interpreted as indicators for the incumbents' motive and opportunity to create electoral economic cycles, alternatively. Comparing the outcome with results in previous studies, in particular the measurements for political accountability and concentration of power prove more effective without relying on non-institutional factors such as transparency or general compliance with the law. The interaction among institutional variables verifies a clear priority of effectiveness with concentration of power being identified as the primary determining force that takes precedence over any other effect. Essentially, the PBC remains always confined never reaching statistical significance if political power is diluted. In consequence, the individual effect of other institutional variables is consistently suppressed; merely the distinction between single and multiple district magnitude does not completely disappear. In reversed scenario, the PBC reaches is highest value in interaction with political accountability providing incumbents with a distinct motive and the opportunity to create a PBC.

Comparing the above findings with the outcome in 34 low till middle income countries during the same time period, the previously crucial distinction between competitive and uncompetitive election proves to be unsubstantiated in developing countries. As the number of elections characterised by a lack of a credible opposition becomes a common phenomenon, the nature of the election changes and becomes more of a measurement for the incumbents' popularity. The election outcome, however, has still ramifications for their stay in office as it also fulfils the function of an indicator for latent opposition regarding the probability of a successful uprising. The effects of the other institutional variables do not change. Consistent with previous findings, the average district magnitude is the only formal institutional variable exhibiting a significant interaction effect affirming the higher scale of the PBC under multiple district magnitude. The most apparent consistency, however, is the unconditional restriction of the PBC under diluted political power. As in developed countries, the concentration of political power takes precedence over all other institutional effects. More significantly, the differences between developed and developing countries disappear under all tested institutional settings when political power is dispersed and the incumbent lacks fiscal leeway. Further tests give evidence that the restricting effect is not the result of a mere correlation with other factors in the political economic environment such as the access to free media or the presence experienced voters in established democracies. While results verify the impact of those factors on the size of the PBC, they prove not effective enough to have the PBC fully prevented in interaction with consolidated institutional power. The distinction between institutions with weak and strong political power remains significant in countries with free and censored media and old and new democracies, alternatively.

Electoral cycles are detected in public spending as well as in government revenue. In neutral environment, the biggest spending increase and the largest tax cut before the election take place in *"General Public Service"* and *"Tax on Goods and Service"*, alternatively. The outcome exemplifies the use of fiscal instruments that benefit a large majority within the population when creating a PBC. Further electoral cycles are detected in expenditures on *"Grants"* and expenses aimed for the purpose of *"Education"*. Examining electoral cycles in *"Total Revenue"* and *"Total Expenditure"* in dependence of the institutional framework, results do not substantiate a connection between the institutional framework and they budget composition. Results, however, affirm that incumbents attempt to create a balanced form of the PBC by creating small

scaled anti-symmetric fiscal cycles if confronted with weak political power. In contrast, the distinct pattern that emerges for the interaction between institutional power and district magnitude within expenditure functions, expenditure objects and within tax objects proves conclusively that the form and the composition of the PBC are indeed determined by the institutional framework in place. Analogously to the findings for the PBC in budget balance, the concentration of political power accounts for the scale of the individual electoral cycle whereas the district magnitude determines which fiscal instruments are being utilised. Concretely, the interaction between consolidated institutional power and multiple district magnitude shows within expenditure functions significant electoral cycles in *"General Public Service"*, *"Economic Affairs"* and *"Housing"* whereas *"Defence"*, *"Health"* and *"Social Protection"* remain unaffected. In turn, interaction between consolidated institutional power and single district magnitude shows large electoral cycles in latter three spending types while *"Housing"* remains unaffected and *"General Public Service"* and *"Economic Affairs"* exhibit large spending cuts. The same dynamic applies in expenditure objects: conditional on concentrated political power, multiple district magnitude causes significant electoral cycles in *"Interests"*, *"Subsidies"* and *"Social Benefits"* whereas single district magnitude reveals significant spending increases in *"Compensation of Employees"* and *"Goods and Service"* and large anti-PBCs in *"Interests"*, *"Subsidies"*, *"Social Benefits"* and *"Other Expenditures"*. Within the tax composition, electoral cycles emerge under multiple district magnitude in *"Tax on Payroll"* and *"Trade Tax"* and under single district magnitude in *"Income Tax"* and *"Other Taxes"* while modest signs of an anti-PBC are detected in *"Tax on Payroll"*. Significant electoral cycles under both district magnitudes are only detected in *"Tax on Goods and Services"*, *"Education"* and *"Grants"* which explains conclusively why only four out of 21 fiscal components exhibit significant electoral cycles in unconditional environment. The results also explain the difference in size of the accumulated budget balance between single and multiple district magnitude and put those results into a new perspective. Single district magnitude causes distinct shifts in the budget composition; large anti-PBCs emerge when political power is concentrated whereas under multiple district magnitude individual electoral cycles are either large or diminished but never turn into anti-PBCs. The outcome signifies that results for the total budget balance or even for *"Total Revenue"* and *"Total Expenditure"* can be highly misleading regarding the extent of fiscal manipulations.

Essentially, a balanced form of the PBC takes place in case of diluted political power when fiscal leeway is generally restricted or under single district magnitude when large individual electoral cycles are being compensated by anti-PBCs in different fiscal instruments.

In conclusion, results discovered in this research prove conclusively that the size and the type of the PBC are in developed and developing countries strongly influenced by political institutions. The effect of the institutional framework, however, is mostly captured by formative institutional indicators rather than by formal institutional variables. The major field of future research is therefore the exact nature of the underlying causality. A possible approach is the analysis of the PBC *via* structural equation modelling technique with electoral competition, accountability and concentration of power as the latent factors. Further research needs to be devoted to examine the impact of indirect institutional effects such as the voter turnout. This research has provided strong evidence that the PBC within the budget composition is determined by the interaction between institutional power and the district magnitude. The question which fiscal instruments are being selected can, however, only partially explained by the model and requires also further investigations.

.

7 Literature

ACEMOGLU, D. 2005. Constitutions, Politics and Economics: A Review Essay on Persson and Tabellini's "The Economic Effect of Constitutions". *National Bureau of Economic Research Working Paper Series,* No. 11235.

ADSERA, A., BOIX, C. & PAYNE, M. 2003. Are you being served? Political Accountability and Quality of Government. The Journal of Law, Economics & Organisation, 19, 445-490.

AIDT, T. S. & SHVETS, J. 2011. Distributive Politics and Electoral Incentives: Evidence from Seven US State Legislatures. CESIFO Working Paper Series No. 3405.

AKAIKE, H. 1974. A New Look at the Statistical Model Identification. IEEE Transactions on Autamatic Control, AC-19, 716-723.

AKHMEDOV, A., RAVICHEV, A. & ZHURAVSKAYA, E. 2004. Opportunistic Political Cycles: Test in a Young Democracy Setting. Quarterly Journal of Economics, 119, 1301-1338.

ALESINA, A. 1987. Macroeconomic Policy in a Two-Party System as a Repeated Game. The Quarterly Journal of Economics, 102, 651-678.

ALESINA, A. 1988. Credibility and Policy Convergence in a Two-Party System with Rational Voters. The American Economic Review, 78, 796-805.

ALESINA, A., COHEN, G. D. & ROUBINI, N. 1991. Macroeconomic Policy and Elections in OECD Democracies. National Bureau of Economic Research Working Paper Series, No. 3830.

ALESINA, A. & SACHS, J. 1988. Political Parties and the Business Cycle in the United States, 1948-1984. Journal of Money, Credit and Banking, 20, 63-82.

ALT, J. E. & LASSEN, D. D. 2006. Transparency, Political Polarization, and Political Budget Cycles in OECD Countries. American Journal of Political Science, 50, 530-550.

ALT, J. E. & LOWRY, R. C. 2004. The Electoral Cycle in Debt is Where You Can’t See It:Fiscal Transparency and Electoral Policy Cycles in Advanced Industrialized Democracies. Harvvard University.

ALT, J. E. & ROSE, S. S. 2009. Context-Conditional Political Budget Cycle. In: BOIX, C. & STOKES, S. C. (eds.) The Oxford Handbook of Comparative Politics. Oxford: Oxford University Press.

ARELLANO, M. 2003. Panel Data Econometrics, Oxford, Oxford University Press.

ARELLANO, M. & BOND, S. 1991. Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. The Review of Economic Studies, 58, 277-297.

ARELLANO, M. & BOVER, O. 1995. Another look at the instrumental variables estimation of error components models. Journal of Econometrics, 68, 29-51.

BALEIRAS, R. N. & DA SILVA COSTA, J. 2004. To be or not to be in office again: an empirical test of a local political business cycle rationale. European Journal of Political Economy, 20, 655-671.

BALTAGI, B. H. 2005. Econometric Analysis of Panel Data, John Wiley & Sons, Ltd.

BARBERIA, L. G. & AVELINO, G. 2011. Do Political Budget Cycles Differ in Latin American Democracies? Economía, 11.2, 101-134.

BAUM, C. F. & SCHAFFER, M. E. 2003. Instrumental variables and GMM: Estimation and testing. The Stata Journal, 3, 1-31.

BECHER, M. & DONNELLY, M. 2013. Economic performance, individual evaluations and the vote: investigating the causal mechanism. The Journal of Politics, 75, 968-979.

BECK, T., CLARKE, G., GROFF, A., KEEFER, P. & WALSH, P. 2001. New Tools in Comparative Political Economy: The Database of Political Institutions. The World Bank Economic Review, 15, 165-176.

BECK, T., KEEFER, P. E. & CLARKE, G. R. 2000. New Tools and Tests in Comparative Politcal Economy. The Database of Political Institutions. The World Bank.

BECK, T., KEEFER, P. E. & CLARKE, G. R. 2010. Database of Political Institutions 2010 (updated Dec. 2010). The World Bank.

BEN-PORATH, Y. 1975. THE YEARS OF PLENTY AND THE YEARS OF FAMINE—A POLITICAL BUSINESS CYCLE? Kyklos, 28, 400-403.

BLOCK, S. A. 2002a. Elections, electoral competitiveness, and political budget cycles in developping countries.: Center for International Development, Harvard University.

BLOCK, S. A. 2002b. Political business cycles, democratization, and economic reform: the case of Africa. Journal of Development Economics, 67, 205-228.

BLOCK, S. A., FERREE, K. E. & SINGH, S. 2003. Multiparty Competition, Founding Elections and Political Business Cycles in Africa. Journal of African Economies, 12, 444-468.

BLUME, L., MÜLLER, J., VOIGT, S. & WOLF, C. 2009. The Economic Effects of Constitutions: Replicating and Extending Persson and Tabellini. Public Choice, 197–225.

BLUNDELL, R. & BOND, S. 1998. Initial conditions and moment restrictions in dynamic panel data models. Journal of Econometrics, 87, 115-143.

BÖHM, C. & MARKWARD, G. 2011. Political Budget Cycles and their Consequences in Developed Countries. CESifo.

BOHN, F. 2011. Political Budget Cycles: Can Disinformation Explain Country Group Differences? NiCE Working Papers No. 11-103.

BONOMO, M. & TERRA, C. 2010. ELECTORAL CYCLES THROUGH LOBBYING. Economics & Politics, 22, 446-470.

BOVENS, M. 2010. Two Concepts of Accountability:Accountability as a Virtue and as a Mechanism. West European Politics, 33, 946-967.

BRAMBOR, T., CLARK, W. R. & GOLDER, M. 2006. Understanding Interaction Models: Improving Empirical Analyses. Political Analysis, 14, 63-82.

BRÄUNINGER, T. 2005. A Partisan Model of Government Expenditure. Public Choice, 125, 409-429.

BREITUNG, J. 2000. The local power of some unit root tests for panel data. Advances in Econometrics. Press.

BRENDER, A. 2003. The Effect of Fiscal Performance on Local Government Election Results in Israel: 1989-1998. Journal of Public Economics, Vol. 87, pp. 2187-2205, 2003.

BRENDER, A. & DRAZEN, A. 2003. Where Does the Political Budget Cycle Really Come From? CERP Discussion Paper No. 4049. Centre for Economic Policy Research.

BRENDER, A. & DRAZEN, A. 2005. Political Budget Cycles in New versus Established Democracies. Journal of Monetary Economics, 52, 1271–1295.

BRENDER, A. & DRAZEN, A. 2008. How Do Budget Deficits and Economic Growth Affect Reelection Prospects? Evidence from a Large Panel of Countries. American Economic Review, 98, 2203-20.

BROUSSEAU, E., GARROUSTE, P. & RAYNAUD, E. 2011. Institutional changes: Alternative theories and consequences for institutional design. Journal of Economic Behavior & Organization, 79, 3-19.

BRUNO, G. S. F. 2005. Estimation and inference in dynamic unbalanced panel-data models with a small number of individuals. Stata Journal, 5, 473-500.

CAREY, J. M. 2008. Presidential versus Parliamentary Government. In: MÉNARD, C. & SHIRLEY, M. M. (eds.) Handbook Of New Institutional Economics. Berlin Heidelberg: Springer-Verlag.

CHANG, E. C. C. 2008. Electoral Incentives and Budgetary Spending: Rethinking the Role of Political Institutions. The Journal of Politics, 70, 1086-1097.

CHORTAREAS, G. E., LOGOTHETIS, V. I. & PAPANDREOU, A. A. 2011. Political Cycles and Regulation. University of Athen.

CHUDIK, A. & HASHEM PESARAN, M. 2013. Large Panel Data Models with Cross-Sectional Dependence: A Survey. CESIFO Working Paper Series No. 4371.

CIOFFI, M., MESSINA, G. & TOMMASINO, P. 2012. Parties, institutions and political budget cycles at municipal level: evidence from Italy. Bank of Italy, Research Department.

CLARK, W. R. & HALLERBERG, M. 2000. Mobile Capital, Domestic Institutions, and Electorally Induced Monetary and Fiscal Policy. The American Political Science Review, 94, 323-346.

COX, G. W. 2008. Electoral Institutions and Political Competition. In: MÉNARD, C. & SHIRLEY, M. M. (eds.) Handbook Of New Institutional Economics. Berlin Heidelberg: Springer-Verlag.

COX, P. 2012. The Media and the Political Business Cycle. America Economia.

CRISP, B. F., DESPOSATO, S. W. & KANTHAK, K. 2011. Legislative Pivots, Presidential Powers, and Policy Stability. Journal of Law, Economics, and Organization, 27, 426-452.

DAHLBERG, M. & MÖRK, E. 2011. Is There an Election Cycle in Public Employment? Separating Time Effects from Election Year Effects. CESifo Economic Studies, 57, 480-498.

DAVIDSON, L. S., FRATIANNI, M. & VON HAGEN, J. 1990. Testing for political business cycles. Journal of Policy Modeling, 12, 35-59.

DE HAAN, J. & STURM, J.-E. 1994. Political and institutional determinants of fiscal policy in the European Community. Public Choice, 80, 157-172.

DE HOYOS, R. & SARANTIDES, V. 2006. Testing for cross-sectional dependence in panel-data models. The Stata Journal, 6, 482-496.

DIERMEIER, D. & FEDDERSEN, T. J. 1998. Cohesion in Legislatures and the Vote of Confidence Procedure. The American Political Science Review, 92, 611-621.

DOWNS, A. 1957a. An economic theory of democracy, New York, Harper & Row.

DOWNS, A. 1957b. An Economic Theory of Political Action in a Democracy. Journal of Political Economy, 65, 135-150.

DRAZEN, A. 2000a. The Political Business Cycle after 25 Years. NBER Macroeconomics Annual, 15, 75-117.

DRAZEN, A. 2000b. Political Economy in Macroeconomics, Princeton, New Jersey, Princeton University Press.

DRAZEN, A. 2008. Is There a Different Political Economy for Developing Countries? Issues, Perspectives, and Methodologyâ€ Journal of African Economies, 17, 18-71.

DRAZEN, A. & ESLAVA, M. 2005. Electoral Manipulation via Expenditure Composition: Theory and Evidence. National Bureau of Economic Research Working Paper Series, No. 11085.

DRAZEN, A. & ESLAVA, M. 2006. Pork Barrel Cycles. National Bureau of Economic Research Working Paper Series, No. 12190.

DREHER, A. & VAUBEL, R. 2006. Foreign Exchange Intervention and the Political Business Cycle: A Panel Data Analysis. TWI Research Paper Series No. 9.

DRURY, C. A., KRIECKHAUS, J. & LUSZTIG, M. 2006. Corruption, Democracy, and Economic Growth. International Political Science Review, 27, 121-136.

EFENDIC, A., PUGH, G. & ADNETT, N. 2011. Institutions and economic performance: A meta-regression analysis. European Journal of Political Economy, 27, 586-599.

EFTHYVOULOU, G. 2012. Political budget cycles in the European Union and the impact of political pressures. Public Choice, 153, 295-327.

EICHER, T. & LEUKERT, A. 2009. Institutions and Economic Performance: Endogeneity and Parameter Heterogeneity. Journal of Money, Credit and Banking, 41, 197-219.

FEDELINO, A., INANOVA, A. & HORTON, M. 2009. Computing cyclically Adjusted Balances and Automatic Stabilizers. In: DEPARTMENT, F. A. (ed.). International Monetary Fund.

FELD, L. P. & KIRCHGÄSSNER, G. 2000. Direct democracy, political culture, and the outcome of economic policy: a report on the Swiss experience. European Journal of Political Economy, 16, 287-306.

FERRAZ, C. & FINAN, F. 2007. Electoral Accountability and Corruption in Local Governments: Evidence from Audit Reports. IZA Discussion Papers No. 2843.

FRANZESE, R. & KAM, C. 2009. Modeling and interpreting interactive hypotheses in regression analysis, University of Michigan Press.

FRANZESE, R. J. 2002. ELECTORAL AND PARTISAN CYCLES IN ECONOMIC POLICIES AND OUTCOMES. Annual Review of Political Science, 5, 369-421.

FREY, B. S. & SCHNEIDER, F. 1978. An Empirical Study of Politico-Economic Interaction in the United States. The Review of Economics and Statistics, 60, 174-183.

FRIEDRICH, R. J. 1982. In Defense of Multiplicative Terms in Multiple Regression Equations. American Journal of Political Science, 26, 797-833.

FUMAGALLI, E. & NARCISO, G. 2012. Political institutions, voter turnout, and policy outcomes. European Journal of Political Economy, 28, 162-173.

GÄRTNER, M. 1994. The quest for political cycles in OECD economies. European Journal of Political Economy, 10, 427-440.

GAVIOUS, A. & MIZRAHI, S. 2002. Maximizing political efficiency via electoral cycles: An optimal control model. European Journal of Operational Research, 141, 186-199.

GÉLINEAU, F. 2013. Electoral accountability in the developing world. Electoral Studies, 32, 418-424.

GEMMELL, N., KNELLER, R. & SANZ, I. 2007. Tax composition and economic growth in OECD countries. Mimeo.

GLAESER, E. L., PORTA, R. L., LOPEZ-DE-SILANE, F. & SHLEIFER, A. 2004. Do Institutions Cause Growth? National Bureau of Economic Research Working Paper Series, No. 10568.

GOLDEN, D. G. & POTERBA, J. M. 1980. The Price of Popularity: The Political Business Cycle Reexamined. American Journal of Political Science, 24, 696-714.

GOLDER, M. 2005. Democratic Electoral Systems Around the World, 1946-2000. Electoral Studies, 24, 103 - 121.

GONZALEZ, M. D. L. A. 2002. Do Changes in Democracy Affect the Political Budget Cycle? Evidence from Mexico. Review of Development Economics, 6, 204-224.

GONZALEZ, P., HINDRIKS, J., LOCKWOOD, B. & PORTEIRO, N. 2006. Political budget cycles and fiscal decentralization. CEPR Discussion Papers No. 5646.

GONZALEZ, P., HINDRIKS, J. & PORTEIRO, N. 2013. Fiscal Decentralization and Political Budget Cycles. Journal of Public Economic Theory, 15, 884-911.

GUILLAMON, M., BASTIDA, F. & BENITO, B. 2011. The electoral budget cycle on municipal police expenditure. European Journal of Law and Economics, 1-23.

HANSEN, L. 1982. Large sample properties of generalized method of moments estimators. Econometrica, 50, 1029–1054.

HANSEN, N.-J. H. 2011. Political Cycles and Fiscal Policy. Empirica Working Paper.

HANUSCH, M. 2012. Mooted signals: Economic disturbances and political budget cycles. Journal of Applied Economics, 15, 189-212.

HANUSCH, M. & KEEFER, P. 2011. Promises, promises: Vote-buying, institutionalized political parties and political budget cycle. World Bank.

HANUSCH, M. & VAALER, P. M. 2013. Credit rating agencies and elections in emerging democracies: Guardians of fiscal discipline? Economics Letters, 119, 251-254.

HARRIS, R. D. F. & TZAVALIS, E. 1999. Inference for unit roots in dynamic panels where the time dimension is fixed. Journal of Econometrics, 91, 201-226.

HAYAKAWA, K. 2008. The Asymptotic Properties of the System GMM Estimator in Dynamic Panel Data Models When Both N and T are Large. SSRN eLibrary.

HECKELMAN, J. C. & BERUMENT, H. 1998. Political Business Cycles and Endogenous Elections. Southern Economic Journal, 64, 987-1000.

HENISZ, W. J. 2002. POLCON_2002 Codebook. University of Pennsylvania.

HENISZ, W. J. 2004. Political Institutions and Policy Volatility. Economics & Politics, 16, 1-27.

HIBBS, D. A., JR. 1977. Political Parties and Macroeconomic Policy. The American Political Science Review, 71, 1467-1487.

HLOUSKOVA, J. & WAGNER, M. 2006. The performance of panel unit root and stationarity tests: Results from a large scale simulation study. Econometric Reviews, 25, 85–116.

HOANG, N. T. & MCNOWN, R. F. 2006. Panel Data Unit Roots Tests Using Various Estimation Methods. University of Colorado at Boulder.

HODRICK, R. J. & PRESCOTT, E. C. 1997. Postwar U.S. Business Cycles: An Empirical Investigation. Journal of Money, Credit and Banking, 29, 1-16.

HOPMANN, D. N., ELMELUND-PRÆSTEKÆR, C., ALBÆK, E., VLIEGENTHART, R. & VREESE, C. H. D. 2012. Party media agenda-setting. Party Politics, 18, 173-191.

HORGOS, D. & ZIMMERMANN, K. W. 2010. It Takes Two to Tango: Lobbies and the Political Business Cycle. Kyklos, 63, 383-399.

HSIAO, C. 2003. Analysis of Panel Data, Cambrdige University Press.

HSIAO, C. 2007. Panel data analysis—advantages and challenges. TEST, 16, 1-22.

HYDE, S. D. & MARINOV, N. 2012. WhichElections Can Be Lost? Political Analysis, 20, 191-210.

HYDE, S. D. & O'MAHONY, A. 2010. International Scrutiny and Pre-Electoral Fiscal Manipulation in Developing Countries. The Journal of Politics, 72, 690-704.

IM, K. S., PESARAN, M. H. & SHIN, Y. 2003. Testing for Unit Roots in Heterogeneous Panels. Journal of Econometrics, 115, 53-74.

ITO, T. & PARK, J. H. 1988. Political business cycles in the parliamentary system. Economics Letters, 27, 233-238.

IVERSEN, T. & SOSKICE, D. 2006. Electoral Institutions and the Politics of Coalitions: Why Some Democracies Redistribute More Than Others. American Political Science Review, 100, 165-181.

JACCARD, J. & TURRISI, R. 2003. Interaction Effects In Multiple Regression, Sara Miller McCunde, Sape Publications, Inc.

JACKMAN, R. 1987. Political Institutions and Voter Turnout in the Industrial Democracies. American Political Science Review, 81, 405-424.

JINDAPON, P. & VAN ESSEN, M. 2012. Political Business Cycles in a Dynamic Bipartisan Voting Model. University of Alabama.

JONG-A-PIN, R., STURM, J.-E. & DE HAAN, J. 2012. Using Real-Time Data to Test for Political Budget Cycles. KOF Working Papers No. 12-313. Zuerich: KOF Swiss Economic Institute, ETH Zurich.

JUDSON, R. A. & OWEN, A. L. 1999. Estimating dynamic panel data models: a guide for macroeconomists. Economics Letters, 65, 9-15.

KALECKI, M. 1943. POLITICAL ASPECTS OF FULL EMPLOYMENT1. The Political Quarterly, 14, 322-330.

KATSIMI, M. & SARANTIDES, V. 2012. Do elections affect the composition of fiscal policy in developed, established democracies? Public Choice, 151, 325-362.

KAUFMANN, D., KRAAY, A. & MASTRUZZI, M. 2009. Aggregate and individual Governance Indicators, 1996-2008. World Bank Policy Research Working Paper. World Bank.

KAUFMANN, D., KRAAY, A. & MASTRUZZI, M. 2010. The Worldwide Governance Indicators: Methodology and Analytical Issues. World Bank.

KAUFMANN, D., KRAAY, A. & ZOIDO-LOBATÓN, P. 1999. Aggregating Governance Indicators. Policy Research Working Paper No. 2195. The World Bank.

KEECH, W. R. 1980. Elections and Macroeconomic Policy Optimization. American Journal of Political Science, 24, 345-367.

KEECH, W. R. & PAK, K. 1989. Electoral Cycles and Budgetary Growth in Veterans' Benefit Programs. American Journal of Political Science, 33, 901-911.

KHEMANI, S. 2004. Political cycles in a developing economy: effect of elections in the Indian States. Journal of Development Economics, 73, 125-154.

KISS, Á. 2009. Coalition Politics and Accountability. Public Choice, 139, 413-428.

KIVIET, J. F. 1995. On bias, inconsistency, and efficiency of various estimators in dynamic panel data models. Journal of Econometrics, 68, 53-78.

KLOMP, J. & DE HAAN, J. 2011. Do Politicial Budget Cycles really exist? Applied Economics, 45, 329-341.

KLOMP, J. & DE HAAN, J. 2013. Popular protest and political budget cycles: A panel data analysis. Economics Letters, 120, 516-520.

KLOSE, J. 2012. Political business cycles and monetary policy revisited–an application of a two-dimensional asymmetric Taylor reaction function. International Economics and Economic Policy, 9, 265-295.

KNEEBONE, R. & MCKENZIE, K. 2001. Electoral and Partisan Cycles in Fiscal Policy: An Examination of Canadian Provinces. International Tax and Public Finance, 8, 753-774.

KÖKSAL, B. & ÇALıŞKAN, A. 2012. Political Business Cycles and Partisan Politics: Evidence from a Developing Economy. Economics & Politics, 24, 182-199.

KRAMER, G. H. 1971. Short-Term Fluctuations in U.S. Voting Behavior, 1896-1964. The American Political Science Review, 65, 131-143.

LASSEN, D. D. 2001. Political Accountability and the Size of Government: Theory and Cross -Country Evidence. EPRU Working Paper Series

LEDERMAN, D., LOAYZA, N. V. & SOARES, R. R. 2005. ACCOUNTABILITY AND CORRUPTION: POLITICAL INSTITUTIONS MATTER. Economics & Politics, 17, 1-35.

LEVIN, A., LIN, C. F. & CHU, C. J. 2002. Unit root tests in panel data: asymptotic and finitesample properties. Journal of Econometrics, 108, 1-24.

LEVIN, A. & LIN, C. V. 1992. Unit root tests in panel data: Asymptotic and finite sample properties. Discussion Paper No. 92-23. University of Calefornia, San Diego.

LIEW, V. K. S. 2004. Which Lag Length Selection Criteria Should We Employ? Economics Buletin, 3, 1-9.

LIJPHART, A. 1997. Unequal Participation: Democracy's Unresolved Dilemma. The American Political Science Review, 91, 1-14.

LUCAS, R. E. 1972. Expectations and the neutrality of money. Journal of Economic Theory, 4, 103-124.

MADDALA, G. S. & WU, S. 1999. A COMPARATIVE STUDYOF UNIT ROOT TESTS WITH PANEL DATA AND A NEW SIMPLE TEST. OXFORD BULLETIN OF ECONOMICS AND STATISTICS, 631-652.

MANKIW, N. G. 2003. Macroeconomics, New York, Worth Publisher.

MCCALLUM, B. T. 1978. The Political Business Cycle: An Empirical Test. Southern Economic Journal, 44, 504-515.

MECHTEL, M. & POTRAFKE, N. 2013. Electoral Cycles in Active Labor Market Policies. Public Choice, 156, 181-194.

MILESI-FERRETTI, G. M., PEROTTI, R. & ROSTAGNO, M. 2002. Electoral Systems and Public Spending. Quarterly Journal of Economics, 117, 609-657.

MINK, M. & DE HAAN, J. 2006. Are there political budget cycles in the euro area? European Union Politics, 7, 191-211.

MUELLER, D., C. 2003. Public Chice III, Camridge, Cambridge University Press.

NICKELL, S. 1981. Biases in Dynamic Models with fixed Effects. Econometrica, 49, 1417-1426.

NOGARE, C. D. & RICCIUTI, R. 2011. Term limits: do they really affect fiscal policy choices? European Journal of Political Economy, In Press, Accepted Manuscript.

NOHLEN, D., GROTZ, F. & HARTMANN, C. 2002. Elections in Asia and the Pacifik: A Data Handbook, Oxford University Press.

NORDHAUS, W. D. 1975. The Political Business Cycle. The Review of Economic Studies, 42, 169-190.

NORDHAUS, W. D., ALESINA, A. & SCHULTZE, C. L. 1989. Alternative Approaches to the Political Business Cycle. Brookings Papers on Economic Activity, 1989, 1-68.

NORRIS, P. 2002. Ballot Structures & Legislative Behavior. Exporting Congress? The Influence of the U.S. Congress on World Legislatures. Miami: Jack D. Gordon Institute for Public Policy and Citizenship Studies.

O'MAHONY, A. 2011. Engineering good times: Fiscal manipulation in a global economy. British Journal of Political Science, 41, 315-340.

O'CONNELL, P. 1998. The overvaluation of purchasing power parity. Journal of International Economics, 44, 1-19.

OSTERHOLM, P. 2004. Killing four unit root birds in the US economy with three panel unit root test stones. Applied Economics Letters, 11, 213-216.

PELTZMAN, S. 1992. Voters as Fiscal Conservatives. The Quarterly Journal of Economics, 107, 327-361.

PEROTTI, R. & KONTOPOULOS, Y. 2002. Fragmented Fiscal Policy. Journal of Public Economics, 86, 191-222.

PERSSON, T., ROLAND, G. & TABELLINI, G. 2000. Comparative Politics and Public Finance. Journal of Political Economy, 108, 1121-1161.

PERSSON, T., ROLAND, G. & TABELLINI, G. 2007. Electoral Rules and Government Spending in Parliamentary Democracies. Quarterly Journal of Political Science, 20, 1-34.

PERSSON, T. & TABELLINI, G. 2000. Political Economics: Explaining Economic Policy, Cambridge, The MIT Press.

PERSSON, T. & TABELLINI, G. 2001. Political Institutions and Policy Outcomes: What are the Stylized Facts? CESifo Working Paper Series No. 459.

PERSSON, T. & TABELLINI, G. 2003a. Do Electoral Cycles Differ Across Political Systems? IGIER Working Paper No. 232.

PERSSON, T. & TABELLINI, G. 2003b. The Economic Effect of Constitutions: What do the data say, Cambridge, MIT Press.

PERSSON, T., TABELLINI, G. & TREBBI, F. 2003. Electoral Rules and Corruption. Journal of the European Economic Association, 1, 958-989.

PHILLIPS, A. W. 1958. The Relation between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861-1957. Economica, 25, 283-299.

POTRAFKE, N. 2012. Political cycles and economic performance in OECD countries: empirical evidence from 1951–2006. Public Choice, 150, 155-179.

POWELL, G. B., JR. 1982. Contemporary Democracies: Participation, Stability and Violence, Cambridge MA, Harvard University Press.

POWELL, G. B., JR. & WHITTEN, G. D. 1993. A Cross-National Analysis of Economic Voting: Taking Account of the Political Context. American Journal of Political Science, 37, 391-414.

REYNOLDS, C. L. 2013. State politics, tuition, and the dynamics of a political budget cycle. Empirical Economics, 1-30.

RHODES, R. A. W., BINDER, S. A. & ROCKMAN, B. A. 2008. The Oxford Handbook of Political Institutions, Oxford, Oxford University Press.

ROCKEY, J. 2010. Reconsidering the Fiscal Effects of Constitutions. Leicester: Department of Economics, University of Leicester.

RODRIK, D. 1998. Why Do More Open Economies Have Bigger Governments? Journal of Political Economy, 106, 997-1032.

ROGOFF, K. 1990. Equilibrium Political Budget Cycles. The American Economic Review, 80, 21-36.

ROGOFF, K. & SIBERT, A. 1988. Elections and Macroeconomic Policy Cycles. The Review of Economic Studies, 55, 1-16.

ROODMAN, D. 2009a. How to do Xtabond2: An Introduction to Difference and System GMM in Stata. The Stata Journal, 9, 81-136.

ROODMAN, D. 2009b. A Note on the Theme of Too Many Instruments*. OXFORD BULLETIN OF ECONOMICS AND STATISTICS, 71, 135-158.

ROSE, S. 2006. Do fiscal rules dampen the political business cycle? Public Choice, 128, 407-431.

SACKEY, F. G. & COMPAH-KEYEKE, G. 2012. Testing for the Existence of Politico-Economic Cycles in Ghana. Journal of Economics and Sustainable Development, 3.

SAKURAI, S. & MENEZES-FILHO, N. 2008. Fiscal policy and reelection in Brazilian municipalities. Public Choice, 137, 301-314.

SAPORITI, A. & STREB, J. 2008. Separation of powers and political budget cycles. Public Choice, 137, 329-345.

SARAFIDIS, V. 2009. GMM Estimation of Short Dynamic Panel Data Models With Error Cross-Sectional Dependence. MPRA Paper No. 25176.

SARGAN, J. 1958. The estimation of economic relationships using instrumental variables. Econometrica, 26, 393–415.

SARGENT, T. J. & WALLACE, N. 1975. "Rational" Expectations, the Optimal Monetary Instrument, and the Optimal Money Supply Rule. Journal of Political Economy, 83, 241-254.

SCHNEIDER, C. J. 2009. Globalizing Electoral Politics: International Political Budget Cycles in the European Union. University of California, San Diego.

SCHUKNECHT, L. 1996. Political Business Cycles and Fiscal Policies in Developing Countries. Kyklos, 49, 155-170.

SCHULTZ, K. A. 1995. The Politics of the Political Business Cycle. British Journal of Political Science, 25, 79-99.

SEDMIHRADSKÁ, L., KUBÍK, R. & HAAS, J. 2011. POLITICAL BUSINESS CYCLE IN CZECH MUNICIPALITIES. Prague Economic Papers, 59-70.

SHELTON, C. A. 2012. Legislative Electoral Budget Cycles. Public Choice, 1-25.

SHI, M. & SVENSSON, J. 2002a. Conditional Political Budget Cycles. CERP Discussion Paper No. 3352. SSRN eLibrary.

SHI, M. & SVENSSON, J. 2002b. Political Budget Cycles In Developed and Developing Countries. Working Paper. Stockholm University.

SHI, M. & SVENSSON, J. 2003. Political Budget Cycles: A Review of Recent Developments. Nordic Journal of Political Economy, 29, 67-76.

SHI, M. & SVENSSON, J. 2006. Political budget cycles: Do they differ across countries and why? Journal of Public Economics, 90, 1367-1389.

SIEG, G. 2001. A political business cycle with boundedly rational agents. European Journal of Political Economy, 17, 39-52.

SIEG, G. 2006. A model of an opportunistic-partisan political business cycle. Scottish Journal of Political Economy, 53, 242-252.

SJAHRIR, B. S., KIS-KATOS, K. & SCHULZE, G. G. 2013. Political budget cycles in Indonesia at the district level. Economics Letters, 120, 342-345.

SMITH, A. 1776. An Inquiry into the Nature and Causes of The Wealth of Nations, Radnom House, Inc.

SOTO, M. 2009. System GMM Estimation With A Small Sample. ystem GMM Estimation With A Small Sample No. 395.

STREB, J. M. M., LEMA, D. & TORRENS, G. 2009. Checks and Balances on Political Budget Cycles: Cross-Country Evidence. Kyklos, Vol. 62, Issue 3, pp. 426-447, August 2009.

STRÖMBERG, D. 2001. Mass media and public policy. European Economic Review, 45, 652-663.

TEPE, M. & VANHUYSSE, P. 2009. Educational Business Cycles. Public Choice, 139, 61-82.

TREISMAN, D. & GIMPELSON, V. 2001. Political Business Cycles and Russian Elections, or the Manipulations of 'Chudar'. British Journal of Political Science, 31, 225-246.

TSEBELIS, G. 2002. Veto Players: How Political Institutions Work, Princeton, New Jersey, Princeton University Press.

TSEBELIS, G. & CHANG, E. C. C. 2004. Veto players and the structure of budgets in advanced industrialized countries. European Journal of Political Research, 43, 449-476.

TUFTE, R. E. 1978. Political Control of the Economy, New Jersey, Princeton University Press.

TUJULA, M. & WOLSWIJK, G. 2004. What Determines Fiscal Balances? An Empirical Investigation in Determinants of Changes in OECD Budget Balances. Working Paper Series No. 0422. European Central Bank.

TULLOCK, G. 1993. Rent Seeking, Aldershot, Edward Elgar Publishing Company.

VAALER, P. M., SCHRAGE, B. N. & BLOCK, S. A. 2005. Counting the Investor Vote: Political Business Cycle Effects on Sovereign Bond Spreads in Developing Countries. Journal of International Business Studies, 36, 62-88.

VEIGA, L. R. & VEIGA, F. J. 2007a. Does Opportunism Pay Off? Economics Letters, 96, 177-182.

VEIGA, L. R. & VEIGA, F. J. 2007b. Political Business Cycles at the Municipal Level. Public Choice 131, 45-64.

VERGNE, C. 2009. Democracy, elections and allocation of public expenditures in developing countries. European Journal of Political Economy, 25, 63-77.

VOGELAAR, M. 2011. Political Budget Cycles and the Level of Education. MSc: International Economic Studies, Maastricht Universtity.

VOIGT, S. 2011a. Empirical Constitutional Economics: Onward and Upward? Journal of Economic Behavior & Organization, 80, 319–330.

VOIGT, S. 2011b. Positive constitutional economics II—a survey of recent developments. Public Choice, 146, 205-256.

VUKOVIC, V. 2013. Persistent Electoral Success with Endogenous Rents. Zagreb: Zagreb School of Economics and Management.

WAGNER, A. 1893. Grundlegung der Politischen Oekonomie, Leipzig, C.F. Winter.

WEHNER, J. 2010. Cabinet structure and fiscal policy outcomes. European Journal of Political Research, 49, 631-653.

WEINGAST, B. R. & KENNETH, S. 1981. The Political Economy of Benefits and Costs. Journal of Political Economy, 89, 642-664.

WHITTEN, G. D. & PALMER, H. D. 1999. Cross-national analyses of economic voting. Electoral Studies, 18, 49-67.

WICKENS, T. 2002. Government Finance Statisitcs Manual 2001 Companion Material. Classification of GFSM 1986 Data to the GFSM 2001 Framework. International Monetary Fund.

WITTMAN, D. & WEINGAST, B. R. 2008. The Oxford Handbook of Political Economy, Oxford, Oxford University Press.

WRIGHT, J. 2011. Electoral Spending Cycles in Dictatorships. The Pennsylvania State University.

Appendix 1: The Rational Partisan Theory

As for the PT, the Rational Partisan Theory (RPT) rejects Down's (1957a) thesis that politicians are only aiming for re-election but that the economic policy is affected by their ideological preferences. Different to model of Hibbs (1977), the economic agents in the RPT are rational, forward looking and well informed.

Alesina (1987, 1988) and Alesina and Sachs (1988) describe the partisan cycle in a model that matches the situation in the United States (US) with two competing parties with different economic preferences. Both parties start their election campaign by announcing their platform to the public. Before the election, polls are conducted that indicate to the public the winning chances of both parties; based on those results, wage and price setters make their decision for the coming period. After the election, the winning party implements their preferred economic policy; with regard to the situation in the US, the Republicans would be expected to run a defensive monetary policy to keep inflation low and Democrats are likely to increase the money supply in order to stimulate the output thereby decreasing unemployment. The crucial difference to Hibb's (1977) former version of the PT is that economic agents are forward looking and aware of the impact of the election success of either party. Consequently, they take the economic effect of either partisan policy into consideration as they decide on prices and wages for the next period. A partisan impact on the real economy exists therefore only to the extent that voters make wrong predictions regarding the outcome of the election. The scale of the impact depends on the ideological difference between both parties and on the uncertainty of the election. If there was no uncertainty about the election outcome, no partisan cycle would be observed at all.

In contrast to the PT, the RPT assumes that voters make their decision independent from past and current policies; the only concern that matters is the ideological preferences of the next party in office. The only uncertain component in the model is the distribution of preferences among voters and therefore the outcome of the election. In any event, the partisan effect will only last as long it takes economic agents to adjust prices and costs accordingly. Even if politicians announce a different economic policy during the election campaign in order to attract more voters, there will be no impact in a repeated game. As long economic agents comprehend the ideal party objective, they will anticipate that after a successful election, there is no more incentive for the party to stick

with their campaign platform but pursue their ideal party policy. As Alesina (1987) points out, this conclusion is valid as long there is no reputational damage or other form of binding commitment. A modified version of the model introduced by Drazen (2000b) in which the incumbent party pursues an economic policy that is aimed to restrain the leeway of their successor. A right-wing party that is convinced to lose the next election could run an expansive monetary policy thereby forcing their successor to take actions to cut inflation once in power.

Appendix 2: Unit Root Test

	Fisher Type / ADF	IPS
Balance	188.2108*** -9.3368*** -10.1644*** 13.8211***	-6.2329***
Trade	198.7293*** -9.3892*** -9.7904*** 12.6642***	-0.3146
Infl_Gap	508.2861*** -19.5606*** -27.0632*** 43.7137***	-37.5314***
Unemployment	108.7918*** -6.9881*** -7.1580*** 9.0698***	-4.5824***
gdp_gap	444.6351*** -17.1628*** -21.0691*** 32.2962***	-18.5099***
lnGDP_PC	303.2526*** -13.4399*** -14.7958*** 21.1471***	-15.8593***
POP1564	322.6219*** -8.9062*** -9.3404*** 11.5219***	-3.6714***
POP65plus	193.6685*** -0.0618 -0.8219 3.6448***	-6.5815***

Note: ***, ** and * indicate 99%, 95% and 90% significance. Fisher type statistics: Inverse chi-squared, inverse normal Z, inverse logit t, modified inv. Chi-squared, alternatively. Time trend is included for *lnGDP_PC* and *POP65plus;* all tests have cross-sectional average subtracted to mitigate the impact of cross-sectional dependence (Levin et al., 2002). Lag length is selected according to Akaike Information Criterion (Akaike, 1974) (aic).

xtunitroot fisher combines the p-values from the panel-specific unit-root tests using the four methods proposed by Choi (2001). Three of the methods differ in whether they use the inverse 2 , inverse normal, or inverse logit transformation of p-values, and the fourth is a modification of the inverse 2 transformation that is suitable for when N tends to infinity. The inverse normal and inverse logit transformations can be used whether N is finite or infinite.

Appendix 3: Results with Reduced Instruments

Balance [% / GDP]	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Elect	-0.84 (.269)											
El_pres		-0.74 (595).										
El_parl			-0.52** (.221)									
El_semipres				-1.17 (.787)								
El_maj					-0.42* (.247)							
El_prop						-0.74*** (.252)						
El_sdm							-0.48 (.626)					
El_pdm								-0.99 (.353)				
El_closed									-.57*** (.215)			
El_open										-0.52* (.304)		
El_acl											-0.50** (.224)	
El_ach												-1.49*** (.441)
pres = semipres		(.562)										
parl = semipres		(.343)*										
pres = parl		(.636)										
maj = prop					(.333)							
sdm = pdm							(.301)					
closed = open									(.646)			
acl = ach											(.485)**	
2nd Order test (Pr > z)	0.84	0.51			0.41		0.53		0.30		0.28	
Hansen test (Prob > χ2)	0.52	0.36			0.45		0.49		0.31		0.56	
Numb. of Instr.	24	26			26		26		26		26	
Numb. of Grp.	68	68			68		68		54		61	
Numb. of Obs.	1425	1425			1376		1249		702		1015	

Balance [% / GDP]	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
El_cbl	-1.33 (.354)									
El_cbh		-0.23 (.389)								
El_cbl_acl			-0.59*** (.220)							
El_cbl_ach				-2.27*** (.561)						
El_cbh_acl					0.38 (.207)					
El_cbh_ach						-0.23 (.464)				
El_cbl_sdm							-1.53** (.673)			
El_cbl_pdm								-1.90 (.876)		
El_cbl_sdm									0.14 (.381)	
El_cbl_pdm										-0.34 (.603)
cbl = cbh	(.388)***									
cbl: acl = ach			(.661)**							
cbh: acl = ach			(.455)							
acl: cbl = cbh			(.548)							
ach: cbl = cbh			(.603)***							
cbl: sdm = pdm							(.742)			
cbh: sdm = pdm							(.484)			
sdm: cbl = cbh							(.707)**			
pdm: cbl = cbh							(.800)*			
2nd Order test (Pr > z)	0.37		0.34				0.36			
Hansen test (Prob > χ2)	0.39		0.77				0.41			
Numb. of Instr.	26		30				30			
Numb. of Groups	68		61				68			
Numb. of Observ.	1409		1050				1206			

Balance [% / GDP]	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
El_cbl_pres	-0.89 (.708)							
El_cbl_parl		-1.57*** (.485)						
El_cbh_pres			-0.18 (.760)					
El_cbh_parl				-0.23 (.502)				
El_acl_pres					-0.72** (.304)			
El_acl_parl						-0.71 (.441)		
El_ach_pres							-0.91 (.761)	
El_ach_parl								-1.12*** (.362)
cbl: pres = parl	(.772)							
cbh: pres = parl	(.716)							
pres: cbl = cbh	(.672)							
parl: cbl = cbh	(.468)***							
acl: pres = parl					(.483)			
ach: pres = parl					(.733)			
pres: acl = ach					(.753)			
parl: acl = ach					(.451)			
2nd Order test (Pr > z)	0.40				0.31			
Hansen test (Prob > χ2)	0.65				0.66			
Numb. of Instr.	30				30			
Numb. of Groups	62				61			
Numb. of Observ.	1084				1015			

Balance [% / GDP]	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)
El_acl_sdm	-0.02 (.405)							
El_acl_pdm		-0.52* (.247)						
El_ach_sdm			-0.71 (.747)					
El_ach_pdm				-1.04*** (.352)				
El_pres_sdm					-0.28 (.479)			
El_pres_pdm						-1.01** (.459)		
El_parl_sdm							-0.57 (473)	
El_parl_pdm								-0.59** (.234)
acl: sdm = pdm	(.476)*							
ach: sdm = pdm	(.572)**							
sdm: acl = ach	(.567)							
pdm: acl = ach	(.322)							
pres: sdm = pdm					(.702)			
parl: sdm = pdm					(.459)			
sdm; pres = parl					(.626)			
pdm; pres = parl					(.516P			
2nd Order test (Pr > z)	0.49				0.77			
Hansen test (Prob > χ2)	0.78				0.42			
Numb. of Instr.	29				30			
Numb. of Groups	61				68			
Numb. of Observ.	915				1252			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Appendix 4: Results with Reduced Panel

Balance [% / GDP]	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Elect	-0.57*** (.179)											
El_pres		-0.31 (.367)										
El_parl			-0.54** (.222)									
El_semipres				-1.45 (.892)								
El_maj					-0.39 (.242)							
El_prop						-0.86*** (287)						
El_sdm							-0.27 (.257)					
El_pdm								-0.99*** (.271)				
El_closed									-0.68** (.311)			
El_open										-0.54 (.301)		
El_acl											-0.45* (.238)	
El_ach												-1.48*** (.456)
pres = semipres		(.611)*										
parl = semipres		(.551)**										
pres = parl		(.422)										
maj = prop					(.453)							
sdm = pdm							(.356)**					
closed = open									(.437)			
acl = ach											(.505)**	
2nd Order test (Pr > z)	0.33	0.34			0.35		0.35		0.29		0.47	
Hansen test (Prob > χ2)	0.51	0.50			0.58		0.40		0.40		0.60	
Numb. of Instr.	52	52			52		52		32		50	
Numb. of Grp.	62	62			62		62		32		61	
Numb. of Obs.	1127	1127			1018		912		489		981	

Balance [% / GDP]	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
El_cbl	-1.40*** (.416)									
El_cbh		-0.21 (.197_								
El_cbl_acl			-0.63 (.612)							
El_cbl_ach				-2.32*** (.573)						
El_cbh_acl					0.26 (.227)					
El_cbh_ach						-0.33 (.380)				
El_cbl_sdm							-1.17** (.585)			
El_cbl_pdm								-1.90*** (.559)		
El_cbh_sdm									-0.04 (.244)	
El_cbh_pdm										-0.40 (.248)
cbl = cbh	(.467)**									
cbl: acl = ach			(.866)*							
cbh: acl = ach			(.476)							
acl: cbl = cbh			(.646)							
ach: cbl = cbh			(.712)***							
cbl: sdm = pdm							(.638)			
cbh: sdm = pdm							(.259)			
sdm: cbl = cbh							(.671)*			
pdm: cbl = cbh							(.631)**			
2nd Order test (Pr > z)	0.44		0.54				0.41			
Hansen test (Prob > χ2)	0.47		0.76				0.50			
Numb. of Instr.	50		50				50			
Numb. of Groups	62		61				62			
Numb. of Observ.	1050		970				897			

Balance [% / GDP]	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
El_cbl_pres	-0.72 (.688)							
El_cbl_parl		-1.47 (.425)						
El_cbh_pres			-0.20 (.403)					
El_cbh_parl				-0.15 (.153)				
El_acl_pres					-0.55 (.334)			
El_acl_parl						-0.43* (.256)		
El_ach_pres							-0.62 (.737)	
El_ach_parl								-0.85* (.496)
cbl: pres = parl	(.817)							
cbh: pres = parl	(.445)							
pres: cbl = cbh	(.856)							
parl: cbl = cbh	(.408)***							
acl: pres = parl					(.423)			
ach: pres = parl					(.879)			
pres: acl = ach					(.726)			
parl: acl = ach					(.549)			
2nd Order test (Pr > z)	0.47				0.48			
Hansen test (Prob > χ2)	0.60				0.78			
Numb. of Instr.	50				50			
Numb. of Groups	62				61			
Numb. of Observ.	1004				927			

Balance [% / GDP]	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)
El_acl_sdm	0.35 (.828)							
El_acl_pdm		-0.54** (.267)						
El_ach_sdm			-0.42 (.578)					
El_ach_pdm				-1.71** (.743)				
El_pres_sdm					-0.12 (.348)			
El_pres_pdm						-0.73* (.407)		
El_parl_sdm							-0.38 (.498)	
El_parl_pdm								-0.67*** (.225)
acl: sdm = pdm	(.500)*							
ach: sdm = pdm	(.669)*							
sdm: acl = ach	(.731)							
pdm: acl = ach	(.651)*							
pres: sdm = pdm					(.506)			
parl: sdm = pdm					(.554)			
sdm; pres = parl					(.572)			
pdm; pres = parl					(.478)			
2nd Order test (Pr > z)	0.40				0.36			
Hansen test (Prob > χ2)	0.47				0.54			
Numb. of Instr.	50				50			
Numb. of Groups	61				62			
Numb. of Observ.	915				961			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Appendix 5: Results with Annual Time Dummy Variables

Balance [% / GDP]	(1)	(2)	(3)	(4)	(5)	(6)
El_sdm	-0.59** (.254)					
El_pdm		-0.94*** (.347)				
El_acl			-0.44 (.225)			
El_ach				-1.49*** (.419)		
El_cbl					-1.28*** (.323)	
El_cbh						-0.33* (.169)
sdm = pdm	(.370)					
acl = ach			(.488)**			
cbl = cbh					(.360)***	
2nd Order test (Pr > z)	0.40		0.54		0.35	
Hansen test (Prob > χ2)	0.56		0.52		0.51	
Numb. of Instr.	58		51		58	
Numb. of Groups	68		61		68	
Numb. of Observ.	1249		1015		1409	

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Appendix 6: Concentration of Power rescaled

Balance [% / GDP]	(1)	(2)	(3)
El_cbh-1	-0.500 (.333)		
El_cbh		-0.207 (.186)	
El_cbh+1			-0.075 (.436)
2nd Order test (Pr > z)	0.37	0.38	0.39
Hansen test (Prob > χ2)	0.45	0.61	0.55
Numb. of Instr.	57	57	57
Numb. of Groups	68	68	68
Numb. of Observ.	1409	1409	1409

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Appendix 7: PBC within the Budget Composition

Total Revenue	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	-0.190 (.157)	-0.121 (.089)	-0.177 (.188)	-0.021 (.443)	-0.240* (.126)	-0.031 (.145)	-0.433 (.355)	-0.420* (.271)	-0.021 (.188)
pres = parl		(.339)							
sdm = pdm				(.428)					
acl = ach						(.423)			
cbl = cbh								(.343)	
2nd Order test (Pr > z)	0.79	0.76		0.65		0.73		0.80	
Hansen test (Prob > χ2)	0.49	0.47		0.52		0.48		0.41	
Numb. of Instr.	41	45		33		44		0.44	
Numb. of Groups	68	68		68		67		68	
Numb. of Observ.	1542	1542		1304		1443		1516	

Total Revenue	cbl_sdm	cbl_pdm	cbh_sdm	cbh_sdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	-0.941* (.552)	-0.612* (.315)	0.289 (.498)	-0.039 (.209)	0.167 .415	-0.919*** .328	-0.247 .311	0.129 .201
cbl: sdm = pdm	(.503							
cbh: sdm = pdm	(.993)							
sdm: cbl = cbh	(.985)							
pdm: cbl = cbh	(.368)							
cbl: pres = parl					(.609)*			
cbh: pres = parl					(.441)			
pres: cbl = cbh					(.690)			
parl: cbl = cbh					(.380)***			
2nd Order test (Pr > z)	0.46				0.79			
Hansen test (Prob > χ2)	0.49				0.34			
Numb. of Instr.	41				48			
Numb. of Groups	68				68			
Numb. of Observ.	1542				1516			

Total Revenue	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	-0.040 .288	-1.042** .513	0.023 .146	0.104 .427	0.297 .256	-0.196 .412	-0.233 .382	-0.207 .156
cbl: acl = ach	.513*							
cbh: acl = ach	.667							
acl: cbl = cbh	.259							
ach: cbl = cbh	.613*							
pres: sdm = pdm					(.713)			
parl: sdm = pdm					(.652)			
sdm: pres = parl					(.798)			
pdm: pres = parl					(.461)			
2nd Order test (Pr > z)	0.32				0.32			
Hansen test (Prob > χ2)	0.39				0.55			
Numb. of Instr.	41				50			
Numb. of Groups	67				68			
Numb. of Observ.	1379				1338			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Total Expenditure	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.217* (.128)	-0.027 (.249)	0.296** (.145)	0.072 (.350)	0.553*** (.178)	0.085 (.193)	0.822*** (.412)	0.848*** (.274)	0.089 (.165)
pres = parl		(.291)							
sdm = pdm				(.432)					
acl = ach									
cbl = cbh						(.493)		(.363)**	
2nd Order test (Pr > z)	0.31	0.32		0.39		0.35		0.40	
Hansen test (Prob > χ2)	0.38	0.36		0.32		0.36		0.39	
Numb. of Instr.	51	52		52		52		53	
Numb. of Groups	68	68		68		68		68	
Numb. of Observ.	1509	1483		1321		1321		1483	

Total Expenditure	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	0.203 (.334)	1.084*** (.328)	0.503 (.476)	0.275 (.195)	0.678* (.388)	0.666** (.316)	-0.216 (.451)	0.200 (.310)
cbl: sdm = pdm	(.873)							
cbh: sdm = pdm	(.530)							
sdm: cbl = cbh	(.935)							
pdm: cbl = cbh	(.402)**							
cbl: pres = parl					(.532)			
cbh: pres = parl					(.476)			
pres: cbl = cbh					(.427)**			
parl: cbl = cbh					(.444)			
2nd Order test (Pr > z)	0.40				0.39			
Hansen test (Prob > χ2)	0.39				0.33			
Numb. of Instr.	53				54			
Numb. of Groups	68				68			
Numb. of Observ.	1298				1483			

Total Expenditure	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	0.089 (.439)	1.289** (.551)	-0.057 (.205)	0.348 (.284)	0.201 (.188)	0.216 (.432)	-0.094 (.463)	0.317* (.172)
cbl: acl = ach	(.622)*							
cbh: acl = ach	(.730)							
acl: cbl = cbh	(.528)							
ach: cbl = cbh	(.988)							
pres: sdm = pdm					(.725)			
parl: sdm = pdm					(.547)			
sdm: pres = parl					(.671)			
pdm: pres = parl					(.541)			
2nd Order test (Pr > z)	0.35				0.37			
Hansen test (Prob > χ2)	0.32				0.34			
Numb. of Instr.	55				54			
Numb. of Groups	67				68			
Numb. of Observ.	1396				1321			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Total Tax	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	-0.123 (.103)	-0.048 (.223)	-0.201 (.125)	-0.048 (.234)	-0.205* (.107)	0.089 (.135)	-0.544** (.213)	-0.485*** (.103)	0.079 (.103)
pres = parl		(.248)							
sdm = pdm				(.268)					
acl = ach						(.256)**			
cbl = cbh								(.224)**	
2nd Order test (Pr > z)	0.58	0.59		0.35		0.71		0.38	
Hansen test (Prob > χ2)	0.47	0.31		0.46		0.49		0.47	
Numb. of Instr.	42	35		45		45		45	
Numb. of Groups	68	67		67		67		67	
Numb. of Observ.	1464	1431		1278		1349		1278	

Total Tax	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	-0.988* (.579)	-0.587*** (.221)	0.230 (.234)	-0.004 (.117)	-0.354 (.291)	-0.580 (.257)	0.049 (.320)	0.019 (.102)
cbl: sdm = pdm	(.616)							
cbh: sdm = pdm	(.239)							
sdm: cbl = cbh	(.637)*							
pdm: cbl = cbh	(258)**							
cbl: pres = parl					(.398)			
cbh: pres = parl					(.340)			
pres: cbl = cbh					(.465)			
parl: cbl = cbh					(.287)**			
2nd Order test (Pr > z)	0.58				0.43			
Hansen test (Prob > χ2)	0.55				0.57			
Numb. of Instr.	51				54			
Numb. of Groups	67				67			
Numb. of Observ.	1305				1278			

Total Tax	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	0.014 (.273)	-0.975*** (.307)	0.021 (.128)	0.042 (.145)	0.176 (.444)	-0.237 (.207)	-0.215 (1.99)	-0.179* (.110)
cbl: acl = ach	(.411)**							
cbh: acl = ach	(.254)							
acl: cbl = cbh	(.303)							
ach: cbl = cbh	(.417)**							
pres: sdm = pdm					(.570)			
parl: sdm = pdm					(.334)			
sdm: pres = parl					(.533)			
pdm: pres = parl					(.341)			
2nd Order test (Pr > z)	0.62				0.38			
Hansen test (Prob > χ2)	0.42				0.47			
Numb. of Instr.	51				0.54			
Numb. of Groups	66				67			
Numb. of Observ.	1336				1278			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Social Contribution	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	-0.003 (.059)	-0.009 (.058)	0.0029 (.085)	-0.032 (.065)	0.036 (.082)	0.018 (.076)	-0.045 (.058)	-0.067 (.129)	0.037 (.071)
pres = parl		(.104)							
sdm = pdm				(.108)					
acl = ach						(.092)			
cbl = cbh								(.135)	
2nd Order test (Pr > z)	0.27	0.58		0.48		0.30		0.38	
Hansen test (Prob > χ2)	0.58	0.52		0.56		0.54		0.32	
Numb. of Instr.	43	47		54		46		46	
Numb. of Groups	63	63		63		62		56	
Numb. of Observ.	1361	1361		1213		1290		1043	

Social Contribution	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	-0.036 (.622)	-0.004 (.171)	-0.055 (.082)	0.052 (.104)	0.167 (.205)	-0.131 (.208)	-0.068 (.074)	0.085 (.096)
cbl: sdm = pdm	(.219)							
cbh: sdm = pdm	(.124)							
sdm: cbl = cbh	(.167)							
pdm: cbl = cbh	(.191)							
cbl: pres = parl					(.303)			
cbh: pres = parl					(.117)			
pres: cbl = cbh					(.244)			
parl: cbl = cbh					(.198)			
2nd Order test (Pr > z)	0.35				0.37			
Hansen test (Prob > χ2)	0.34				0.39			
Numb. of Instr.	50				52			
Numb. of Groups	59				59			
Numb. of Observ.	950				1043			

Social Contribution	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	-0.067 (.241)	-0.060 (.166)	0.069 (.085)	-0.126 (.150)	-0.130 (.072)	-0.011 (.087)	0.038 (.073)	0.039 (.095)
cbl: acl = ach	(.332)							
cbh: acl = ach	(.131)							
acl: cbl = cbh	(.270)							
ach: cbl = cbh	(.884)							
pres: sdm = pdm					(.095)			
parl: sdm = pdm					(.075)			
sdm: pres = parl					(.098)*			
pdm: pres = parl					(.066)			
2nd Order test (Pr > z)	0.43				0.33			
Hansen test (Prob > χ2)	0.44				0.45			
Numb. of Instr.	52				50			
Numb. of Groups	58				63			
Numb. of Observ.	982				1258			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Other Revenue	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	-0.010 .063	0.073 .165	-0.006 .064	0.078 .117	0.016 .071	-0.039 .097	0.140 .134	0.089 .106	-0.010 .074
pres = parl		(.140)							
sdm = pdm				(.141)					
acl = ach						(.143)			
cbl = cbh								(.105)	
2nd Order test (Pr > z)	0.59	0.58		0.40		0.64		0.61	
Hansen test (Prob > χ2)	0.48	0.57		0.51		0.56		0.59	
Numb. of Instr.	41	46		44		44		44	
Numb. of Groups	66	66		66		65		66	
Numb. of Observ.	1504	1504		1327		1406		1478	

Other Revenue	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	0.193 (.383)	0.032 (.130)	0.048 (.118)	-0.001 (.101)	0.371 (.314)	-0.057 (.108)	-0.077 (.175)	0.018 (.097)
cbl: sdm = pdm	(.422)							
cbh: sdm = pdm	(.154)							
sdm: cbl = cbh	(.403)							
pdm: cbl = cbh	(.148)							
cbl: pres = parl							(380)	
cbh: pres = parl							(.199)	
pres: cbl = cbh							(.419)	
parl: cbl = cbh							(.125)	
2nd Order test (Pr > z)	0.39						0.67	
Hansen test (Prob > χ2)	0.64						0.54	
Numb. of Instr.	50						50	
Numb. of Groups	66						66	
Numb. of Observ.	1304						1478	

Other Revenue	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	-0.156 (.386)	0.280 (.253)	0.005 (.079)	-0.047 (.180)	0.031 (.207)	0.127 (.127)	0.159 (.142)	-0.037 (.084)
cbl: acl = ach	(.264)							
cbh: acl = ach	(.195)							
acl: cbl = cbh	(.130)							
ach: cbl = cbh	(.235)							
pres: sdm = pdm					(.246)			
parl: sdm = pdm					(.195)			
sdm: pres = parl					(.251)			
pdm: pres = parl					(.155)			
2nd Order test (Pr > z)	0.64				0.20			
Hansen test (Prob > χ2)	0.66				0.53			
Numb. of Instr.	50				54			
Numb. of Groups	65				66			
Numb. of Observ.	1392				1327			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Income Tax	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.023 (.082)	-0.016 (.222)	-0.008 (.100)	-0.069 (.080)	0.037 (.092)	-0.090 (.118)	0.072 (.079)	-0.162 (.123)	0.064 (.051)
pres = parl		(.211)							
sdm = pdm				(.221)					
acl = ach						(.236)			
cbl = cbh								(.198)	
2nd Order test (Pr > z)	0.33	0.31		0.37		0.39		0.39	
Hansen test (Prob > χ2)	0.44	0.43		0.36		0.46		0.45	
Numb. of Instr.	42	0.46		45		45		45	
Numb. of Groups	67	66		66		66		67	
Numb. of Observ.	1545	1545		1100		1188		1256	

Income Tax	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	-0.367 (.651)	-0.014 (.172)	0.123 (.164)	0.075 (.093)	0.114 (.201)	-0.292 (.181)	-0.100 (.378)	0.056 (.090)
cbl: sdm = pdm	(.636)							
cbh: sdm = pdm	(.184)							
sdm: cbl = cbh	.654)							
pdm: cbl = cbh	(.185)							
cbl: pres = parl					(.537)			
cbh: pres = parl					(.410)			
pres: cbl = cbh					(.772)			
parl: cbl = cbh					(.244)			
2nd Order test (Pr > z)	0.40				0.32			
Hansen test (Prob > χ2)	0.46				0.47			
Numb. of Instr.	50				51			
Numb. of Groups	66				66			
Numb. of Observ.	1363				1545			

Income Tax	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	-0.031 (.211)	-0.197 (.272)	0.069 (.123)	-0.049 (.084)	0.412 (.335)	-0.122 (.188)	-0.235 (.323)	0.039 (.075)
cbl: acl = ach	(.267)							
cbh: acl = ach	(.169)							
acl: cbl = cbh	(.212)							
ach: cbl = cbh	(.268)							
pres: sdm = pdm					(.454)			
parl: sdm = pdm					(.331)			
sdm: pres = parl					(.450)			
pdm: pres = parl					(.320)			
2nd Order test (Pr > z)	0.30				0.50			
Hansen test (Prob > χ2)	0.46				0.58			
Numb. of Instr.	50				50			
Numb. of Groups	65				66			
Numb. of Observ.	1464				1387			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Tax on Payroll	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	-0.021 (.032)	-0.092* (.047)	0.005 (.038)	0.073 (.076)	-0.074** (.031)	-0.070 (.042)	0.037 (.060)	0.005 (.040)	-0.045 (.034)
pres = parl		(.088)							
sdm = pdm				(.077)*					
acl = ach						(.100)		(.052)	
cbl = cbh								X	
2nd Order test (Pr > z)	0.35	0.35		0.34		0.32		0.30	
Hansen test (Prob > χ2)	0.54	0.55		0.59		0.35		0.60	
Numb. of Instr.	30	32		20		32		33	
Numb. of Groups	39	38		37		37		38	
Numb. of Observ.	616	606		532		560		596	

Tax on Payroll	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	0.073 (.118)	-0.078* (.042)	0.061 (.038)	-0.080 (.054)	0.007 (.082)	-0.027 (.070)	-0.140** (.066)	0.002 (.026)
cbl: sdm = pdm	(.058)***							
cbh: sdm = pdm	(.082)							
sdm: cbl = cbh	(.096)							
pdm: cbl = cbh	(.060)							
cbl: pres = parl					(.108)			
cbh: pres = parl					(.072)**			
pres: cbl = cbh					(.115)			
parl: cbl = cbh					(.065)			
2nd Order test (Pr > z)	0.36				0.32			
Hansen test (Prob > χ2)	0.53				0.42			
Numb. of Instr.	27				32			
Numb. of Groups	37				38			
Numb. of Observ.	515				596			

Tax on Payroll	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	-0.046 (.033)	0.008 (.092)	-0.077* (.039)	0.073 (.043)	-0.011 (.041)	-0.135** (.063)	0.104 (.087)	-0.040 (.030)
cbl: acl = ach	(.088)							
cbh: acl = ach	(.065)**							
acl: cbl = cbh	(.059)							
ach: cbl = cbh	(.073)							
pres: sdm = pdm					(.074)*			
parl: sdm = pdm					(.094)			
sdm: pres = parl					(.098)			
pdm: pres = parl					(.067)			
2nd Order test (Pr > z)	0.31				0.37			
Hansen test (Prob > χ2)	0.65				0.68			
Numb. of Instr.	35				29			
Numb. of Groups	37				37			
Numb. of Observ.	548				532			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Tax on Property	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	-0.64 (.032)	0.007 (.018)	-0.057 (.035)	-0.016 (.062)	-0.042 (.036)	-0.012 (.021)	-0.068 (.021)	-0.052 (.039)	-0.024 (.021)
pres = parl		(.042)							
sdm = pdm				(.038)					
acl = ach						(.067)			
cbl = cbh								(.052)	
2nd Order test (Pr > z)	0.48	0.52		0.41		0.49		0.43	
Hansen test (Prob > χ2)	0.36	0.38		0.36		0.37		0.38	
Numb. of Instr.	42	37		45		45		45	
Numb. of Groups	64	64		62		62		64	
Numb. of Observ.	1298	1298		1153		1227		1281	

Tax on Property	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	0.038 (.058)	-0.059 (.040)	-0.033 (.076)	-0.023 (.028)	-0.007 (.223)	-0.040 (.041)	-0.002 (.047)	-0.033 (.031)
cbl: sdm = pdm	(.073)							
cbh: sdm = pdm	(.079)							
sdm: cbl = cbh	(.067)							
pdm: cbl = cbh	(.037)							
cbl: pres = parl					(.050)			
cbh: pres = parl					(.059)			
pres: cbl = cbh					(.236)			
parl: cbl = cbh					(.041)			
2nd Order test (Pr > z)	0.36				0.44			
Hansen test (Prob > χ2)	0.38				0.39			
Numb. of Instr.	51				51			
Numb. of Groups	62				64			
Numb. of Observ.	1136				1281			

Tax on Property	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	-0.048 (.037)	-0.063 (.050)	0.004 (.029)	-0.018 (.064)	-0.009 (.040)	0.021 (.035)	-0.025 (.023)	-0.035 (.031)
cbl: acl = ach	(.078)							
cbh: acl = ach	(.060)							
acl: cbl = cbh	(.049)							
ach: cbl = cbh	(.054)							
pres: sdm = pdm					(.062)			
parl: sdm = pdm					(.038)			
sdm: pres = parl					(.045)			
pdm: pres = parl					(.054)			
2nd Order test (Pr > z)	0.39				0.39			
Hansen test (Prob > χ2)	0.42				0.34			
Numb. of Instr.	51				51			
Numb. of Groups	62				64			
Numb. of Observ.	1214				1281			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Tax on Goods and Services	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	-0.120* (.065)	-0.133 (.108)	-0.074 (.065)	0.001 (.126)	-0.176* (.070)	0.009 (.062)	-0.342*** (.114)	-0.257* (.119)	-0.018 (.054)
pres = parl		(.130)							
sdm = pdm				(.137)					
acl = ach						(.139)***			
cbl = cbh								(.142)*	
2nd Order test (Pr > z)	0.38	0.37		0.42		0.43		0.41	
Hansen test (Prob > χ2)	0.36	0.38		0.36		0.36		0.42	
Numb. of Instr.	55	56		54		54		54	
Numb. of Groups	67	67		66		66		66	
Numb. of Observ.	1563	1503		1376		1465		1376	

Tax on Goods and Services	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	-0.141 (.267)	-0.418** (.148)	0.066 (.091)	-0.042 (.079)	-0.504*** (.152)	-0.090 (.140)	0.043 (.107)	-0.038 (.069)
cbl: sdm = pdm	(.304)							
cbh: sdm = pdm	(.114)							
sdm: cbl = cbh	(.281)							
pdm: cbl = cbh	(.168)**							
cbl: pres = parl					(.246)*			
cbh: pres = parl					(.124)			
pres: cbl = cbh					(.233)**			
parl: cbl = cbh					(.153)			
2nd Order test (Pr > z)	0.41				0.43			
Hansen test (Prob > χ2)	0.34				0.35			
Numb. of Instr.	54				54			
Numb. of Groups	66				64			
Numb. of Observ.	1352				1536			

Tax on Goods and Services	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	-0.025 (.191)	-0.537*** (.164)	-0.006 (.066)	-0.035 (.331)	-0.043 (.185)	-0.239 (.147)	0.048 (.128)	-0.133 (.082)
cbl: acl = ach	(.224)**							
cbh: acl = ach	(.155)							
acl: cbl = cbh	(.187)							
ach: cbl = cbh	(.174)***							
pres: sdm = pdm					(.235			
parl: sdm = pdm					(.161)			
sdm: pres = parl					(.218)			
pdm: pres = parl					(.177)			
2nd Order test (Pr > z)	0.39				0.38			
Hansen test (Prob > χ2)	0.44				0.42			
Numb. of Instr.	54				52			
Numb. of Groups	66				66			
Numb. of Observ.	1451				1376			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Trade Tax	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	-0.062 (.065)	-0.111 (..092)	0.007 (.039)	0.077 (.045)	-0.069 (.050)	-0.090 (.078)	0.072 (.065)	-0.162 (.132)	0.064 (.051)
pres = parl		(.250)							
sdm = pdm				(.102)					
acl = ach						(.150)			
cbl = cbh								(.123)*	
2nd Order test (Pr > z)	0.78	0.45		0.37		0.33		0.39	
Hansen test (Prob > χ2)	0.34	0.40		0.49		0.40		0.48	
Numb. of Instr.	42	42		45		45		45	
Numb. of Groups	67	66		66		66		67	
Numb. of Observ.	1273	1100		1100		1188		1256	

Trade Tax	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	0.027 (264)	-0.264 (.204)	0.053 (.022)	0.006 (.061)	-0.239 (.166)	-0.027 (.093)	0.110 (.089)	0.038 (.053)
cbl: sdm = pdm	(.267)							
cbh: sdm = pdm	(.178)							
sdm: cbl = cbh	(.281)							
pdm: cbl = cbh	(.205)							
cbl: pres = parl					(.434)			
cbh: pres = parl					(.171)			
pres: cbl = cbh					(.313)			
parl: cbl = cbh					(.221)			
2nd Order test (Pr > z)	0.39				0.40			
Hansen test (Prob > χ2)	0.45				0.73			
Numb. of Instr.	51				56			
Numb. of Groups	66				67			
Numb. of Observ.	1084				1256			

Trade Tax	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	-0.245 (.219)	-0.040 (.111)	-0.015 (.063)	0.060 (.087)	0.010 (.073)	-0.204 (159)	-0.030 (.064)	0.036 (.058)
cbl: acl = ach	(.230)							
cbh: acl = ach	(.119)							
acl: cbl = cbh	(.178)							
ach: cbl = cbh	(.147)							
pres: sdm = pdm					(.268)			
parl: sdm = pdm					(.078)			
sdm: pres = parl					(.123)			
pdm: pres = parl					(.321)			
2nd Order test (Pr > z)	0.33				0.44			
Hansen test (Prob > χ2)	0.52				0.63			
Numb. of Instr.	51				54			
Numb. of Groups	66				66			
Numb. of Observ.	1177				1100			

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Economic Affairs	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.012 (.086)	-0.205** (.103)	0.065 .109	-0.130 (.167)	0.117 (.099)	0.054 (.098)	-0.085 (.146)	0.136 (.107)	-0.063 (.075)
pres = parl		(.158)*							
sdm = pdm				(.219)					
acl = ach						(.232)			
cbl = cbh								(.185)	
2nd Order test (Pr > z)	0.53	.50		0.82		0.47		0.47	
Hansen test (Prob > χ2)	0.42	0.45		0.61		0.44		0.70	
Numb. of Instr.	50	54		52		52		53	
Numb. of Groups	65	65		64		63		65	
Numb. of Observ.	1379	1379		1211		1275		1339	

Economic Affairs	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	-0.548 (.486)	0.378** (.148)	-0.018 (.163)	-0.056 (.086)	-0.290 (.204)	0.238 (.189)	-0.129 (.113)	-0.056 (.083)
cbl: sdm = pdm	(.498)*							
cbh: sdm = pdm	(.162)							
sdm: cbl = cbh	(.305)*							
pdm: cbl = cbh	(.202)**							
cbl: pres = parl					(.288)*			
cbh: pres = parl					(.171)			
pres: cbl = cbh					(.250)			
parl: cbl = cbh					(.205)			
2nd Order test (Pr > z)	0.82				0.52			
Hansen test (Prob > χ2)	0.37				0.55			
Numb. of Instr.	53				55			
Numb. of Groups	64				65			
Numb. of Observ.	1192				1339			

Economic Affairs	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	0.242 (.205)	0.010 (.295)	-0.004 (.086)	-0.233 (.167)	-0.140 (.101)	-0.126 (.118)	-0.092 (.288)	0.097 (.108)
cbl: acl = ach	(.394)							
cbh: acl = ach	(.209)							
acl: cbl = cbh	(.246)							
ach: cbl = cbh	(.287)							
pres: sdm = pdm					(.191)			
parl: sdm = pdm					(.309)			
sdm: pres = parl					(.292)			
pdm: pres = parl					(.179)			
2nd Order test (Pr > z)	0.48				0.79			0.84
Hansen test (Prob > χ2)	0.48				0.42			0.32
Numb. of Instr.	53				53			54
Numb. of Groups	63				63			64
Numb. of Observ.	1262				1211			1121

***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Health	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.019 .032	0.015 .050	0.023 .038	0.054 .041	-0.003 .046	-0.008 .047	0.076 .056	0.069 .058	0.002 .048
pres = parl		(.076)							
sdm = pdm				(.075)					
acl = ach						(.077)			
cbl = cbh								(.072)	
2nd Order test (Pr > z)	0.83	0.90		0.59		0.84		0.84	
Hansen test (Prob > χ2)	0.61	0.35		0.43		0.51		0.58	
Numb. of Instr.	53	56		52		52		52	
Numb. of Groups	65	65		64		63		65	
Numb. of Observ.	1328	1328		1178		1242		1306	

Health	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	0.216** (.102)	0.001 (.080)	-0.004 (.076)	0.007 (.068)	0.068 (.112)	0.046 (.059)	-0.088 (.097)	0.019 (.047)
cbl: sdm = pdm	(.103)**							
cbh: sdm = pdm	(.101)							
sdm: cbl = cbh	(.115)*							
pdm: cbl = cbh	(.100)							
cbl: pres = parl					(.086)			
cbh: pres = parl					(.111)			
pres: cbl = cbh					(.135)			
parl: cbl = cbh					(.092)			
2nd Order test (Pr > z)	0.52				0.83			
Hansen test (Prob > χ2)	0.35				0.42			
Numb. of Instr.	53				53			
Numb. of Groups	64				65			
Numb. of Observ.	1159				1306			

Health	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	-0.078 (.085)	0.164** (.068)	0.006 (.056)	-0.021 (.109)	0.099 (.073)	-0.083 (.063)	0.035 (.030)	0.014 (.048)
cbl: acl = ach	(.112)							
cbh: acl = ach	(.143)							
acl: cbl = cbh	(.123)							
ach: cbl = cbh	(.121)							
pres: sdm = pdm					(.137)			
parl: sdm = pdm					(.085)			
sdm: pres = parl					(.109)			
pdm: pres = parl					(.109)			
2nd Order test (Pr > z)	0.72				0.83			
Hansen test (Prob > χ2)	0.48				0.42			
Numb. of Instr.	52				53			
Numb. of Groups	64				65			
Numb. of Observ.	1178				1178			

All tests are estimated using xtabond2 (Roodman, 2009a) in Stata 11.0. ***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in Parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Housing	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.037 (.024)	0.017 (.042)	0.043 (.027)	0.015 (.035)	0.043 (.032)	0.027 (.020)	0.098* (.057)	0.117* (.062)	0.025 (.025)
pres = parl		(.052)							
sdm = pdm				(.052)					
acl = ach						(.93)			
cbl = cbh								(.068)	
2nd Order test (Pr > z)	0.45	0.45		0.82		0.37		0.31	
Hansen test (Prob > χ2)	0.73	0.69		0.73		0.60		0.75	
Numb. of Instr.	42	47		45		45		44	
Numb. of Groups	64	63		63		62		63	
Numb. of Observ.	1271	1270		1152		1203		1254	

Housing	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	0.072 (.45)	0.159* (.065)	0.053** (.026)	-0.020 (.033)	0.065 (.132)	0.105 (.080)	0.017 (.073)	0.026 (.020)
cbl: sdm = pdm	(.134)							
cbh: sdm = pdm	(.036)**							
sdm: cbl = cbh	(.089)							
pdm: cbl = cbh	(.080)**							
cbl: pres = parl					(.132)			
cbh: pres = parl					(.077)			
pres: cbl = cbh					(.158)			
parl: cbl = cbh					(.085)			
2nd Order test (Pr > z)	0.50				0.65			
Hansen test (Prob > χ2)	0.78				0.81			
Numb. of Instr.	46				43			
Numb. of Groups	63				63			
Numb. of Observ.	1137				1254			

Housing	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	0.080 (.071)	0.170* (.095)	0.014 (.030)	0.059 (.038)	-0.015 (.036)	-0.039 (.065)	0.016 (.051)	0.051 (.035)
cbl: acl = ach	(.113)							
cbh: acl = ach	(.041)							
acl: cbl = cbh	(.068)							
ach: cbl = cbh	(.097)							
pres: sdm = pdm					(.075)			
parl: sdm = pdm					(.064)			
sdm: pres = parl					(.065)			
pdm: pres = parl					(.072)			
2nd Order test (Pr > z)	0.36				0.50			
Hansen test (Prob > χ2)	0.63				0.72			
Numb. of Instr.	46				44			
Numb. of Groups	62				63			
Numb. of Observ.	1191				1152			

All tests are estimated using xtabond2 (Roodman, 2009a) in Stata 11.0. ***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in Parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

General Public Service	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.250** (.121)	0.296 (.199)	0.056 (.085)	0.100 (.212)	0.264** (.125)	0.030 (.108)	0.445* (.238)	0.384 (.251)	0.108 (.120)
pres = parl		(.230)							
sdm = pdm				(.252)					
acl = ach						(.286)			
cbl = cbh								(.296)	
2nd Order test (Pr > z)	0.53	0.47		0.57		0.34		0.52	
Hansen test (Prob > χ2)	0.36	0.51		0.41		0.41		0.44	
Numb. of Instr.	52	55		54		52		54	
Numb. of Groups	67	67		67		66		67	
Numb. of Observ.	1349	1349		1202		1266		1325	

General Public Service	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	-0.202 (.172)	0.493* (.250)	0.265* (.124)	0.101 (.162)	0.645 (.412)	-0.113 (.094)	-0.034 (188)	0.138 (.123)
cbl: sdm = pdm	(.701)							
cbh: sdm = pdm	(.216)							
sdm: cbl = cbh	(.839)							
pdm: cbl = cbh	(.282)							
cbl: pres = parl					(.453)			
cbh: pres = parl					(.418)			
pres: cbl = cbh					(.572)			
parl: cbl = cbh					(.412)			
2nd Order test (Pr > z)	0.63				0.57			
Hansen test (Prob > χ2)	0.41				0.54			
Numb. of Instr.	54				54			
Numb. of Groups	67				67			
Numb. of Observ.	1181				1325			

General Public Service	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	0.171 (.258)	0.478* (.256)	-0.045 (.139)	0.450** (.211)	-0.026 (.175)	0.556** (.259)	0.150 (.198)	0.056 (.106)
cbl: acl = ach	(.587)							
cbh: acl = ach	(.250)*							
acl: cbl = cbh	(.322)							
ach: cbl = cbh	(.544)							
pres: sdm = pdm					(.346)			
parl: sdm = pdm					(.348)			
sdm: pres = parl					(.323)			
pdm: pres = parl					(.323)			
2nd Order test (Pr > z)	0.43				0.66			
Hansen test (Prob > χ2)	0.46				0.46			
Numb. of Instr.	52				54			
Numb. of Groups	66				67			
Numb. of Observ.	1252				1202			

All tests are estimated using xtabond2 (Roodman, 2009a) in Stata 11.0. ***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in Parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Culture	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.001 (.007)	0.006 (.018)	-0.020 (.064)	0.008 (.019)	0.001 (.007)	0.007 (.004)	-0.015 (.011)	0.012 (.013)	-0.005 (.009)
pres = parl		(.012)							
sdm = pdm				(.022)					
acl = ach						(.017)			
cbl = cbh								(.015)	
2nd Order test (Pr > z)	0.85	0.83		0.64		0.78		0.77	
Hansen test (Prob > χ2)	0.41	0.48		0.56		0.67		0.46	
Numb. of Instr.	44	45		42		42		42	
Numb. of Groups	63	63		63		60		63	
Numb. of Observ.	1349	1273		1136		1198		1251	

Culture	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	0.007 (.044)	0.010 (.013)	-0.005 (.023)	-0.002 (.010)	0.041 (.035)	0.008 (.014)	-0.020 (.035)	-0.001 (.011)
cbl: sdm = pdm	(.043)							
cbh: sdm = pdm	(.026)							
sdm: cbl = cbh	(.050)							
pdm: cbl = cbh	(.015)							
cbl: pres = parl					(.033)			
cbh: pres = parl					(.077)			
pres: cbl = cbh					(.045)			
parl: cbl = cbh					(.017)			
2nd Order test (Pr > z)	0.68				0.78			
Hansen test (Prob > χ2)	0.49				0.46			
Numb. of Instr.	42				42			
Numb. of Groups	63				63			
Numb. of Observ.	1117				1251			

Culture	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	0.037** (.015)	-0.002 (.011)	0.000 (.023)	-0.014 (.011)	0.014 (.031)	0.001 (.011)	0.010 (.023)	0.003 (.011)
cbl: acl = ach	(.027)							
cbh: acl = ach	(.046)							
acl: cbl = cbh	(.016)							
ach: cbl = cbh	(.051)							
pres: sdm = pdm					(.033)			
parl: sdm = pdm					(.026)			
sdm: pres = parl					(.038)			
pdm: pres = parl					(.014)			
2nd Order test (Pr > z)	0.44				0.65			
Hansen test (Prob > χ2)	0.48				0.47			
Numb. of Instr.	42				42			
Numb. of Groups	62				63			
Numb. of Observ.	1194				1136			

All tests are estimated using xtabond2 (Roodman, 2009a) in Stata 11.0. ***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in Parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Education	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.053** (.025)	0.109** (.050)	0.026 (.029)	0.048 (.072)	0.038 (.025)	0.030 (.026)	0.059 (.054)	0.154*** (.045)	-0.002 (.028)
pres = parl		(.053)							
sdm = pdm				(.061)					
acl = ach						(.054)			
cbl = cbh								(.053)***	
2nd Order test (Pr > z)	0.46	0.40		0.42		0.32		0.46	
Hansen test (Prob > χ2)	0.43	0.41		0.45		0.52		0.49	
Numb. of Instr.	50	0.50		50		50		50	
Numb. of Groups	65	65		64		63		65	
Numb. of Observ.	1375	1357		1218		1279		1346	

Education	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	0.375*** (.138)	0.124*** (.046)	-0.072 (.059)	0.019 (.038)	0.146 (.102)	0.152** (.060)	0.102 (.063)	-0.016 (.036)
cbl: sdm = pdm	(.151)*							
cbh: sdm = pdm	(.065)							
sdm: cbl = cbh	(.182)**							
pdm: cbl = cbh	(.060)*							
cbl: pres = parl					(.122)			
cbh: pres = parl					(.075)			
pres: cbl = cbh					(.135)			
parl: cbl = cbh					(.068)**			
2nd Order test (Pr > z)	0.51				0.44			
Hansen test (Prob > χ2)	0.41				0.49			
Numb. of Instr.	50				50			
Numb. of Groups	645				63			
Numb. of Observ.	1186				1335			

Education	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	0.064 (.058)	0.203*** (.077)	0.012 (.033)	-0.118** (.048)	0.056 (.051)	0.114 (.079)	0.035 (.063)	0.035 (.028)
cbl: acl = ach	(.080)*							
cbh: acl = ach	(.055)*							
acl: cbl = cbh	(.069)							
ach: cbl = cbh	(.084)***							
pres: sdm = pdm					(.094)			
parl: sdm = pdm					(.080)			
sdm: pres = parl					(.090)			
pdm: pres = parl					(.082)			
2nd Order test (Pr > z)	0.37				0.41			
Hansen test (Prob > χ2)	0.54				0.51			
Numb. of Instr.	50				50			
Numb. of Groups	63				64			
Numb. of Observ.	1265				1205			

All tests are estimated using xtabond2 (Roodman, 2009a) in Stata 11.0. ***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in Parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Social Protection	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.034 (.063)	-0.090 (.125)	0.059 (.073)	-0.006 (.058)	0.025 (.049)	0.011 (.093)	0.026 (.091)	-0.004 (.096)	0.001 (.078)
pres = parl		(.146)							
sdm = pdm				(.133)					
acl = ach						(.129)			
cbl = cbh								(.114)	
2nd Order test (Pr > z)	0.24	0.27		0.23		0.23		0.25	
Hansen test (Prob > χ2)	0.41	0.34		0.39		0.41		0.50	
Numb. of Instr.	54	56		54		52		54	
Numb. of Groups	64	64		64		63		64	
Numb. of Observ.	1378	1378		1323		1296		1356	

Social Protection	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	0.099 (.063)	0.040 (.110)	-0.027 (.182)	0.048 (.113)	0.132 (.082)	0.101 (.134)	-0.086 (.170)	0.022 (.102)
cbl: sdm = pdm	(.182)							
cbh: sdm = pdm	(.164)							
sdm: cbl = cbh	(.173)							
pdm: cbl = cbh	(.182)							
cbl: pres = parl					(.289)			
cbh: pres = parl					(.204			
pres: cbl = cbh					(.267)			
parl: cbl = cbh					(.159)			
2nd Order test (Pr > z)	0.28				0.36			
Hansen test (Prob > χ2)	0.51				0.30			
Numb. of Instr.	52				54			
Numb. of Groups	64				64			
Numb. of Observ.	1213				1356			

Social Protection	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	-0.050 (.045)	0.107 (.085)	0.016 (.044)	-0.042 (.135)	-0.114 (.153)	0.077 (.172)	0.033 (.112)	0.081 (.105)
cbl: acl = ach	(.208)							
cbh: acl = ach	(.156)							
acl: cbl = cbh	(.166)							
ach: cbl = cbh	(.177)							
pres: sdm = pdm					(.233)			
parl: sdm = pdm					(.140)			
sdm: pres = parl					(.189)			
pdm: pres = parl					(.190)			
2nd Order test (Pr > z)	0.24				0.28			
Hansen test (Prob > χ2)	0.48				0.57			
Numb. of Instr.	52				52			
Numb. of Groups	63				1232			
Numb. of Observ.	1283				64			

All tests are estimated using xtabond2 (Roodman, 2009a) in Stata 11.0. ***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in Parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Grants	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.141* (.084)	0.230 (.141)	0.053 (.083)	0.240* (.142)	0.099 (.078)	0.118 (.108)	0.161 (.116)	0.272* (.156)	0.070 (.103)
pres = parl		(.198)							
sdm = pdm				(.170)					
acl = ach						(.150)			
cbl = cbh								(.187)	
2nd Order test (Pr > z)	.079	0.82		0.79		0.79		0.80	
Hansen test (Prob > χ2)	0.79	0.50		0.65		0.32		0.48	
Numb. of Instr.	50	54		53		52		53	
Numb. of Groups	63	63		63		62		63	
Numb. of Observ.	894	893		863		858		882	

Grants	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	0.435 (.274)	0.200 (.164)	0.120 (.385)	0.013 (.113)	0.315* (.189)	0.245* (.146)	0.222 (.197)	-0.039 (.114)
cbl: sdm = pdm	(.307)							
cbh: sdm = pdm	(.206)							
sdm: cbl = cbh	(.333)							
pdm: cbl = cbh	(.194)							
cbl: pres = parl					(.228)			
cbh: pres = parl					(.383)			
pres: cbl = cbh					(.365)			
parl: cbl = cbh					(.189)			
2nd Order test (Pr > z)	0.80				0.83			
Hansen test (Prob > χ2)	0.41				0.39			
Numb. of Instr.	53				52			
Numb. of Groups	63				63			
Numb. of Observ.	853				882			

Grants	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	0.394* (.201)	0.198 (.144)	0.050 (.119)	0.093 (.132)	0.429 (.315)	0.172 (.136)	0.088 (.111)	0.045 (.093)
cbl: acl = ach	(.322)							
cbh: acl = ach	(.168)							
acl: cbl = cbh	(.259)							
ach: cbl = cbh	(.230)							
pres: sdm = pdm					(.372)			
parl: sdm = pdm					(.145)			
sdm: pres = parl					(.347)			
pdm: pres = parl					(.182)			
2nd Order test (Pr > z)	0.78				0.78			
Hansen test (Prob > χ2)	0.44				0.49			
Numb. of Instr.	52				53			
Numb. of Groups	62				63			
Numb. of Observ.	852				863			

All tests are estimated using xtabond2 (Roodman, 2009a) in Stata 11.0. ***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in Parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Social Benefit	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.007 (.073)	-0.042 (.140)	0.037 (.044)	-0.122 (.107)	-0.019 (.096)	-0.033 .090	0.107 (.122)	0.054 (.135)	-0.078 (.091)
pres = parl		(.121)							
sdm = pdm				(.117)					
acl = ach						(.146)			
cbl = cbh								(.166)	
2nd Order test (Pr > z)	0.65	0.61		0.57		0.38		0.40	
Hansen test (Prob > χ2)	0.48	0.45		0.42		0.56		0.44	
Numb. of Instr.	55	55		0.64		54		58	
Numb. of Groups	65	65		65		64		65	
Numb. of Observ.	1104	1103		1031		1047		1089	

Social Benefit	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	-0.150 (.177)	0.142 (.100)	-0.105 (.112)	-0.088 (.139)	0.443 (.317)	0.148 (.089)	-0.227 (.267)	0.023 (.109)
cbl: sdm = pdm	(.239)							
cbh: sdm = pdm	(.210)							
sdm: cbl = cbh	(.283)							
pdm: cbl = cbh	(.216)							
cbl: pres = parl					(.441)			
cbh: pres = parl					(.281)			
pres: cbl = cbh					(.460)			
parl: cbl = cbh					(.181)			
2nd Order test (Pr > z)	0.57				0.67			
Hansen test (Prob > χ2)	0.36				0.43			
Numb. of Instr.	58				42			
Numb. of Groups	65				64			
Numb. of Observ.	1020				1039			

Social Benefit	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	0.054 (.378)	0.148 (.119)	-0.082 (111)	0.029 (.215)	-0.154 (.098)	-0.022 (.207)	-0.125 (.140)	0.054 (.044)
cbl: acl = ach	(.252)							
cbh: acl = ach	(.223)							
acl: cbl = cbh	(.251)							
ach: cbl = cbh	(.251)							
pres: sdm = pdm					(.242)			
parl: sdm = pdm					(.175)			
sdm: pres = parl					(.169)			
pdm: pres = parl					(.227)			
2nd Order test (Pr > z)	0.56				0.70			
Hansen test (Prob > χ2)	0.41				0.44			
Numb. of Instr.	58				58			
Numb. of Groups	65				65			
Numb. of Observ.	1031				1089			

All tests are estimated using xtabond2 (Roodman, 2009a) in Stata 11.0. ***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in Parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Compensation of Employees	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.057 (.016)	0.143* (.085)	0.042 (.053)	0.166 (.106)	0.055 (.049)	0.005 (.051)	0.207** (.091)	0.148 (.095)	0.029 (.050)
pres = parl		(.083)							
sdm = pdm				(.106)					
acl = ach						(.116)			
cbl = cbh								(.110)	
2nd Order test (Pr > z)	0.66	0.85		0.56		0.76		0.69	
Hansen test (Prob > χ2)	0.52	0.51		0.52		0.56		0.66	
Numb. of Instr.	56	49		45		44		46	
Numb. of Groups	66	66		66		65		66	
Numb. of Observ.	1464	1464		1306		1391		1445	

Compensation of Employees	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	0.457 (.243)	0.082 (.083)	0.080 (.083)	0.037 (.060)	0.399** (.162)	0.131 (.099)	0.034 (.104)	0.004 (.058)
cbl: sdm = pdm	(.261)							
cbh: sdm = pdm	(.107)							
sdm: cbl = cbh	(.250)							
pdm: cbl = cbh	(.098)							
cbl: pres = parl					(.195)			
cbh: pres = parl					(.118)			
pres: cbl = cbh					(.211)*			
parl: cbl = cbh					(.106)			
2nd Order test (Pr > z)	0.56				0.66			
Hansen test (Prob > χ2)	0.46				0.57			
Numb. of Instr.	46				48			
Numb. of Groups	66				66			
Numb. of Observ.	1288				1445			

Compensation of Employees	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	-0.099 (.129)	0.384*** (.124)	0.045 (.050)	-0.032 (.131)	0.246 (.168)	0.120 (.117)	0.127 (.100)	0.024 (.064)
cbl: acl = ach	(.180)***							
cbh: acl = ach	(.126)							
acl: cbl = cbh	(.137)							
ach: cbl = cbh	(.176)**							
pres: sdm = pdm					(.250)			
parl: sdm = pdm					(.120)			
sdm: pres = parl					(.239)			
pdm: pres = parl					(.130)			
2nd Order test (Pr > z)	0.75				0.50			
Hansen test (Prob > χ2)	0.47				0.47			
Numb. of Instr.	55				46			
Numb. of Groups	65				66			
Numb. of Observ.	1378				1306			

All tests are estimated using xtabond2 (Roodman, 2009a) in Stata 11.0. ***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in Parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Goods and Service	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.049 (.057)	-0.016 (.079)	0.108** (.050)	0.225* .130	0.054 (.059)	0.132 (.057)	0.046 (.104)	0.005 (.064)	0.123** (.053)
pres = parl		(.101)							
sdm = pdm				(.111)					
acl = ach						(.088)			
cbl = cbh								(.077)	
2nd Order test (Pr > z)	0.33	0.32		0.32		0.27		0.35	
Hansen test (Prob > χ2)	0.44	0.48		0.59		0.52		0.41	
Numb. of Instr.	42	51		56		56		56	
Numb. of Groups	67	67		67		66		67	
Numb. of Observ.	1528	1528		1357		1446		1503	

Goods and Service	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	0.200 (.140)	0.014 (.076)	0.014 (.282)	0.081 (.064)	0.066 (.097)	0.014 (.087)	0.062 (.053)	0.133* (.071)
cbl: sdm = pdm	(.184)							
cbh: sdm = pdm	(.145)							
sdm: cbl = cbh	(.198)							
pdm: cbl = cbh	(.087)							
cbl: pres = parl					(.268)			
cbh: pres = parl					(.177)			
pres: cbl = cbh					(.212)			
parl: cbl = cbh					(.122)			
2nd Order test (Pr > z)	0.36				0.35			
Hansen test (Prob > χ2)	0.54				0.52			
Numb. of Instr.	54				55			
Numb. of Groups	66				67			
Numb. of Observ.	1335				1507			

Goods and Service	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	0.149 (.112)	0.018 (.119)	0.111** (.056)	0.163 (.247)	0.028 (.097)	0.104 (.094)	0.328*** (.115)	0.056 (.048)
cbl: acl = ach	(.159)							
cbh: acl = ach	(.137)							
acl: cbl = cbh	(.096)							
ach: cbl = cbh	(.256)							
pres: sdm = pdm					(.139)			
parl: sdm = pdm					(.097)***			
sdm: pres = parl					(.145)			
pdm: pres = parl					(.130)			
2nd Order test (Pr > z)	0.37				0.36			
Hansen test (Prob > χ2)	0.65				0.43			
Numb. of Instr.	54				56			
Numb. of Groups	66				67			
Numb. of Observ.	1432				1357			

All tests are estimated using xtabond2 (Roodman, 2009a) in Stata 11.0. ***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in Parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Subsidies	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.053 (.108)	-0.054 (.091)	-0.018 (.066)	-0.151 (.105)	0.109 (.098)	0.030 (.077)	0.352 (.279)	0.269 (.172)	-0.011 (.051)
pres = parl		(.117)							
sdm = pdm				(.107)**					
acl = ach						(.242)			
cbl = cbh								(206)	
2nd Order test (Pr > z)	0.45	0.48		0.53		0.32		0.40	
Hansen test (Prob > χ2)	0.42	0.55		0.57		0.42		0.46	
Numb. of Instr.	42	42		44		42		44	
Numb. of Groups	63	63		63		62		63	
Numb. of Observ.	1126	1126		1062		1073		1112	

Subsidies	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	-0.357*** (.135)	0.279 (.188)	-0.056 (.334)	-0.017 (.071)	-0.384*** (.108)	0.108 (.097)	0.084 (.564)	-0.051 (.063)
cbl: sdm = pdm	(.240)***							
cbh: sdm = pdm	(.344)							
sdm: cbl = cbh	(.131)**							
pdm: cbl = cbh	(.198)							
cbl: pres = parl						(.226)**		
cbh: pres = parl						(.497)		
pres: cbl = cbh						(.189)**		
parl: cbl = cbh						(.133)		
2nd Order test (Pr > z)	0.54					0.43		
Hansen test (Prob > χ2)	0.41					0.52		
Numb. of Instr.	50					51		
Numb. of Groups	63					63		
Numb. of Observ.	1050					1112		

Subsidies	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	-0.028 (.244)	0.602 (.381)	-0.004 (.066)	-0.045 (.086)	-0.187 (.132)	0.006 (.132)	-0.067 (.042)	0.025 (.85)
cbl: acl = ach	(.414)							
cbh: acl = ach	(.086)							
acl: cbl = cbh	(.197)							
ach: cbl = cbh	(.481)							
pres: sdm = pdm					(.138)			
parl: sdm = pdm					(.083)			
sdm: pres = parl					(.188)			
pdm: pres = parl					(.185)			
2nd Order test (Pr > z)	0.31				0.44			
Hansen test (Prob > χ2)	0.50				0.51			
Numb. of Instr.	50				50			
Numb. of Groups	62				63			
Numb. of Observ.	1065				1052			

All tests are estimated using xtabond2 (Roodman, 2009a) in Stata 11.0. ***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in Parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Other Expenditures	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.064 (.096)	0.031 (.128)	-0.084 (.134)	-0.299 (.207)	0.018 (.134)	0.010 (.107)	-0.248 (.217)	-0.206 (.164)	0.048 (.123)
pres = parl		(.153)							
sdm = pdm				(.303)					
acl = ach						(.303)			
cbl = cbh								(.264)	
2nd Order test (Pr > z)	0.74	0.83		0.76		0.77		0.73	
Hansen test (Prob > χ2)	0.53	0.44		0.44		0.41		0.36	
Numb. of Instr.	40	42		42		40		42	
Numb. of Groups	65	65		65		64		64	
Numb. of Observ.	813	812		775		778		801	

Other Expenditures	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	-1.002** (.456)	0.009 (.122)	0.183 (1.31)	0.003 (.144)	0.258 (.315)	-0.384 (.250)	-0.074 (.111)	0.118 (.174)
cbl: sdm = pdm	.938							
cbh: sdm = pdm	(.204)							
sdm: cbl = cbh	(.676)*							
pdm: cbl = cbh	(.182)							
cbl: pres = parl					(.365)*			
cbh: pres = parl					(.204)			
pres: cbl = cbh					(.335)			
parl: cbl = cbh					(.345)			
2nd Order test (Pr > z)	0.77				0.77			
Hansen test (Prob > χ2)	0.55				0.45			
Numb. of Instr.	44				44			
Numb. of Groups	64				64			
Numb. of Observ.	765				801			

Other Expenditures	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	0.026 (.158)	-0.450 (.294)	0.011 (.133)	0.034 (.309)	0.039 (.462)	-0.030 (.110)	-0.503 (.399)	0.029 (.126)
cbl: acl = ach	(.567)							
cbh: acl = ach	(.243)							
acl: cbl = cbh	(.197)							
ach: cbl = cbh	(.628)							
pres: sdm = pdm					(.221)			
parl: sdm = pdm					(.422)			
sdm: pres = parl					(.488)			
pdm: pres = parl	(				(.180)			
2nd Order test (Pr > z)	0.78				0.65			
Hansen test (Prob > χ2)	0.48				0.39			
Numb. of Instr.	42				42			
Numb. of Groups	63				65			
Numb. of Observ.	772				774			

All tests are estimated using xtabond2 (Roodman, 2009a) in Stata 11.0. ***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in Parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Interests	elect	pres	parl	sdm	pdm	acl	ach	cbl	cbh
Coefficient	0.047 (.030)	0.038 (.073)	-0.011 (.052)	-0.120 (.084)	0.161* (.090)	-0.011 (.055)	0.174 (.214)	0.148 (.107)	-0.001 (.042)
pres = parl		(.113)							
sdm = pdm				(.115)**					
acl = ach						(.226)			
cbl = cbh								(.182)	
2nd Order test (Pr > z)	0.38	0.37		0.35		0.29		0.39	
Hansen test (Prob > χ2)	0.41	0.39		0.57		0.56		0.61	
Numb. of Instr.	41	44		44		44		44	
Numb. of Groups	67	67		67		66		67	
Numb. of Observ.	1572	1572		1387		1474		1545	

Interests	cbl_sdm	cbl_pdm	cbh_sdm	cbh_pdm	cbl_pres	cbl_parl	cbh_pres	cbh_parl
Coefficient	-0.173 (.207)	0.330 (.235)	-0.053 (.604)	0.056 (.089)	-0.026 (.119)	0.029 (.201)	0.037 (.154)	-0.027 (.046)
cbl: sdm = pdm	(.339)							
cbh: sdm = pdm	(.106)							
sdm: cbl = cbh	(.210)							
pdm: cbl = cbh	(.261)							
cbl: pres = parl					(.221)			
cbh: pres = parl					(.164)			
pres: cbl = cbh					(.163)			
parl: cbl = cbh					(.184)			
2nd Order test (Pr > z)	0.49				0.40			
Hansen test (Prob > χ2)	0.62				0.62			
Numb. of Instr.	50				50			
Numb. of Groups	67				67			
Numb. of Observ.	1363				1545			

Interests	cbl_acl	cbl_ach	cbh_acl	cbh_ach	pres_sdm	pres_pdm	parl_sdm	parl_pdm
Coefficient	-0.039 (-.039)	0.321 (.287)	-0.001 (.067)	-0.008 (.154)	-0.115 (-106)	0.208 (..133))	-0.081 (.094)	0.075 (.48)
cbl: acl = ach	(.495)							
cbh: acl = ach	(.109)							
acl: cbl = cbh	(.207)							
ach: cbl = cbh	(.389)							
pres: sdm = pdm					(.180)			
parl: sdm = pdm					.109)			
sdm: pres = parl					(.116)			
pdm: pres = parl					(.169)			
2nd Order test (Pr > z)	0.53				0.37			
Hansen test (Prob > χ2)	0.56				0.69			
Numb. of Instr.	50				50			
Numb. of Groups	66				67			
Numb. of Observ.	1460				1387			

All tests are estimated using xtabond2 (Roodman, 2009a) in Stata 11.0. ***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in Parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > χ2) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.

Appendix 8: The Budget Composition with Party Ideology

Tax Object	Income Tax	Property Tax	Payroll Tax	Tax on Goods & Service	Trade Tax	Other Taxes
Elect	-0.04 (.03)	-0.08 (.06)	-0.02 (.06)	-0.14** (.06)	0.14 (.09)	-0.03 (.02)
lwi	-0.45 (.29)	0.65 (.45)	0.02 (.28)	0.32 (.20)	0.85** (.34)	0.05 (.36)
rwi	-0.12 (.13)	0.62 (.51)	0.03 (.32)	-0.05 (.16)	0.83** (.42)	0.02 (.08)
2nd Order test	0.44	0.29	0.36	0.32	0.75	0.39
Hansen test	0.49	0.53	0.64	0.42	0.48	0.61
Numb. of Instr.	40	42	30	0.31	42	42
Numb. of Groups	65	64	42	0.45	67	64
Numb. of Observ.	1545	1298	616	1563	1340	1176

Economic Function	Housing	Education	Culture	Economic Affairs	General Public Service	Defence	Health	Social Protection
Elect	0.04 (.05)	0.08*** (.26)	0.01 (.02)	0.04 (.10)	0.28*** (.10)	0.04 (.03)	0.03 (.03)	0.10 (.07)
lwi	0.23 (.47)	-0.43** (.20)	-0.12 (.20)	0.06 (.37)	0.20 (.14)	-0.23 (.18)	-0.29 (.19)	-0.97 (.46)
rwi	0.48 (.34)	-0.13 (.16)	0.02 (.18)	-0.90*** (.21)	-0.20 (.16)	-0.30 (.16)	-0.14 (.12)	-0.42 (.30)
2nd Order test	0.49	0.54	0.80	0.47	0.51	0.28	0.87	0.26
Hansen test	0.58	0.47	0.44	0.79	0.38	0.42	0.60	0.39
Numb. of Instr.	42	45	42	44	52	48	53	52
Numb. of Groups	64	65	63	65	67	68	65	64
Numb. of Observ.	1271	1375	1287	1379	1349	1601	1328	1378

Economic Object	Goods and Service	Compens. of Empl.	Social Benefits	Subsidies	Grants	Interests	Other Expenditures
Elect	0.07 (.06)	0.07 (.05)	0.03 (.08)	0.05 (.09)	0.10 (0.80)	0.04 (.08)	-0.06 (.042)
lwi	-0.40 (.30)	-0.25 (.36)	-0.69 (.65)	0.64 (.65)	0.25 (62)	0.41 (.88)	0.26 (.19)
rwi	-0.05 (.21)	-0.03 (.24)	-0.07 (.45)	-0.02 (.46)	0.70 (64)	1.22 (.09)	0.06 (.12)
2nd Order test	0.37	0.86	0.81	0.45	0.73	0.37	0.71
Hansen test	0.39	0.41	0.68	0.44	0.44	0.39	0.56
Numb. of Instr.	44	52	55	50	50	41	40
Numb. of Groups	67	66	65	63	63	67	65
Numb. of Observ.	1528	1464	1104	1126	894	1572	813

All tests are estimated using xtabond2 (Roodman, 2009a) in Stata 11.0. ***/**/* denote significance at 99%, 95%, and 90% levels, respectively. Robust standard errors stated in Parentheses. 2nd order tests (Pr > z) and Hansen test (Prob > $\chi 2$) describe tests for second-order serial correlation in the difference equation and over-identifying restrictions, respectively.